

Human Security in the Amazon: perception of priorities in protected areas in Amazonas State, Brazil

Paulo Vinicius Queiroz SOUSA¹

ABSTRACT. In order to improve the livelihoods of populations living outside the capital city of Manaus--while protecting its large forest cover--Amazonas State in Brazil has implemented since 2003 a set of projects and programs which later became known as the Green Free Trade Zone Sustainable Development Strategy. Among the actions taken, the Bolsa Floresta Program stands out as an attempt at improving socioeconomic conditions of communities living inside protected areas administered by Amazonas State, through a mix of conditional cash transfers and promotion of sustainable activities that generate income for them. This study aims at identifying what values the target population of the Program consider important to live their lives, and how these are reflected in the implementation of the Program, so as to assess its success. To achieve the above mentioned aims, we employed a single-case study methodology to a protected area known as Rio Negro Sustainable Development Reserve, conducting structured and open-ended interviews with communities' members, as well as semi-structured interviews with relevant stakeholders from the local government and NGOs. The results show that the local population sees stable source of income, quality of education and access to health services as the most important things for them to lead meaningful lives in the reserve, and that while such elements have been taken into account during the design of the Program, its implementation has not yet materialized into improvement of economic insecurity of all members of the communities in the reserve. The establishment of a system to prioritize the improvement of economic conditions of those in more dire need in the communities, as well as more thorough planning and follow-up of the income generating activities proposed by communities, are suggested actions for improving the Program.

KEY TERMS: human security, human development, sustainable development, payment for environmental services

The author agrees to allow the Digital Library of the Commons to add this paper to its archives for IASC conferences.

¹ Doctoral degree candidate, Tohoku University Graduate School of Environmental Studies
Contact at paulobrazoka@hotmail.com
fy10024@kankyo.tohoku.ac.jp

1. INTRODUCTION

Since 2003, Amazonas State has implemented a set of programs and actions which eventually became known as “Zona Franca Verde” sustainable development strategy, an attempt to bring more even economic growth in the state and improvement of livelihoods, based on the concepts of sustainable development, human development, and environmental services. In this strategy, the role of populations living inside conservation areas as fundamental agents in the process of protection of these areas, as well as in the social development of communities and their integration to the wider social development of Brazilian society, echo the present paradigm of the role of human presence in areas which are considered to be important for protection purposes².

While there is little room for disagreement about the expected positive impacts a sustainable/human development based economic growth strategy can generate, allowing the targeted population opportunities to express their opinion about the economic strategy implemented by the state adds an essential dimension to the implementation of the strategy. This research focuses on the implementation of this strategy from the perspective of target communities, themselves potential agents in the process of improvement of livelihoods. The opinions from the communities can provide valuable insights for the design and implementation of development strategies, and through this research an assessment of the extent to which the priorities raised by communities is in accord with the development strategy proposed by the state is done; from such accordance we evaluate the success of the strategy.

To accomplish such aim, we have used as a guiding principle the concept of human security, defined in GECHS (1999) as “the condition when and where individuals and communities have the options necessary to avoid or adapt to risks to their basic needs and rights; have the capacity and freedom to exercise these options; and can actively participate in attaining these options”. Despite frequent criticism on the vagueness of the concept³, we believe human security has at least 2 notable strengths that other concepts lack and which are essential in this research. First, human security can be seen as a synthesis of related concepts of human needs, human development and human rights. Secondly, human security is concerned with mundane realities of groups of people and their felt-experience, somewhat distancing itself from most of the legal-led work on human rights and economics-led work on human development.⁴

About 55% percent of Amazonas State is officially protected in the form of indigenous reserves, federal and state reserves (Figure 1). In this research, Rio Negro Sustainable Development Reserve (hereafter RDS Rio Negro) was the universe where interviews with local populations were undertaken in order to raise the perceptions and various issues faced by them. We also conducted interviews with environmental governmental bodies and private organizations involved in the implementation of the strategy, which in this research is focused on the Bolsa Floresta Program (hereafter

² Andrade and Reyna. 2003

³ Chandler and Nynek 2011

⁴ Gasper, 2011

BFP). The data collected in the reserve is a result from observations, informal and structured interviews with communities' members, who exposed the values they consider important in their lives, their opinions on the communities they reside in, their view on the design and implementation of the BFP, and priorities they would like to see addressed in their communities. While the research is mainly a qualitative one, we inserted, where possible, quantitative elements which may assist in the evaluation of the results and discussion presented.

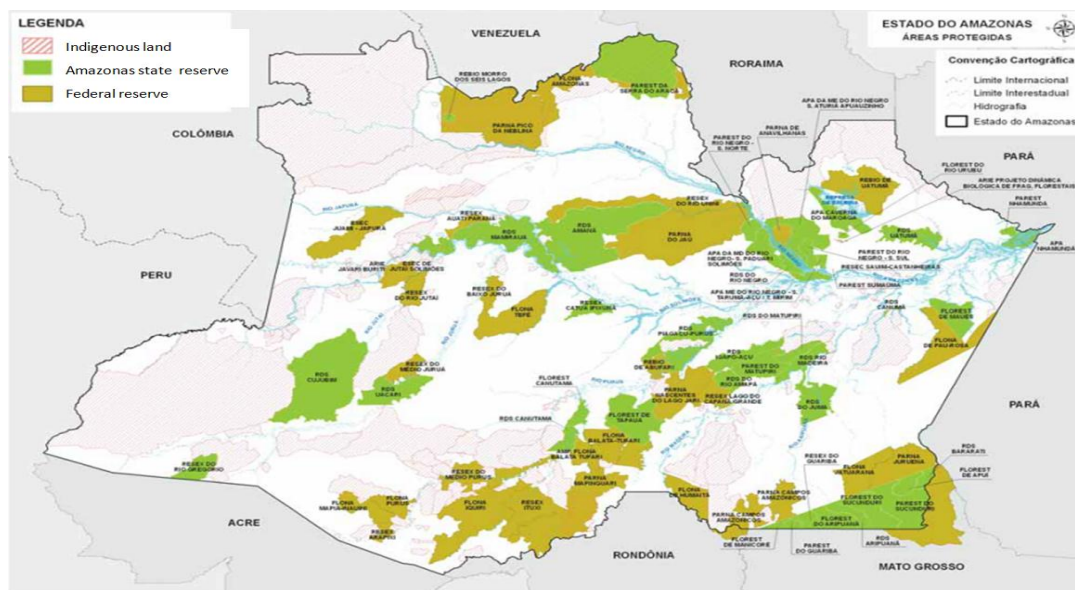


Figure 1. Map of Protected Areas in Amazonas State

Source: Amazonas (2009)

2. AMAZONAS STATE “ZONA FRANCA VERDE” STRATEGY

The Zona Franca Verde (hereafter ZFV) development strategy pursued by the Amazonas state government is part of a wider federal government strategy for the Amazon region. This strategy is summarized in mainly two plans, namely the Sustainable Amazon Plan (hereafter PAS) of 2008⁵, and Action Plan for the Prevention and Control of Deforestation in Amazon (hereafter PPCDAM) of 2004.

PAS recognized that the previous economic policies designed and implemented in the region allowed for the “growth of cities, rise of new cities, population growth and new spaces to be effectively incorporated by the national society, but such process did not occur in a harmonious, stable and sustainable way. On the opposite, the transformations in the region were not accompanied by satisfactory quality of life

⁵ Discussions that led to the creation of the Plan started in May 2003 on the occasion of the ministerial meeting for the launching of the Multi-Year Plan Brazil for All (Plano Plurianual Brasil para Todos). After various public consultations the final official version of PAS was released in 2008.

standards for the majority of its inhabitants, and its socioeconomic indicators are among the lowest in the country” (Brasil, 2008:19). It also recognized the adverse effects of these occupation and land use models on the environment, and the resulting loss in forested area. PAS sets directives, strategies and recommendations in 4 main axis, namely territorial zoning and environmental management, sustainable economic production, infrastructure for sustainable development, and finally social inclusion and citizenship. It lacks an operational character, which are set in the PPCDAM.

