LEVERAGING PUBLIC PROGRAMMES WITH SOCIO-ECONOMIC AND DEVELOPMENT OBJECTIVES TO SUPPORT CONSERVATION AND RESTORATION OF ECOSYSTEMS: THE PRICE-SUPPORT POLICY FOR SOCIO-BIODIVERSITY DERIVED PRODUCTS AND THE GREEN GRANT PROGRAMME OF BRAZIL

Commissioned by the

Secretariat of the Convention on Biological Diversity
United Nations Environment Programme

Prepared by

João Paulo Viana
Planning and Research Specialist,
Institute of Applied Economic Research (IPEA), Brazil

Convention on
Biological Diversity

Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

Contents

Figures

Tables

ABBREVIATIONS AND ACRONYMS

ANVISA	National Sanitary Surveillance Agency *(Agência Nacional de Vigilância Sanitária)*
BSM	Brazil Without Extreme Poverty Plan *(Plano Brasil Sem Miséria)*
CadÚnico	Unified List of Social Programmes of the Federal Government *(Cadastro Único para Programas Sociais do Governo Federal)*
CBD	Convention on Biological Diversity
CCU	Contract of Concession of Use *(Contrato de Concessão de Uso)*
CEF	Caixa Econômica Federal (federal savings bank) *(Caixa Econômica Federal)*
CDRU	Concession of Real Right of Use *(Concessão de Direito Real de Uso)*
CNPJ	National Registration as a Legal Entity *(Cadastro Nacional de Pessoa Jurídica)*
CONAB	National Supply Company *(Companhia Nacional de Abastecimento)*
COP	Conference of the Parties to the CBD
CPF	Registration as a Natural Person *(Cadastro de Pessoa Física)*
DAP	Declaration of Eligibility for the National Programme for Strengthening of Family Agriculture *(Declaração de Aptidão ao Programa Nacional de Apoio à Agricultura Familiar)*
EMBRAPA	Brazilian Agricultural Research Company (state-owned) *(Empresa Brasileira de Pesquisa Agropecuária)*
FLONA	National Forest *(Floresta Nacional)*
FUNAI	National Indian Foundation *(Fundação Nacional do Índio)*
GGP (BV)	Green Grant Programme / *Environmental Conservation Support Programme* *(Programa Bolsa Verde / Programa de Apoio à Conservação Ambiental)*
GIZ	Gesellschaft für internationale Zusammenarbeit (German international cooperation agency)
IBAMA	Brazilian Institute of the Environment and Renewable Natural Resources *(Instituto Brasileiro de Meio Ambiente e Recursos Naturais Renováveis)*
IBGE	Brazilian Institute for Geography and Statistics *(Instituto Brasileiro de Geografia e Estatística)*
ICMBIO	Chico Mendes Institute for the Conservation of Biodiversity *(Instituto Chico Mendes para a Conservação da Biodiversidade)*
INCRA	National Institute for Settlement and Agrarian Reform *(Instituto Nacional de Colonização e Reforma Agrária)*
IPEA	Institute for Applied Economic Research *(Instituto de Pesquisa Econômica Aplicada)*
MAPA	Ministry of Agriculture, Animal Husbandry and Supply *(Ministério da Agricultura, Pecuária e Abastecimento)*
MDA	Ministry of Agrarian Development *(Ministério do Desenvolvimento Agrário)*
MDS	Ministry of Social Development and Fight against Hunger *(Ministério do Desenvolvimento Social e Combate à Fome)*

MMA	Ministry of the Environment *(Ministério do Meio Ambiente)*
PA	Settlement Project *(Projeto de Assentamento)*
PAA	Foodstuffs Acquisition Programme *(Programa de Aquisição de Alimentos)*
PAE	Agro-extractivist Settlement Project *(Projeto de Assentamento Agroextrativista)*
PAF	Forestry Settlement Project *(Projeto de Assentamento Florestal)*
PDA	Settlement Development Plan *(Plano de Desenvolvimento do Assentamento)*
PDS	Sustainable Development Project *(Projeto de Desenvolvimento Sustentável)*
PNGATI	National Policy on Territorial and Environmental Management of Indigenous Lands *(Política Nacional de Gestão Territorial e Ambiental de Terras Indígenas)*
PNPCT	National Policy on the Sustainable Development of Traditional Peoples and Communities *(Política Nacional de Desenvolvimento Sustentável dos Povos e Comunidades Tradicionais)*
PNPSB	National Plan for Promoting Socio-Biodiversity Product Chains *(Plano Nacional de Promoção das Cadeias de Produtos da Sociobiodiversidade)*
PRA	Settlement Recovery Plan *(Plano de Recuperação do Assentamento)*
PRONAF	National Programme for Strengthening of Family Farming *(Programa Nacional de Apoio à Agricultura Familiar)*
PSPBIO *(PGPMBIO)*	Price-Support Policy for Socio-Biodiversity Derived Products *(Política de Garantia de Preços Mínimos para Produtos da Sociobiodiversidade)*
RDS	Sustainable Development Reserve *(Reserva de Desenvolvimento Sustentável)*
RESEX	Extractive Reserve *(Reserva Extrativista)*
SAF	Office of Family Farming *(Secretaria de Agricultura Familiar)*
SBF	Brazilian Forestry Service *(Serviço Florestal Brasileiro)*
SIPAM	System of Protection of the Amazon *(Sistema de Proteção da Amazônia)*
SNUC	National System of Conservation Units *(Sistema Nacional de Unidades de Conservação)*
SPU	Office of Federal Assets *(Secretaria do Patrimônio da União)*
TAP	Terms of Adherence to the Programme *(Termo de Adesão ao Programa)*
TAUS	Sustainable Usufruct Authorization *(Termo de Autorização de Uso Sustentável)*

Foreword

The Strategic Plan for Biodiversity 2011-2020 recognizes that biodiversity underpins ecosystem functioning and the provision of services that are essential for human well-being. The fourth Global Biodiversity Outlook reports that biodiversity is still being lost and degraded at alarming rates. This loss threatens development and poverty eradication gains.

The conservation of biodiversity on its own is no longer a sufficient method; actions for restoring degraded ecosystems need to be strengthened and scaled up to maintain biodiversity and the human systems that depend on it.

Some countries have developed public programmes with socio-economic and development objectives that invest in large-scale ecosystems conservation and restoration. These programmes offer individuals employment for a number of days each year (employment guarantee schemes) or ongoing employment, as required, on a large scale during times of crisis or stress (short-term employment programmes). These programmes utilize labour-intensive approaches for both development needs and ecosystem conservation and restoration goals.

The Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) adopted at its eleventh meeting decision XI/16 to promote ecosystem restoration in an integrated manner, building on existing relevant past COP decisions and existing programmes of work, including activities such as addressing causes of ecosystem degradation or fragmentation, and identifying opportunities to link poverty eradication and ecosystem restoration and giving due attention to the rehabilitation of degraded ecosystems in order to restore critical ecosystem functions and the delivery of benefits to people.

By 2020, the Strategic Plan for Biodiversity calls for the rate of loss of all natural habitats, including forests, to be at least halved and where feasible brought close to zero, and degradation and fragmentation to be significantly reduced (Aichi Biodiversity Target 5) and for ecosystem resilience and the contribution of biodiversity to carbon stocks to be enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification (Aichi Biodiversity Target 15).

In this context, the Secretariat of the CBD commissioned this study, with the generous financial contributions from the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, on the potential of public programmes with socio-economic and development objectives to contribute to large-scale biodiversity conservation and ecosystem restoration, and how biodiversity conservation and ecosystem restoration can contribute to poverty alleviation and development.

The objective of the study is to provide best practices and lessons learned to assist countries to understand the potential of public programmes with socio-economic and development objectives to contribute simultaneously to poverty alleviation and development and large-scale biodiversity conservation and ecosystem restoration goals.

The study elaborates on how the of the Government of Brazil developed and designed two large-scale environmental restoration and conservation programmes, the Price-Support Policy for Socio-Biodiversity Derived Products and the Green Grant Programme, including the criteria for success, the enabling factors, and the key principles that can be replicated.

Braulio Ferreira de Souza Dias
Executive Secretary
Convention on Biological Diversity

1. INTRODUCTION

Recent years have seen important progress in biodiversity conservation. There has been, for example, a significant increase in terrestrial and marine protected areas. Brazil stands out in this regard, having been responsible for the creation of 74 per cent of all protected areas in the world from 2003 to 2008 (Jenkins and Joppa, 2009). Brazil's fourth national report to the Convention on Biological Diversity (Brazil, 2010a) presents additional information on the country's contributions to biodiversity conservation.

However, worldwide losses and degradation of biodiversity, as well as the scope of the threats, continue at significant rates (CBD, 2010). The loss of biodiversity and the associated environmental services threaten the development and gains in poverty reduction, for the natural infrastructure upon which many economies depend continues to be eroded. The increasing efforts focusing on conservation and sustainable use of biodiversity must be accompanied by the strengthening and dissemination of actions on behalf of the restoration of degraded ecosystems.

The Strategic Biodiversity Plan for Biodiversity 2011-2020 highlights the need to restore degraded ecosystems in order to increase their resiliency. The restoration of degraded ecosystems has many benefits, including mitigation and adaptation to climate change and supporting the struggle against desertification (CBD, 2010). Ecosystem restoration contributes to protecting and conserving biodiversity as well as the economic gains and development associated with its sustainable use, especially for communities that depend on resource extraction.

Many countries, including Brazil, recognize this and invest in programmes, particularly government programmes with socio-economic and development objectives, that seek the conservation and restoration of ecosystems. Often, the focus of such programmes is on poverty reduction and the protection of the poor against localized or chronic shocks, such as natural disasters or unemployment. The reduction of chronic poverty is the primary objective of such programmes, but many programmes also bring improved infrastructure and social or natural capital (OECD, no date). Such programmes with social and development objectives may, therefore, offer opportunities for the conservation and restoration of ecosystems on a scale that might be sufficient to help interrupt, or even reverse, biodiversity loss.

This document presents two promising government policies implemented in Brazil to support biodiversity conservation and restoration on a relevant scale, with positive impacts on both natural capital and the quality of life of beneficiaries.[1] One is a price-support policy that guarantees a minimum price to eligible applicants for specified products: the Price-Support Policy for Socio-Biodiversity Derived Products. The other is a programme that provides quarterly grants to eligible rural families under certain conditions, commonly known as the *Bolsa Verde* or Green Grant Programme.

It is important to point out that proving positive impacts of such policies on natural capital is difficult because programmes rarely have monitoring systems appropriate for this purpose. Furthermore, monitoring systems imply additional expenditures, and normally such programmes compete for budget with others which generally are given greater priority. The Price-Support

[1] The present document expands upon a previous evaluation of these two Brazilian government policies by Viana (2013). Support for translation was provided through the Secretariat of the CBD.

Policy for Socio-Biodiversity Derived Products and the Green Grant Programme both target Brazilian population groups that depend largely upon the use of non-timber forest products (e.g., fruits, seeds, fibres and other plant parts) for their livelihoods (henceforth they will be referred to as *extractivists*).

2. STRUCTURING POLICIES FOR EXTRACTIVE PRODUCTS AND THE EXTRACTIVISTS

Extraction of timber and non-timber forest products is intertwined with the process of colonization and conquest of what is now the Brazilian territory, in which various economic cycles associated with such products have succeeded one another. Relatively recent historical cycles occurred with the exploitation of latex, with a first boom in the late nineteenth and early twentieth centuries; it terminated with the bankruptcy of the Amazon rubber estates (*seringais*) due to cheaper production from Malaysian plantations, developed from contraband plants from Brazil. A second boom occurred in the Amazon during World War II, when the Japanese invasion of the producing regions of Asia cut off the supply flows of natural rubber to the Allies, which included Brazil. The so-called "rubber soldiers" were relocated from the Brazilian Northeast to the Amazon to collaborate with the Allied war effort and, for some time, Brazil again became an important latex supplier (Neves, 2001; Ferreira and Salati, 2005; Prates and Bacha, 2011; Barata, 2012).

Extraction of non-timber forest products persists today. It is associated with a diffuse informal economy practiced especially, but not exclusively, by a variety of communities in remote corners of the country. What these groups have in common, in addition to their strong dependency on products extracted from nature, are the facts that they are poor or extremely poor and that they suffer from the circumstances associated with such a condition.

