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ABSTRACT

The project “Impacts on poverty and sustainable development of the REDD architectures: for equity options, growth and for the environment” (POVSUS-REDD) is aimed at increasing the understanding of how different options for REDD will affect the achievement of reducing greenhouse gas emissions while benefitting sustainable development and poverty reduction. In such a context, this thesis is part of a study that assesses the processes of introduction of REDD+ in Brazil and Tanzania. The focus of this research is the Brazilian case.

In Brazil, the POVUSUS-REDD project is coordinated by the ‘Sustainable Amazonas Foundation’ (FAS), being Bolsa Floresta the programme under which REDD+ is being implemented. The aim of this thesis is to document and evaluate the process of introducing REDD+ in the Rio Negro Sustainable Reserve (RDS Rio Negro) in Brazil.

The RDS Rio Negro in the State of Amazonas was selected as the research area due to its proximity to the state capital (Manaus), easy access, and mostly because all four components of the programme Bolsa Floresta are running in this area.

The thesis used theories of ‘institutions and institutional change’, ‘participation’ and ‘process legitimacy’ in order to classify the findings collected from a combination of both qualitative and quantitative research methods. For the collection of qualitative data, interviews were used with resource persons from the FAS, the government’s organisations and the local communities; and focus group discussions were used with members of the communities. The quantitative data was collected using questionnaires with the people from the communities.

The findings showed that there were institutional and organisational changes in the area as a result of the process of introducing Bolsa Floresta. The family component of the programme (BFF) created new institutions related to the introduction of a contribution to each family that commits to BFP individually. These findings are classified using theories of institutions and institutional change.

Regarding the association component (BFA), it was found that a new organisation was created to organise the people of the communities in order to increase participation and involvement in matters concerning the RDS’ as a whole. In the case of BFR and BFS, a vast

number of projects aimed at improving the infrastructure of each community and creating income generation projects for its members were started.

The research showed the existence of an unsolved conflict in one of the areas of the RDS. The conflict is related to the amount of money given from BFF and the illegal extraction of wood. The people are not satisfied with the amount of money given from the family component of the programme and in some communities they are exceeding the limits on wood extraction.

Regarding the evaluation from the people living in the area, one important output is that they are mostly satisfied with the programme, how it was introduced and recognise that FAS has done a good job introducing Bolsa Floresta in the RDS. However, the concern amongst the locals is the amount of money given to each family individually, as they consider it to be low.

On the other side, it was evidenced that the implementing organisations are satisfied with the development, processes and outcomes of the BFP. However, regarding the reported conflict, FAS explains that there is a misunderstanding of the rules introduced by the creation of the RDS and those from the BFP. They argue that the limitations on wood extraction were set with the RDS and FAS is only contributing to the families for having committed to BFP, thus the conflict itself is not an outcome of the process of implementing BFP.

The use of qualitative and quantitative methods approach used for this research was convenient. Using the theories of ‘institutions and institutional change’, ‘participation’ and ‘process legitimacy’ along with the mixed-research methods increased the strengths and minimised the potential weaknesses of the collected data, analysis of the findings and discussion.

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List of Abbreviations

ACS Rio Negro: Rio Negro Sustainable Communities Association or Associação das Comunidades Sustentáveis do Rio Negro

APA: Environmental Protected Area or Área de Proteção Ambiental

BFA: Bolsa Floresta Association Component or Bolsa Floresta Associação

BFF: Bolsa Floresta Family component or Bolsa Floresta Familiar

BFP or PBF: Bolsa Floresta Programme or Programa Bolsa Floresta

BFR: Bolsa Floresta Income Generation Component or Bolsa Floresta Renda

BFS: Bolsa Floresta Social component or Bolsa Floresta Social

CECLIMA: State Climate Change Centre or Centro Estadual de Mudanças Climáticas

CEUC: State Conservation Units Centre or Centro Estadual de Unidades de Conservação

COP 14: Poznan Climate Change Conference

COP 15: Copenhagen Climate Change Conference

IDAM: Agricultural Development and Sustainable Forestry of Amazonas or Instituto de Desenvolvimento Agropecuário e Florestal Sustentável

IPCC: Intergovernmental Panel on Climate Change

FAS: Sustainable Amazonas Foundation or Fundação Amazonas Sustentável

PES: Payments for Environmental Services

R\$ or reais: Brazilian currency. Equivalent to around USD \$0.5

RDS: Sustainable Development Reserve or Reserva de Desenvolvimento Sustentável

REDD or REDD+: Reducing Emissions from Deforestation and forest Degradation

RESEX: Extractivist Reserve or Reserva Extrativista

SDS: State's Secretary of Environment and Sustainable Development or Secretaria de Estado do Meio Ambiente e Desenvolvimento Sustentável

SEUC: State System for Conservation Units or Sistema Estadual de Unidades de Conservação

UCs: Conservation Units or Unidades de Conservação

UGMUC: State Climate Change Centre and State Conservation Unit Centre Managing Unit or Unidade Gestora do Centro Estadual de Mudanças Climáticas e do Centro Estadual de Unidades de Conservação

UNPCCC: United Nations Framework Convention on Climate Change

UPI: or Unidades de Proteção Integral

UUS: or Unidades de Uso Sustentável

1. Introduction

1.1. Problem Statement and Justification

It is believed that the conservation of forests worldwide depends on supporting the development of the traditional populations living in the forests. An essential part for protection and conservation is to acknowledge that the trees are of higher value standing than cut. This idea must be presented as a clear and simple message to enable political leaders, policymakers and forest dwellers to internalise it and translate it into action.

However, as the populations of the forests are dependent from these and base their livelihoods on the extraction and use of the forest's resources, they need to be compensated for changing extractivist and agricultural practices towards the reduction on deforestation and degradation of the forests and its resources.

REDD is an abbreviation for “Reducing Emissions from Deforestation and Forest Degradation”; an effort to create a financial value for the carbon stored in the forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development (UN-REDD, 2009). However, REDD+ goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

REDD+ mechanisms are meant for providing incentives for developing countries to reduce deforestation. Basically, REDD+ intends to create economic incentives to keep the forest standing. These incentives are compensation for governments, communities, private organisations and/or people willing to take actions to reduce emissions from forest loss. The mechanism, then, is a payment for environmental services.

The present thesis is a part of a larger project called “Impacts on poverty and sustainable development of the REDD architectures: for equity options, growth and for the environment” (POVSUS-REDD), led by the International Institute for Environment and Development (IIED) and the Norwegian University of Life Sciences (UMB). It includes five different countries: Brazil, Ghana, Tanzania, Uganda and Vietnam. The project's objective is to “increase understanding of how different design options and international policies, national and subnational REDD will impact on reducing greenhouse gas emissions, the co-benefits of

sustainable development and on poverty reduction” (FAS, 2009-2012). POVSUS-REDD is funded by the Norwegian government as a part of the Climate and Forest Initiative and the Norwegian Agency for Development Cooperation (NORAD).

It is important to note that this research is a part of a study in which the evaluations of introducing REDD+ in Brazil and Tanzania will be compared; being the case in Brazil the main topic of this thesis.

In Brazil, the project is coordinated by Fundação Amazonas Sustentável (FAS) and it is known as Bolsa Floresta Program (BFP). The BFP is certified internationally as the first programme that rewards and improves the quality of life of the traditional populations for taking care of the environmental services in the tropical forests, reducing deforestation and increasing the value of the standing forest. Currently, BFP is being run in 15 conservation units (UCs) in the State of Amazonas in Brazil.

An evaluation of the implementation of the programme in the State of Amazonas was needed as part of POVSUS-REDD. Therefore, the Rio Negro Sustainable Reserve (RDS Rio Negro) was selected as the subject of this research because of its proximity to Manaus, easy access and most importantly because unlike some of the other conservation units, the RDS Rio Negro has all four components (explained ahead) of the programme running. Therefore, this thesis looks at the introduction of REDD+ in the RDS Rio Negro in Amazonas, Brazil.

The Bolsa Floresta Programme is a set of actions that are aimed at offering a “reward to the forest keepers committed to the environmental conservation and the sustainable development in the Amazonas Conservation Units” (FAS, 2012). The benefits from the programme are divided into four components:

1. Bolsa Floresta Renda (Income Generation Component): An incentive to sustainable production.
2. Bolsa Floresta Social (Social Component): Investment made to improve healthcare, education, transport and communication.
3. Bolsa Floresta Associação (Association Component): Strengthen the organizations and the social control of the program.
4. Bolsa Floresta Familiar (Family Component): Monthly payment to the families and households that commit to environmental conservation and sustainable development.

There is a need to establish the kind of institutional and organizational changes, and the processes involved occurred as result of implementing Bolsa Floresta Programme. Also how people living within the area evaluate the changes undertaken regarding the process of introducing BFP and how the responsible implementing organizations assess the changes undertaken and the processes involved.

1.2. Objectives and Research Questions

According to the previously stated, the objective of this research is to document and evaluate experiences with the process of introducing REDD+ in the RDS Rio Negro. The research questions will contribute on the accomplishment of the planned objective, so they are displayed as follows:

- A. What kind of institutional and organizational changes have been undertaken in the area since the programme started and which processes have been initiated for those changes to happen?
 - Which actors were involved in the process and what role did they play?
 - Have any new organizations/administrative bodies been established at community level related to land use planning, payments and/or MRV?
 - What institutional changes have been undertaken in the pilot area as part of establishing REDD+?
 - Were there any conflicts and if so how were they handled? Are there any unsolved conflicts?

- B. How do people living within the area evaluate the changes undertaken and the processes involved?
 - Are people overall satisfied with processes and outcomes?
 - How was the participation during the different processes? How do they evaluate it? How do they evaluate the process of decision making?
 - Did the people have clear and enough information regarding the implementation and content of the programme?

- How do they explain the conflicts appearing during the process of implementation? Are there any unsolved conflicts and how do they evaluate them?

C. How do the responsible implementing organizations (NGOs, public authorities, community organizations) evaluate the changes undertaken and the processes involved?

- Are they satisfied with the development of BFP, the processes and outcomes?
- How was the engagement among the actors and how do they evaluate it?
- How do they explain the conflicts appearing during the process of implementation? Are there any unsolved conflicts and how do they evaluate them?
- What solutions to unsettled issues are favoured?

1.3. Structure of the Thesis

The thesis is divided into seven different chapters. After Introduction, Chapter 2 outlines a background of REDD project worldwide, in Brazil and then more specifically in the State of Amazonas. Next, Chapter 3 covers the theoretical framework on which the analysis and discussion will be based will be presented. The following chapter explains the methods used for collecting data. The findings and analysis chapter is subdivided into three sections where each research question is answered separately. Following, the discussion Chapter evaluates the findings presented in the previous chapter against the theories and concepts presented in chapter 3. The concluding chapter of the thesis contains the summary of the findings and discussion.

2. Background

The objective of this chapter is to contextualise the topic of this thesis. Information concerning the background of the project will be presented. Hence, the aim is to give the reader enough information to be able to understand the processes that took place, which led to the implementation of REDD+ in the RDS Rio Negro. More specifically the chapter is divided in two parts: one relating the topics of climate change, payments for environmental services and REDD+ and one that will go more specifically into REDD+ in Brazil.

2.1. REDD+ in the Global Context

The Millenium Ecosystem Assessment (2005) suggests that the global forest area has been reduced to half its size in the last three centuries. If this tendency continues, the subsistence of more than 1.6 billion people's livelihood depending on forests will be threatened (UN, 2011); moreover, the reduction on the forest areas has led to serious effects on the planet's climate. According to this, the Intergovernmental Panel on Climate Change (IPCC) indicated that in the last two decades deforestation in the tropical areas has contributed dramatically to the emission of CO₂ produced by the change in land use. Considering the tropical forests may account for 40% of the world's CO₂ sinks (Phillips et al., 1998) and disruptions in these ecosystems will lead to a significant change in the world's carbon cycle.

Local communities and forest dwellers have a great role in climate change. Part of the future and success in countering its effects is in the conservation of forests and development of forest dwellers. The establishment of economic instruments to create incentives for gathering knowledge, conservation and sustainable practices in the forests, including mechanisms for the creation of systems for payments for environmental services (Centro de Gestão e Estudos Estratégicos et al., 2011) is required in order to assure the benefits and incentives reach the communities protecting and keeping the forest.

PES is designed to give incentives to land users/owners so that they commit themselves to the provision of an environmental service that benefits society/other people. The idea behind this scheme is to cover the opportunity costs. In other words, the land user will cease to receive a benefit from deforestation in exchange for receiving a payment that will cover their cost.

Originally, PES was planned in a way that the amount of the payment would depend on how the international carbon market and mechanism were established. A competitive market would give a price to REDD credits and a high rent for low-price shares. Also, the volume of benefits were expected to come from the developed countries' commitment to reduce the greenhouse emissions. However, yet to this date no market has been established. In practice, REDD+ is funded by national funds that act more as 'aid' from developed countries to developing ones.

According to Corbera et al. (2007) there are two main reasons why the benefits should be properly distributed amongst the forest dwellers. The first one is to create effective incentives through compensation to people, communities, organisations and businesses for actions aimed to change the use of lands and reduce the emissions. This means providing greater benefits than their sacrifice in order to achieve a change in their behaviour. The second reason is building legitimacy - both nationally and internationally - to support the REDD+ mechanism. This can only be achieved if the people and communities involved are justly treated and a strong emphasis is placed on equity. This can mean that benefits need to be distributed more broadly than simple incentive-focused policies implies.

2.2. Forest Policy and REDD+ in Brazil

2.2.1. Federal Level

Having established the importance of PES and more specifically REDD+ to counter climate change, it is time set focus on the topic of this thesis: REDD+ in Brazil. How has the scenario changed since the awareness of climate change was raised? What challenges were encountered? Towards what kind of policies are the governments - both federal and state - aiming at?

Since the WWII the Brazilian federal government's initiatives were aimed at goals very different from conservation and protection of the forests. The type of 'development' proposed for the Amazon region was based merely on economic growth and deforestation. The impact for implementing REDD+ in these conditions are enormous.

From 1989 to the second half of the last decade, the government ran rural credit and financing programmes as incentives primarily for agriculture and cattle. These policies

tended to prioritise on increasing the size of cattle ranches without any concern on productivity and management of deforested lands. These policies were highly criticised for supporting the expansion of agricultural borders and the lack of measures for the protection of the forests.

With the Law 9 985 from 2000, regulations on the national system of protected areas were established. However, in 2005 it was reformed by another law (11 132/2005). The amendment gave the federal government the power to restrict the activities that could cause or increase environmental risks in areas where research for the creation of new federal protected areas were being held.

Since launched in 2004, the Action Plan for Protection and Control of Deforestation in the Amazon (PPCDAM) is aimed at prevention and control of deforestation in the Amazon. According to INPE (2013) through land use planning in the forest areas (including land tenancy and rights, surveillance and monitoring, promotion of sustainable development and productive forestry management) the PPCDAM, the creation of new UCs protecting 25 million hectares of the forest, the ratification of over 10 million hectares of indigenous territories and the approval of norms regarding sustainable use of the forests have contributed in the reduction of deforestation in 71% (from 2004 to 2012).

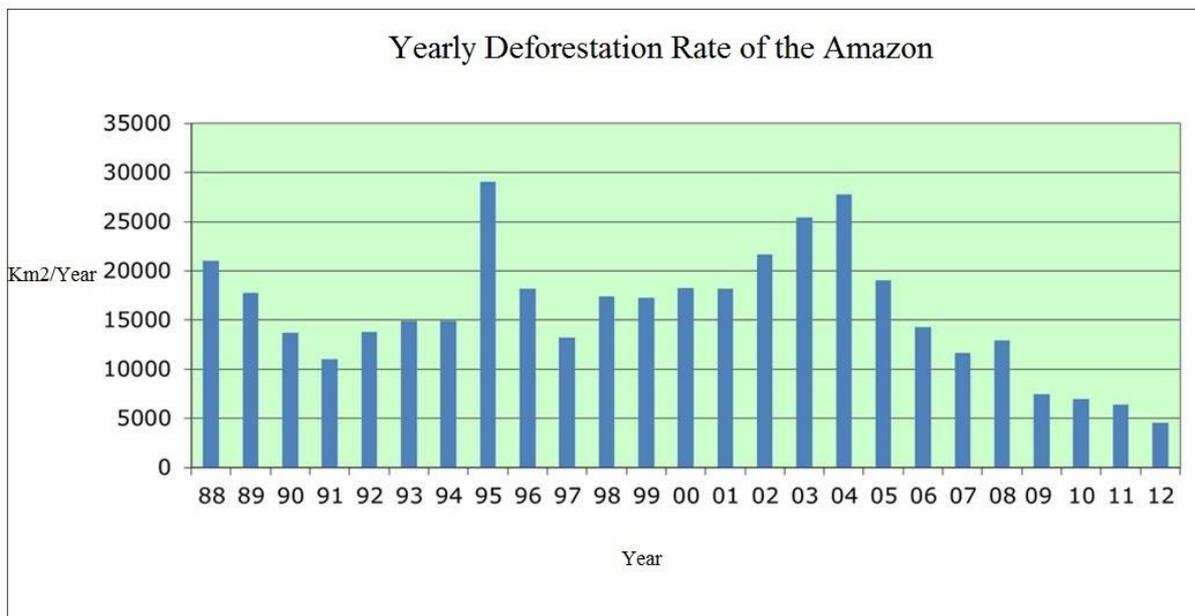


Figure 2.1: Yearly deforestation of the Amazon in km²

Source: INPE (2013)

During the year 2006, the Law 11 284 was approved. The law enables the federal government to offer long-term concession of public forest lands for the extraction of timber, community forests and the creation of the Brazilian Forestry Service (SFB or Serviço Forestal Brasileiro). This law also presents the idea of ‘independent certification of management’ for the documentation of forest areas in the Amazon region.

It is important to mention that the ‘Accelerated Growth Programme’ from 2007 (PAC or Programa de Aceleração do Crescimento) is considered by many to be taking Brazil back in time; large-scale infrastructure projects, especially hydroelectric dams, roads and highways that contributed to large-scale deforestation were either planned or constructed under the PAC.