PPCDAM was officially published in April 2004, the same year of the second highest total deforestation area in the Brazilian Amazon (Figure 2). Its objective was to substantially reduce the increasing deforestation rate, focusing on three axes of action: 1) territorial zoning and land consolidation measures; 2) monitoring and environmental control; and 3) promotion of sustainable productive activities. (Brazil, 2004). Among the activities that directly contributed to the steep deforestation decrease from the very next year of the plan’s implementation, the following deserve notice: creation of more than 25 million hectares of conservation areas, cancelling of more than 60 thousand illegal land documents, creation of a fast track deforestation monitoring system, and the Green Arch Operation, which focused on environmental monitoring and control on the 47 municipalities with highest deforestation rate in the Amazon. In order to optimize actions for deforestation control, the federal government took steps to strengthen cooperation with states and municipalities, which led most Amazon region states also to create State Deforestation Prevention and Combat Plans.

Amazonas has always had a comparatively low deforestation rate (Figure 2.); only one municipality (Labrea, to the south of the state) was considered to be a priority in the above mentioned Green Arch Operation. Unlike other Amazon region states, where the dominant economic activities have had a direct impact on the loss of forest cover, the challenge faced by Amazonas state has been rather how to bring economic development and the associated improvement of livelihoods for population living outside the capital city Manaus, in a way that did not follow the same pattern of deforestation as seen in the neighboring states.

Data from PAS and IBGE (the Brazilian statistics bureau) corroborates the limitations of the state economic growth model based in the Economic Free Zone of Manaus. Between 1985 and 2005, the share of Amazonas GDP in the national GDP varied from 0.12 % to 0.20%, in an increase which is slightly above the region’s share in the national GDP. In 2004, the main contributors to the state GDP were transformation industry (55.4%), services (26.5%) and public administration (10.1%), which are economic activities concentrated in Manaus. In 2005, the state’s GDP contribute to 19.7% of the regional GDP, but in per capita terms it was only 88.3 % of the national GDP per capita⁶. When the Amazonas government launched in November 2003 the ZFV strategy, more than being a plan to counter the rising deforestation pressures in the south of the state, it was a strategic sustainable development plan which took into account the peculiarities of the state and the directives proposed by PAS.

⁶ In 1985, such percentage was of 115.5%.

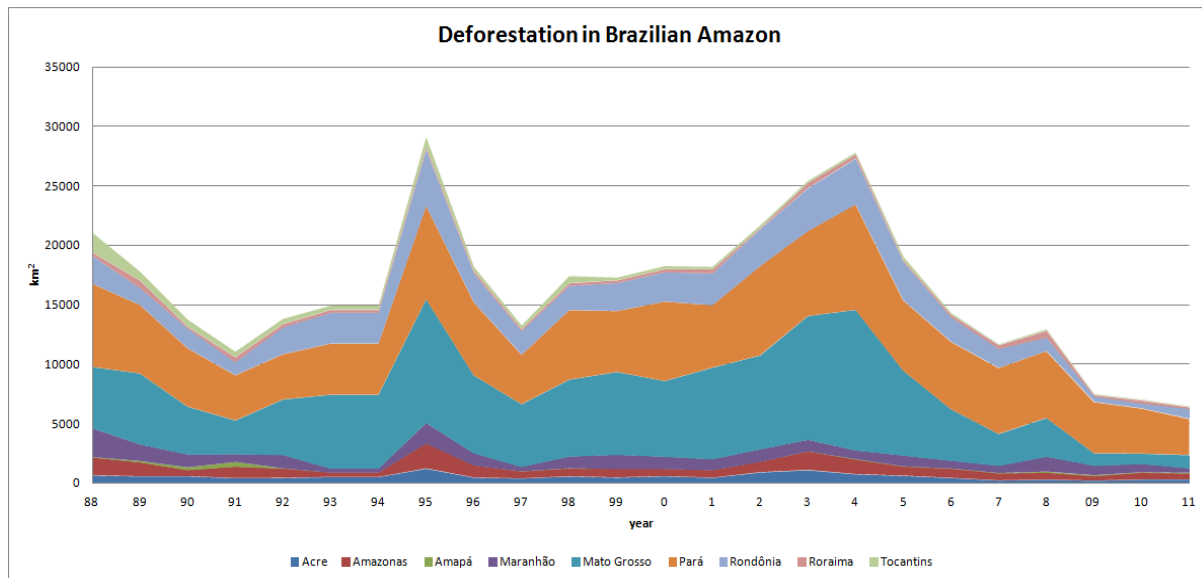


Figure 2. Annual deforestation areas by state

Source: INPE (2012)

According to Viana (2010), poor socio-economic conditions in the state outside Manaus result from “bottlenecks in the value chains for forestry and fisheries products”, which make cattle ranching more economically viable, even when it is illegal. By taking steps to improve bottlenecks such as low technological level of production systems, low level of (formal) education, poor transportation infrastructure and high transportation costs, poor and expensive energy supply, among others, ZFV aims at eliminating people’s need for deforestation by providing them with economic alternatives in which leaving the forest standing is more profitable.

Among the actions taken within the ZFV strategy, we focus on the Bolsa Floresta Program (hereafter BFP) and on the private foundation responsible for the Program, namely the Fundação Amazonas Sustentável (hereafter FAS).

3. BOLSA FLORESTA PROGRAM AND FAS

BFP basic premise is that those who are responsible for “protecting” the forest must be rewarded by society and receive incentives to avoid deforestation. In the program (Figure 3), such incentives are a combination of conditional direct cash transfers to families (BF Family), grants to community associations (BF Association), social development programs and projects (BF Social), and the promotion of income-generating activities (BF Income).

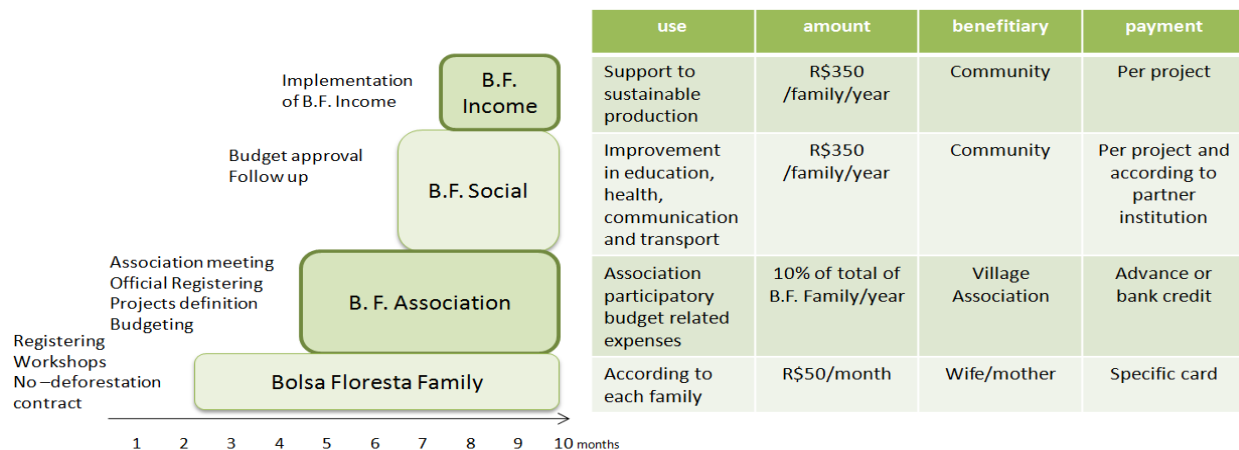


Figure 3. Bolsa Floresta Program

source: adapted from FAS 2009

BF Family is a monthly payment of R\$50 done to married women who are registered in the program. The payment is done through bank transfer to an account opened in a Bradesco Bank branch. The condition to which mothers pledge in order to receive the monthly benefit is that their families will not deforest large areas for agriculture. BF Association is calculated to be 10% of the total annual amount of family allowances in a reserve. The money is transferred to the reserve's so called "mother-association" bank account, or used as a form of credit towards communities expenses related to community strengthening or control activities, such as logistics, transportation, or office support related expenses. BF Social is a yearly budget which aims at improving communities' infrastructure, and is equivalent to R\$350 times the number of families registered in the BF Family component. Finally, BF Income component is an annual budget calculated in the same fashion as BF Social, and is designated to promote sustainable development and income generating activities. While the Family component can be freely used by each family, the use of both the Social and the Income components budgets have to be decided in community assemblies.