Even though extraction of non-timber forest products (henceforth, *extractivism*) does not represent as large a share of the national economy[2] as in the past, production derived from it has been identified as a key component in the subsistence of producing groups. This activity frequently constitutes an important source of income, and is considered a key component of a strategy for the sustainable use of natural resources (Anderson and Jardim, 1989; Balzon, 2006; Jesus and Gomes, 2012; Magalhães, 2011; Silva, Fantini and Shanley, 2011). In 2011, extraction of non-timber products generated BRL 935.8 million (US$ 558.7 million, at the average exchange rate in 2011) (IBGE, 2012). In recent years, various policies have been established by the federal government in support of this economic activity

The 1980s saw the beginning of a relationship between extractivists, the environmental movement, and environmental public policy, marked by the struggle of the rubber tappers of the region of Xapuri, in Acre state, against the deforestation of areas traditionally utilized for rubber extraction. That conflict resulted in the murder of the leader of the rubber tappers, Chico Mendes. A little over a year after that crime, the first extractive reserve (the Alto Juruá Extractive Reserve or Alto Juruá RESEX) was created through Decree 98863, of 23 January 1990, and another decree established the legal framework for the creation of similar areas (Decree 98897, of 23 January 1990). The Chico Mendes RESEX was one of the three protected areas of this type created immediately afterwards, in March 1990.

[2] A synthesis of social and economic indicators for Brazil can be found at http://devdata.worldbank.org/AAG/bra_aag.pdf.

With the establishment of Brazil's National System of Protected Areas via Law no. 9985, of 18 July 2000, the extractive reserves (RESEX), like other sustainable use protected areas (i.e., those permitting local populations to remain within the protected area and to use the natural resources) such as the Sustainable Development Reserves (RDS) and National Forests (FLONA), became part of the national strategy for nature conservation through specially protected areas.

Another important landmark that solidified the association between environmental policy and the extractivists was the institution of the National Policy for the Sustainable Development of Traditional Peoples and Communities[3] (PNPCT) (Decree 6040, of 7 February 2007). The aim of this policy is to promote the sustainable development of traditional peoples and communities. It focuses on the recognition, strengthening and guarantee of their territorial, social, environmental, economic and cultural rights, with a view to valuing their identity, forms of organization and institutions. The prevailing poverty in these groups and the specific needs of traditional peoples and communities placed the PNPCT under the Ministry of Social Development and Fight against Hunger (MDS) mandate.[4]

In this context of structuring public policy in support of extractivists, another important tie that has proven to be of strategic importance to the support of extractivist communities in recent years is related to family farming. Law 11326, of 24 July 2006, set the guidelines for the formulation of the National Policy on Family Farming and Rural Family Enterprises.[5] The benefits are extended to the extractivists provided they use mainly the manpower of the family in the economic activities of the rural establishment or enterprise, have a minimum percentage of the family income originating in the economic activities practiced there, and manage the establishment or enterprise with the participation of the family. Law 11326 further established that indigenous peoples and members of communities descending from rural *quilombos* (remnants of runaway slave settlements) and other traditional peoples and communities meeting those same conditions may also have access to the benefits of the National Policy on Family Farming and Rural Family Enterprises.

One sees here a convergence of governmental institutions linked to issues related to extractivism and extractivists, with the Ministry of the Environment (MMA) focusing on the dwellers and natural resource users of sustainable use protected areas, the Ministry of Social Development and Fight against Hunger (MDS) on traditional peoples and communities, and the Ministry of Agrarian Development (MDA) on family farmers (Figure 1).

---

[3] The traditional peoples and communities consist of a variety of Brazilian societal groups, including indigenous peoples, *quilombolas* (remnants of runaway slave communities), gypsies (Roma), mangaba fruit gatherers, babassu coconut breakers (largely constituted by women), members of *terreiros* (places where Afro-Brazilian religions, such as *macumba* and *candomblé*, are practiced), inhabitants of the *Pantanal* (a wetland ecosystem shared by Brazil and Paraguay), *caiçaras* (descendants of Portuguese settlers and Amerindians that inhabit small villages along the seacoast), extractivists, Pomeranians, herdsmen of the Araguaia river, and back-pasture communities (IPEA, 2012).

[4] This linkage had already been established in 2004, at the time of the creation of the National Commission on the Sustainable Development of Traditional Communities, now called the National Commission on the Sustainable Development of Traditional Peoples and Communities, which is presided over by the Ministry of Social Development and Fight against Hunger (MDS), with the Ministry of the Environment (MMA) responsible for the executive secretariat.

[5] The objective of the National Policy on Family Farming and Rural Family Enterprises is to promote the planning and execution of actions in many areas, including credit, infrastructure and services, technical assistance and rural extension, research, commercialization, insurance, housing, as well as sanitary, pension, commercial and tax regulations.

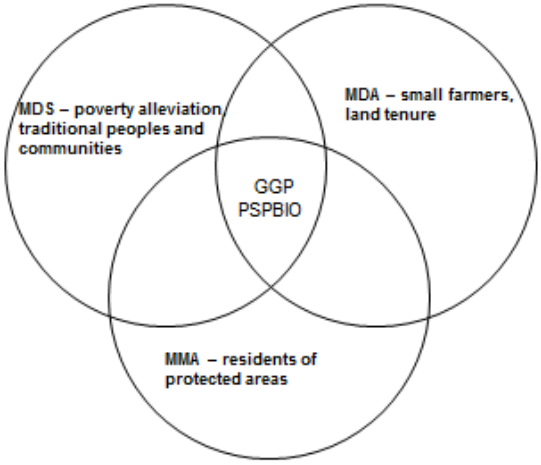

Figure 1. Responsibilities and linkages among the MMA, MDS and MDA in the implementation of the Price-Support Policy for Socio-Biodiversity Derived Products and the Green Grant Programme.

MMA=Ministry of the Environment, MDS=Ministry of Social Development and Fight against Hunger, MDA=Ministry of Agrarian Development.

Through inter-institutional linkages, and in accordance with their respective mandates, these three ministries and the institutions tied to them, along with a range of non-governmental partners and partners from the three levels of government, are implementing the Price-support Policy for Socio-Biodiversity Derived Products and the Environmental Conservation Support Programme, better known as the Green Grant Programme.

3. THE PRICE-SUPPORT POLICY FOR SOCIO-BIODIVERSITY DERIVED PRODUCTS

Brazil's Price-Support Policy for Biodiversity Derived Products aims to reduce income variations for extractivists and to support the valorization of their products. In exchange, the extractivists, by using their traditional, reduced impact exploitation techniques, contribute to the conservation and sustainable use of biodiversity.