Between 2007 and 2008 the states of Acre, Amazonas and Tocantins created their own climate change and forest conservation laws. The state of Amazonas was the first to allow REDD+ projects and to establish mechanisms for PES compensation to the people that avoided deforestation. REDD pilot initiatives started in the states of Acre, Amazonas, Amapá, Mato Grosso and Pará from 2007 to 2009.

The Amazonas Sustainable Plan (PAS) was started in 2008 by the federal government in partnership with the governments of the states of the Brazilian amazon (Acre, Amapá, Amazonas, Maranhão, Mato Grosso, Pará, Rondônia, Roraima and Tocantins). Its objective is to define the strategies for sustainable development of the Amazon. PAS also includes guidelines for sustainable development focusing on sociocultural and ecological diversity, and reducing regional inequalities (MMA, 2013a).

In mid-July 2008, the Amazon Fund (Fundo Amazônia) was created with the support and donation of \$110 million USD from the Norwegian Government. It was expected to receive support from 12 other countries, but currently it is only funded by the governments of Norway and Germany and the Brazilian Oil Company Petrobras. The idea is to use the funds on projects towards the reduction of deforestation; however, the amount of projects approved and receiving support from the fund is limited due to the requirements and the quality of the submitted projects¹.

In late 2008, the National Plan for Climate Change (Plano Nacional de Mudança Climática) was approved by the Federal Government. This Plan is intended to reduce emissions from

¹ According to the Amazon Fund (2013), by the 1st of April 2013 there were 33 projects being funded.

deforestation, to develop instruments for the improvement of forest management and to contain agricultural expansion. The plan was presented at the COP14 in Poznan.

Although the country has committed itself several times² to counter environmental change, it has no national policy or laws meant explicitly for the protection of the Amazon. During Lula's government a couple of initiatives were proposed, but only one became effective: law 11 952 of 2009 intends to regularise land claims in the Amazon. Critics argued that the real outcomes of the law were far from the expected targets. Furthermore, the law led to land speculation, concentration of land tenure, increasing deforestation and social conflicts. They failed to address land issues appropriately and mined the way for REDD+.

In October 2009 the ministry of environment in Lula's government presented the 'National Pact for Valorisation of the Forest and Ending of Deforestation' to the Congress. This pact was proposed by nine NGOs aimed at reducing deforestation to zero, but it was never approved by the Congress. However, the Congress adopted the objective of reducing emissions from deforestation by 80% by 2020 and this was considered as a *de-facto* approval of this proposal.

The National law 12 187 of 2009 established a National Policy on Climate Change (PNMC or Política Nacional sobre Mudança do Clima) which adopted measures for the reduction of greenhouse gasses by 38.9% in 2020, the creation of a national council for climate change and established a fund for climate change. During COP15 in Copenhagen the Brazilian National Policy on Climate Change was released and the governors from the Amazon states presented their strategies for REDD+.

As an instrument of the PMNC, a National Fund for Climate Change (Fundo Clima) was created (Law 12 144/2009). It is intended to finance projects, research and entrepreneurship aimed towards climate change mitigation and adaptation. The Fundo Clima is managed by the Ministry of the Environment (MMA). It should not be mistakenly taken or confused with the Amazon Fund, as they are completely different things.

² Such as COP14 and COP15 in the United Nations Framework Convention on Climate Change, amongst others.

2.2.2. Protected Areas

The law 9985 of 2000 institutes the National System of Nature Conservation Units (SNUC). It establishes criteria and norms for the creation, implementation and management of the UCs. The SNUC is constituted by all the conservation units in the country (federal, state or municipal).

It divides the conservation units into two categories. Integral protection units (UPIs) and sustainable use units (UUSs). For the integral protection units the main objective is to preserve nature, allowing only indirect use of the resources. In the other case, the sustainable use units are meant to link nature conservation with use of a portion of its natural resources if deemed sustainable.

There are different types of UPIs: 1. Ecological station; 2. Biological reserve; 3. National Park; 4. Natural Monument; and 5. Wildlife refuge.

Table 2.1: Types of Integral Protection Units

Category	Types	Description	Property Rights
Integral Protection Units	Ecological Station	Intended for the preservation nature and conducting research.	Land is of public domain. Areas within belonging to private parties will be expropriated.
	Biological Reserve	Intended for integral preservation of the biota and other natural attributes existing within its limits without human intervention or environmental modifications.	
	National Park	Intended for the preservation of natural ecosystems of great ecologic importance and scenic beauty.	
	Natural Monument	Intended to protect rare, unique or great scenic beauty natural sites.	It can be constituted by areas belonging to private parties if the UCs' objectives concur with the owner's land or resource use. In the case that the objectives do not concur, property will be expropriated.
	Wildlife Refuge	Intended to protect natural environments where conditions for existence and/or reproduction of fauna and flora are provided.	

Source: Based on República Federativa do Brasil (2000).

Also, there are different types of UUSs: 1. Environmental protected area (APA); 2. Area of relevant ecologic interest; 3. National forest; 4. Extractivist reserve (RESEX); 5 Wildlife reserve; 6. Sustainable development reserve (RDS); and 7. Private natural heritage reserve.

Table 2.2: Types of Sustainable Use Units

Category	Types	Description	Property Rights
Sustainable Use Units	Environmental Protected Area	Extensive areas with human populations. It is endowed with biotic, abiotic, aesthetic or cultural attributes important for local livelihoods. It is intended to protect biologic diversity and assure sustainable use of the natural resources.	Can be constituted on public and private lands.
	Area of Relevant Ecologic Interest	Small areas with little or no human populations. It is endowed with extraordinary natural characteristics and shelter rare species of regional biota. It is intended to maintain natural ecosystems important for the region and regulate the access to these areas.	
	National Forest	Forests with mostly native species. It is intended for multiple sustainable uses of the forest resources and conducting research focused on exploration methods of native forests.	Land is of public domain. Areas within belonging to private parties will be expropriated.
	Extractivist Reserve	Area used by traditional populations where their subsistence is based primarily on extractivist activities. It is intended to preserve the livelihoods of those populations, assuring the sustainable use of the resources.	Land is of public domain. Concedes use to the traditional populations. Areas within belonging to private parties will be expropriated.
	Wildlife Reserve	Natural area for aquatic or land, resident or migratory native animal populations. It is intended for technical/scientific research on economic sustainable management of faunal resources.	Land is of public domain. Areas within belonging to private parties will be expropriated.
	Sustainable Development Reserve	Natural area that shelters traditional populations whose existence is based on sustainable systems for exploitation of the natural resources. It is intended to preserve the nature and improve the conditions and necessary means for reproduction and improvement of the standard of living and extraction of natural resources of the traditional populations; focused at valuing, conserving and perfecting the environment management techniques of the traditional populations.	
	Private Natural Heritage Reserve	It is a private area intended for the conservation of biological diversity.	

Source: Based on República Federativa do Brasil (2000).

Possession and use of areas occupied by traditional populations in RESEX and RDS is regulated by a contract in which the populations must have an active role in preservation, restoration, defence and upkeep of the UC. It also states a prohibition of use of endangered species or practices that risk their environment, and a prohibition on practices that may represent a risk for the natural regeneration of the ecosystems.

2.3. Forest Policy and REDD+ in the State of Amazonas

2.3.1. State of Amazonas

The State of Amazonas has a legal framework for REDD+. In 2007, the state government sanctioned Law 3135 in which the state policy for climate change, environmental conservation and sustainable development is established. The goal was to create instruments to enable the state to work towards conservation of forests, by facing the challenges and opportunities of climate change.

In this Law, it is established that the State of Amazonas is to support and fund a foundation for the caretaking of environmental products and services of the protected areas of the state. The financial characteristic of the grant is aimed for integral investments to improve the quality of life of the local populations and the preservation of the environment in the conservations units (UCs). To execute it, Amazonas Sustainable Foundation (FAS) and the state government signed an agreement to implement the Bolsa Floresta Programme (BFP). The idea was that FAS should have the capability to implement a long-term programme efficiently, transparently and independently from political interests.

In part due to “*federal policy vacuum*” (May et al., 2011: 61), part committed with international agreements and in the attempt to counter the effects of climate change, the State of Amazonas started a process to create and implement a policy for environmental conservation and sustainable development. Modifying institutions and creating new organisations was necessary, and consequently done by the State government.

It began with an initiative lead by a group of specialists from different areas and organisations to study and analyse diverse areas like planning, legal aspects, economic aspects (i.e. opportunity costs), quantification of carbon storage and implementation costs in

the UCs, amongst others. These studies were the theoretical and technical basis for the design of the mechanisms to implement REDD+ in the State of Amazonas.

It is important to mention that the initiative was a part of a political process started by Eduardo Braga during the time he was the governor of the State of Amazonas (2002-2010) with members from his government, including his secretary of the environment of Virgílio Viana (now the Superintendent-General of FAS). The initiative was made on the basis of a democratic decision-making system (i.e. it was designed by the state government authorities who were elected through elections by the population of the State of Amazonas). The people did not directly participate in the process, however they were represented in the system.

The outcomes of this process were the state policy for climate change, environmental conservation and sustainable development (Law 3135/2007), the State of Amazonas conservation units' system – SEUC (Complementary law 57/2007) and the law that created UGMUC, CECLIMA and CEUC (Law 3244/2008). These three laws represent the legal framework in which it enables the State of Amazonas to implement the mechanisms proposed by the group of specialists.

In the 6th Article of Law 3135/2007 it is stated that the executive power of the State of Amazonas is authorised to include an independent non-profit private foundation; meaning that the financial mechanisms established by the law to be “operated by a private/public and independent institution – the “Amazonas Sustentável” Foundation – created in December 2007” (SDS, 2009: 14). According to Viana (personal communication, 2013), the fact that the state did not create their own organisation was that a private organisation supported by the state would be free to act and avoid bureaucratic inefficiency. Also, it is stated that the private foundation is set to be ruled by a board structured by diverse members of the society with a minimum of 20% of the members representing the public.

Through the law 3135 of 2007, FAS was granted the legal rights to manage environmental services such as REDD+ policies, conservation of carbon sinks, biodiversity and water sources in all the UCs. However, this is not to be mistaken as the foundation's control over the UCs. The management of the conservation units is the responsibility of State Conservation Units Centre (CEUC), an organisation directed by the State's Secretary of Environment and Sustainable Development³. It is Secretary of Environment and Sustainable

³ The structure in which CEUC is managed was defined by Law 3244 of 2008.

Development (SDS) and/or CEUC who determine and define the policies and partnerships for the UCs (see figure 2.2).

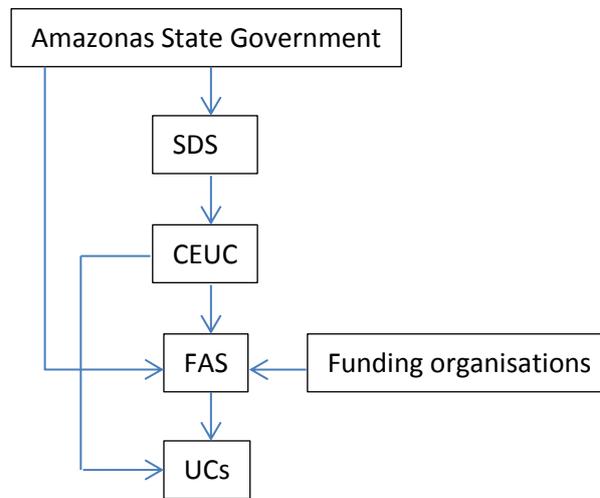


Figure 2.2. The Legal Structure

The management of the Conservation Units was formalised in the complementary law 53/2007. The SDS and/or CEUC establish strategic partnerships with organisations from the civil society allowing the co-management of the UCs of Amazonas. FAS is one of these organisations. However, management activities in the UCs must follow the plans approved by CEUC. The resources for these come from several sources, but mainly from the state government and private companies.

The State of Amazonas supported the creation of FAS with R\$ 20 million. The funds are aimed to be used in a long-term investment in which the profit is invested yearly, giving the foundation’s programmes financial sustainability. These resources are administered by Bradesco Bank, who allocates special benefits such as exemptions on administrative tax and free financial services regarding the use of the resources. Also, Bradesco itself contributed with another R\$ 20 million for the creation of the foundation.

The rest of the funds FAS receives come from donations. According to their website, in 2009 Coca-Cola Brazil made a donation of another R\$ 20 million; Fundação Nodo R\$ 80 thousand; Yamamay R\$ 130 thousand; Marriott International R\$ 500 thousand per year for four years; the Amazon Fund for R\$ 19.3 million split through four years for the Renda and Associação components; Samsung Brazil gave R\$3.8 to support the Rio Negro Environmental Protected Area; most recently the oil and gas company HRT committed to

donate R\$ 24 million, from which R\$ 4 million are to be used specifically on the RDS Uacarai.

In conclusion, the BFP and FAS were instituted in 2007 by the State Law 3135 on State policy for climate change, environmental conservation and sustainable development and the Complementary Law 57 on the State of Amazonas conservation units' system – SEUC. These set the legal framework for the environmental products and services' economic structure.

2.3.2. Programa Bolsa Floresta

From 2007 to 2009 pilot REDD initiatives started in the States of Mato Grosso, Pará, Acre, Rondônia, Amapá and Amazonas. The Amazonas adopted strategies to distribute the benefits of reducing deforestation, including investments in monitoring and research aimed to benefitting the traditional communities for their commitment to conservation and change of behaviour towards deforestation.

The BFP is a compensation for environmental services towards conservation from the traditional and indigenous populations of the Amazonas. According to the four components of BFP, FAS compensates the communities for managing the environmental services and invests in income generation activities, social strengthening, education and health. All four represent an annual investment of over R\$ 1300⁴ yearly per family. It is distributed in the following way:

1. Bolsa Floresta Familiar – BFF or Family Component:

Is a payment of R\$ 50 as monthly (R\$ 600 yearly) compensation to the mother of each family that committed to conservation of the environment and sustainable development. This is an important mechanism to include the people directly in activities against deforestation. It is not intended to be the family's main income. It is only an additional income as reward for conservation of the forest. This sum of money is given directly to each family.

2. Bolsa Floresta Associação – BFA or Association Component:

⁴ Amount taken from the investments made by FAS on 2011 FAS, A. S. F.-. 2012. *Country Report. Results of a baseline study for a pilot area in Brazil: The Rio Negro APA and the Bolsa Floresta Programme.*

Is an investment destined for the associations of communities in the UCs. It corresponds to 10% taken from the amount given to each family registered in the Family Component. Its goal is to strengthen social organisation of the communities in each UC.

3. Bolsa Floresta Renda – BFR or Income Generation Component:

Is an incentive for sustainable production of forest products such as timber, essential oils, fruit and nuts, and honey. Each community receives R\$ 396 yearly per registered family. Those incentives are meant for the purchase of equipment and facilities and support for income generation activities. Even though the money is destined to the families, the sum of money is given to the community (i.e. a community with ten families would receive R\$ 396 x 10, one with 20 would receive R\$ 396 x 20).

4. Bolsa Floresta Social – BFS or Social Component:

Is an investment focused towards supporting improvements in education, health, communications and transport, which are areas of vital importance for the livelihoods of the communities. This component is implemented and developed with both public and private organisations as partners. Each community receives R\$ 350 yearly per family registered family. Like the BFR, the sum of money is given to the community and not the families.

BFP was agreed by the government of the State of Amazonas and FAS to be implemented in 15 Conservation Units: RDS Juma, Amanã, Uacari, Rio Amapá, Mamirauá, Uatumã, Piagaçu Purus, Cujubim, Canumã, Rio Madeira and Rio Negro; RESEX Catuá Ipixuna, Rio Gregório, Floresta de Maués; and APA Rio Negro.

3. Theoretical Framework and Concepts

This chapter is divided into two main parts; the first one outlines institutions and institutional change theory, and the second focuses on participation and process legitimacy. The concept of a governance structure will be briefly explained before going further in depth with the theoretical framework.

Governance structures are defined as the actors involved and the institutions that enable interaction between these actors. Vatn (2011) identifies two different types of actors: One economic and one political; the first are those who have rights and access to the economic resources and the political are those who establish the rules concerning access to and the transfer of those same resources. Regarding the institutions there are also two: the “resource regime”, understood as those regulating the economic process of the resources; and the “rules governing the political process” (see figure 3. 1).

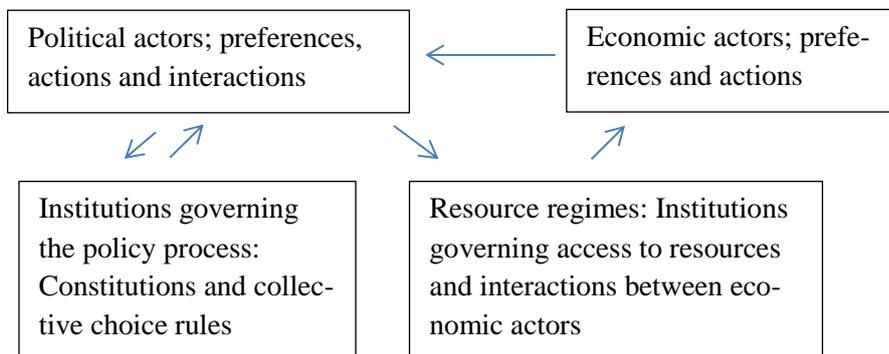


Figure 3.1. The concept governance structure

Source: Vatn (2011)

Figure 3.1. indicates the “direction of influence between the variables” (2011: 141). However, there are many different reasons by which changes on the structures are made. It is important to establish that modifying the governance structure should not be considered as a weakness. Moreover, what should be understood from these changes is - in fact - a transformation in which it adapts to new challenges, opportunities and new interests. The State continues to be an ends-fixing structure even though its role as an implementer or executer has been granted to others.

The thesis focuses on the implementation process REDD+ with BFP in Brazil, the way the modifications and changes to governance structures were done are classified according to the following theories and concepts.

3.1. Institutions and Institutional Change

This part presents the concepts of ‘institutions’ and ‘institutional change’. The motivation lays on the importance of these for the analysis and discussion of the collected data. These are one of the most important items that will contribute in the classification of the implementation process of BFP.

The concept of an ‘institution’ is used to define behaviours, norms and manners considered important for a society. As structures and mechanisms of social order, ‘institutions’ are studied by different disciplines and professions in social sciences, such as anthropology, sociology, political science, economics and administration, amongst others. Also, in law institutions are seen as the formal procedure to establish and implement rules. As mentioned previously, institutions can also be behaviours, and can be formal or informal.