BFP funding is guaranteed by an endowment fund created by Amazonas State and private companies, and its implementation is done by the private foundation FAS. FAS' mission is the promotion of sustainable development in state conservation units through actions that decrease deforestation and reduce poverty, and its establishment as a private foundation was a necessary institutional innovation that, according to FAS and SDS (the Amazonas state department of environment) interviewees, not only freed it from electoral cycles but it also allowed for quick and smooth cooperation with a wide range of government, NGOs and private organizations. As a result, FAS has served as a bridge between the government's sustainable development strategy and private companies interested in supporting such strategy, becoming a "fundamental agent for

the implementation of many of the actions envisaged by the government under the ZFV strategy”⁷.

4. RDS RIO NEGRO

4.1 General Characteristics

RDS Rio Negro was established in December 2008, covering an area of 461,740.67 hectares, out of which 3.78% is in the municipality of Manacapuru, 80.12% in Iranduba, and 16.1% in Novo Airao (Figure 4). There are basically two ecosystems in the reserve, namely “terra firme” (solid ground) and flooded forest environment, with great biodiversity and biomass. The soils of “terra firme” in Central Amazon are acidic and poor in nutrients (Vieira and Santos, 1987), and have low capacity to provide water to plants, so the maintenance of the forest is guaranteed by nutrients cycling, which is practically closed (Ferreira et al, 2002).

Access to the reserve is done mainly by boat from Manaus, although the southern part of the reserve has access to state road AM-070. Access between communities occurs entirely by small motorboats, given the lack of roads.

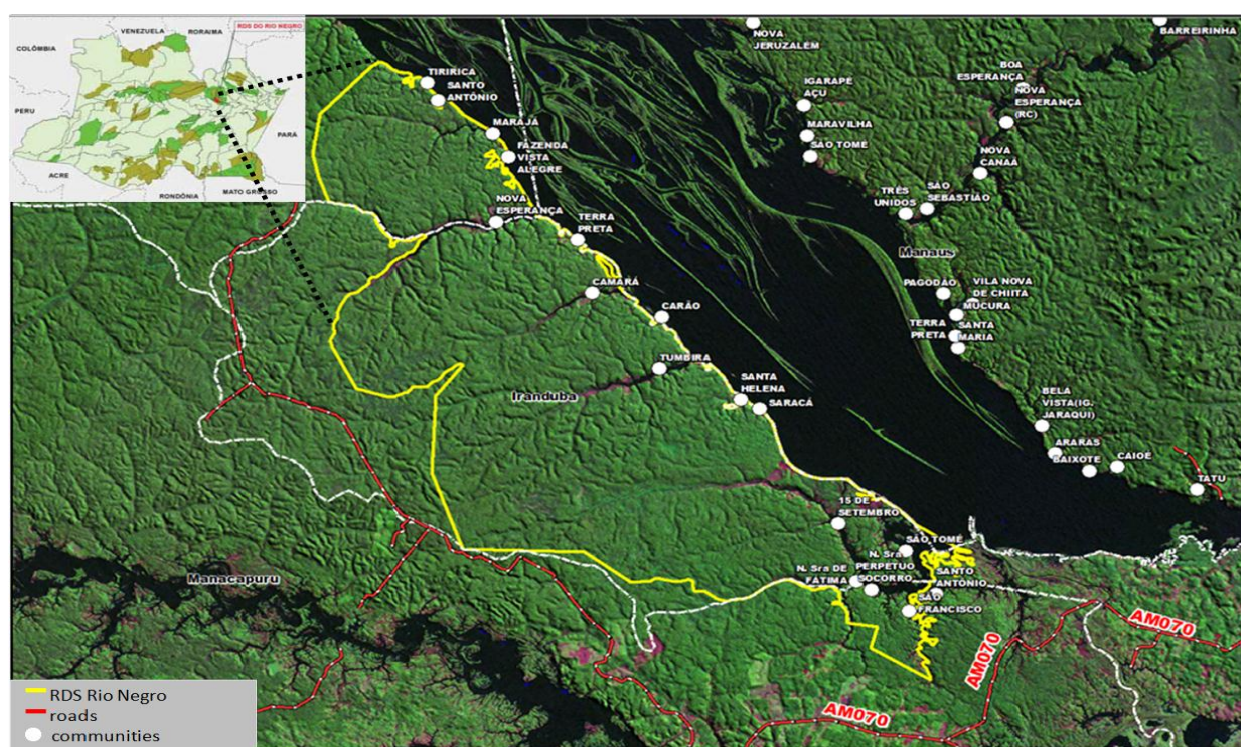


Figure 4. RDS Rio Negro

source: FAS (2012)

⁷ Interview with SDS staff.

4.2 Communities

As a sustainable development reserve, RDS Rio Negro allows for the occupation of traditional communities whose lives are based on natural resources sustainable use systems. According to the reserve dwellers and SDS staff interviewed, conservation areas created in the 1980s and 1990s did not conduct public inquiries with local stakeholders, creating a situation in which the government did not actually know who, or what was in the area it was protecting. As a result, many of the families interviewed were unaware that they were living in an officially protected area until 2008.

There is an estimated 471 families living in the reserve, and their occupation in the area can be taken as an example of an occupation process described in detail by Leonardi (1999). Rio Negro was subject to much less migration and resettlement during the rubber boom when compared to other Amazon regions, because the local rubber plants (*Hevea microphylla* and *H. benthamiana*) were of inferior quality than those explored along rivers Madeira, Purus and Solimões. Along the upper and mid Rio Negro, economic activities were based on extractivist products, but since there were no products that allowed for the creation of stable economy, there was constant movement of occupation and abandonment of the areas of the lower course of the river. The present resettlements occurred in the last 60 years, and although many of the families came from the northeast of Brazil, the majority migrated from other regions of Amazon or came from the upper and mid Rio Negro, stimulated by the low prices of rubber, and by the urbanization and industrialization of Manaus. Therefore, the activities that have attracted people to the region are small scale agriculture, extrativism and wood extraction, all of which aimed to meet the demands of Manaus.

The communities in the reserve are located in three relatively distinct coastal areas. The most populated southern part is heavily influenced by its proximity to Iranduba's city center, with comparatively better infrastructure, and communities there are generally made up of large number of families. The central part of the reserve has communities with comparatively fewer families, but with strong communal cohesion (as it will be explained in details later). Electricity is available only through gasoline fueled generators, which are turned on for some hours every day. Finally, the northern part is composed mainly of smaller communities with comparatively worse infrastructure, and where a sense of abandonment by public authorities is felt strongly.

There are city-administered primary schools in 9 communities, and in 2009 the first high school was established in the community of Tumbira. At the time of this research, there were no available data on the income situation of the communities of the reserve, but during the field trip we learned that until 2008 most families had on (illegal) logging and fishing their main sources of income. Guaranteeing stable income is a critical issue for the families, which we will further explore in the following sections.

5. METHODOLOGY

Field work was conducted between April and May of 2012 for 6 weeks, in order to accomplish the following objectives: 1) a qualitative assessment of the development strategy proposed by the state government through interviews with FAS and SDS staff; and 2) a quantitative and qualitative assessment of improvement of “life conditions”, according to the perception of community dwellers, through observation of daily routines, interviews and application of questionnaires.

In order to accomplish the first objective, interviews were conducted with the local government environmental department management staff, as well as with the BFP general coordinator of FAS. The specific aims of these interviews were to 1) identify the main component(s) behind the ZFV sustainable development strategy, 2) clarify the role of FAS within the strategy, and 3) evaluate the impact of each of the components of BFP. Given the specific aims, the interviews took an exploratory, subjective approach based on structured scripts.

For the second objective, one hundred questionnaires were distributed in 11 communities in the southern, central and northern part of the reserve, and 56 questionnaires were collected. The specific objectives of the questionnaires were to identify 1) communities dwellers’ values they consider important in their lives, 2) their views about their communities, 3) their perception of the effects of the Bolsa Floresta Program, and 4) priorities for their communities. The range and type of questions were such that the research can be characterized as being exploratory, descriptive-conclusive and simple transversal. (Churchil 1987, Malhotra 2001)

While some questions had stimulated answers most of the questions were open ones, in which interviewees were given the opportunity not only to directly answer the question being asked, but could also dwell on the question. In this case, the tabulation method used followed the methodology used in the Brazilian 2009/2010 Human Development Report.