The policy is part of the National Plan for Promotion of Socio-Biodiversity Product Chains (PNPSB), which aims to structure sustainable production chains, supporting initiatives that value the knowledge of traditional peoples and communities. A variety of agencies participate in the National Plan execution, including state governments, the Office of the Presidential Chief of Staff, the National Agency for Surveillance and Sanitary Inspection (ANVISA), the Brazilian Forestry Service (SFB), the Chico Mendes Institute for Biodiversity Conservation (ICMBIO), the National Institute for Settlement and Agrarian Reform (INCRA), the German international cooperation agency (GIZ), the Brazilian Agricultural Research Company (EMBRAPA), corporations, development agencies and organized civil society. Actions anticipated in the plan include technical advising, training and support for social organization, access to credit, development of infrastructure for production, marketing and inclusion of extractive products in the market (Brazil, 2009; Campos and Santos, 2009; Guimarães, 2013).

The implementation of the Price-Support Policy for Biodiversity Derived Products (PSPBIO)[6] is the responsibility of Brazil's National Supply Company, CONAB,[7] which sets a minimum price for selected products and operationalizes the payment of the benefit, in the form of a subsidy, as determined by Law 1175 of 27 September 2008. This law provides for payment of the difference between the minimum price set by the government and the sale price of the extractive products. Access to the benefit may be direct or through associations or cooperatives (CONAB, 2014).

For direct access to the PSPBIO subsidy, the extractivist must fill out a registration form and present the following documents: i) a copy of the Registration as a Natural Person (CPF);[8] ii) a copy of the National Programme for Strengthening of Family Farming (PRONAF) Eligibility Declaration (known as DAP);[9] iii) a copy of the purchase or entry invoice issued by the acquirer or copy of the invoice issued by the cooperative of which he or she is a member; and iv) banking data (chequing account or request for a money order from the *Banco do Brasil*, if the extractivist does not have a chequing account) (CONAB, 2014).

For access through associations or cooperatives, the association or cooperative must also fill out a registration form and present the following documents: i) a copy of the National Registration as a Legal Entity (CNPJ);[10] ii) the by-laws and minutes of the election or taking of office of the current directorate of the body; iii) a notarized copy of the minutes of the assembly declaring that a majority of the members of the association or cooperative are aware of the rules of the PSPBIO and the form of operationalization of the payment of the subsidy by the body; iv) certificates of regular payment by the body of its labour, fiscal and social security obligations; v) a list of beneficiaries, identifying each person and the products, quantities, prices of sale and amount of the subsidy to which they are entitled; vi) a copy of the DAP of the association or cooperative; vii) a copy of the invoice of purchase or entry issued by the acquirer; and viii) banking data of the body (CONAB, 2014).

The year 2009 marked the start of the payment of subsidies; below are presented the results from the 2009-2013 period, based on information from the Office of Administration of Socio-Biodiversity Products at CONAB. The data were made available on spreadsheets, breaking down the operations of payment of subsidies by year and product. Each payment record had the following information: i) date; ii) state; iii) county; iv) subsidy paid;[11] v) product quantity; and vi) number of extractivists benefited. In addition, semi-structured interviews were conducted with members of extractive producer groups, who were asked about their level of knowledge about the price-support policy and how to access its benefits. Table 1 summarizes overall trends.

---

[6] The present document uses the English-language acronym for the price-support policy (PSPBIO), rather than the Portuguese equivalent, PGPMBIO (*Política de Garantia de Preços Mínimos para Produtos da Sociobiodiversidade*); similarly, "GGP" is used for the Green Grant Programme (*Programa Bolsa Verde*) described in section 4.

[7] CONAB *(Companhia Nacional de Abastecimento)* is a public corporation tied to the Ministry of Agriculture, Animal Husbandry and Supply (MAPA). It is responsible for managing agricultural and supply policy. Among others, its goals are to i) guarantee minimum prices and warehousing for the storage and conservation of agricultural products, ii) form buffer stocks, and iii) meet nutritional needs in unaided areas or those not sufficiently served by private initiatives.

[8] The CPF (*Cadastro de Pessoa Física*) provides a single nationwide individual taxpayer identification number.

[9] The DAP (*Declaração de Aptidão ao Programa Nacional de Apoio à Agricultura Familiar*) was created by the Office of Family Farming (SAF) of the Ministry of Agrarian Development (MDA). It serves as an identifier for family farmers or their organizations and is required in order to access governmental family farming support programmes. The DAP is issued by a body authorized by the MDA.

[10] The CNPJ (*Cadastro Nacional de Pessoa Jurídica*) provides a single nationwide corporate taxpayer identification number.

[11] The amount paid was converted into dollars at the average commercial exchange rate in the corresponding year, based on data from the Central Bank of Brazil and available at http://ipeadata.gov.br.

Table 1. Synthesis of subsidy payment operations by CONAB via the Price-Support Policy for Socio-Biodiversity Derived Products (2009-2013)

	2009	2010	2011	2012	2013
Amount operationalized (thousand US$)	535	1,566	1,131	2,510	2,575
Production (t)	945	3,368	2,664	10,241	9,892
Number of extractivists benefited	3,508	16,365	5,753	10,944	12,495
Number of products supported by the PSPBIO	7	8	11	11	14
Number of products with operationalized subsidies	3	4	4	5	5
Number of payment operations	92	232	101	147	200
Number of states benefited	7	7	9	7	6
Number of counties benefited	35	38	32	36	57

Within the period under consideration, the largest number of subsidy payment operations, and of extractivists benefited, occurred in 2010, when over 16,000 extractivists were paid. The greatest amount (value) of subsidies paid occurred in 2013, equivalent to nearly US$ 2.6 million.

Over the years, the number of products supported by PSPBIO has increased, reaching 14 in 2013. The seven products initially supported were assai or açaí fruit, babassu seeds or almonds, natural rubber, Brazil nut in the shell, souari nut (pequi), piassaba fibre, and type B carnauba palm powder. In 2010, carnauba palm type 4 wax was included in the list; and in 2011, three more products were added: the fruits of *Dipteryx alata* (*baru*), *Hancornia speciosa* (*mangaba*) and *Spondias tuberosa* (*umbu*). Finally, in 2013 crabwood seeds, cocoa beans and cabbage palm fruit joined the list of socio-biodiversity products subsidized under the policy. Additional information on products supported under the policy is presented in Annex 1; products under study for possible inclusion are presented in Annex 2.

During the period under consideration, in any given year only three to five of the products covered under the policy had actual demand for payment operations. Almost 40% of the amount paid in subsidies was for piassaba fibre; this was followed by babassu seed and rubber, then Brazil nut, assai, and souari nut or pequi (Table 2).