According to Vatn (2011) institutions can be classified into three different groups: 1. Institutions as conventions; 2. Institutions as norms and; 3. Institutions as legal rules. Institutions as conventions are created by human actions intended for cooperation and coordination amongst members of a society, community or group, and they do not require sanctioning. Institutions as norms can be defined as social mechanisms. They protect values internalised by groups and do not need sanctioning either. In contrast, institutions as legal rules need to be sanctioned because they are intended to respond to a situation in which the other two types were unable to address. Furthermore, the aim of institutions as legal rules is to harmonise the interests of a society and avoid potential conflicts.

It is important to be able to define the way institutions and human actions relate, and the way both humans and institutions influence each other. As a starting point it is necessary to keep in mind that institutions are social constructions (structures created by humans), but also institutions are “forming people” (Vatn, 2011: 132). Institutions shape people and their actions. It is undeniable that institutions influence the way people see different issues and how they define their actions. People create institutions to satisfy needs, and these generally evolve

to supply other and new needs. This is defined as ‘institutional change’, which is one of the main concerns of the thesis. Vatn argues that “institutional change covers both the process of changing an existing institution and the establishment of an institution in a field where no institution has existed before” (Vatn, 2005: 169) and groups institutional change into four different types.

His description will be of great value in order to categorise the institutional changes involved in the implementation of the Bolsa Floresta Project in the Rio Negro Sustainable Reserve. One type of institutional change is referred to as ‘spontaneous’ and is a result of non-intentional or not designed change; another type is ‘designed’ in which there is a change to increase efficiency in order to reduce transaction costs. The third type responds to interests, values and/or power; and the last type as a reaction to crises. In any case, institutional change stems from the idea that actions can and will be achieved by changing the institution.

The ‘spontaneous’ institutional change - as already indicated - is considered a product of actions that have no intention in changing the institutions. These actions are implicit and often come as a change from below. Vatn (2005) argues that these actions are a product of daily life and start to be reproduced gradually by more and more people ending up as an institution.

On the other side, ‘designed institutional change’ is intentionally created. These changes result from a decision taken by a group or collective. The institutional change is intended to reduce “large transaction costs involved in individual bargaining” (Vatn, 2005: 176) e.g. the state creates an institutional structure that enables the access to the market easier and less costly in cases where the those markets are too expensive to use, like in the case of environmental services.

Legal rules or laws are created to answer interests, values and/or power. This type of institutional change stems from the concept of *property rights* and the question of who has the right to exploit certain resource. This institutional change is made once there is a potential or an actual conflict which must be terminated. This type can be for individual, group or common goals, even though it is normally planned to establish or protect private property.

The last type of institutional change is ‘as reaction to crises’. Vatn (2005) defends the statement in which the change not only comes as the evolution of certain structures (economic, political or others), but also when these structures fail in their normal functioning. This type of change is motivated by crises. The change must come in a way that structures are

‘fixed’, ‘replaced’ or ‘supported’ with new ones. By ‘fixed’ it is meant that the changes implemented will contribute to taking the structure out of the crisis. ‘Replaced’ is when the structure in crisis is disposed of and replaced with a new one, and ‘supported’ is when new institutions are created to contribute in overcoming the crises.

Concepts like participation and legitimacy are important when evaluating institutional change. The reason is that the lack or low levels of participation and legitimacy might represent a risk for the institutions or the institutional changes. If the process of changing or creating new institutions is not done through participatory processes, the legitimacy and the institutions themselves will not count with the required support and acknowledgement of the excluded stakeholders, and thus will not have the desired effects. However, participation and legitimacy have a value of their own and are important because they are key factors for democracy and a democratic process.

3.2. Participation and Process Legitimacy

In this section I first explain the concept of participation and related theories. Then the concept of legitimacy is defined mainly through the bidimensional description of Scharpf (2009). It is important to note that even though the concept of power is not discussed in depth, it is important to for the understanding of participation and legitimacy as a process.

The idea of ‘participation’ is associated with the concept of ‘legitimacy’ in political processes; it is commonly claimed that interaction through participation is the source legitimacy. According to this, the question about legitimacy is problematized progressively in the moment that a political community’s government ceases to be a direct government, i.e. in the moment that for any reason citizens are no longer able to participate directly. In this case an issue is raised about legitimacy of the representation of power. The complexity of the relation between participation and legitimacy has evolved throughout time.

The ‘Ladder of Participation’ is quite complex, but it is important to mention it due to the way it formulates the different levels and the detailed information from each one. It establishes types of participation and nonparticipation altogether in eight levels in which Arnstein believes participation is presented starting with the most top-down approach to the most bottom-up form of it (see table 3.1).

Table 3.1. The ladder of participation

8	Citizen control	Citizen power
7	Delegated power	
6	Partnership	
5	Placation	Tokenism
4	Consultation	
3	Informing	
2	Therapy	Nonparticipation
1	Manipulation	

Source: Based on Arnstein (1969)

At the bottom of the ladder are the nonparticipation levels; ‘Manipulation’ and ‘Therapy’. At these levels, the idea is to not let the people participate in any part of the process; it is rather to “enable powerholders to “educate” or “cure” the participants” (Arnstein, 1969: 218). In level 1 people are used as support and participation is turned into means for public relations. Level 2 is not much different, where the issue here is that the powerholders see not-having-power as an illness that needs to be treated so through prolonged group sessions in which the people are ‘treated’ and - for the ones in charge - integrated into the processes.

Levels 3, 4 and 5 are at a level she calls “tokenism”. ‘Informing’ the people about their rights and decisions is considered the first step towards legitimate participation. The issue is that communication is only from the powerholders to the people, and there is no chance of feedback or influencing the decision-making. ‘Consultation’ invites people’s opinions, but it does not guarantee that their ideas will be taken into account. Normally, the people are taken as “statistical abstractions, and participation is measured by how many come to meetings, take brochures home, or answer a questionnaire” (Arnstein, 1969: 222). In these two levels, people are allowed to speak and hear; however, in these levels they still lack the power to make sure their opinions are heard or included by the powerholders. When the participation is at this level, there are no real opportunities of making a change in the established order.

On level 5 (‘Placation’) people start to have some influence, even though it is so little that it should still be considered inside the “tokenism”. People here are integrated into boards or committees, but in reduced numbers so their participation is very limited and often outvoted. In practice, the people are allowed to advise even though the right to decide is limited to the ones in power.

The next three levels are those in which the power is with the citizens. In the ‘Partnership’ level, negotiation and interchange are facilitated between the two sides. The creation of

certain structures such as joint boards are agreed to establish ground rules through a negotiation process in which decisions are not taken unilaterally.

In the last two levels, the people are making and taking the decisions and have what Arnstein considers “full managerial power”. The seventh level (delegated power) is when the people that take a dominant position over the public officials in negotiations previous to the decision making processes. Citizens delegate power to organizations or groups and hold the majority of votes in boards, committees or councils.

The eight and last level is ‘Citizen Control’. It is the ultimate way of participation; the highest in the ladder. As the name indicates, the people have control. A characteristic here is that nobody has absolute control of power. “People are simply demanding that degree of power (or control) which guarantees that participants or residents can govern a program or an institution, be in full charge of policy and managerial aspects, and be able to negotiate the conditions under which "outsiders" may change them” (Arnstein, 1969: 223).

It is important to clarify the concept of power used in the ‘Ladder’. The standard definition of power would be the influence from actor A to make actor B do something otherwise B would not do (Dahl, 1957). According to Lukes (2005), this is a very simplified definition, the exercise of power goes much beyond and it is substantially more complicated. Lukes (2005) argues that power itself has different dimensions and thus needs a deeper analysis.

In Lukes’ work, a definition of power from a ‘Three-Dimensional View’ is presented. Here, he examines the behaviour in “*decision-making and control over the political agenda*”, “*issues and potential issues*”, and “*subjective and real interests*” (Lukes, 2005: 29). Lukes (2005) establishes that it is not only action, but inaction what defines the nature of power. In other words, the powerholder is not only exercising its power when acting, but also when not acting. From this, he argues that this “*allows for consideration of the many ways in which potential issues are kept out of politics*” (Lukes, 2005: 28) making the inaction and latent conflict scenario a place where power is still exercised even though if it is not explicit. Subsequently, the third dimension can be both subjective and real interests that are in stake.

Having explained ‘participation’ and ‘power’ it is pertinent to move to the concept of legitimacy. Participation, interaction and legitimacy are tightly linked together. For this purpose, Scharpf (1999) defines legitimacy as a bidimensional concept in which participation and legitimacy are linked in cooperative policy-making processes; roughly, on one side

‘input’ legitimacy regards the process of establishing a new system; and the other ‘output’ legitimacy as how the results from the process are evaluated.

Before going to the definition about the two types of legitimacy, it is pertinent to establish the importance of interaction between the actors within a process on defining the factors of legitimacy of that same process. In governance related processes participation of the people in the decision-making process is commonly seen as a way to link political decisions with the people’s preferences. Also the “involvement of citizens could generate better or more effective political outcomes” (Boedeltje and Cornips, 2004: 4). And there is exactly where Scharpf’s bidimensional definition comes in hand.

‘Input’ legitimacy is established as dependant; referring to the way political decisions translate and integrate people’s preferences. The process has to be seen as the way to link the will of the people with the content of the decision - or policy - and therefore deliberation is indeed an important part. Also, if this way of legitimacy is achieved it could reduce social exclusion. For this purpose Scharpf (1999) integrates ‘fairness’ into the concept. Meaning that all parts have equal chance to express their opinions and to be heard; not only the people’s access to the process, but in terms of the parties’ opportunities to influence it according to their specific preferences and interests.

On the other hand, ‘output’ legitimacy is defined by two components one ‘objective’ and the other ‘subjective’. ‘Objective’ is here referring to the “extent that policy outcomes succeed effectively solving social problems” (Boedeltje and Cornips, 2004: 6); understanding that the participation of both “powerless” and powerholders in different processes produces much more accurate outcomes. The ‘subjective’ component regards whether or not the content of the outcome of the process - or policy - satisfies the people. Also it is understood that if the process is interactive and integrative the people will evaluate it with a more positive judgement.

This distinction made by Scharpf (1999) contributes to understanding legitimacy. However, it is important to state that even though both types of legitimacy explained above are interrelated, it cannot - and should not - be mistakenly understood that achieving one would lead to achieving the other. We already understand that interaction is needed in order to know people’s preferences and interests, which also leads to ‘input’ legitimacy. However, this does not mean the ‘output’ one will be achieved; and *vice-versa* if the ‘output’ is achieved and the

people are satisfied with the results it does not necessarily mean that the process was legitimate.

4. Methods

In this chapter, the research methods and instruments used for the thesis are defined and explained.

4.1. Overall Description of the Methods

This research combined elements from both quantitative and qualitative research methods. The main idea behind this was to maximise the advantages and minimise the potential weaknesses of each type of data. The use of mixed methods was hence chosen in order to obtain as precise and thorough picture of the researched case as possible.

The collection of the data was divided in three; the collection of data at a local level (in the communities using questionnaires, focus group discussions and semi-structured interviews); the collection of data from the executing part of the project (FAS and government organisations, mainly based on semi-structured interviews); and the collection of data from literature and databases.

Additionally, an important amount of data was collected through informal communication with people from the communities and FAS. Observations of everyday community life and personal interactions enhanced the data collected through surveys, semi-structured interviews and focus groups discussions.

Previous to the field research, a literature review was done in order to obtain as much information as possible for setting up the research instruments accurately. Data was also thoroughly revised and collected from databases from FAS and the State of Amazonas' organisations.

4.1.1. At the Local Level

Data and information was collected through the use of surveys (questionnaires), interviews with local leaders and representatives and focus group discussions (FGDs).

For the questionnaires, considering the Rio Negro reserve has 524 registered families, a number of 100 was chosen to be surveyed. The number corresponds to around 19% of the total, which Bryman (2008) suggests is a representative sample and could allow generalisations.

In the case of the interviews, I used semi-structured ones, which according to Bryman (2008) will allow to keep a consequent line of ideas during the interviews, but at the same time allow more flexibility to go deeper into specific topics and a natural flow in the conversation. For this instrument, local leaders were selected from the communities. The interviewee had to be the president of each community, the Association of Sustainable Communities of Rio Negro (ACS Rio Negro) or a person identified by the locals as their representative.

The focus group discussions were carried out to identify opinions and attitudes from the communities as a group, rather than the more individual opinions collected through the questionnaires and interviews. The FGD enables interaction and discussion between the participants in order to record discrepancies about situations and everyday happenings related to the project. This method contributed to a much deeper dataset which was crucial for the analysis.

4.1.2. Executing Organisations

In this section, the instruments were divided in two; one for collecting data from FAS and the other from state institutions. Similar to the local level, meetings and semi-structured interviews were organised with resource persons, generally representatives and field officers of FAS.

From the state organisations, the Institute of Agricultural Development and Sustainable Forestry of Amazonas (IDAM) and the State Conservation Units Centre (CEUC) were selected because they contributed towards both the implementation and the running of the programme in the RDS. A representative from each one of these organisations was interviewed.

4.2. Defining the Samples

This section relates to the way the samples and/or interviewees were selected for each research instrument.

4.2.1. Surveys (questionnaires)

To avoid over- or underrepresentation of facts I could have encountered during the data collection process, the selection was done based on considerations suggested for a research done by the POVSUS-REDD project before the implementation of the BFP pilot project in a nearby area; one concerning the number of communities and the other the distribution of community samples. The idea was to “include villages that are *representative* for the study area, get *variation across the villages in key variables* to be studied” (Anon., n.y.).

Some researchers preferred to use a fixed number of households per community (e.g., 10 surveys for each of the communities), while others a proportion according to the number of households in the community (e.g., 20% of the households in each community). The situation was that if I wanted to minimise overall errors of the sample estimates none of these methods were completely satisfactory, so I tried to use a combination of both.

Considering the number of desired surveys to be done was 100, the previous considerations were taken into account to be able to make an appropriate selection of the communities and the number of surveys in each one. I chose 10 communities out of 19 - including different sizes - and varied the number of surveys representing from 7.9% to 11.8% of the households of the communities (see table 5.9. Selection of the communities).

Table 4.1. Selection of the communities

Community	Number of Surveys	Proportion of the sample in the community
15 de Setembro	12	10.30%
Bujarú	8	10.30%
Camará	8	10.40%
Marajá	5	11.60%
Nossa Senhora do Perpétuo Socorro	17	10.70%
São Tomé	6	9.70%

Saracá	11	11.80%
Terra Preta	20	7.90%
Tiririca	5	9.20%
Tumbira	8	10%
Total	100	

For the selection of the interviewees, all the members of the communities were summoned to the social centres, after explaining the purpose of the research they were asked if anyone wanted to volunteer for the surveys. Most of the time, none or not many wanted to volunteer. The interviewers (five in total) divided the number of households in each community amongst themselves so that each one knew the number of surveys to carry out and which houses to go to. Then each interviewer went collecting surveys one by one until the required number of questionnaires from the people who were willing to contribute and share their opinions about BFP. The interviewers had no requirement or procedure for the selection of the respondents.

4.2.2. Focus Group Discussions

For the case of the focus group discussions, the criteria considered when choosing the participants was representativeness of the communities from where the groups are drawn (mostly age and gender).

To ensure that the groups from communities were as variable and diverse as possible, I had planned to do 4 to 5 FGDs in communities based on criteria such as closeness to transportation facilities such as the river, dependence on forests (communities both close and far from the forest) and income activities of the community (communities that depend on different income activities).

From each of the communities, the plan was to use 2 to 3 groups of about 8 to 12 people. Having separate male and female groups to ensure gender disparity but also to make sure women's views were not crowded out by the men. The plan was to have one group with men alone, another with women alone, and the third with a mixture of both men and women including different ages in the groups.

Considering that the leaders of the communities would have their own personal interviews, I felt it was better not to have any of them in the FGDs, as they could possibly hijack the discussions. In addition, only one person from each household would be allowed in a group.

4.2.3. Resource Persons

For the interviews with resource persons from the communities, a total of 10 leaders and local representatives were interviewed. From these, the president of the Association of Sustainable Communities of Rio Negro (ACS Rio Negro) and four other community presidents were selected. These four were selected randomly from the list of the communities chosen for the questionnaires. For the local representatives the requirement was that they had to be recognised by the people in the communities; then five were selected also from the list.

For the institutions, three formal (as semi-structured interviews) and three informal (as meetings with no interview guides) interviews were held with FAS' representatives. From IDAM and CEUC, one representative was selected from each organisation.

4.3. Challenges and Limitations

This section presents the challenges and limitations encountered once on the field that may have altered the findings or course of the thesis. Each one were handled making the best use of the resources available.

4.3.1. Logistics

The first and most important limiting fact was the geographical location of the area in which the research was carried out. The distance from Manaus and having to use the river as the only way to transport was an issue. Being so far apart from the main city limited communications dramatically, making it almost impossible to seek advice or recommendations from anyone outside of the communities.

Additionally, the collection of the data in the field was limited by the amount of time available; four weeks in total. According to Bryman (2008), each research design has certain limitations to collecting data; knowing this, the short amount of time in the field somewhat limited the possibility to gain deeper insight into the communities, especially concerning reported conflicts and personal opinions about them.

The limited time had to be used to collect data both in the RDS and Manaus. The time was divided in three parts accordingly. The first was to get everything ready for the collection of data in the RDS, permissions, questionnaires, and other logistics, and to meet and interview FAS' workers; the second was in the field collecting data from the communities; and the third in Manaus again interviewing the representatives from government's organisations and the remaining from FAS.

4.3.2. Data Collection

November and December 2012 were used to prepare for the data collection in the field. The most amount of time was used designing and putting together the questionnaires for the locals' evaluation. The process was especially long, because (as mentioned before) the research is part of a study to compare the cases of Brazil and Tanzania, so the questionnaires had to have two parts: one common core shared for both Brazil and Tanzania, and one regarding the specificities of each case. Therefore, the process of producing the questionnaires was coordinated between our supervisor, a supporting PhD student⁵, the researcher for the Tanzanian case and myself.