6. RESULTS

6.1 Values, Threats and Priorities

When asked to answer spontaneously, the values dwellers consider to be most important were grouped in the categories shown in Figure 5. While items such as health, (access and quality of) education, work and a stable source of income⁸ match the dimensions in which human development can be measured, it is worth noting the distinction made in this first question and throughout the questionnaire between work/job, from where income is generated, and stable income itself. This seems to point

⁸ The responses to open questions were grouped in the categories in Figure 5, following the tabulation guidelines in the Brazilian 2009/2010 Human Development Report.

to “work/job” not as much as a valuable thing in itself (for example, in terms of the dignity attached to it), but rather towards economic security.

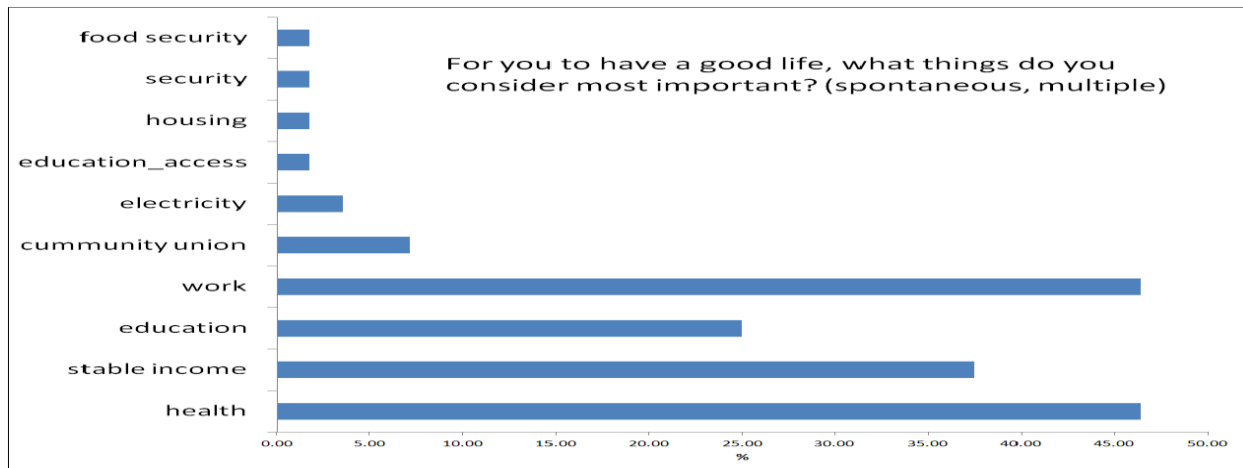


Figure 5. Important values in life

Once the values that community dwellers found important were made clear, we attempted to clarify what threats dwellers felt they are facing in their present life. Considering that the municipalities where the protected area is located have low socio-economic indicators, we hypothesized the existence of an overlapping of values considered to be important and the perception that such values are under threat. Figure 6 confirms the hypothesis, and also shows some unforeseen results, such as the relatively high mentioning of stiffer public regulations and control on income generating activities as a source of insecurity, or even uncontrolled community growth. It is also interesting noticing the absence of environmental threats as something community dwellers thought to be important in their lives, or as a source of insecurity.

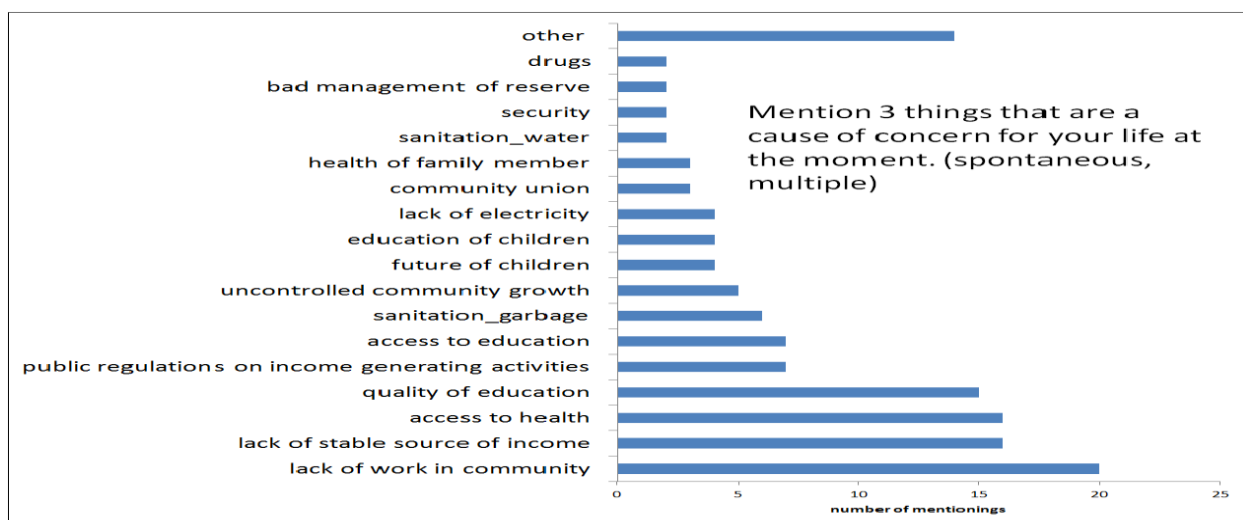


Figure 6. Present concerns for communities dwellers

From a human security perspective, identifying threats and vulnerabilities is the first step of a process which also includes the identification of agents responsible (or involved) in decreasing the perceived threats and vulnerabilities, and clarifying the calculations done among security providers to define priorities of action. On the issue of defining who the security providers are, given a list of possible agents composed of NGOs (including organizations such as the Church, etc), the government, the community, and the interviewee himself, the government is regarded as the main responsible for improving the concerns expressed by the communities (Figure 7).

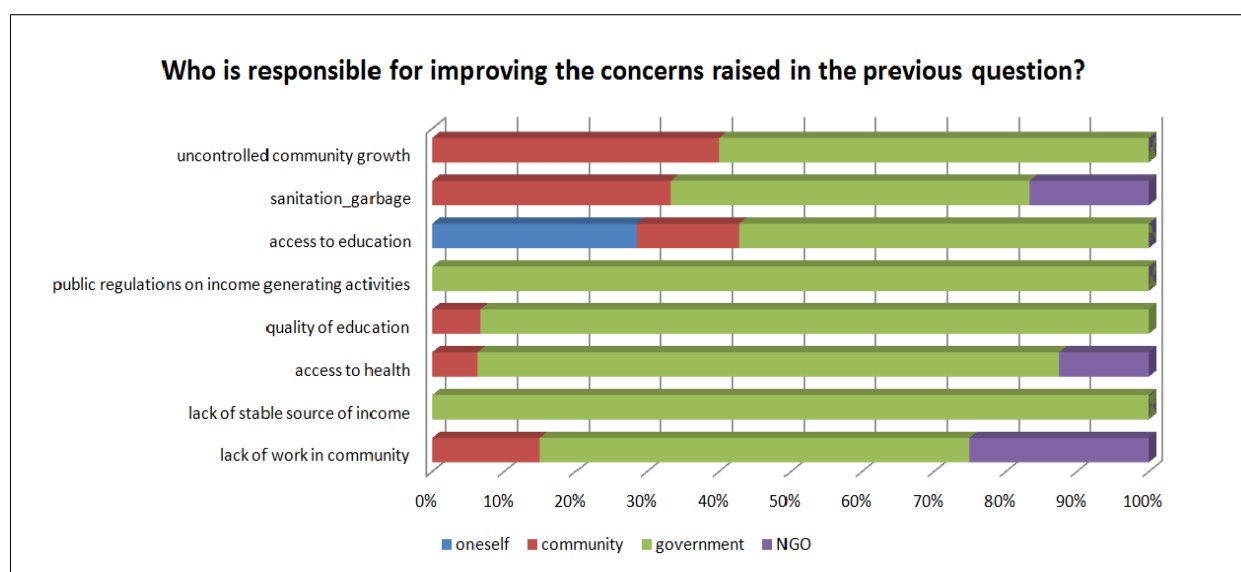


Figure 7. Security providers

On the issue of priorities of actions to be taken inside the communities, communities' dwellers placed paramount priority in the promotion of activities that generate income, to the extent that there were only two respondents placing it in the low-priority range (Table 1).