The price-support policy reached nine states in 2011, and the number of counties benefited oscillated between 32 and 57. Over the five-year period, 84 counties in 11 states were reached overall, almost all in Brazil's North and Northeast regions (Figure 2).[12] In general, the quantity of production subsidized and the number of extractivists benefited by the PSPBIO tended to increase over time (Table 1).

[12] Of the 84 counties reached overall, 42 were in the Northeast (of which 34 were in Maranhão and 4 in Bahia) and 40 were in the North (of which 16 were in Amazonas, 12 in Acre and 7 in Pará).

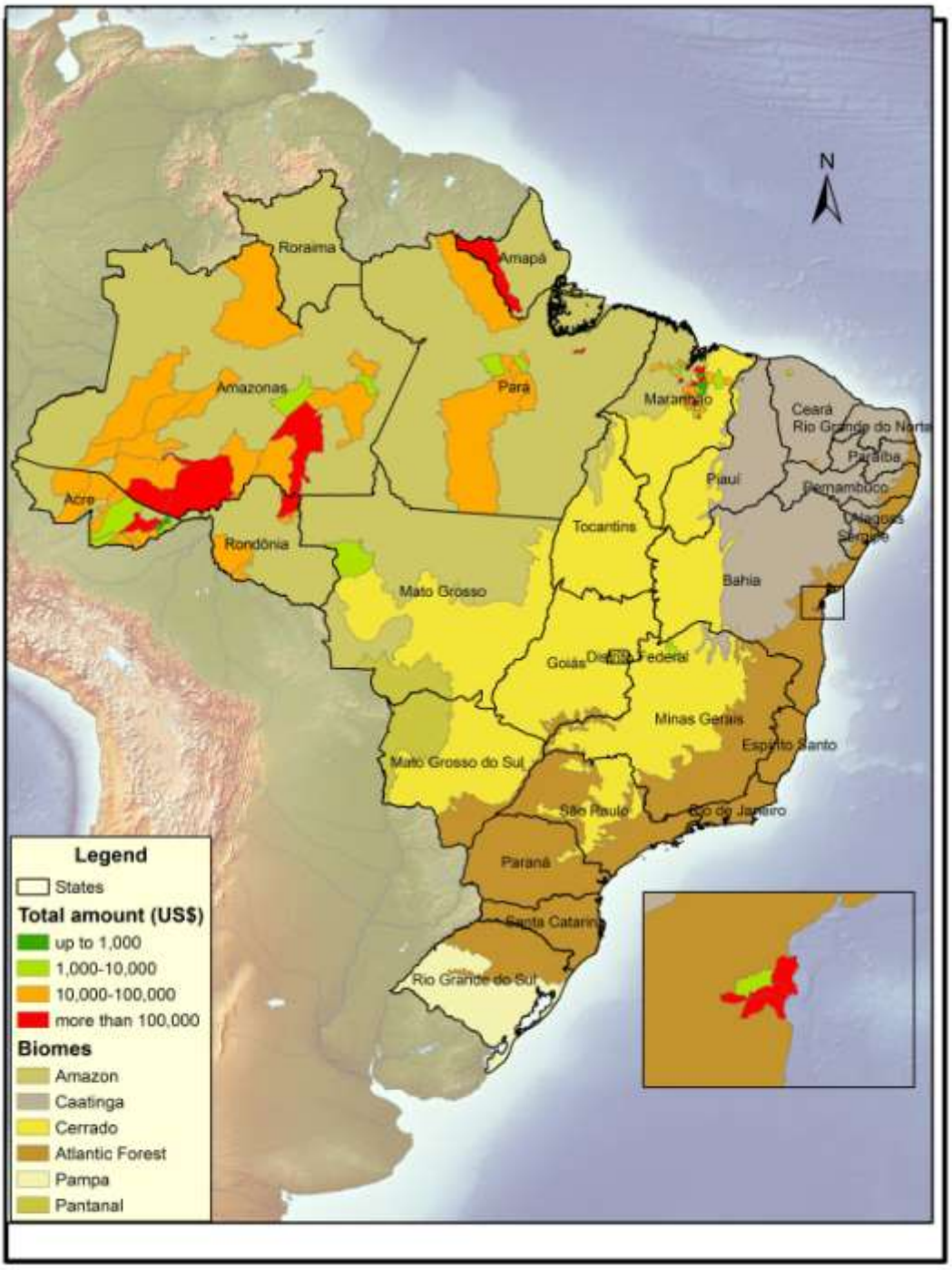

Figure 2. Total amount of subsidies in the 84 counties supported by the Price-Support Policy for Socio-Biodiversity Derived Products in 2009-2013.

Note: The background layer for map figures uses Natural Earth data (www.naturalearthdata.com).

Table 2. Subsidies operationalized by CONAB via the Price-Support Policy for Socio-Biodiversity Derived Products, by product and state (2009-2013)

Piassaba fibre	2009 Quant. (t)	2009 Amount (US$)	2010 Quant. (t)	2010 Amount (US$)	2011 Quant. (t)	2011 Amount (US$)	2012 Quant. (t)	2012 Amount (US$)	2013 Quant. (t)	2013 Amount (US$)	Total 2009-2013 Quant. (t)	Total 2009-2013 Amount (US$)	%
Amazonas	0	0	0	0	0	0	0	0	136	27,765	**136**	**27,765**	*0.3*
Bahia	0	0	262	103,452	1,048	374,757	7,874	1,658,594	6,473	940,943	**15,658**	**3,077,745**	*37.2*
Subtotal	0	0	262	103,452	1,048	374,757	7,874	1,658,594	6,609	968,708	**15,794**	**3,105,511**	*37.5*

Babassu seed (almond)	2009 Quant. (t)	2009 Amount (US$)	2010 Quant. (t)	2010 Amount (US$)	2011 Quant. (t)	2011 Amount (US$)	2012 Quant. (t)	2012 Amount (US$)	2013 Quant. (t)	2013 Amount (US$)	Total 2009-2013 Quant. (t)	Total 2009-2013 Amount (US$)	%
Ceará	0	0	0	0	12	3,192	103	28,074	0	0	**115**	**31,266**	*0.4*
Maranhão	313	91,591	1,485	495,218	815	245,014	1,669	524,303	2,098	1,035,482	**6,381**	**2,391,609**	*28.9*
Piauí	0	0	0	0	3	597	0	0	0	0	**3**	**597**	*<0.1*
Subtotal	313	91,591	1,485	495,218	830	248,803	1,772	552,377	2,098	1,035,482	**6,498**	**2,423,472**	*29.3*