Once in Manaus, the questionnaires had to be translated not only into Portuguese, but using the terms of the locals (caboclo). The process took more time than expected and support from FAS was required. However, the process of translation gave time for meetings with FAS' representatives. This time was taken as a bonus to acquire valuable data. The contribution to the translation and completion of questionnaires was immense, it helped to focus the questionnaire towards more specific points of the research and the desired outcomes. Sometimes it felt as if FAS intended to bias, change or diverge some questions, especially during the meetings and discussions.

⁵ Maria Nantongo

In regards to the questionnaires, the interviewers had no requirements other than the amount of questionnaires per community, so there is possibility that they could have chosen the closest respondents to the roads or the community centres; acquiring bias data. However, if the size and population density of each community are considered it is unlikely that this issue could have caused significant changes in the collected data.

I encountered multiple issues that dramatically limited the FGDs and interviews. The communities were smaller than I had thought and for some reason villagers tried avoid contact with foreigners or outsiders, which led to a complicated situation.

Considering that the average number of households in the communities is 27 and not even half wanted to meet me and even less were willing to contribute. FGDs of 8 to 12 people was virtually impossible to achieve, so I used much smaller groups of people (4 or 6).

It was very common that people refuse to be recorded, insisting that the information could be used against them, so most of the times I could only take notes, therefore I was unable to transcribe and crosscheck the data. The situation got worse when many people refused to talk in front of others in the communities, so they were not willing to be part of a FGD. The idea of getting 4 or 5 communities and doing three different FGDs in each (one men, one women and one mixed) would mean 12-15 FGDs, which was unattainable.

At the end four FDG were held. One with only females, another with only males and the other two were mixed. The participants were from all different ages, starting from 18 up to 77 years old.

4.3.3. Reliability and Validity of the Collected Data

The concepts of reliability and validity are essential for research quality. Reliability is related to stability of the findings, while validity refers to “indicators that are devised to measure concepts truly measure those concepts” (Bryman, 2008). Both reliability and validity can be adapted to obtain more accurate results and evaluation of the findings.

Although the research was aimed at the RDS Rio Negro and the research instruments were so specific, it could be replicated in other reserves in which Bolsa Floresta was introduced and have all four components running.

During the data collection process, it was always a priority not to mislead and persuade the respondents or their answers. However, it was sometimes difficult due to different reasons (mostly related to language and/or knowledge of the concepts from either the respondents or the interviewer). Once a lack of understanding of questions or concepts was identified, the questions were asked again using different words and explanations. This may have affected the validity of the research, but data that was found affected was not considered for the research, making all information analysed authentic and from valid sources.

5. Results and Analysis of the Data

This chapter of the thesis contains the analysis of the findings from the research. In the introduction of each section I will describe the sources of data and/or the samples, but before going into the findings, a description of the project area is needed.

5.1. The RDS Rio Negro

The RDS Rio Negro was created by the government of the State of Amazonas through Law 3355 of 2008. It is located in the municipalities of Manacapuru, Iranduba and Novo Airão, 200 km northwest of Manaus. The RDS is divided in three areas (Polo 1, Polo 2 and Polo 3) that group the 19 communities (see table 5.1).

Table 5.1. Communities of the RDS Rio Negro

Area	Community	Number of registered families	Number of registered people
1	Marajá	17	43
1	Nova Esperança (Rio Negro)	42	170
1	Tiririca	17	54
1	Santo Antônio (Rio Negro)	14	41
2	Camará	23	77
2	Carão	15	51
2	Santa Helena (Rio Negro)	18	65
2	Saracá	27	93
2	Terra Preta	64	251
2	Tumbira	28	80
3	15 de Setembro	40	117
3	Nossa Senhora da Conceição	29	70
3	Nossa Senhora de Fátima (Rio Negro)	35	119
3	Nossa Senhora Perpétuo Socorro	56	159
3	Nova Aliança	14	52
3	Santo Antônio Acajatuba	13	46
3	São Francisco do Bujaru	22	78
3	São Tomé (Rio Negro)	19	62
3	Terra Santa	31	160
TOTAL		524	1788

Source: Based on FAS (2013)

Within the RDS the communities settled are distributed in an area of 102.979 hectares (FAS, 2009-2012). The population's primary activities are agriculture, fishing, tourism and the extraction of forest products (timber and non-timber) for subsistence or manufacture of handcrafts. It is important to note that the communities are dependent from the forest's resources. Like in the Rio Negro APA (on the other side of the Rio Negro river) high logging rates have declined substantially in the recent years (Movik et al., 2012) due to the creation of the RDS and the implementation of Bolsa Floresta in 2009.

Even though land inside the RDS is public, there seems to be private land according to data collected. Most of the surveyed families claim to own the land and in all of the communities the land is being sold or bought by the traditional populations. The following chart shows the size of landholdings for the surveyed families (see chart 5.1.).

It is interesting that there is an informal market based on the assumption that the land will not be taken by those who really owns it (or owns it in a formal sense, in this case the State of Amazonas). Apparently the reason for this behaviour is that they are based on a customary system that is not acknowledged by the government authorities.

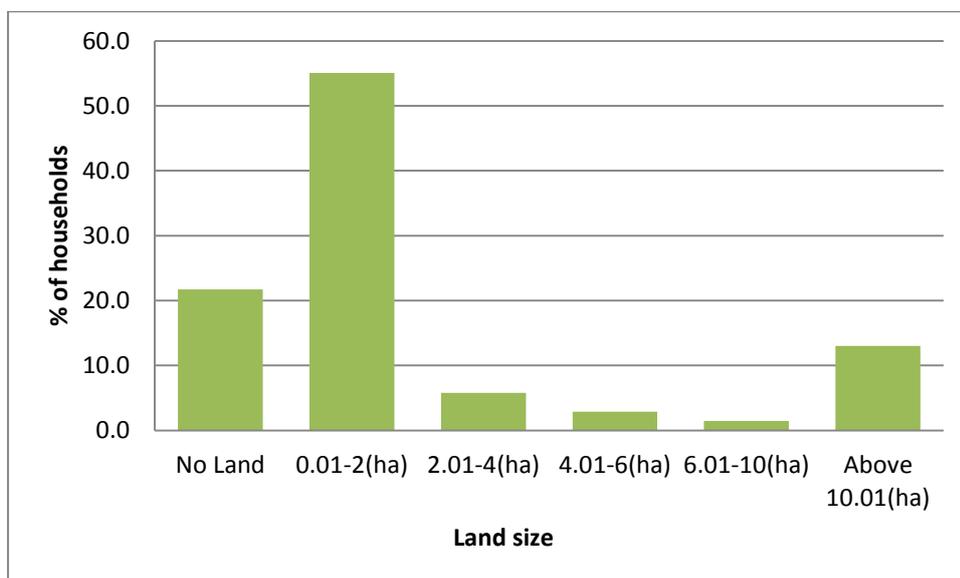


Figure 5.1. Landholdings⁶ in the RDS Rio Negro (N=69)

⁶ The size of land per family. It Includes agricultural land, size of land used for their homes, gardens and other that each family consider theirs.

There are 524 households (families) registered in the RDS (FAS, 2013); The average size of the families is four. Here, mostly ‘caboclos’ (traditional population and miscegenation of local indigenous and whites) and small groups of indigenous inhabit the reserve. The collected data evidenced that education levels are low. On average each person attends to three years of school education and most of the people have only received two years of formal education (see chart 5.2).

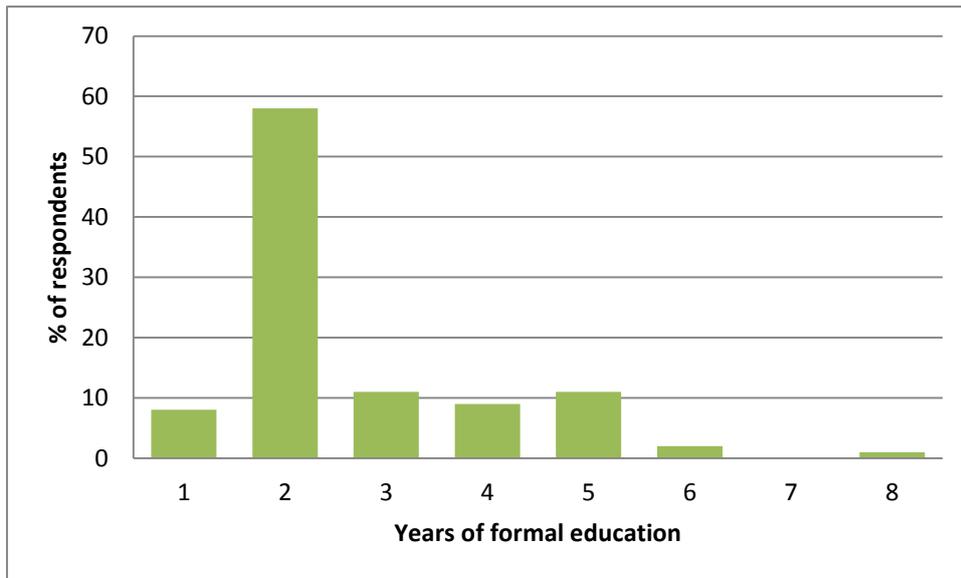


Figure 5.2. Population’s years of formal education (N=99)

5.2. Introducing BFP: The Processes, Institutions and Organisations

This section presents information taken from FAS’ databases obtained at their main office in Manaus, personal communication with resource persons, through electronic communication with their representatives and on their official website. Another valuable source of the information were the interviews held with representatives and/or presidents from the communities and FAS’ field coordinators.

Introducing Bolsa Floresta in the Rio Negro Sustainable Development Reserve was a process that involved several activities and ended up with changes and/or creating new institutions and one organisation. For practical reasons the process will here be divided in four parts. First, the introduction of BFP and the commitment between FAS and the families of the reserve (Family component); second, the support provided by FAS for the creation of the

association (Association component); third, the activities related to the investments on the income generation; and finally the social components.

It is important to note that for the implementation of the programme there was no discussion or contribution from the people for either the contents or the way the programme would be implemented. In order to join the BFP, the people in the communities had to sign an agreement in which FAS and each family individually committed. The BFP was introduced as a package where the people could only say yes or no to it. Participation in this part of the implementation was limited to receiving information and deciding whether to join or not.

The implementation started with introduction workshops in which the communities were informed about the Bolsa Floresta Programme and given a brief course on climate change. During the first part of those workshops, the objective was to present the programme to the people and explain the reasons for why it is pertinent for the protection of the environment and the importance of sustainable practices of the families in the reserve for the society as a whole.

Once the workshops were completed, FAS' field team proceeded to register the families and the signing of the commitments between FAS and the local families interested in participating in BFP. For this purpose, it was required that each family signed the agreement separately and it was that the mother or head woman to do so. To be able to receive the benefits of the BFP component it was also required that the family attended to at least one of the workshops organised by FAS.

Once the families were registered and their bank accounts opened, FAS would return to the communities and hand out the BFP membership cards (also used as bank cards). From this moment on, the families started to receive their payment from Bolsa Floresta Familiar.

The second part of the implementation of the programme came with the association component (BFA) workshops organised by FAS. Based on the need to create a space in which the interests of all the communities are discussed and where the Rio Negro reserve was represented as a whole, therefore the formation of a social organisation in the RDS was supported by gathering the people of the communities and presenting a structure for the association.

During the first two parts of implementing BFP new institutions started to be forged and institutional change started to take place. The participation was - however - limited for the

locals. The BFP came as a fixed package that allowed the people to participate in the use of shared resources (BFS and BFR), but the decision about joining was an individual one. This decision consisted mainly whether or not to join Bolsa Floresta, where the ultimate power was held by the people in the way that they could have opted for not joining the programme and, thus, would have not been introduced in the RDS. It is important to note that even though the process has elements of tokenism (where the people's participation was limited to a yes or no question) it is imprecise to define it as so.

The third part was the workshops on investment plans for income generation (BFR) and social facilities improvements (BFS). These have the aim to promote discussion with the members of the communities for the definition of the investments-to-be. It is of great importance that the communities meet previous to these workshops so that they can prepare and organise their interests, making the debate and discussions easier.

As all the investments on BFR, BFS and BFA are the result of participatory processes where the benefited communities chose democratically through a vote for the activities to be developed. It was suggested by FAS that up to four leaders or representatives from each community were invited to the workshops. Preferably, they should be representatives from the youth, women, the president of the community and other representative chosen by the community.

5.2.1. Bolsa Floresta Familiar

The first component, Bolsa Floresta Familiar, has the objective of promoting the involvement of the families living in the RDS in reducing deforestation and increasing the value of the standing forest. This form of support also acts in the sense that it promotes the understanding of the socioeconomic and environmental conditions of the people in the communities to improve the efficiency in the use of resources and the assessment of the investments.

In practice, it is a monthly compensation of R\$ 50 paid to the mother or head woman of the families that live in the RDS and that are willing to commit to environmental conservation and sustainable development. According to FAS' representatives it is considered an important mechanism to get the population involved in activities against deforestation, but it is not and should not be considered under any circumstance as the main source of income of the

families of the RDS. It is only a complementary income as a reward for preserving the forest and following the RDS and the programme's rules.

The resources for paying the families are guaranteed through a permanent fund financed by the State Government of Amazonas, Bradesco and Coca-Cola. The payment to each family is made by a monthly transfer to their private bank accounts, opened for them once they sign the act of commitment with FAS, and can be accessed at the nearest ATM with the given cards to withdraw their money.

These commitment acts or in Portuguese 'Acordo de Compromisso' are signed by both the head of the family (it has to be a woman who signs and receives the money) and FAS, in which the whole family agrees to commit to five points (see Appendix 1: Acordo de Compromisso):

1. Follow the rules of the Usage Plan or the RDS management plan⁷;
2. Be associated and up-to-date on the contribution to the Association of the RDS and actively participate in their activities;
3. Maintain the size of the garden areas no larger than the one registered at the beginning of the BFP in the community, growing crops in open areas of shrub or forest management resting, not advancing in primary forest areas;
4. Having children in school age in schools close to their residence, registered and attending; and
5. Make firebreaks in the vicinity of areas of clearings (secondary forests) and communicate the community on the day of burning.

On the other side, FAS commits to grant the benefits of Bolsa Floresta Familiar, Associação, Renda and Social according to the rules established by the administration board of FAS.

It is important to note that the programme itself only added two new rules to the ones of the RDS. The families had to commit to supporting the association and to have their children attend school. The management plans and protection of the forest make part of the existing legislation regarding the rules and regulations of the RDS.

During the data collection, it was evident that there is an on-going conflict in the RDS. The people disagree with the amount received from the family component (BFF), they argue that

⁷ Will be presented in the following section 5.2.3. Bolsa Floresta Renda.

R\$ 50 per month is not enough money to sustain a family and that the amount does not cover the cost of not extracting wood from the forest. The people in the communities see the conflict as a 'side effect' of the process of introduction of the BFP.

The benefit from BFF is a contribution to the families that committed to BFP and is not meant to cover the costs of protecting the forest. Also, the rules regarding limits on the extraction of wood and use of forest resources were introduced with the creation of the RDS and not by BFP. In other words, this conflict cannot be considered a consequence of the programme.

It is believed that the people are not obeying the rules and are cutting more wood than the allowed amount. So, the people breaking the rules are receiving the benefits from all the components of the Bolsa Floresta, the benefits from selling wood legally and still extracting and selling more wood than the allowed amount. This situation was especially reported in the area 3 (Polo 3 or Acajatuba).

5.2.2. Bolsa Floresta Associação

Through Bolsa Floresta Associação, financial resources are channelled for the associations of the communities of the UCs. Additionally, all families registered in the Bolsa Floresta Familiar support the associations with a contribution of 10% of the BFF support (10% of the annual R\$ 600 they receive).

The Rio Negro Sustainable Communities Association (Associação das Comunidades Sustentáveis do Rio Negro - ACS Rio Negro) was funded in 2009 as part of the implementation of Bolsa Floresta, more specifically as the Bolsa Floresta Association component intended to promote participatory management of the communities through the strengthening of community organisation, empowerment of the communities and social control of the Bolsa Floresta Programme. Moreover, the ACS Rio Negro contributes to exercise associative leadership in the RDS.

ACS Rio Negro is an organisation in which the members discuss their community's interests and concerns respectively. People from all the communities can attend the association's meetings. In some of those meetings the goals and guidelines of the ACS Rio Negro are

discussed. These meetings are supposed to be held every year before the meetings with representatives from FAS.

In the meetings with FAS, the board of the ACS Rio Negro and the representatives from each community get together to discuss the investment of both BFR and BFS for each year or a determined period of time. Those investments are planned for the whole RDS and for each community separately.

Every two years the ACS has to call for elections of its president and its board. They are intended to establish the person responsible for the execution of the collective interests of the RDS Rio Negro. People from all the involved communities are invited and every head of a household (or family) registered can vote.

According to Nascimento (personal communication, 2013), the current president of the ACS Rio Negro and member of the community of Terra Preta, his motivation to serve as president of the association is to defend the interests of the people of the communities. He emphasised that it is them and not ‘outsiders’ who understand and know the real conditions and situation of the communities because they have lived them. Therefore, the communities should decide the policies, investments and future of the RDS.

5.2.3. Bolsa Floresta Renda

Since the implementation of Bolsa Floresta, the communities have engaged in different kinds of income generation projects with support from FAS and its partner organisations. Projects for sustainable development in the UCs are focused to activities that allow the extraction of timber and non-timber products from the forest, such as fish, essential vegetable oils, honey, fruits and nuts. This way, the activities developed under the BFR must become more efficient in the use of resources through the use of modern technologies in the sense that they can be transformed into improvements and an increase in the involved families’ income.

The great stock of timber in the Amazon forest enables the community to extract the resource used for building communities’ facilities, houses and furniture. State laws enable the people to make use of timber for those purposes. However, the extraction for trade must be accomplished through forest management plans approved by the SDS. Investment on development and implementation of such plans is required to be able to extract timber in a

legal way, following technical, environmental and security rules. Also, by improving the production quality, value will be added to the outcome and an increase in profit margins and income will be achieved.

With financial support from the Amazon Fund, FAS' objectives for these BFR projects is the legalization of the timber extracting activities, improvement in the quality of the final product, a raise in the price of the timber and thus an increase on the families' income.