ITEM	PRIORITY (1 as the highest priority, percentage of answers)									
	1	2	3	4	5	6	7	8	9	10
transport between communities	1.79	1.79	3.57	1.79	5.36	1.79	10.71	7.14	19.64	46.43
transport to/from the city	1.79	7.14	1.79	3.57	7.14	1.79	8.93	8.93	32.14	26.79
activities that strengthen the community (games, meetings, etc)	5.36	3.57	7.14	7.14	8.93	17.86	12.50	17.86	17.86	1.79
sanitation and electricity	21.43	8.93	17.86	17.86	14.29	8.93	3.57	1.79	5.36	0.00
food security	1.79	5.36	10.71	5.36	10.71	16.07	12.50	23.21	7.14	7.14
access to health	17.86	16.07	14.29	26.79	10.71	7.14	1.79	3.57	1.79	0.00
telecommunications	3.57	7.14	3.57	7.14	7.14	16.07	17.86	16.07	10.71	10.71
income generating activities	23.21	14.29	17.86	12.50	12.50	12.50	3.57	3.57	0.00	0.00
access to education	7.14	12.50	10.71	7.14	17.86	12.50	17.86	7.14	3.57	3.57
quality of education	16.07	23.21	12.50	10.71	7.14	3.57	10.71	10.71	1.79	3.57

Table 1. Priorities in communities

6.2 Views on the communities

In addition to values, threats and priorities, the questionnaires also attempted to capture the views of communities' members on their communities through the following 4 questions.

- “Do you believe your community to be united and capable of bringing about the necessary improvements to the community?”
- “Do you believe your opinion is taken into account in the community?”
- “How often do you take part in community meetings?”
- “One of the roles of the community leadership is to engage with responsible bodies to bring improvements to the community”. Indicate your level of satisfaction with your community leadership (satisfied, somewhat satisfied, not too satisfied, not satisfied at all)

About 91% of interviewees believe their communities to be cohesive, and about 71% believe their opinions are taken into account in their communities. Within those who believe the communities to be united, 50% stated that their communities had always been united and for another 15%, such cohesion just took shape after the arrival of FAS. Through informal conversations in the reserve, it was found out that some communities, in particular those in the center and north of the reserve, are composed of a small number of (extended) families, which might strongly influence community cohesion. Among those who believe their opinion is not heeded in the community, not belonging to the main families of the community was raised as the main reason.

Particularly after the implementation of BFP in the reserve, community meetings and assemblies have become instances where decisions concerning various aspects of the community life are taken; therefore, participation in such meetings, which are neither compulsory nor at regular intervals, is high, with about 85% of interviewees affirming their family is always or almost always represented in the meetings.

Although in the first section interviewees expressed their view of the government as the main responsible for bringing improvements and reducing insecurities in the communities, when stimulated with the statement “One of the roles of the community leadership is to deal with responsible bodies to bring improvements to the community”, in order to evaluate their level of satisfaction with their community leadership, about 71 % of interviews were satisfied or somewhat satisfied with their leadership.

6.3 Views on Bolsa Floresta Program

ZFV sustainable development strategy is composed of a variety of subprograms and projects, but for families living inside conservation units, the BFP is the most present in their lives. When asked about the hypothetical situation of being in the

position to increase one of the components of BFP, thinking about the best for the community, 70% of respondents would increase the value of the Family component, while 21% voted for the Income component and 5% voted for the Social one. (Figure 9)

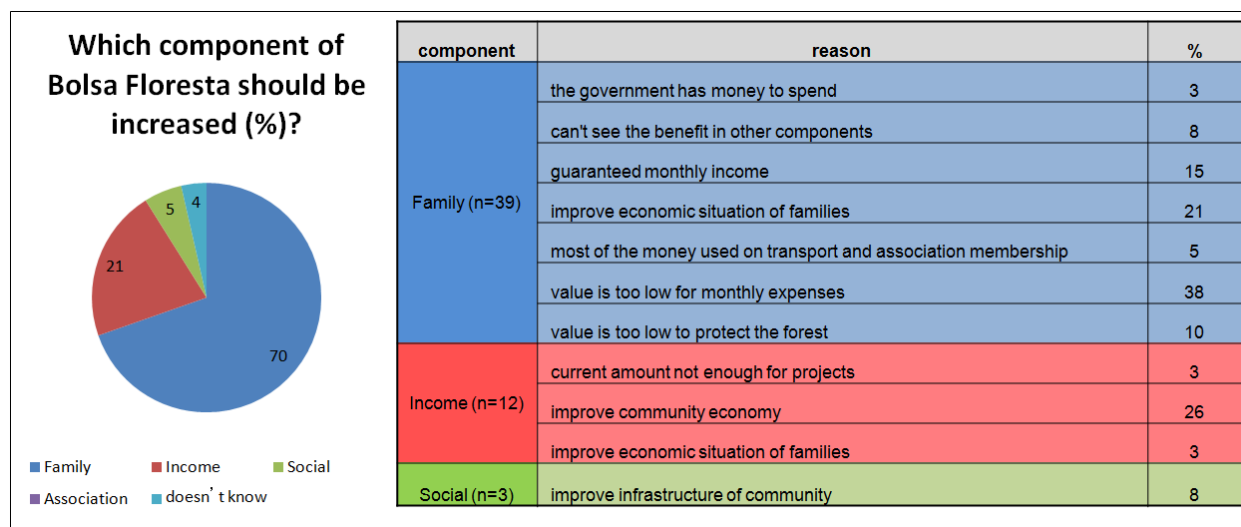


Figure 9. Which component of Bolsa Floresta should be increased, and reason why.

Similarly, the 73% of negative answers to the hypothetical proposition of decrease in BF Family for the sake of increase in the value of other components indicates a greater concern with family's immediate economic security over the more indirect benefits the other components provide.

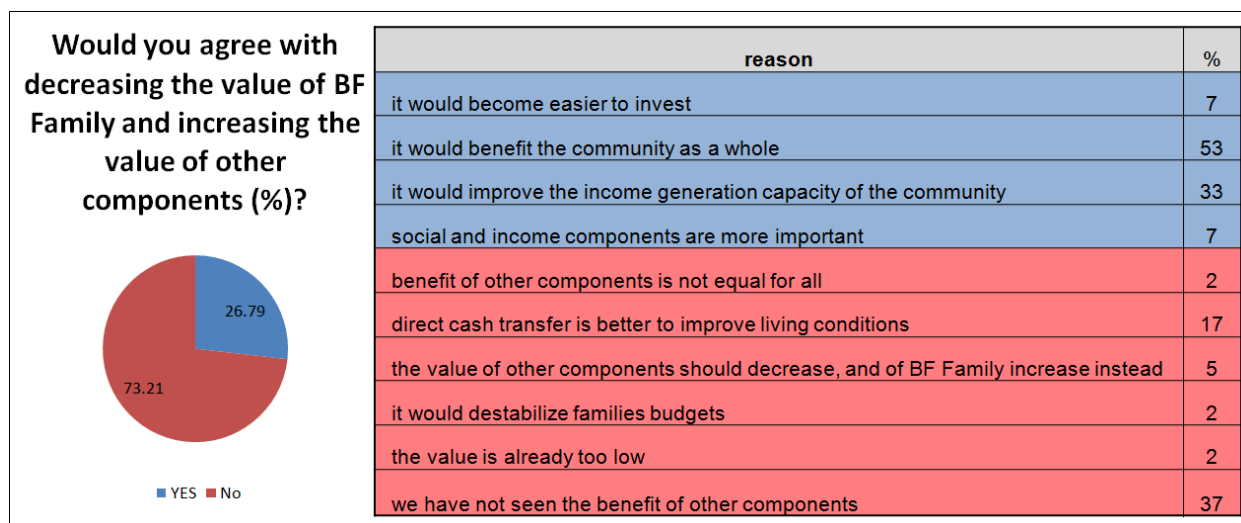


Figure 10. Agreement to decreasing the value of BFF and increasing of other components, and reasons.

Moving to the monthly value of R\$50 provided by BF Family, a large majority find it too low. For 35% of those who think the value is low, R\$50 is too low for monthly

expenses, for 33% of the respondents the value is too low because most of the money is used for travel expenses necessary in order to receive the money (it can only be received using a cash card in any Bradesco Bank agency, which are located in urban centers) and the monthly association membership, and for another 20% of respondents, R\$ 50 is too low to protect the forest. Such results indicate that for the majority of the population living in the reserve, the Bolsa Floresta Family is not a recognition for their “work” in protecting the forest (as it is often emphasized by the government and FAS), but an official financial assistance akin to other social benefits, such as the federal Bolsa Familia Program (Figure 11). When asked on what the ideal value of the family component should be, 23% said the value should be doubled, while for 18% it should be at least half of the federal minimum wage, and for another 16% it should be at least the federal minimum wage of R\$ 622.