Rubber	2009 Quant. (t)	2009 Amount (US$)	2010 Quant. (t)	2010 Amount (US$)	2011 Quant. (t)	2011 Amount (US$)	2012 Quant. (t)	2012 Amount (US$)	2013 Quant. (t)	2013 Amount (US$)	Total 2009-2013 Quant. (t)	Total 2009-2013 Amount (US$)	%
Acre	143	153,722	271	254,974	105	84,837	45	49,972	181	202,856	**745**	**746,361**	*9.0*
Amazonas	266	211,365	309	319,738	451	260,015	336	109,159	238	155,484	**1,600**	**1,055,760**	*12.7*
Mato Grosso	5	3,882	0	0	0	0	0	0	0	0	**5**	**3,882**	*<0.1*
Pará	1	790	6	8,075	154	119,907	84	71,699	82	71,468	**327**	**271,939**	*3.3*
Rondônia	29	31,055	52	67,593	58	41,490	100	58,627	69	56,975	**307**	**255,740**	*3.1*
Subtotal	444	400,814	638	650,381	768	506,248	565	289,457	570	486,783	**2,985**	**2,333,681**	*28.2*

Brazil nut	2009 Quant. (t)	2009 Amount (US$)	2010 Quant. (t)	2010 Amount (US$)	2011 Quant. (t)	2011 Amount (US$)	2012 Quant. (t)	2012 Amount (US$)	2013 Quant. (t)	2013 Amount (US$)	Total 2009-2013 Quant. (t)	Total 2009-2013 Amount (US$)	%
Acre	14	1,249	0	0	0	0	0	0	0	131	**14**	**1,380**	*<0,1*
Amazonas	20	2,438	119	19,026	0	0	0	0	338	20,391	**477**	**41,855**	*0.5*
Amapá	95	26,211	761	283,146	0	0	0	0	0	0	**856**	**309,358**	*3.7*
Pará	59	12,549	73	10,405	0	0	0	0	0	0	**133**	**22,953**	*0.3*
Rondônia	0	0	30	4,246	0	0	0	0	0	0	**30**	**4,246**	*0.1*
Subtotal	188	42,448	983	316,823	0	0	0	0	339	20,522	**1,509**	**379,793**	*4.6*

Assai (fruit)	2009 Quant. (t)	2009 Amount (US$)	2010 Quant. (t)	2010 Amount (US$)	2011 Quant. (t)	2011 Amount (US$)	2012 Quant. (t)	2012 Amount (US$)	2013 Quant. (t)	2013 Amount (US$)	Total 2009-2013 Quant. (t)	Total 2009-2013 Amount (US$)	%
Acre	0	0	0	0	0	0	0	0	31	4,508	**31**	**4,508**	*0.1*
Amazonas	0	0	0	0	0	0	29	4,651	245	27,323	**274**	**31,974**	*0.4*
Subtotal	0	0	0	0	0	0	29	4,651	276	31,831	**305**	**36,482**	*0.5*

Souari nut (pequi)	2009 Quant. (t)	2009 Amount (US$)	2010 Quant. (t)	2010 Amount (US$)	2011 Quant. (t)	2011 Amount (US$)	2012 Quant. (t)	2012 Amount (US$)	2013 Quant. (t)	2013 Amount (US$)	Total 2009-2013 Quant. (t)	Total 2009-2013 Amount (US$)	%
Minas Gerais	0	0	0	0	18	1,590	0	0	0	0	**18**	**1,590**	*<0.1*
Subtotal	0	0	0	0	18	1,590	0	0	0	0	**18**	**1,590**	*<0.1*

Total	**945**	**534,852**	**3,368**	**1,565,874**	**2,664**	**1,131,397**	**10,241**	**2,509,730**	**9,892**	**2,575,157**	**27,109**	**8,280,528**	*100.0*

It should be pointed out that selection of the products to be supported under the policy was the result of studies and consultations conducted under the coordination of the Ministry of the Environment (MMA), while the definition of the minimum price was based on studies by CONAB, taking into consideration variable production costs, supported by field research and meetings with extractivists and technical personnel (Brazil, 2008; Brazil, 2009). Observing that the minimum prices of products covered by the PSPBIO are set on strictly economic grounds, Cerqueira and Gomes (2012) point out that provisions do exist for the inclusion of environmental costs for socio-biodiversity products. Environmental costs are those related directly or indirectly to the protection of the environment (Carvalho, Matos and Moraes, 2000); they may even be intangible, i.e., difficult to quantify (Moura, 2003). In 2011 CONAB initiated studies to include environmental costs in the calculation of minimum prices, but orientation from the economic area of the government put this initiative on hold.

The payment of subsidies has been mainly in counties located in the Amazon and Atlantic Rainforest biomes, with lesser amounts in the Cerrado and Caatinga biomes (Figure 2 and Figure 3). Two Brazilian biomes, the Pampa and the Pantanal, have yet to be reached by the policy. Payment of the subsidy is spatially concentrated, particularly for piassaba fibre, for which the payments were all made in just four counties, in the state of Bahia (Figure 2). In fact these four counties accounted for the full amount of the subsidies paid in the Atlantic Rainforest biome.

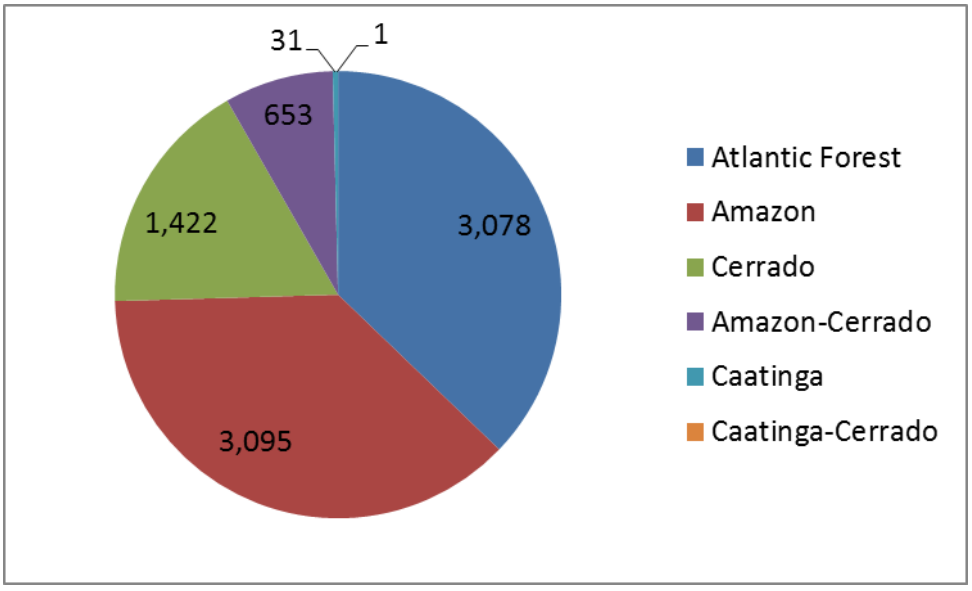

Figure 3. Total amount of the Price-Support Policy for Socio-Biodiversity Derived Products subsidy paid in different Brazilian biomes, 2009-2013 (thousand US$).