For this purpose, during 2009, 14 Forest Management Plans were implemented in the RDS Rio Negro in the communities of Tiririca, Santo Antônio, Marajá, Nova Esperança, Terra Preta, Camará, Carão, Inglês, Saracá, São Francisco do Bujarú, Nossa Senhora Perpétuo Socorro, Nossa Senhora de Fatima, 15 Setembro and Nossa Senhora do Perpétuo Socorro.

These management plans are meant for increasing the income of the communities of the RDS involved in the process. They represent a potential of extraction of 4500 cubic meters of logged and 2252 of timbered wood (Solidade, personal communication), giving the communities the opportunity of extraction and commercialization of wood in a conscious, legal and sustainable way. Which will raise the prices of wood significantly in the local markets and ultimately the families' income.

The 14 plans were estimated to generate income of R\$ 92 thousand per year for each one of the communities (Nascimento, personal communication). It is important to note that the plans belong to the community and it is to them to supervise the activities related to it. In this sense, there were workshops aimed at capacitating the people on how to use the management plans in their communities and on the wood market; emphasises that selling legal wood represents a much larger commercial price and thus a much larger income.

Between 2010 and 2011 those initial plans were revised and restructured in 14 of the communities. Simultaneously, other communities started their own income generation projects.

Aviculture is one of the most common projects started by the communities in the RDS. It is expected that with small scale aviculture, income will be generated through the commercialisation of chicken meat and eggs. Also, being a community-managed project, the idea is to improve the children's food in the local schools. The residues produced during the process are used as fertiliser of families' small-scale crop production. These types of projects

were started in 2012 in the communities of Camará, Carão, Nossa Senhora de Fátima and São Francisco do Bujarú with the support from the Amazon Fund too.

With the support from FAS and the Amazon Fund, some of the communities refurbished old and deteriorated tractors and boats back to use. Without considering impacts on CO₂ emissions, the utilisation of tractors is of great importance in the collection and transportation of the forest's products, they have an important role in the improvement of the production process, reduction of transport costs and ultimately as an increase of the income of the involved families. The tractors are used in different processes such as timber, nuts and fruit transport from inside the forest to the communities and the river, where they are taken by boat to be commercialised in other communities or in Manaus. These projects were carried out in the communities of Carão and Inglês.

In order to promote environmental conservation and improve the living standards of the communities in the RDS, production chains based on forest-related sustainable activities were started by the communities. This is why FAS, through BFR supported the idea of increasing the communities' income by creating handcrafting workshops aimed for the manufacture and commercialisation of local handicrafts. The construction and equipment of these workshops were started in Santa Helena and Tumbira during 2010-2011.

A larger project is running in the community of Nossa Senhora do Perpétuo Socorro with the support from FAS and the Amazon Fund. A community-managed tourist centre was started as a sustainable development alternative to seek economic growth with reduced environmental impact, while arguing for the rescue of the cultural and gastronomical heritage of the river people. The interviewees said that it attracts national and international tourists, and increases the families' income. The centre is also used as location for workshops and courses of different types.

Last but not least, during 2010-2011, the community of Saracá built a community-managed restaurant to attract tourists. Intended initially to stimulate tourism within the communities, the restaurant was believed to contribute as an alternative way of income generation and improvement of the community. It should be emphasised that the actual sustainability of tourism is being debated as it probably generates more CO₂ emissions than other activities.

Table 5.2. Bolsa Floresta Renda in 2010-2011

Community	Investment
Camará	Aviculture
Carão	Aviculture Tractor refurbishment Boat refurbishment
Inglês	Tractor refurbishment
Nossa Senhora de Fátima	Aviculture
Nossa Senhora do Perpétuo Socorro	Community-managed tourist centre
Santa Helena	Equipment for a handcrafting workshop
São Francisco do Bujarú	Aviculture
Saracá	Community-managed restaurant
Tumbira	Handcrafting workshop Equipment for handcrafting workshop

Source: Based on FAS (2013)

During 2012, the support for the 14 initial Forest Management Plans continued, new handcrafting workshops were built and equipped in other communities and aviculture was started in one other community (Nossa Senhora da Conceição). Also new and different projects were introduced.

In Carão, as part of the investments of BFR, the community acquired a power generator. It was argued that the electricity generated benefitted other income generation projects (without discussing the effects of power generators in terms of CO2 emissions). Once these other projects were linked with the power, the quality of their production would increase, along with the production's performance and efficiency and it would lead to an increase in the community's income.

In Nossa Senhora do Perpétuo Socorro the construction of mini selling centres for crafts and other products from the community was supported as a BFR project. Also a community-managed inn in Santa Helena and a tourism canoe acquired in the community of Tumbira were part of BFR in 2012 aimed at attracting tourism and generating income.

Table 5.3. Bolsa Floresta Renda in 2012

Community	Investment
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Camará	Construction of a Work Centre for Women
Carão	Acquisition of a 30 KVA power generator
Nossa Senhora da Conceição	Aviculture
Nossa Senhora do Perpétuo Socorro	Construction of mini selling centres for crafts and others
Santa Helena	Construction of a community-managed inn
São Francisco do Bujarú	Handcrafting workshop Equipment for handcrafting workshop
Tumbira	Equipment for handcrafting workshop Acquisition of a tourism canoe

Source: Based on FAS (2013)

According to FAS' database from 2009 to 2012 the total investment in Bolsa Floresta Renda in the RDS Rio Negro was R\$ 561.250, if divided between the 19 communities in the RDS it corresponds to around R\$ 29.539 per community. For detailed information for each period and the total investment for 2009-2012 see the following table:

Table 5.4. Investment on Bolsa Floresta Renda 2009-2012

Year	Investment	Investment per community
2009	R\$ 78.000	R\$ 4.105
2010-2011	R\$ 272.275	R\$ 14.330
2012	R\$ 210.975	R\$ 11.104
Total	R\$ 561.250	R\$ 29.539

Source: Based on FAS (2013)

5.2.4. Bolsa Floresta Social

This component of Bolsa Floresta is destined for improvements on education, health, communications and transport, believed to be essential for the construction of livelihoods and strengthening of social networks of the forest communities.

Since the start of the programme in 2009, the RDS has received three ambulance boats. These are aluminium boats adapted for assisting emergencies and first aid medical treatments. The

boats are given to the communities and it is their responsibility to manage its operations. One boat was given to the communities of Tiririca, Santo Antônio, Marajá and Nova Esperança; another to Terra Preta, Camará, Carão, Tumbira, Inglês and Saracá; and the other boat to São Tomé, Santo Antônio, São Francisco do Bujarú, Nossa Senhora Perpétuo Socorro, Nossa Senhora de Fatima and Nossa Senhora da Conceição. During the first year, BRS' investments were limited to the ambulance boats. The following years the investments increased dramatically as the number of projects amplified.

In the communities of the Amazon, communications are precarious. Not many communities have communication systems or mobile phone network coverage. Investing in communication radios was a priority for BFS in order to create a network within the communities of the RDS, which would contribute to more accurate logistics, an improvement in communications and a reduction in transportation costs. That is why during 2010-2011 ten of the 19 communities in the Rio Negro received and installed communication radios.

It is a fact that in the communities of the RDS most of the water used by the population comes from the Rio Negro River or its streams. This water is not appropriate for human consumption; therefore it is a great cause of disease and infections. It is believed that artesian well can collect and store clean water from underground reservoirs and therefore contribute considerably to the reduction of the waterborne risks, improving health conditions and raising life quality of the consumers. In both 2010-2011 and 2012 BFS, through investment in health, supported the construction and refurbishment of artesian wells and water supply networks in the communities.

Another investment from BFS came for the construction of power generator houses. Even though the power generators were acquired as part of Bolsa Floresta Renda, the construction of the house to store and operate the generators was put under the social component. The reason for this was that it was alleged that it had an important role in protection and security of the communities' assets (in this case, the power generators).

Historically, churches have had an important role in the communities - no matter the religion. Different communities have churches or chapels that are normally used for various activities and religious rituals or ceremonies. The construction, refurbishment or equipment of churches and religious spaces are part of the infrastructure progress of BFS aimed to improve the livelihoods and wellbeing of the communities in the RDS.

During this period, Nossa Senhora da Conceição was supported by BFS for the construction of an elementary school. With this this new school, not only the education coverage was increased, but now the children would not have to travel to neighbouring communities to attend classes, reducing their transport time, costs and risks that young children may have encountered by commuting long distances.

Aimed at improving organisation in the communities, the construction of a common space for social activities was started. Social centres are important places for the arrangement of social, sport and festive events. The construction of such places is of great importance for Bolsa Floresta. It is there where the community gets together to discuss the investments of BFR, BFS and BFA.

In the RDS, the communities are located in forest and agricultural land. The upkeep of common areas to guarantee the population's access is difficult. As part of BRS some of the communities have invested in mowing equipment used for cleaning and upkeep of the common areas contributing to making life easier and thus improving the quality for the locals.

As stated previously, transport improvements are an essential part of BFS. Considering that transportation can be very limited in the RDS and that there is an actual need of traveling from one community to others and/or Manaus to go to school, purchase food or materials, attend to social or cultural events and seeking medical attention, amongst others, Tumbira decided to acquire a transport boat in order to improve their transportation, increase their autonomy and ability to transport significantly reducing the transportation costs.

Table 5.5. Bolsa Floresta Social in 2010-2011

Community	Investment
15 de Setembro	Construction of an artesian well
Carão	Construction of community shelter Construction of power generator house Construction of communications radio house
Inglês	Refurbishment of the church Refurbishment of the well
Nossa Senhora da Conceição	Construction of a school
Nossa Senhora de Fátima	Construction of a water supply network
Santa Helena	Refurbishment of the church Refurbishment of the artesian well
São Francisco do Bujarú	Construction of social centre Construction of water supply network

	Purchase of mowing equipment
Saracá	Refurbishment of the power generator Construction of a power network
Santo Antônio	Construction of an artesian well
Tumbira	Construction of social centre Purchase of a community transport boat Refurbishment of the church

Source: Based on FAS (2013)

During 2012, the investments made on Bolsa Floresta Social were almost the same as the ones for the period 2010-2011. The construction or refurbishment of social centres, water supplies and other social spaces continued throughout various communities. There were three main changes. The construction and equipment of a mandioca flour production house in São Francisco do Bujarú, a staircase in São Tomé and the refurbishment of a football pitch in Tumbira.

Mandioca is the base of the Amazon people's diet. Its flour is consumed daily almost in every meal. The construction and equipment of a production house is not only an income generation activity, but it has such a social meaning for the communities that it is supported by BFS. In those houses the mandioca is processed from its raw stage to become the flour. Part of the production is used by the locals and the rest is commercialised in the other communities.

Not just in the RDS, but in all of Brazil, football is of great importance and social significance. It is considered a sport and a cultural event that brings people together. There are different types of local tournaments and cups in the communities of the RDS. No matter age or sex, the people attend and support the football-related events. In order to prepare for those events, the people of Tumbira chose for the refurbishment and preparation of their football pitch.

Table 5.6. Bolsa Floresta Social in 2012

Community	Investment
15 de Setembro	Construction of social centre
Camará	Construction of social centre
Santo Antônio	Equipment for the school space
Nossa Senhora da Conceição	Drilling an artesian well
Nossa Senhora de Fátima	Construction of social centre
Nossa Senhora do Perpétuo Socorro	Construction of the main water supply network
São Francisco do Bujarú	Construction of mandioca flour production

	house Equipment for mandioca flour production house
São Tomé	Construction of a church Construction of a staircase
Santo Antônio	Construction of a water supply network
Tumbira	Construction of a community square
Tumbira	Refurbishment of the football pitch

Source: Based on FAS (2013)

The information collected evidences the total investment in Bolsa Floresta Social from 2009 and 2012 in the RDS Rio Negro was R\$ 540.669. Once divided in the 19 communities R\$ 28.455 would correspond to each one. The following table shows information for each period and the total investment for 2009-2012 (See table 5.8.).

Table 5.7. Investment on Bolsa Floresta Social 2009-2012

Year	Investment	Investment per community
2009	R\$ 103.000	R\$ 5.421
2010-2011	R\$ 245.661	R\$ 12.929
2012	R\$ 192.008	R\$ 10.105
Total	R\$ 540.669	R\$ 28.455

Source: Based on FAS (2013)

5.3. Local Communities' Evaluation of the Process of Introducing the BFP

As emphasised, 10 communities were selected to participate in the surveys (questionnaires), 4 focus group discussions (FGD) and 10 interviews with local leaders and/or representatives were also conducted. A total of 100 households were selected for the sample to be representative from the 524 registered in the reserve.

For the surveys the requirements were to be over 18 years old and head of their household. In the case of the FGD and interviews the requirements were to be a member of the community and depending on the type of FGD male or female. People from all ages, sex and backgrounds were chosen. For the interviews with the representatives, they had to be the community president or acknowledged by the community as their representatives. The idea of having a very small number of requirements was to not limit or bias the collection of the data or the data itself.

5.3.1. General knowledge and views on the programme

According to the information collected in the field, all the respondents knew about BFP and the responsible organisation (FAS). However, not many people knew about FAS before the implementation. Only 5% of the interviewees answered to have known about FAS previous to the implementation, and this is understandable because FAS was created a year before BFP was introduced in the RDS Rio Negro.

It is not clear if the people in the communities knew who were involved in the programme, beyond FAS. Most respondents expressed confusion. The frequency for each option was very low, being the federal government the highest in frequency although the federal government is not involved in BFP.

During the FGDs and the interviews with local representatives a question about the origin of the money to support the programme was asked. The idea behind this was to see if the respondents understood that this programme was a part of a larger international project and not just from FAS or the state government. The answers were clear; most respondents did not know where the money to pay for the programme came from. Most of them answered that they did not know, while some expressed that the money came from different sources. The results from the data collected with the questionnaires concurred on this finding.

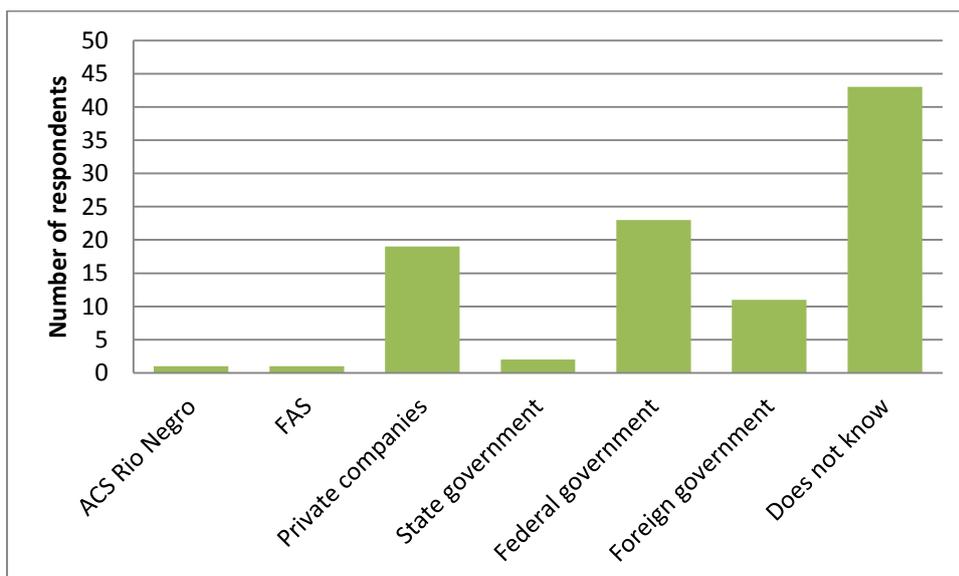


Figure 5.3. Who is paying for the programme? (N=98)

In general the families' opinion about BFP is positive. The people expressed that they liked the programme, but considered that the amount given for the BFP was too low. This explains why the BFP did not get the top score by many. Most of the respondents assigned a score of 3 or 4 on a 1 to 5 point Likert scale where 1 is 'very negative' and 5 'very positive'.

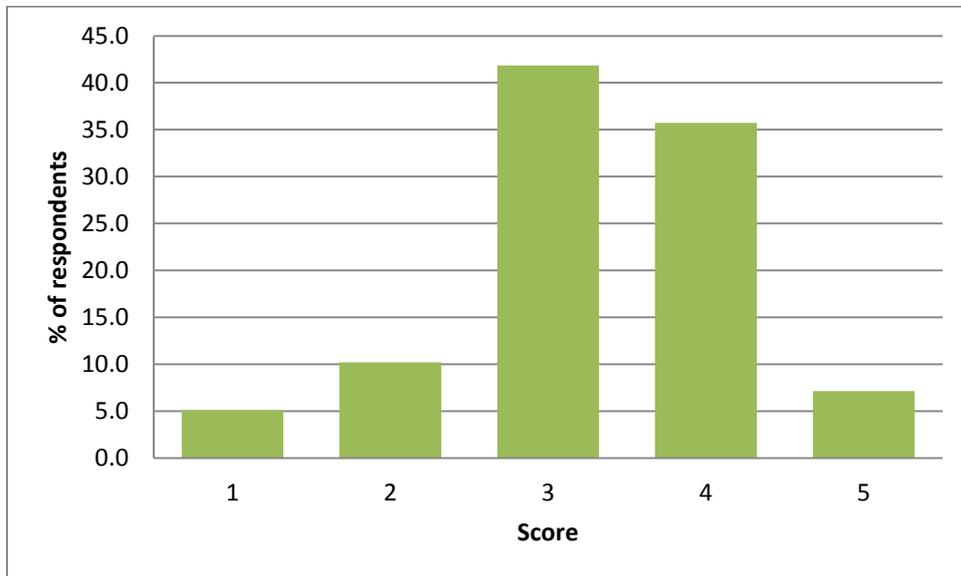


Figure 5.4. Respondents' opinion about BFP (N=98)

However, it is important to note that during informal interviews with local leaders of the area 3 (Polo 3 or Acajatuba), they emphasised their disagreement with the programme. Accordingly, the data collected with the questionnaires evidenced that a larger percentage of respondents gave lower grades to the programme (the explanation for this behaviour will be presented in section 5.3.2.3. on decision making and conflicts related to the BFP component). See following chart:

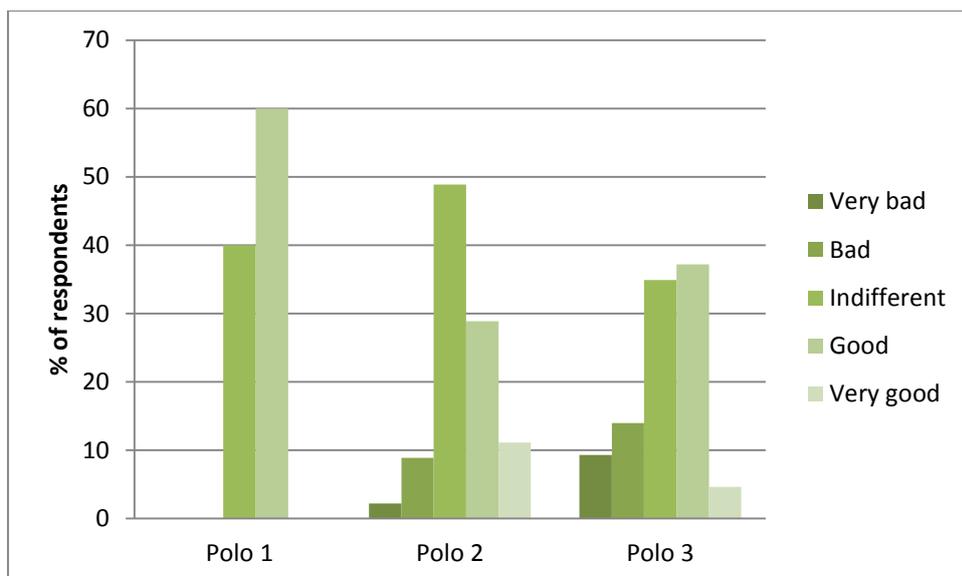


Figure 5.5. Respondents’ opinion about BFP by area. (N=98)

In order to establish if there is a relation between the area (Polo) and the people’s opinion on BFP, a Fisher’s Exact test was run. The results showed that there is no correspondence or relationship between the two variables (Area and Opinion on BFP). Non-parametric tests⁸ were also run, which obtained the same result.