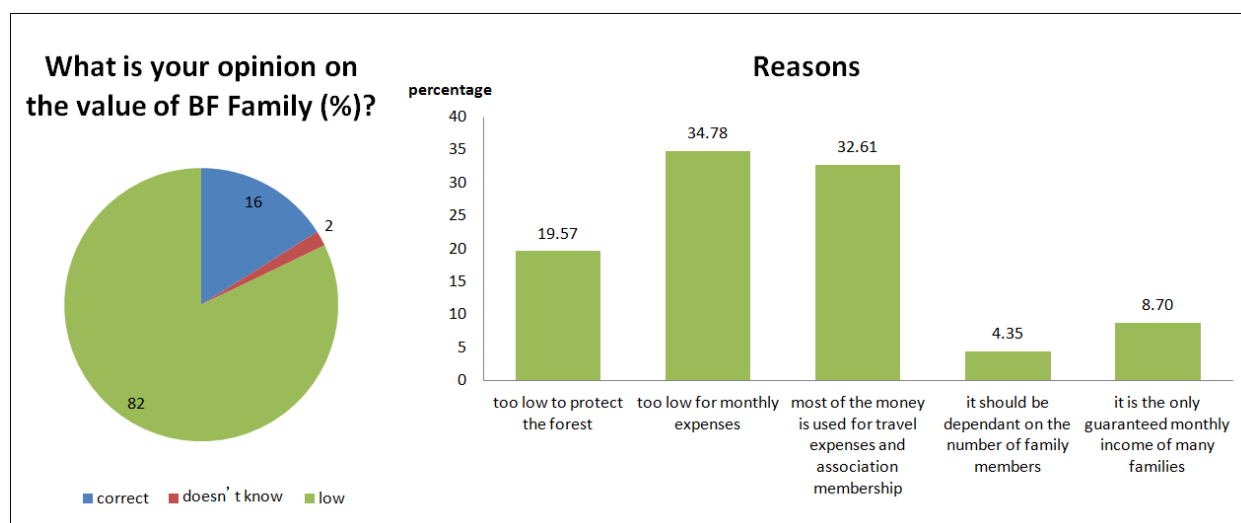


Figure 11. Opinion on the value of BF Family and reasons.

7. DISCUSSION

7.1 Values, priorities and actors

Among the themes that RDS Rio Negro dwellers consider important, access to work inside the reserve and access to a stable source of income represent their desire to be part of the general process of economic growth and improvement of livelihoods that Brazil has experienced since the mid 1990's.

Before the establishment of RDS Rio Negro, the main sources of income for dwellers were work as staff in the local primary schools, or work with wood extraction or fishing. There are no data on the economic situation of communities prior to the establishment of RDS Rio Negro nor the adoption of the Bolsa Floresta Program, but informal conversation with dwellers indicate that despite the concern of being caught by authorities for conducting wood extraction and fishing in reserve areas without any kind

of permit, the income from such activities was enough to generate a sense of economic security, and enough to buy house appliances such as TV, construction materials and gasoline to fuel the power generators of the communities.

During the interviews and conversations with dwellers, emphasis on a stable source of income from available work opportunities inside the reserve was always made. It seems that with the establishment of RDS Rio Negro, and later on with the implementation of Bolsa Floresta Program in the reserve, government controls on the two main sources of work and income for dwellers, that is wood extraction and fishing, became more strict, directly impacting the number of people working in these two fields, as well as their income. Given the lack of other economic activities or jobs available for the local population, many have felt an actual increase in their economic insecurity, as their educational background and (lack of other) skill make it difficult for them to pursue other types of work in the city.

From this perspective, concern with the poor quality of education in the schools can be seen as a concern for the future of their children, as many see in the obtaining of a good formal education for their children a way for them to have a better life, even if it means leaving the reserve. Until the establishment of the first high school of the reserve in the community of Tumbira, most of the students who completed the basic education provide by the local primary schools had to stop studying and start working in fishing, wood extraction or small agriculture; only a few families had the resources to send their children to the capital and enroll them in high schools there.

Acknowledging that the establishment of a high school in the reserve has allowed not only the adolescents, but also adults to complete their high school education, most of the concerns raised about the quality of education in primary, junior high and high schools in the reserve are related to lack of teachers. In an attempt to remedy this, the state government has invested in a distance learning lecture system. While this system is as valid attempt to provide students with the opportunity to complete their education, the design of the system (for example, students cannot ask the lectures questions, which are to be answered by a teacher present in school who is not an expert in the subject of the lecture) is such that good quality of education cannot be secured.

Access to health services also ranked high among important things for local dwellers and an area of concern for them. The problem with access to health services is similar to that of education, in the sense that lack of health centers in many of the communities means that, in the case of emergency, dwellers have to seek for treatment in cities. Depending on the community, a fast-boat trip to Manaus can take between 1 to 2 hours, and its cost of R\$25 is not a light burden on many families budgets. Lack of medicines and qualified health technicians were also often raised as reasons of concern.

The above mentioned themes of access to work inside the reserve, access to stable income, access to health and quality of education were spontaneously mentioned by dwellers, and further reinforced when they were presented with a closed list of “important things” in their communities which they felt needed to be prioritized.

According to Gomez (2011), when using human security as a guiding framework, it is essential to make clear not only what values are under a security threat, but also who is the vulnerable population, and who are the agents that can play a part in decreasing the insecurities; there are certain situations in which the very vulnerable populations can become essential actors for the decreasing of vulnerabilities, and since the Bolsa Floresta Program is designed in such a way that an annual budget for improvements in the community is decided during community meetings, we wanted assess whether community members saw themselves, individually or as a community, as a security provider. As shown in the questionnaires, reserve dwellers generally hold the position that it is the government, first and foremost, the responsible for improvements in the concerns they feel about income/work, health and education.

Although improvements in health and education are generally taken to be areas where the state is the traditional actor, the perception that the state is also responsible for improving the economic security of dwellers might be influenced by the present poverty reduction strategy pursued by the Brazilian government. Some of the pillars of this strategy are the expansion of the domestic consumer market, generous increases in the minimum wage, as well as increasing in coverage of cash-transfer programs, social assistance and pension programs, among others. Just in Amazonas State, 305,000 families receive the federal Bolsa Familia conditional cash transfer program, and some of the families interviewed are also beneficiaries of the Bolsa Familia. The Bolsa Floresta Program has been implemented in the RDS Rio Negro since 2008, and at least so far there has not appeared a perception by dwellers of their own role as actors capable of improving their livelihoods, despite the fact that one of the main objectives of the program is strengthening community empowerment.

7.2 Communities

One characteristic element of traditional populations living along the various rivers of the Amazon is that they tend to organize themselves in small communities, and the Rio Negro reserve is no exception. The population of the various communities varies from as few as 10 families in the north to as many as 50 in the south. Given the historical pattern of occupation of the region, the small number of families per communities indicates that they are actually related to one another, which in turn reflects on the perception of community union and community organization capacity⁹.

This view of community cohesion is reinforced by the design of Bolsa Floresta Program. BF Social, BF Income and BF Association components are directly dependant

⁹ A day trip to the community Maraja in the north part of the community is a clear example of how loose, or even lack of family ties among community members negatively impact the very existence of the community. Out of the communities visited, Maraja was the one where conditions were the worst, as reflected by even lack of a wheel (it was the only community in the reserve that had to rely directly on the waters of Rio Negro River for drinking water). The community leader informed me that many of the families were not related, and that the frequent fights led to a situation where they were not able to receive the benefits from the Bolsa Floresta Social and Bolsa Floresta Income, being forced to lend the rightful amount to income generating activities in other communities.

on the number of families in each community registered in the BF Family component. In order for a community to receive the benefits of the BF Social, BF Income and BF Association components, legislation obliges community members to become associated to the so called “mother-association” of the reserve. In the case of RDS Rio Negro, such association is the Association of Sustainable Communities of Rio Negro, officially registered in a registry office, and umbrella association to all other communities associations in the reserve. In addition, the allocation of the funds for infrastructure improvements (BF Social component) and income generating activities (BF Income component) has to be agreed by the majority in community assemblies. The high level of participation in community meetings, as well as 70% of the interviewees stating that their views and opinions are taken into account in their communities can be seen as an indicator of community empowerment.