Note: Payment amount by biome was generated based on counties' allotment to biomes. In the case of counties containing more than one biome, these were allocated in a category corresponding to the intercepted biomes.

In the period under consideration, CONAB allocated approximately US$ 33 million for payment of subsidies (CONAB, 2010a, 2011). Yet only 25% of this (equivalent to US$ 8,280,528) was actually paid out as subsidies, and the payments involved just six of the fourteen products supported by the policy (Table 2). The low execution of the budget may be associated with various factors.

In the case of Brazil nut, there were no operations with this product in 2011 or 2012 because the market price was greater than the minimum price defined by the government.[13] This was also the case with assai; despite it being on the list of supported products since 2009, subsidy payments began only in 2012 because, in general, market prices were superior to the minimum price set by CONAB (CONAB, 2010b, 2012).

Interviews uncovered a perception on the part of the producers that the form of operationalization of the payment of subsidies is very bureaucratic. According to the interviewees, one important bottleneck is the need for the extractivist to have a PRONAF Eligibility Declaration or DAP. As previously stated, the DAP is issued by a body authorized by the Ministry of Agrarian Development (MDA), and serves to identify a family farmer for access to support programmes related to family farming. Similarly, an evaluation of another programme, the Foodstuffs Acquisition Programme (PAA)[14] identified – according to farmers, fishermen and extractivists – the difficulty in obtaining the DAP from the issuing bodies as the main limitation for accessing the programme (Cordeiro, 2007). According to extractivists interviewed in this study, the number of authorized bodies and the technical staff they have made available are insufficient to meet the demand for DAP issuance. See footnote below and Figure 4 for details regarding DAP coverage.[15]

Other potential bottlenecks in the operationalization of subsidy payments include the need to present an invoice of purchase or sale (depending on the operation) and the requirement that the extractivist possess personal documentation and a chequing account. Similar requirements apply to operations conducted by legal persons. Necessary as they may be to prove operations of commercialization and formalize the payment of subsidies, such requirements certainly are important obstacles for extractivists to access the policy, given their social condition and the informality of the trading of such products. One indication of the degree of informality is given by Carmélio (2010), who estimated that only half of extractive production is commercialized through channels that generate tax withholding.

---

[13] Information provided by the Office of Products of Socio-Biodiversity at CONAB.

[14] The aims of the Foodstuffs Acquisition Programme are to promote access to food on the part of populations in a situation of nutritional insecurity, and social and economic inclusion in the countryside, through strengthening of family farming (Brazil, 2010b).

[15] According to federal data, the DAP registry had 4.2 million valid records of family farmer establishments in 2012, with ca. 7 million persons with unique personal identifications (CPFs) enrolled. At the same time, the 2006 National Agricultural Census showed approximately 4.4 million family farmer establishments in the country (Brazil, 2012a). According to that source, 22 out of 27 Brazilian states had DAP coverage of 90% of all family farmers identified in the 2006 Agricultural Census.

Another way to evaluate DAP coverage would be to consider coverage as a percentage of the total population of each county (*município*), i.e., as number of DAPs issued for the county / county population, x 100 (the data on numbers of DAPs issued per county were made available by the MDA, and the county population is according to the 2010 National Population Census, IBGE). Such an alternative survey indicates generally lower DAP coverage (Figure 4). In practically all the counties of the Northern region of Brazil (broadly corresponding to the Amazon biome), which the results presented here show to be an important focus of the PSPBIO, only up to 7% of the county population has the DAP. Also, the highest percentage coverage was found in the semiarid region of Brazil's Northeast region, the north of the states of Minas Gerais and Rio Grande do Sul, and the west of Santa Catarina state, regions that do not correspond to those in which the PSPBIO is most present (compare Figures 2 and 4).

The conclusion, therefore, is that high coverage of DAPs for family farm establishments does not necessarily correspond to satisfactory coverage for extractivists.

It should also be pointed out that those extractivists who have already accessed the benefit probably represent only a small fraction of such producers. This may be inferred by comparing, for the three main PSPBIO-subsidized products, the total quantities produced versus the quantities subsidized (Table 3).

Table 3. Total production of piassaba fibre, babassu seed, and natural rubber in Brazil, and production subsidized under the PSPBIO (t and %), 2009-2012

	2009			2010			2011			2012		
	Total	PSPBIO	PSPBIO	Total	PSPBIO	PSPBIO	Total	PSPBIO	PSPBIO	Total	PSPBIO	PSPBIO
	thousand t		%	thousand t		%	thousand t		%	thousand t		%
Piassaba fibre	72.2	**-**	-	63.8	**0.3**	0.4	61.4	**1.0**	1.7	57.8	**7.9**	13.6
Babassu seed (almond)	109.3	**0.3**	0.3	106.1	**1.5**	1.4	102.5	**0.8**	0.8	97.8	**1.8**	1.8
Rubber	3.3	**0.4**	13.3	3.4	**0.6**	18.9	2.9	**0.8**	26.5	2.1	**0.6**	26.9

Sources: IBGE (2009), IBGE (2010), IBGE (2012), IBGE (2013), and CONAB.

Table 3 indicates that the subsidy benefited only a small fraction of Brazilian production of the three products in the years from 2009 to 2012. In the case of babassu almond, the percentage of production subsidized by the PSPBIO was less than 2%. For rubber, a larger share of total production was subsidized, reaching almost 27% in 2012.