Although the statistical analysis did not confirm the relationship between the area and the people’s opinion, the observations suggest that there might be a correspondence linked to the amount of conflicts reported and the area.

Regarding the way FAS has implemented BFP in the RDS, the people mostly agreed that they did it in a good way; mostly because FAS gave the people enough and clear information about the programme and because according to Nascimento⁹ (personal communication, 2013): “unlike traditional politicians, FAS fulfilled the commitments acquired with the families in the RDS”.

Nascimento (personal communication, 2013) presented the relation between ACS Rio Negro and FAS as a harmonious one. The ACS supports the both BFP and FAS. Additionally, it was repeatedly noted in the FGDs that the ACS supported the foundation because they believe it manages the programme with great commitment, responsibility and transparency. It was

⁸ Two-sample F-test (=Wilcoxon) and Folded F for equivalence of variance (=Ansari-Bradley) and a more general test of difference between the samples (=Kolmogorov-Smirnov).

⁹ President of the Association of Sustainable Communities of the Rio Negro (ACS Rio Negro)

noted in the FGDs that the ACS supports FAS because they are happy with the way it implements the programme.

In the local's evaluation of BFP and the way FAS has implemented the programme, no significant differences were found in the answers between communities, age group, education level, occupation or economic wealth¹⁰.

5.3.2. Bolsa Floresta Familiar

This section regards the people's opinion on the way BFF was introduced. The objective for this section is to be able to establish, from the people's point of view if there was free, prior and informed consent (FPIC) in the process of introducing BFP, regarding it was done through the family component.

It is important to emphasise that the process of implementing BFF and registering for BFP as a whole was set as a package. This package was presented to the families of the communities in the RDS Rio Negro and they had to decide whether or not to join the programme. They did not have the chance of changing anything regarding the content or the organisation of Bolsa Floresta.

5.3.2.1. Participation and Discussion

In order to register for the BFP and as a requirement from FAS, the families (or someone representing their family) had to attend to at least one introduction and registry workshop. There were several workshops in the RDS. According to both FAS and the families, the events took place at a time and place where it was easy for the people to attend. The respondents in general evaluated the workshops as good (see chart 5.1.).

¹⁰ The economic wealth of the families was estimated using the number of rooms in the house, the type of housing contract and land size.

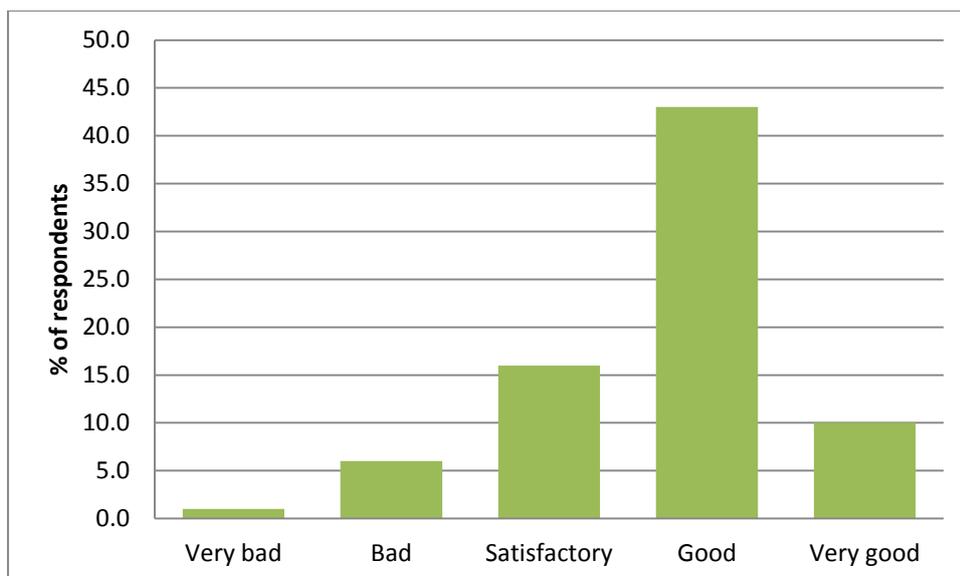


Figure 5.6. Overall impression of the workshops (N=76)

During the workshops, most of the participants were active, asking questions and discussing about the concerning topics. In the majority of the communities the questions asked by the families were said to have been discussed a lot and in extensive ways. This eliminated any further inquiries and possible conflicts related to misunderstanding of the programme.

The people in the communities also made clear that FAS' representatives were open to discuss the people's views during and outside the workshops. It is believed that the families could contact FAS by contacting a representative or field officer in person or through phone calls at almost any time previous to and during the implementation of BFP.

The picture somewhat changes when it comes to the people's proposals on how the programme should have been organised. Although they presented few proposals during the workshops and they were believed (by some of the families) to have been taken into account, the implementation of the programme itself was planned as a package and was not negotiable.

In the data collected from the questionnaires it was clear that the respondents mistakenly answered with the proposals concerning BFS and BFR when asked about BFF. However, it is interesting that when asked about proposals that were not taken into account by FAS they mostly made references to the amount of money given to each family in the BFF.

Even though most of the interviewees stated that there was no conflict during the BFF workshop they attended, almost all of them agreed (during the FGD and individual interviews) that there is a major problem with BFF that has not been resolved. The situation relates to the R\$ 50 given to each household in the family component, adding to this, the monthly contribution of R\$ 5 to the BFA.

The people in the communities explain that monthly they receive R\$50. From this amount they pay R\$ 5 to the ACS Rio Negro (BFA), so that leaves them with R\$ 45. To be able to get the cash, they have to go to a bank or ATM and on average they buy 6 litres of fuel for the boat ($6 \times R\$ 3,75 = R\$ 22,5$), so that means another R\$ 22,5 are taken from the remaining 45. This means that now they only have R\$ 22,5 left. In most cases the person has to take public transport to the bank. The return tickets cost around R\$ 12. Making R\$ 22,5 minus R\$ 12; and that leaves the family with R\$ 10,5.

The situation here is that although they argue that with R\$ 10,5 they cannot sustain a family, a couple of questions comes up: do the people need to go to collect their money every month and is this the only reason to go to the city/town? How often and what were the reasons for the people in the communities to travel to the city/town before the implementation of the BFF? These questions are asked mainly because the people's argument and explanation is most likely not the case and it seems that they are over-amplifying the situation.

The situation involves FAS and the families in general. In the analysis of the data, cross-tabulations were made to establish if there were any statistical differences or correlations between the people's opinions about this conflict and their communities, age, education level, occupation or economic wealth, or identifiable group of people that relates to the issue. No differences were found. The responses were very even throughout the whole RDS.

Accordingly, almost all the interviewees insisted that the solution would be to change the amount money given from BFF. The way that FAS has dealt with this situation is explaining to the people that BFF is not meant to cover the families' expenses; and it should only be considered a contribution for the commitment to Bolsa Floresta.

5.3.2.2. Information

According to the collected data, the information given out by FAS during the workshops was mostly good or very good. They explained the importance of the traditional populations of the forest in climate change mitigation and the commitments they had to engage into in order to receive the benefits from the programme. The execution and rules were also explained to the people in a way that they understood and were able to discuss.

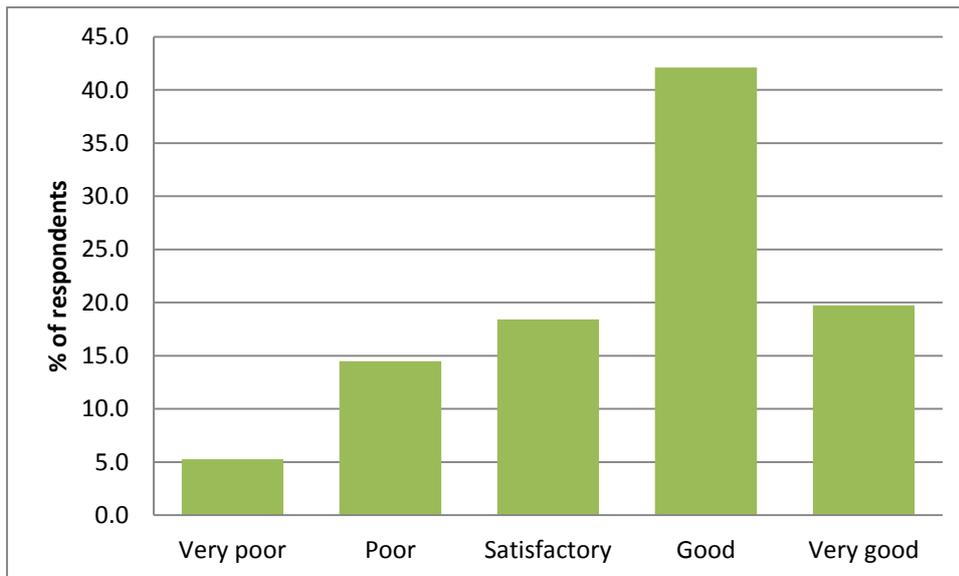


Figure 5.7. Information Quality (N=76)

The respondents said that the main source of information regarding BFP was FAS, although other people from the communities, public authorities and others contributed in a minor way. A question regarding independent sources of information was asked in order to get a better insight of how the process was done and to see if the people had the opportunity of acquiring information from those sources. Once asked about if the respondents had access to an independent source of information, 20% answered affirmatively, even though they considered ‘independent’ sources the state government, the municipality or other people from the RDS.

Regarding this situation, the interviewees (mostly local leaders or representatives) argued that the families did not seek for information on their own. The surveys show that 78.9% of the respondents did not look for information about BFP or the topics discussed in the workshops.

5.3.2.3. *Decision Making*

In the end, 94% of the respondents from the questionnaire signed the BFF agreement and were registered in the programme. Their reasons were mainly related to an improvement in the living standards of the families and the livelihoods of the communities, towards protection of the forests and legal exploitation of the forest resources. Although most of them disagreed on the amount of the BFF, there were cases in which the people argued to have signed the contract just to be able to receive the R\$ 50.

It is interesting that those who did not sign the agreement explained that it was because they were not in their community at the time of the registration or because they have not had the chance yet, but they said to be planning to sign. None of the respondents stated not committing to BFF because of the amount of money in BFF.

By signing the contract the people agreed to not cut primary forest and to avoid the use of fire in exchange for receiving the payment in the family component. However, 77% of the people emphasised that the payment from BFF does not cover the cost they faced by following the rules. They argue that first the amount is too low; and second the areas in which they can extract wood or make use of the land for agricultural or other purposes are too small and do not allow a recovery of the costs.

Even though 78% of the respondents said they have taken the decision to join the programme freely and without any pressure, it is interesting that 18% argued the opposite. Especially because during the interviews and FGDs most of the people felt uncomfortable about answering the questions related to this topic and some of them assured they had been pressured or knew of someone that had been pressured to signed the agreement.

During informal communication with people from the communities, several argued that even though registering had not been compulsory, the vast majority of the families had been pressured to sign by the presidents of the communities or the association ACS Rio Negro. The locals said that the pressure used on them to sign was that if they did not commit to BFF they would lose their rights to live in the RDS and thus had to leave. This argument was also seen in the survey data collected, even though the respondents rarely said who was spreading this information.

In the FDGs and interviews with local leaders a conflict was mentioned repeatedly. It was regarding the wood extractor's disagreement with the programme's rules and the amount of the economic compensation in BFF. The conflict was said to be especially high in the area of Acajatuba (Polo 3, considered to be the area where the most amount of wood was being cut from the forest). According to the president of the community of Saracá (personal communication, 2013), the locals had not understood that it was not BFP that set the rules for the extraction of wood and that those rules regulating the activity were from the RDS and that is why they considered this conflict as being a result of the limited participation in the process of implementation. He emphasised that this is the reason why the wood extractors mistakenly disagree with Bolsa Floresta.

During the FGDs and interviews with locals, it was noted over and over again that there was illegal extraction of wood. Apparently, it is of common knowledge to the people in the RDS that boats carrying illegal wood leave area or Polo 3 (Acajatuba) early in the morning frequently and the authorities do not intervene. The reason for this is that even though the people are receiving the direct benefits from BFF, indirect from BFR and BFS (including the fact that they sell legal wood for an amount of money much higher than the illegal one), they continue to extract and sell wood illegally.

The data showed that 40% of the respondents reported public disagreements during the implementation of BFP. Searching for evidence of the previously mentioned conflict, and looking in depth at who were the people that were disagreeing the most, it showed that respondents in areas 2 and 3 reported the existence of a conflict the most; from those two areas, it was evidenced that the communities of Polo 3 (Acajatuba) had reported conflicts related to wood extractors the most.

5.3.3. Components Renda, Social and Associação

These components are different from the BFF. Unlike the BFF, the people actually discuss and decide each project as a community or the whole RDS; whether to support it or not, and the amount of the investment. Meetings and gatherings for these components are held with certain regularity in each community and less regularly as areas or the RDS as a whole.

In May 2009 there was a workshop on the income generation, social and association components; annually there are meetings to discuss the communities' investments; meetings related to specific projects (from BFR) are held as often as needed; workshops and courses are held less frequently.

5.3.3.1. Participation and Discussion

As the meetings were held at a time and place where it was easy for the people to attend, most of them were present or sent someone to represent them at the meetings. Normally, the person who was unable to attend was represented by their spouse or the community's president. Most of the times these representatives discussed the information and outcomes with those that were not at the meetings.

Information about time and place of these meetings reached the people from FAS through local representatives and/or by radio.

The information given in these meetings is said to be very clear and easy to understand. Also respondents insisted that they were very democratic as even children can attend and give their opinions.

60% of the surveyed people concurred that the attendants participated actively asking questions during the meetings. Most of these questions were regarding the investments on BFR and BFS and were said to be discussed quite a lot through extensive discussions, which mostly resulted in disagreements or conflicts.

Most of these conflicts were only amongst the people from the communities and very rarely between FAS and the communities. Apparently there were several reasons that a discussion could turn into a conflict, but mostly it was because of the destination of the investment, the people who were set to manage the project and the distribution of the profit. Most of these conflicts were solved through deeper and extensive discussions and in the end were settled through a democratic election (voting).

However, it is important to raise the issue that some of the respondents argued that the conflicts were solved in irregular ways, favouring a specific group of people (mostly woodcutters, farmers or fishermen). During the FGDs the attendants argued repetitively that

the investments of BFR and BFS were decided by the communities' representatives and/or presidents outside the meetings - with secrecy - to favour certain private interests or groups.

5.3.3.2. Information

In general the respondents felt that the information offered at these meetings was sufficient for them to decide on the Renda, Social and Association components (see chart 5.3.). The reason for the people to consider the information 'very weak' or 'weak' was mostly because they did not understand how the money was channelled to the projects and where the money came from.

Another issue that they raised was that there is no way of tracking the money given from the families (BFF) to the association component (ACS Rio Negro). Many of the people from the communities have to ask for accounting and records from the ACS, but to the date of the interviews no answer had been given to them.

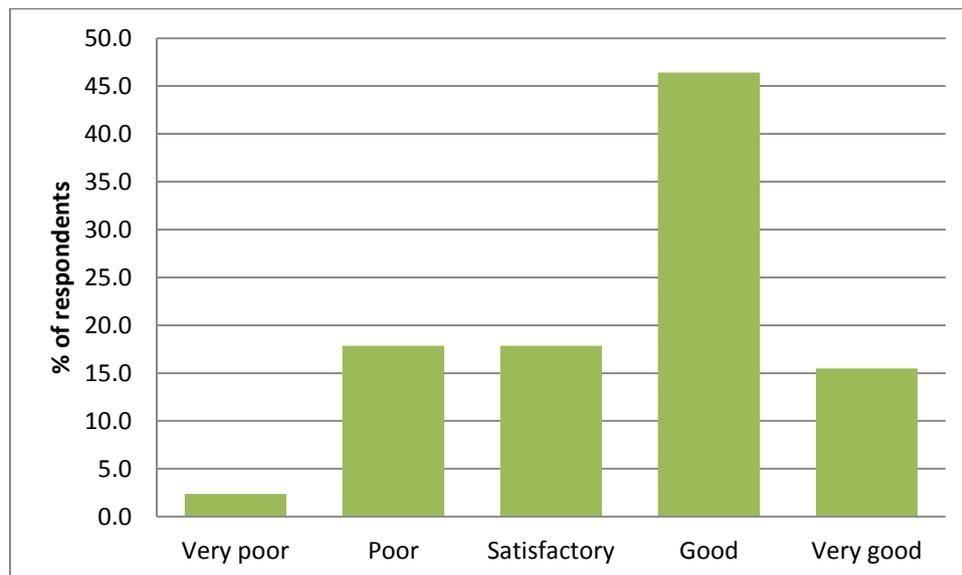


Figure 5.8. Information quality for BFR, BFS and BFA (N=84)

Regarding the information given out during the meetings 72% of the respondents said that FAS was the main source, 17% other villagers, 7% public officers, and 4% other organisations.