Interestingly, there is no definition of what a community is; families simply recognize themselves as part of a community. Similarly, there is no formal process through which community leaderships are formed; they are just recognized as such by other community members, and a community may have more than one leadership, male or female. FAS plays an important role in strengthening the position (or even lending them some legitimacy) of such leaders not only by making them responsible for organizing community meetings, but also by organizing the so-called Leaderships Meetings, which are occasions when FAS gathers all recognized community leaders of the reserve to share experiences and discuss issues related to the reserve.

Generally, most of the community dwellers have shown satisfaction with the work developed by their leadership as measured by their engagement with responsible bodies to bring about the necessary improvements, but complains about failures of the leaderships in transmitting information to other community members, lack of transparency, or even absent leaderships were not uncommon. According to a FAS manager interviewed, the process of helping communities to become organized and empowering them is not always a smooth one, and such problem are part of a necessary learning process that not only communities have to experience, but FAS as well. The BFP general coordinator further stressed that all registered associations have an establishment charter which sets conditions such as number of administrative council members, terms, election procedures, and so on.

7.3 Bolsa Floresta Program

Both FAS and the government of Amazonas have since the first stages of the design of BFP emphasized the positive role traditional forest populations have had in protecting the forest not only to their own benefit, but also for the whole Brazilian society. Such role should thus be recognized in monetary terms; the monthly cash-transfer of R\$50 is thus not a “salary” for protecting the forest, but a “recognition”. Further still, FAS staff always take special attention when explaining about the nature of BFP that it is a comprehensive program of promotion of sustainable income generation, betterment of socio-economic conditions and active citizenship through empowerment, and the cash

transfer conditioned to the promise of not engaging in deforestation is just a part of the program. At the same time, the BFP is not a panacea for the troubles of populations living in conservation units outside Manaus, but should be seen as part of the wider state sustainable development strategy which includes other components.

Surveys conducted by third parties at the request of FAS show that the population of RDS Rio Negro is supportive of the BFP, but out of the 4 components, we have identified that they consider the BF Family to be the most important. As we have identified in the values the local population consider important, economic security in the form of a stable job and a stable source of income are tackled more directly by BF Family, not by BF Income. Even if the value of R\$50 is considered by many to be too low (it has been the same value since the beginning of the program, despite an accumulated inflation rate (official IPCA index) of 20.53% between 2008 and 2011), it is a guaranteed monthly income in an area where fixed jobs opportunities are very few.

The gap between the official view of BF Family as recognition for protecting the forest and the view of the local population can be seen by the answer given by interviewees when asked why they (82%) think the value of R\$50 is too low; 35% find it low to meet family monthly expenses, another 33% point out that in order to cash in the benefit they have to move to travel to the city, in a return trip that costs almost as much as the R\$50 they receive; only 20% see it as too low for the objective of protecting the forest. From the results, the majority of dwellers see BF Family component not as recognition for protecting the forest, but more akin to an official monetary assistance similar to the federal program Bolsa Familia.

FAS' motto is "making the forest worth more standing than cut"; it stresses a basic preoccupation of the Foundation in tackling what they see as one of the main reason for deforestation: economic activities such as cattle ranching and agriculture, both of which require deforestation, are the main drives of deforestation in Brazil because the alternative of keeping the forest standing does not bring about comparable economic benefit. While we agree with this diagnosis, the importance of BF Income does not seem to have been fully understood by Bolsa Floresta beneficiaries, and who seem to equalize Bolsa Floresta Program to Bolsa Floresta Family component.

FAS's own budget constrains mean that even if it were its objective, it could not provide a monthly minimum wage for each family registered in the program. Instead, what FAS seem to be aiming at is to equalize the income of families registered in the BFP to the average income of the municipalities where the reserve is located¹⁰.

Beside the argument on the perception of BF Family component, it is also important to point the view local people have on the other components, particularly BF Income. The method used by FAS for defining the use of the resources of BF Income

¹⁰ In the case of RDS Rio Negro, there is no available data on the income of families, but FAS staff have indicated it is a value "significantly" lower than the average per capita income of the three municipalities where the reserve is located, which in 2010 was R\$ 1169 per month (IBGE Census data for rural households in the municipalities of Novo Airao, Iranduba and Manacapuru).

(as well as the Social and Association ones) is the realization of community workshops called “Investment definition workshops”, where representatives of each community in the reserve present proposals for the use of the resources previously discussed in their own communities. Budgets are approved in the workshops, which are also deliberative meetings. The budgets are implemented directly by FAS; there is no transfer of funding for the realization of the projects to the account of the association, with the exception of the BF Association component (the non transference of funding for the realization of Income and Social components projects is in accordance with local legislation).

In the workshops, the community leaders have total autonomy to decide on the use of the annual budget for income generating activities, which in 2011 reached R\$192,297 and since 2008 has amounted to R\$314,057. While this clearly indicates an attempt of FAS at empowering the communities by promoting a participative planning and management of the BFP components, it has been the cause of many complains of dwellers who claim they have not seen the effects of the component in terms of increase of family income.

Unfortunately FAS has not yet made available detailed data on which income generating activities the budget has been allocated to, but we learned that the most common activities were community forest management, poultry production, and projects that use the touristic potential of the region, such as a community restaurant. All the problems raised by communities concerning these activities can be resumed in poor planning of the necessary follow-up activities after the implementation of the activities: for example, in the forest management of the community Santa Helena dos Ingleses, the project is located about 5km inland from the river, which makes it necessary having a vehicle (which even if the community possessed, it would have to allocate some budget for gasoline and maintenance, for example) to transport the wood to the river.

There are projects that seem to be functioning well, such as the forest management project in the community of Tiririca, but the fact that so many other projects seem to have failed in their objective to generate income for the communities begs the question of what FAS does to ensure the economic sustainability of the projects. According to BFP general coordinator, even when FAS realizes during the Investment Definition Workshops that the income generating activities proposed do not have a good potential, they limit themselves to pointing out the problems of the proposals and advising on better alternatives, without forcing the communities representatives to change their plans. She also points out that to talk about failures of implementation and follow-up of the programs is overhasty, as the projects can continue receiving the necessary funding to generate income in the following years.

Regardless of some success cases, or even in the cases where the projects have a longer “incubation” period until the economic benefits can be harvested, allowing for empowerment to take place and deciding on the allocation of limited funds for income generation in a democratic manner has not necessarily meant a decrease in the economic insecurity of communities dwellers. Given the hypothetical possibility of being in a position to increase the value of any of the components, dwellers would chose BF

Family; further still, among the reasons why 73% of families would not accept an increase in the Income component to the detriment of the Family component, 37% have not seen the benefits of the other components, and another 20% think such proposal would destabilize their already fragile income situation. It seems here that a human security framework could be used as a prioritizing tool for the allocation of resources to those in more dire economic insecurity.

3. CONCLUSIONS

The initial research question proposed by this study was whether the type of development proposed by the Amazonas State is in accordance with the kind of lives local people want for themselves. The strategy aims at bringing economic prosperity outside the urban environment of Manaus while protecting the environmental resources of the state through a wide range of programs. Among the programs, Bolsa Floresta has become emblematic in the sense that it brings the idea of payment for environmental services provided by the forest into a human development framework. During the field observations and interviews conducted, we have shed light on income, education and health as the themes traditional populations want to have promoted, and thus we can conclude that the type of development proposed by Amazonas State is indeed in accord to what local populations want.

The role of communities as agents capable of providing the security to the values identified can be considered to be an active one when one seen from the outside. Community dwellers themselves think that the government is the agent responsible for the promotion of the themes raised above, but the design of the program in fact promotes the empowerment of the communities. Through BF Association, the reserve receives a budget used in activities that promote cohesion among the communities. BF Social and BF Income have budgets whose allocation has to be decided by majority vote of communities' representatives in meetings. Through field observation we could see how some communities are more organized than others, and although follow-up studies are necessary to clarify the reasons, we believe that possible explanations are related to, for example, long community history, few community members, or even family structures inside the communities.