5.3.3.3. *Decision Making on Choice of Investments*

At the end of the meetings the investments on the three different components were decided mostly by the community or the community and FAS together. However, it is an interesting finding that over 25% of the respondents said not to have taken part in the decisions taken and 30% in only a few.

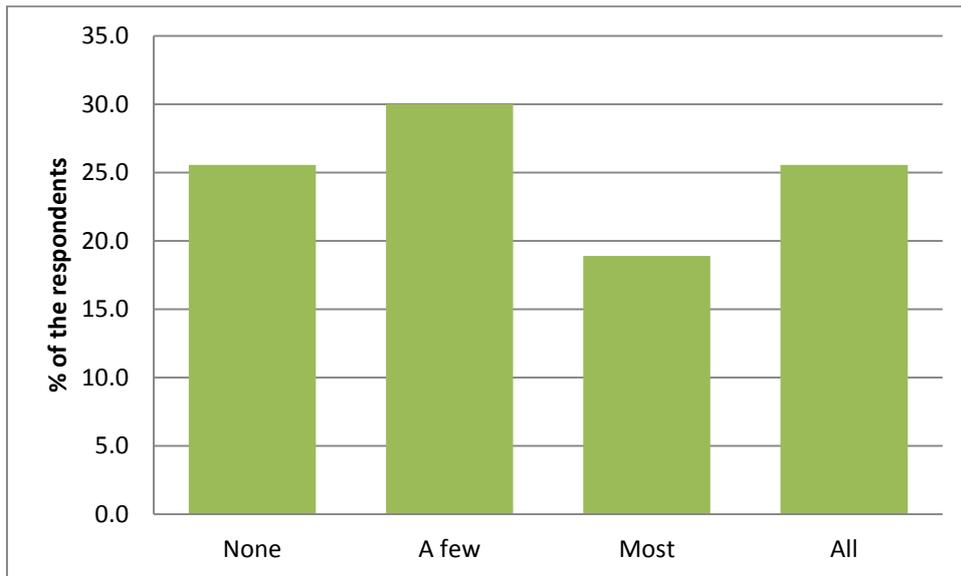


Figure 5.9. Participation on investments (N=90)

According to the respondents, the reason for such a large number of respondents that did not take part in the decisions is that participation in the meetings was limited to supporting or not supporting an investment on a specific project or asking questions about it. The contents of the project were not discussed much because most of the respondents emphasise on the high level of trust the locals deposited on their leaders and representatives.

However, it is interesting that this finding contradicts those presented on the previous section (5.3.2 Participation and Discussion). Although during the interviews and FGDs more questions were asked about this contradiction, the reason for this behaviour in the respondents was not found.

5.3.4. Knowledge and perception of the BFP rules

In order to establish if the people had enough knowledge and information regarding BFP, they were asked about the rules they had committed to when they signed the agreement with FAS. There was a special emphasis on establishing if the people knew the difference between the RDS rules and those from BFP.

During the interviews and FDGs it was evidenced that the people did not know the BFP's rules. Once asked about these, the answers were very varied and mostly mistaken. However, even though they did not know the rules they signed the agreement mostly because of the income they were going to receive from the BFP.

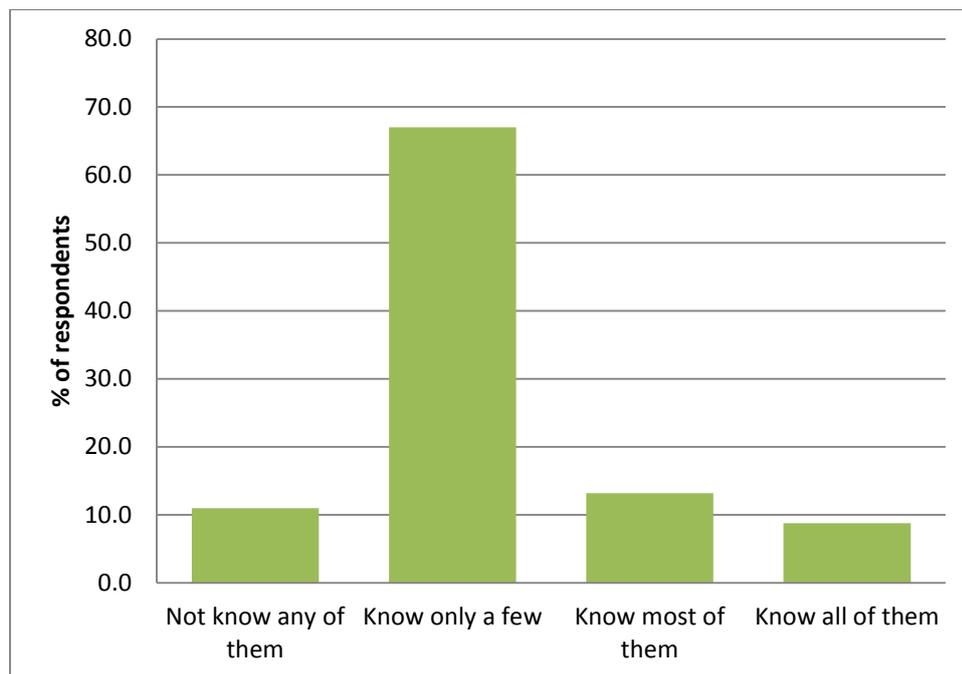


Figure 5.10. Knowledge of the BFP rules (N=91)

As a control question, the people were asked which BFP rules they knew. Almost all of the respondents gave answers related to not cutting the forest (not specifying if primary or secondary) and avoiding the use of fire for clearings. Although these two are part of BFP, they were introduced with the establishment of the RDS. Regarding the monthly contribution to ACS Rio Negro (BFA), only 10% of the respondents mentioned it and the rule about having the children in school was only mentioned by 5% of the respondents.

The answers were even more surprising when asked about if they followed the rules. Most of them answered that they followed most or all of the rules, even when they stated not to have knowledge of them. Accordingly, they considered the BFP rules to have contributed effectively into reducing deforestation in their communities.

Even though the families did not know the rules regarding the programme – evidenced in the data collected - they had a very positive overall impression of the rules, adding no further comments or suggesting any changes.

The whole situation regarding the rules explains - at least in part - the conflict with the wood extractors. The lack of knowledge regarding the rules explains why the people mistakenly mix the rules introduced by the RDS and those from the programme. This situation will be discussed further in the following chapter (6. Discussion)

5.4. Executing Organisation's Evaluation of the Process of Introducing the BFP

The following information responds to qualitative data collected through semi-structured interviews and meetings held with representatives from FAS and public authorities (CEUC and IDAM) during the field visit in January-February 2013. From FAS, Virgilio Viana¹¹, João Tezza¹², Valcleia Solidade¹³, Michelle Costa¹⁴, Hygor Goellner¹⁵ and Marilson Silva¹⁶ contributed to the data collection; Francisco Pinto¹⁷ from CEUC; and from IDAM, Malvino Salvador¹⁸ were interviewed.

This section of the thesis will cover FAS' representatives own evaluation of the changes undertaken and the processes involved during the implementation of BFP. Including the relationships of the involved actors and changes that BFP has created in them, FAS representatives' opinions on the workshops and meetings to inform and register the traditional populations in BFP and their evaluation of Bolsa Floresta Renda and Familiar.

¹¹ Superintendent-General of FAS

¹² Technical-Scientific Superintendent of FAS

¹³ FAS Bolsa Floresta Programme General Coordinator

¹⁴ FAS Project coordinator

¹⁵ FAS Field Coordinator

¹⁶ FAS Field logistics assistant

¹⁷ Sub-coordinator of CEUC

¹⁸ Director of Technical Assistance and Forestry Extension of IDAM

5.4.1. Relations between the Actors

Generally, the responsible organisation insists that the interaction between FAS and the community members is very good. The relation is said to be based on transparency and participation. This is explained by the fact that FAS argues to have a team of people that is prepared to engage with the people in the field, a team that is composed by people that have either worked for several years inside or worked with the communities.

According to FAS, local participation occurs through community workshops with topics related to budget management and training. These workshops are sponsored, organised and facilitated by FAS, where participants decide how best to apply the available resources (Viana, personal communication). However, it was noted by the people in the communities that there was a need to build better participation processes to allow greater effectiveness of the programme.

FAS agrees on that issue and believes participation is essential, but argues that it takes time because participation depends on factors such as trust and credibility (Tezza, personal communication). Accordingly, over the years of implementation, community compliance, commitment and understanding regarding the project and the programme itself should increase.

During an interview with Valcleia Solidade (personal communication, 2013), she explained the way FAS establishes contact with the families: the first time engaging with the communities they contact the presidents and leaders of the communities of the RDS in order to identify the situation within the communities in terms of education, infrastructure and others. Next, they explain the programme, and then engage with the families.

Also, it is said that the relations between State organisations and the communities have improved dramatically since the beginning of BFP, because the people in the communities are now taken into account. The government (SDS, CEUC, IDAM and others) now has a calendar and a plan of actions for the RDS that goes along with the programme. Today the government is more active with the communities and apparently have constant contact.

However, Nascimento (personal communication, 2013) argued that there is still some discomfort from the people in the communities because the government's actions are

considered to be - by the families - much slower than FAS'. Although there is a manager from CEUC living in the municipality and its availability to support and attend the communities is almost 24/7, the situation is probably due to bureaucracy-related issues. To be able to respond to the communities' needs, there is a manager in each one of the UCs. From the 42 UCs in the State, 14 are running BFP and have both the support from FAS and CEUC permanently since the programme was launched.

FAS has partnerships with the municipalities, and they contact and engage with the various organisations or companies to address specific issues. According to FAS, advice is taken from consultants and consulting agencies to be able to make a deeper impact. For example, as part of BFS, FAS has workshops and courses to train teachers for the first years of school and to improve and/or supply the communities' needs on education.

For the Renda component, they would establish contact with IDAM or other partner from the government to engage into workshops and courses on production chains. These are normally carried out in a way that support from both FAS and the government is provided to the communities during the whole process.

However, the situation was not always like this. The introduction of BFP generated significant changes in the described relationships. According to an interview with Nascimento (personal communication, 2013), before 2009 there was no representation of the state in the RDS. The government or politicians went to the communities during elections seeking for support, but when the elections were over everyone disappeared.

He argues that today there are face-to-face meetings with government officials and that the government has new projects for the people of the RDS. Since 2009 the government has implemented policies in order to make bank loans and housing certificates more flexible and easier for the people in the communities. Apparently, the government is now interested in making the communities generate income. On their efforts, they attempt to increase the agricultural, fishing and extractivist production of the traditional population of the river.

Before 2009 and the introduction of BFP, the money came from the State to the municipalities (prefeituras) and then it was supposed to be distributed within the communities. Unfortunately, it is believed that when it reached the municipality it was misplaced and/or affected by corruption.

Apparently the difference that BFP achieved is that with FAS the money actually reaches the communities. Also, Pinto (personal communication, 2013) agreed that the situation changed because in order to implement the programme FAS had to research and carry out a census in the RDS Rio Negro and today they have a very detailed description of the people and livelihoods of the communities.

According to Pinto (personal communication, 2013), the government realised the magnitude of the situation and what was happening in the field and started to make changes. They started approaching the communities with new projects intended for social inclusion and sustainability. Today, through CEUC they approach to explain and discuss with the communities on how and where to invest their efforts. Currently, FAS has already filled the empty spaces left by the government years ago.

5.4.2. Meetings and Workshops

The attention that FAS has given to the communities is mostly through meetings and workshops. However, there is an issue with education in the communities and this was a major challenge at the time of implementing the programme. Being aware of that, FAS was unable to plan “conventional” workshops or meetings to explain and execute the programme.

To overcome the situation, they implemented a much easier format where the people could play, joke, laugh, interact and finally understand BFP and its importance for global climate change. They managed great involvement from the traditional populations and almost everyone in the communities went to those workshops.

Another problem encountered is that due to historical reasons, the people in the communities are always suspicious and distrust outsiders (understood as anyone outside of the RDS or community). They are not very open and/or welcoming to outsiders, especially when they have to sign anything. So the acceptance of FAS at the beginning was very low. Even though after the bank cards (BFF) started to arrive and the people realised that they were actually doing what they had told them, there was a major change. People started to seek contact with FAS and wanted to get involved with the programme. That explains why now almost 100% of the population is registered in BFP.

Another one of the many challenges FAS encountered in the RDS was getting appropriate and enough information to the people for them to sign the agreement. They handled the situation with a team that completed a thorough research on their systems and communities and consequently was able to address the people in the right way.

Accordingly, when FAS' officers arrived at the communities and talked the same way they did it there, using the same words, and their credibility increased. The head of the programme *Solidade* (personal communication, 2013) said during an interview: *“It's the way you arrive, how you contact them, how you address them, how you behave. All that provides an optimum environment for discussion and communication. You can't just go and start talking about climate change or payments for environmental services to people that have hardly left their community. We had to establish a relation between their day to day lives and the those concepts. For example, the rain and dry seasons, and working with that cycle. And those types of things make it easier for them to understand. Once they start talking about it is when you realise that they have understood the situation”*.

As there are normally other organisations (from different backgrounds) working in each one of the UCs, during the implementation of BFP, there were different workshops, discussions and meetings held by different organisations that might have influenced the people's opinions or decisions on the establishment of Bolsa Floresta. It could also be presumed that FAS' partners influenced the people into signing the contract, but it is not completely certain. Of course, if the BPF is what the government and FAS' partners wanted, then they would have most probably encouraged the people in the communities to register for the programme.

However, during the implementation of BFP, the meetings or workshops were not always the most peaceful. According to different sources, before and during the implementation there were conflicts. In fact, *Solidade* (personal communication, 2013) stated that there is always conflict (i.e. the wood extractors in Polo 3) and their disagreement with BFF. According to this, in all parts of the implementation process there were disagreements and/or conflicts.

It is understandable that the communities have problems just like any city or bigger social conglomerate. There are politics, power groups and corruption, amongst many other problems they face. At the time of implementing the programme FAS said they had encountered those situations. They argued that there were conflicts because everyone thought they knew best, and what the others wanted and needed in general. Because of the lack of information or understanding, not to forget the issues with interests either.

Questions like “why is that other community going to receive more money?” or “why do we receive only that amount?” were always asked. There are many things that people would disagree on and - according to FAS’ representatives – they would try to reply through dialogue, explaining the situation to the communities and making them understand the differences between each other, so that at the end they would understand and agree on implementing BFP.

Their FAS handled those situations was through addressing the communities and making sure they understood that BFP is a real opportunity to improve the conditions and living standards of the communities. Silva (personal communication, 2013) insisted that FAS’ field officers explained, discussed and gave examples on different types of issues and problems and how to solve them in the communities.

5.4.3. Rules of Bolsa Floresta

According to FAS, since BFP was introduced the communities accepted to follow new rules. They emphasise that the impacts of those on the communities’ and their livelihoods were of great significance. Both FAS and state representatives agree that the first thing they noticed was a reduction in the size of land used for agriculture and timbering, also the amount of children attending school classes has increased dramatically.

The biggest impact reported by the government authorities and FAS is the involvement of the traditional populations. According to Solidade (personal communication, 2013), the participation of the people in the process was greater once ACS Rio Negro was created. The idea of creating a space in which the people gathered, discussed their plans and problems and made decisions how they were going to invest their money to satisfy the community’s interests is a major change for the RDS.

This is important because the programme was planned to include and integrate the traditional populations into the rest of the society. A change of attitude of the families of the RDS was planned in BFP. FAS recognises that the impact from education is normally in the long term, so in the short term, they believe it is important to organise the people in the communities to discuss, build habits and make changes, while integrating these attitudes into their culture, so as Solidade (2013) said: “*the effects of this is much faster than just education*”.

5.4.4. Bolsa Floresta Renda

According to FAS, most of the production chains that BFP has supported have created a real impact. The example each representative separately concurred is the forest management plans. Once they started putting them in practice, they realised that the communities were receiving a complementary income of great significance. They were now extracting in a much more organised and responsible way. BFR therefore generated the effects and changes that they expected.

Other successful production chains were the nuts, cacao or pirarucú, which also proved effective, and the people continued working with these production chains towards generating more income for the families of Rio Negro. However, according to FAS, these are not important just because of the income they generated, but because during the implementation this was one of the first projects that were started as a part of BFP and it generated very positive impacts, making the communities interested and committed with BFP.

These production chains deemed successful had other project that were unsuccessful because there are cases in which BFR did not produce the expected impacts, which generated somewhat of discomfort amongst the population. It was highly visible during visits to the communities and the most unfeasible example are the production chains related to small animals, like poultry.

Most poultry projects, did not produce the desired amount of cash income; however - according to FAS - it somewhat increased food security to the communities that started these projects. The people started eating their own chickens and that reduced the food-related pressure for the households. So the effect of this is probably not the expected in terms of economic income, but in terms of food and the families' welfare it did have a significant impact.

5.4.5. Bolsa Floresta Familiar

According to Tezza (personal communication, 2013) FAS was created for two reasons: first, to seek support from private institutions for the BFP and, second, to use the resources more efficiently than the government's organisations. An improvement in the conditions of the families of the RDS was needed. So, a common question asked by the communities is why to give each family individually only R\$ 50 if you want to create a major change or produce positive effects?

Viana (personal communication, 2013) stated that the answer to this question is not complicated. The idea was that the programme should not be to be considered as welfarism. The designers of the programme sought out a way that BFP could create a change in the quality of life in the social and income generation areas, in addition to strengthening the local organisations in a way that those organisations could look for alternatives and/or mechanisms to improve the livelihood of those communities.

Also, one of FAS' representatives asked during an interview *“what would be their need (the families’) to look for income if they had all the money they needed or even more? There would be no need to do so”*. It could be understood that if the people in the communities want to improve their livelihoods they need to discuss, participate and build a way of making it happen. R\$ 50 is only a way to contribute to the families and to make them understand that they need to look for other areas in order to obtain income.

In the local's evaluation it was noticed that there was an almost repetitive discourse about the people's need for more money in the BFP to be able to preserve the forest. According to the government and FAS' representatives the claim is not valid, as the rules regarding the limitations wood cutting were established with the RDS' rules and not with the ones from the programme.

They insisted on the importance that the families realise that the forest is a patrimony of all the Amazonas and it's not just to benefit a small part of it or some few, even though when people in the communities have the misconception that living in the Amazonas makes them owners it, it is stated in the law that it is the State's patrimony. In order to address this conflict, FAS has organised workshops and meetings explaining the situation to the people in the RDS.

It is not a secret that there are many social problems and conflicts within the communities so FAS intended to make the people understand that if FAS decides to raise the amount they receive from BFF if those situations would not be changed. Viana (personal communication, 2013) insisted that nothing would be achieved with changing the amount given from BFF. FAS considers that a real positive change will be attained if the money is invested in social infrastructure and in projects that will increase the income of the families of the RDS Rio Negro.

According to FAS, it is natural that families pose resistance to the amount paid. Their coordinators on the field have to be constantly telling the people in the communities that BFF is not the only objective and component of the programme. Solidade (2013) states that *“there is no family in the reserve that does not want to be part of the programme because they only receive R\$ 50. Once the people receive this money and start engaging into the income generation projects their opinion changes”*.

6. Discussion

In this chapter, the theories presented in chapter 3 will be used to categorise the processes of introducing Bolsa Floresta. The first part will regard institutions and institutional change, while the second will be on participation and process legitimacy. The findings will be discussed throughout the chapter.

Before going into the discussion, it is important to emphasise that there was only one main process regarding the introduction of Bolsa Floresta in the RDS Rio Negro. However, it is also important to note that there were other processes resulting from this main one and that these also created or changed institutions. The processes are of a different kind because the process of becoming a member of BFP through BFF was individual, while the ones regarding BFS, BFR and BFA are community decisions on the investments of the programme.

6.1. Institutions and Institutional Change

The main process was directly linked to the Family component of the programme. As seen in previous chapters, the people in the communities committed and registered for BFP through signing the BFF agreement. The other components of BFP were to be delivered once the families had signed it (see appendix 1). According to this, this section will have two parts, one on BFF and the other on the other three components of Bolsa Floresta.

The BFF agreement brought an institution with it. It was evident that the establishment of BFP took place in an area where there had been no institutions concerning payments for environmental services before. The compensations for environmental services aimed at conservation of the forest and development of the forest dwellers were introduced in the RDS by Bolsa Floresta.

The coming institution could be categorised as an “institution as legal rules”. The reason for this is contractual relation acquired at the moment the families of the RDS and FAS committed to obey the agreement. The idea is supported by the fact that a formal sanction was necessary in order to answer to a situation which a convention or a norm would most probably not have caused the desired effects. The contract could also be considered as a way of getting the interests of the society to concur and avoid conflicts.

The changing of formal rules may have also influenced conventions and norms. If the people in the RDS are not allowed to clear primary forest they might have to do agriculture differently; then there may be some new conventions about how they do agriculture. Also the rules concerning the use of fires for clearings are not allowed anymore or restricted in some sense, so the people have to do something else and agricultural practices change. The important thing here is that it is difficult to say that it was just a change in legal rules; it could be also in conventions.

The institutional change that took place in the RDS could also be understood as a ‘designed institutional change’. The structure was created intentionally at the state level to answer global and local needs. On one side, to address issues related to climate change and, on the other, to promote sustainable development of the communities of Amazonas. In the RDS, the decision made individually by the people established the institution resultant from that created structure; it was achieved by making people engage with FAS and believing in the idea that trees are better standing than cut and, additionally, because they got some compensation from it. The situation is interesting because there is an important question about the consistency on the measurement of stored carbon at local, state or national level. If the amount paid does not correspond to amount of carbon that is stored, then there might be a risk for a potential inconsistency on the measurement.

In the case of the processes related to BFA, BFR and BFS the type of changes were different from BFF. The BFA came not only with new institutions, but with a new organisation. Probably the most important and notable institution resulting from the creation of the new organisation is related to participatory management and social control. This institution is considered more as ‘norms’, working as a social mechanism to protect internalised values of the RDS without the need for sanctioning.

The institutional change that came from the creation of the association is ‘designed’ or created intentionally, as the main purpose set by the of ACS Rio Negro is to “promote participatory management of the communities through the strengthening of community organisation, empowerment of the communities and social control of the Bolsa Floresta Programme”.

The introduction of BFR and BFS changed an existing institution. The community councils were changed. These councils now behave different to the way they did before the

implementation of BFP. Since BFP started, the families are summoned to the councils almost exclusively to discuss the investments-to-be as part of the Renda and Social components.

This institutional change was not completely spontaneous; it was not planned or intended by the implementation of the programme. It was more the result of implicit and very gradual changes on the councils' agenda that shaped its behaviour. It was both witnessed in the field and said by most community presidents that the councils' used to be gatherings to discuss different situations and interests of the community, but now they are mostly limited to topics regarding BFR or BFS.

6.2. Participation and process legitimacy

This section has two parts, the first part is about BFF, while the second regards the three remaining components (BFR, BFS and BFA). The discussion tends to categorise participation and legitimacy of the processes of implementing BFP.

A concern has been raised regarding the degree to which the process of implementing Bolsa Floresta integrated the traditional populations of Amazonas. It is believed to be characterised as having been pursued with little or no participation from civil society (Queiroz, 2009). Representatives of civil society protested against the absence of civil society participation in the development of the state policy for climate change, environmental conservation and sustainable development, which motivates REDD+ projects and creates the mechanism for payment for environmental services, regarding Bolsa Floresta.

The State of Amazonas, through FAS, conducted its efforts to combat deforestation by following a rather vertical approach. The creation of the protected areas was a top-down process, meaning that it was a decision taken from above and was implemented without any participation from the locals. The creation of the Bolsa Floresta was also top-down, but implementing it in the RDS was in some way less top-down. This is because when it comes to the issue of BFF the structure is top-down, but the people are free to decide (to say yes or no). The people have a free, prior and informed consent on the process of introducing BFF and joining the BFP; certainly the level of information and other aspects could be discussed.

The process of BFF evidences an element of the local's power that does not fit the ladder. It may seem like tokenism in many senses when it comes to this process, but there is some ultimate power given to the locals individually. The process, then, does not really fit in the ladder. The critique is on the process of establishing Bolsa Floresta and not the introduction of it in the RDS Rio Negro.

Based on the above, the implementation of BFP in the RDS could be placed in the 'informing' category (third level in Arnstein's Ladder), but it is inaccurate as participation at this level is restricted to tokenism¹⁹. During the introduction of BFP, the families were informed about their responsibilities and rights, and even though the flow of information was only one-way (from FAS to the people) leaving no chance for feedback, the locals could decide if they would join or not, so there is more power given to the people.

As seen from the findings, most of the disagreements that came from the way BFP started in the RDS relate to the compensation received by each family individually from the BFF component. There is an on-going discussion in the RDS about how much the payment from BFF should be, and what effects an increase might have in terms of both equity and efficiency of Bolsa Floresta. Not surprisingly, the evaluations from both sides concurred on the fact that the main conflict resulting from the implementation was related to the amount of money given from BFF and the wood extraction activities; mostly evidenced in the Polo 3.

Even though the people have signed and committed to BFP, they still feel like they are losing (especially the wood extractors), so they break the rules; more specifically in Acajatuba (Polo 3), the area of the RDS from where the most amount of wood is being extracted (legally and illegally).

Having signed the agreement, the people now receive the money from BFF and the support from FAS to develop social and income generation projects, but they still break the rules and extract more wood than the allowed quota.

The problem for the people is the illegal logging and that they tend to feel that they don't get compensated enough, but they don't voice the compensation issue, rather they argue about the transportation costs to get the money from BFF²⁰. This explanation has more against it than it actually contributes to the discussion. Apparently the people are not presenting real

¹⁹ Understood as the practice of making a symbolic effort to do a particular thing.

²⁰ See section 5.3.2.1. Page 53

facts because either they are breaking the law extracting more wood than the allowed amount (and of course do not want to say they are doing it), or because they do not have knowledge of the concept of 'opportunity costs' to explain the real situation.

The question is why the people would oppose to receiving benefits "for free"; as they get support only for having the children in school. Especially when looking at the figures, where 15% of the interviewees thinks that BFP is bad or very bad and a large group (41%) are indifferent; making the sum of negative and indifferent 56% in a situation where they are receiving money "for free".

The situation, however, requires a deeper understanding of what it means in terms of legitimacy, for that purpose the process will be discussed using Scharpf's (1999) bidimensional concept of legitimacy.

On the 'input' side, it is clear that legitimacy was not achieved. The population of the RDS were not involved in the establishment of the programme. No deliberation was guaranteed and - as argued before - participation was limited; meaning that not all the involved parts could influence the process according to their interests or needs. Therefore, the first dimension of legitimacy was not met in the process of implementing Bolsa Floresta.

Once trying to analyse the situation in the 'output' side the complexity increases. The 'objective' component is uncertain, as it has not yet been established if the outcomes of the implementation of the programme succeeded effectively in solving social problems, especially if the issue is related to the fact that there is an on-going conflict with BFF and the illegal wood extraction. On the 'subjective' component, though, the scenario seems to be quite different, as the people are mostly satisfied with the outcome of the process.

Regarding the processes related to BFA, BFR and BFS. The situation is very different and not as complicated. Participation is more likely to be in the sixth level of the ladder (partnership). Meaning that in the way participation is held in these processes allows interaction, mainly through negotiations. The definition of the investments of either BFR or BFS depends on a procedure in which the community establishes their priorities and interests, and chooses which projects to invest in, then meets with FAS and through negotiation the investments are defined.

Input legitimacy in BFA, BFR and BFS is guaranteed through the deliberation in a participatory process. Normally, the decisions made by FAS and the communities integrate

the opinions of the people. The level of satisfaction from the people is increased as all the members of the community have the opportunity to speak and be heard, and to influence the outcomes of the decision.

Output legitimacy on the 'objective' side was achieved by integrating the people's preferences into the establishment of new organisations and institutions. Even though sometimes (like in the case of aviculture and other BFR projects), the outcomes were not the desired in terms of economic income, most of the time they ended being an important resource for the community, contributing the 'subjective' part of the outcome legitimacy, as the content of the outcome satisfies the people.

The situation, then takes the discussion into a topic somewhat out of the thesis' aim. It is important to question the overall situation of REDD+ if the people continue to cut the forests illegally. What is happening with the monitoring mechanisms and the responsibilities of the involved authorities and actors? Clearly, if this continues, the emissions on deforestation and degradation would not be reduced and the programme would be severely questioned.

7. Conclusions and summary of the findings

The actors that were involved in the process of introducing Bolsa Floresta in the RDS Rio Negro, were mostly FAS and the members of the communities. The process was initiated when FAS approached and engaged with the people of the RDS to ask if they wanted to join or not BFP. This was done mostly through workshops and meetings organised and sponsored by FAS. During these gatherings, FAS' explained the programme and importance of programme to the communities. Discussion was permitted, however, feedback from the people and/or modifying the contents of the programme were not allowed.

For the BFF component, each family had to commit individually in order to receive a direct payment of R\$ 50 per month. Those willing to commit to the programme signed the agreement and were registered. Days after they received their registration certificate and a membership bank card to receive the benefit for BFF. The agreement in which the families and FAS committed was done as a package; it also states FAS' obligation to distribute the benefits regarding BFR, BRS and BFA.

The introduction of BFP also came with the creation of an organisation (as the main objective of the BFA component), shaping the communities' mores regarding participation and social control through the introduction of new 'institutions as norms'.

The findings showed that the introduction of Bolsa Floresta in the RDS Rio Negro created a new institution that was categorised as 'designed institutional change' and as an 'institution as rules', due to the intentional creation of the programme, its design and implementation, and the creation of a contractual relation between the executing part of the programme and the local families for the protection of the forest and the improvement of their livelihoods.

After the main process of introducing the programme in the RDS, additional changes in the existing institutions also took place. These changes were 'spontaneous' and related mainly with the changes in the behaviour and functioning of the community councils. Without planning, the spaces used for discussion of several topics regarding each community became a space in where the only topic discussed is related to the investments of BFR and BFS.

The introduction of BFP had several conflicts that were solved through workshops, meetings and discussions between FAS and the people. However, there is one unsolved conflict related to the amount of money given from BFF and the illegal wood extraction, especially in Polo 3.

Concerning the people's evaluation, 42% seem to be satisfied with the programme and the manner in which FAS has implemented it, 41% said to be 'indifferent' and 15% consider it 'bad' or 'very bad'. In general, the people felt they were properly involved. They were mostly satisfied with the way the process was done, even though there were constant references to the fact of not being able to give feedback to the executing organisation (FAS) during the implementation, especially in order to raise the amount of money given individually to each family in the BFF component.

Participation was carried out through workshops and meetings organised by FAS to provide information and register the population in the programme. However, participation was limited to the decision whether to join or not to join the programme. It was established that the process of introducing BFP does not really fit Arnstein's ladder. Although it has elements of tokenism and more specifically at the 'informing' level (third level on the ladder), it was the people who ultimately had the power to decide whether or not to join BFP, showing elements of 'citizen power'.

According to the people, a disagreement on the amount of cash provided by BFF came as an outcome of the process, mostly because the families considered it extremely low and they did not have the opportunity to negotiate or discuss the amount before the programme was implemented.

The legitimacy of the process, on the 'input' was not achieved, as the locals were not involved in the creation of the programme. On the 'output' side of legitimacy, it is not clear if the outcomes have succeeded in solving social problems; however, the people seem to be mostly satisfied with the process. The people emphasised that participation was done in a good way, mostly because FAS provided clear and sufficient information regarding the implementation and content of BFP. This fact (the people argued) made the decision-making process better and easier for the families.

Even though there were several conflicts, the people in the RDS identify mostly one on-going conflict related to the amount given from BFF (that they consider extremely low) and the fact that some of the families in the RDS exceed the limits on wood extraction. They explained the existing conflict as a resulting effect of the implementation process.

On the other side, the implementing organisations' evaluation evidenced great satisfaction with the implementation, development and outcomes of Bolsa Floresta. It was emphasised

that the programme has created a real and positive impact in the RDS. Through BFR and BFS, the communities are receiving the required support for starting projects to improve the livelihoods of the Rio Negro reserve.

FAS and the government organisations evaluate the engagement between the involved actors as very good. They also emphasise that the creation of the ACS Rio Negro has contributed to making participation from the bottom much easier and accessible for all the members of the RDS. Creating a much larger impact on the way people are engaging and the level of commitment to the BFP.

Regarding the conflicts appearing during the implementation of BFP, FAS' representatives explain that the conflict related with the illegal wood extraction and the people's discontent with the amount received from BFP has no case. On one side, because the limits for the extraction of wood were set by the RDS' rules and not the BFP's; and on the other side, because BFP is only a way to contribute to the families and to make them understand that they need to look for other activities in order to obtain income.

There have been several attempts to solve the mentioned conflict; however, there is a group of wood extractors in the communities of the Polo 3 that refuse to obey the rules from both the RDS and the programme, and continue exceeding the established limits on logging activities. This conflict has been addressed by FAS through meetings to explain the reasons why the amount given by BFP is not intended to cover the costs of reducing the logging, but as contribution to the families for supplying their needs, but mostly as an incentive for them to seek other sources of income. The organisation (ACS Rio Negro) has also been useful in dealing with conflicts, as it provides a space in which the communities can discuss amongst the members and/or with FAS.

The approach used, based on theories of 'institutions and institutional change', 'participation' and 'process legitimacy' in order to classify the findings collected from a combination of both qualitative and quantitative research methods, demonstrated to be useful to fulfil the aim of this research.

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Appendixes

Appendix 1: Acordo de Compromisso



ACORDO DE COMPROMISSO N° 014522

Que faz, de um lado, a Fundação Amazonas Sustentável, pessoa jurídica de direito privado, com sede e foro na cidade de Manaus, inscrita no CNPJ sob o nº 09.351.359/0001-88, doravante designada simplesmente FAS; e de outro lado, _____, maior, de nacionalidade _____, portador(a) do RG _____, CPF: _____, Estado Civil _____, juntamente com seu cônjuge _____, portador(a) do RG _____ e do CPF _____ moradores na Comunidade _____, localizada à margem _____ do Rio _____ na Unidade de Conservação _____, doravante designados simplesmente FAMÍLIA, após participar da oficina promovida pela FAS, celebram entre si o presente acordo de compromisso.

É dever da FAS repassar os benefícios do programa Bolsa Floresta Familiar, Bolsa Floresta Associação, Bolsa Floresta Social e Bolsa Floresta Renda de acordo com as regras do Programa Bolsa Floresta estabelecidos pelo Conselho de Administração da FAS.

São deveres da FAMÍLIA:

- I- Cumprir as regras do Plano de Uso ou Plano de Gestão da Reserva;
- II- Estar associado e adimplente (em dia) com a mensalidade da Associação de Moradores da Comunidade e da Unidade de Conservação e participar ativamente de suas atividades;
- III- Manter as áreas de roças com tamanho não superior àquela do ano de início do Programa Bolsa Floresta na comunidade, cultivando apenas em áreas de capoeiras abertas ou em descanso e de manejo florestal, não avançando em áreas de mata bruta (primária);
- IV- Tendo filhos em idade escolar e escolas próximas da residência, mantê-los matriculados e freqüentando a escola;
- V- Fazer aceiro no entorno das áreas de roçados e comunicar a comunidade no dia da queima.

_____, de _____ de 20_____.

Assinatura do Representante da FAS: _____

Assinatura ou impressão digital da Família:

_____ Esposo

_____ Esposa

Declaração de moradia: Eu, _____, portador do RG _____ e CPF _____, na qualidade de líder da comunidade supracitada, declaro para os devidos fins que esta família, é moradora a mais de dois anos, nesta comunidade. Assinatura: _____.

Declaração do leitor (caso os membros da família não forem alfabetizados):
Eu, _____, portador do RG _____ e CPF _____, declaro para os devidos fins que procedi a leitura deste acordo à família supracitada. Assinatura: _____.