It is necessary, however, to highlight the fact that not all dwellers have managed to leave a situation of insecurity caused by the threat of being arrested due to illegal fishing or logging, to a situation where their economic security has improved. The income increase promised by the BF Income has not reached all the families living in the communities due to questions related to the range of projects, flawed planning or implementation, and even lack of necessary follow-up. This economic insecurity helps to explain two findings of the research: firstly, that the majority of interviewees have a strong opposition to a hypothetical decrease in the low-but-guaranteed value of BF Family component and instead an increase in the income generation capacity through a higher budget of BF Income, which is a time consuming and without-success-guarantee initiative; secondly, the desire to have the value of BF Family increased not because

they see it as recognition for protecting the forest, but because it is an important component to meet monthly expenses.

In order to decrease the economic insecurity of these families, we recommend FAS to establish a system to set priorities for the improvement of economic conditions of those in more dire need in the communities. Human security can serve as a guiding principle here, as it helps define who the vulnerable population is (in this case, the poorer), and what are the trades-offs done when improving their security. Operationalizing human security in this case could take the form, for example, of a system that provides an increment in the value of BF Family for a specific period of time. Practical issues such as availability of additional funds, as well as conceptual challenges such as explaining why some families would receive more as a recognition for protecting the forest (the original *raison d'être* of the component) would have to be addressed; such issues could be the topic of further research.

We also recommend steps to speed up the generation of income from the BF Income component. FAS gives a great degree of freedom for communities to decide how they want to invest the budget of BF Income; we agree that allowing for a democratic process to define the allocation of the resources leads to community empowerment and should therefore be maintained and promoted further. However, in the cases FAS foresees that projects will not deliver the proposed benefits, and worse still, have the possibility of failing all together and become a waste of valuable financial resources, FAS should intervene. For the implemented projects, we also believe that closer monitoring is necessary to guarantee the economic returns. One of the main pillars of the Bolsa Floresta Program is the generation of income in the reserves through sustainable economic activities, but so far there have been no quantitative studies on the income increase generated by such activities; furthering such studies is essential to give a more complete picture of the success of the Bolsa Floresta Program.

REFERENCES

Amazonas State. 2003. *Plano de Desenvolvimento Sustentavel para o Sul do Estado do Amazonas*. Manaus: Amazonas State

-----, 2006. *Programa de Desenvolvimento Regional do Estado do Amazonas para o projeto Zona Franca Verde – ZFV-BIRD: Relatorio de Avaliacao Ambiental*. Manaus: Amazonas State

Amazonas State Department of Environment and Sustainable Development (SDS).2008 *Plano Estadual de Prevencao e Combate ao Desmatamento no Amazonas*. Manaus:SDS

-----, 2008. *Plano de Gestao do Parque Estadual Rio Negro Setor Norte- Volume1 – Diagnostico da Unidade de Conservacao*. Manaus:SDS

-----, 2008. *Plano de Gestao do Parque Estadual Rio Negro Setor Norte- Volume2 – Planejamento da Unidade de Conservacao*. Manaus:SDS

-----, 2009. *Coletania de Unidades de Conservacao: Leis, decretos e portarias*. Manaus: SDS

-----, 2010. *Plano de Gestao Parque Estadual do Rio Negro Setor Sul*. Manaus: SDS

-----, 2012. *Relatorio de Gestao do Sistema SDS -2011*. Manaus: SDS

Andrade, German, and Rafael Reyna. 2003. *Areas Protegidas en Latinoamerica, de Caracas a Durban: un vistazo sobre su estado 1992-2003 y tendencias futuras*. Quito: UICN

Barreto, Paulo et al. 2006. *Human pressure on the Brazilian Amazon forests*. Belem: IMAZON; Waschington: World Resources Institute

Becker, Bertha K. 2005 “Geopolitica da Amazonia”. *Estudos Avancados*, 19(53)

Benchimol, Samuel. 1992. *Amazonia: a guerra na floresta*. Rio de Janeiro: Civilizacao Brasileira

Brazil. 2004. *Plano de Acao Para a Prevencao e o Controle do Desmatamento na Amazonia Legal*. Brasilia

-----, 2008. *Plano Amazonia Sustentavel: diretrizes para o desenvolvimento sustentavel da Amazonia Brasileira*. Brasilia: MMA

-----, 2009. *Plano de Acao Para a Prevencao e o Controle do Desmatamento na Amazonia Legal*. Brasilia

Chandler, David and Niki Hynek. 2011 *Critical Perspectives on Human Security: Rethinking emancipation and power in international relations*. New York: Routledge

Churchill, Gilbert. 1987. *Marketing Research: methodological foundations*. Chicago: The Dryden Press

Commission on Human Security. 2003 *Human Security Now*. New York: Commission on Human Security

Crocker, David A. 1992. "Functioning and Capability: The Foundations of Sen's and Nussbaum's Development Ethic". *Political Theory*, 20(4)

Fundacao Amazonas Sustentavel (FAS). 2009. *Relatorio de Gestao 2008*. Manaus

-----2010. *Relatorio de Gestao 2009*. Manaus: Grafisa

-----2011. *Relatorio de Gestao 2010*. Manaus: Grafica Ampla

-----2012. *Relatorio de Gestao 2011*. Manaus: Grafisa

Fearnside, Phillip. 1997. "Environmental services as a strategy for sustainable development in rural Amazonia". *Ecological Economics*, 20(1)

Ferreira, Savio et al. 2002. "Propriedades fisicas do solo apos extracao seletiva de madeira na Amazonia Central", *Acta Amazonica* 32(3)

Furtado, Celso. 2001. *Raizes do desenvolvimento*. Rio de Janeiro: Civilizacao Brasileira

Gasper, Des. 2010. "The Idea of Human Security", in Karen O'Brien et al (eds). *Climate Change, Ethics and Human Security*. Cambridge: Cambridge University Press: 23-46

-----2011 "The Human and the Social - a systematised comparison of the discourses of Human Development, Human Security and Social Quality". *International Journal of Social Quality*, 1(1)

Global Environmental Change and Human Security (GECHS). 1999 Science Plan. Bonn: IHDP

Gomez, Oscar. 2011 "Beyond Securitization: Theoretical and Practical Elements for the Operationalization of Human Security". Sendai: Tohoku University . PhD thesis.

Instituto Brasileiro de Geografia e Estatistica (IBGE). 2006. *Estatisticas do Seculo XX*. Rio de Janeiro: IBGE

Instituto de Pesquisa Economica Aplicada (IPEA). 2011. *Mudancas Recentes na Pobreza Brasileira – Comunidades do IPEA n.111*. Brasilia: IPEA

Instituto Nacional de Pesquisas Espaciais (INPE). 2011 – Projeto Prodes [online] <http://www.obt.inpe.br/prodes/index.html>

Leonardi, Victor. 1999. *Os historiadores e os rios: natureza e ruina na Amazonia Brasileira*. Brasilia: Editora UnB

- Malhotra, Naresh. 2001. *Pesquisa de marketing: uma orientacao aplicada*. Porto Alegre: Bookman
- Margulis, Sergio. 2003. *Causas do desmatamento na Amazonia Brasileira*. Brasilia: Banco Mundial
- Nussbaum, Martha C. 1995. "Human Capabilities, Female Human Beings", in Martha C. Nussbaum and Jonathan Glover (eds), *Women Culture and Development*. Oxford: Clarendon Press
- Pagiola, Stefano et al. 2005. "Can payments for environmental services help reduce poverty? An exploration of the issues and the evidence from Latin America". *World Development*, 33(2)
- Parris, Thomas and Robert Kates. 2003. "Characterizing and Measuring Sustainable Development". *Annual Reviews on Environmental Resources*, 28(13)
- Qizilbash, Mozzafar. 2001. "Sustainable development: concepts and rankings". *The Journal of Development Studies*, 37(3)
- Sen, Amartya. 1999. *Development as Freedom*. New York: First Anchor Books
- United Nations Development Program (UNDP) Brazil, 2009. *Relatorio de desenvolvimento humano, 2009-2010: Brasil Ponto a Ponto; consulta publica*. Brasilia: PNUD
- Viana, Virgilio M. 2010. *Sustainable Development in Practice: Lessons Learned from Amazonas*. London: International Institute for Environment and Development
- Vieira, Lucio and Paulo C. T. Santos. 1987. *Amazonia, seus solos e outros recursos naturais*. Sao Paulo: Agronomica Ceres