The trend for all products from 2009 to 2012 was toward an increased percentage of total production being covered by the subsidy; piassaba fibre stands out in this regard, going from 0.4% subsidized in 2010 to 13.6% in 2012. However, increased coverage has been simultaneous with decreasing total production (Table 3). In the cases of piassaba fibre and babassu almond, the reduced demand for the products has been presented as an explanation for the declining production (IBGE, 2011; IBGE, 2013). For babassu, there is also the prohibition of extraction of the almond by landowners in the producing regions, and even the abandonment of the activity by the low income population, which has been responsible for extraction of the product (IBGE, 2011).

Thus, although the price-support policy does represent a quite appropriate strategy for leveraging ecosystem conservation and restoration via socio-economic and development policies, it still faces limitations that restrict its impact capacity. The policy still has room to grow as a productive inclusion policy for extractivists, one that can make a decisive contribution to poverty reduction and improved quality of life for these producers and to ecosystem conservation and restoration.

Figure 4. Coverage by the PRONAF Declaration of Eligibility or DAP by county.

4. THE ENVIRONMENTAL CONSERVATION SUPPORT PROGRAMME (GREEN GRANT PROGRAMME)

Brazil's Green Grant Programme (GGP) or Environmental Conservation Support Programme dates from 2011, and is thus of more recent origin than the price-support policy described above. The law establishing the programme (Law 12512, below) authorizes the transfer of funds and the provision of technical assistance services to families in a situation of extreme poverty engaged in natural resource conservation activities in the rural milieu. Thus the Green Grant Programme is partly but not exclusively a mechanism for payment for environmental services.

The Green Grant Programme is part of the Brazil without Extreme Poverty Plan, BSM (*Brasil Sem Miséria*). BSM was instituted by Decree 7492, of 2 June 2011, and has a priority target group the ca. 16.2 million Brazilians identified by the 2010 census as living in conditions of extreme poverty, with monthly incomes lower than BRL 70 (approximately US$ 32.40 at the average value of the dollar in 2013). BSM has three axes: i) guaranteed income; ii) access to public services; and iii) productive inclusion. The BSM Plan is coordinated by the Ministry of Social Development and Fight against Hunger (MDS), with the participation of the Office of the Presidential Chief of Staff and the General Secretariat of the Presidency of the Republic, as well as several ministries, including Finance; Planning, Budget and Management; Agrarian Development; National Integration; Environment; and Mines and Energy. It also has the participation of public banks and other federal organs and bodies, and partnerships with states and counties, the private sector and civil society organizations (Brazil, 2012a).

The Green Grant Programme (*Programa Bolsa Verde*) was instituted by Law 12512, of 14 October 2011, which assigned its implementation to the Ministry of the Environment (MMA). The focus is the population residing in rural areas. According to the 2010 Census, although rural areas account for only 15.6% of the Brazilian population, about half of the people in extreme poverty (47%) reside in such localities (Brazil, 2012b; Table 4).

Table 4. Regional distribution of the target group of the Brazil without Extreme Poverty Plan

Region	Total target population	%	Urban		Rural	
			Pop.	%	Pop.	%
North	2,658,452	17	1,158,501	44	1,499,951	56
Northeast	9,609,803	59	4,560,486	48	5,049,317	52
Southeast	2,725,532	17	2,144,624	79	580,908	21
South	715,961	4	437,346	61	278,615	39
Centre-west	557,449	3	372,888	67	184,561	33
Total	**16,267,197**	**100**	**8,673,845**	**53**	**7,593,352**	**47**

Source: 2010 IBGE Census (cited in Brazil, 2011).

Thus the Green Grant Programme targets communities in a situation of extreme poverty living in rural priority areas defined by the federal government. These include sustainable use protected areas (RESEX, RDS, FLONA), environmentally differentiated settlement projects (Agro-Extractivist Settlement Projects – PAE, Sustainable Development Projects – PDS, and Forestry Settlement Projects – PAF) (Brazil, 2012b), and others. Annex 3 provides a complete list and additional details for the types of rural priority areas supported by the programme.

Programme implementation began in June 2011, and the first payments were made in October of the same year. This section presents the dynamics of implementation from October 2011 to September 2013. The data utilized were obtained from the programme website.[16] In addition, interviews were held with the programme managers, who made available complementary information regarding the programme.

Between October 2011 and September 2013, the total amount disbursed by the Green Grant Programme was US$ 33,824,101, and the number of families served 44,388 (Table 5). Monthly summaries of payments made and beneficiaries added are provided in Table A.1 of Annex 4.

Most of the families benefited by the programme in the period were from rural settlements,[17] followed by families residing in sustainable use protected areas and, finally, *ribeirinho* families (i.e., families living in small villages or communities along the banks of rivers) (Table 5). In the case of rural settlements, those that belong to the "environmentally differentiated" group accounted for 17,134 families (40.4%) whereas "classic" group settlements corresponded to 9,422 families (21.2%) (Annex 3 provides additional information about the rural priority areas.)

Table 5. Number of Green Grant Programme beneficiary families by type of rural priority area (Oct. 2011 - Sept. 2013)

Type of rural priority area	Number of areas	Number of families	%	Total payments (US$)	%
Protected area	64	14,336	32.3	11,460,058	33.9
Rural settlement	731	27,324	61.6	21,044,536	62.2
Riverbank community occupancy	43 counties	2,420	5.5	1,042,350	3.1
No information	-	308	0.7	277,157	0.8
Total	838	44,388	100.0	33,824,101	100.0

[16] These data consist of monthly lists of payment of the benefit, which may be accessed at the following address: http://www.mma.gov.br/desenvolvimento-rural/bolsa-verde/fam%C3%ADlias-benefici%C3%A1rias. The lists provided, for each grantee, the following information: i) name; ii) social identification number (NIS); iii) county; iv) state; and v) amount received. The amounts received were converted into dollars in the same way as was described earlier for the price-support policy. Each beneficiary corresponds to one family. In addition to the payment lists, monthly listings of new beneficiaries added to the programme were also used. Such lists contain the following information: i) the body responsible for the enrolment; ii) the name of the rural priority area where the beneficiary resides; iii) the code of the rural priority area; iv) name of the beneficiary; v) state; vi) county; vii) old NIS (when it exists); viii) new NIS; and ix) date of inclusion in the programme.

[17] *Rural settlements* here designate areas destined by the government to settle landless family farmers. Rural settlements are a key component of the National Agrarian Reform Policy, which aims to reduce the concentration of land ownership within Brazil. There are two major groups of rural settlements: "classic" settlements (for family farmers) and "environmentally differentiated" settlements for family farmers who are extractivists – i.e. whose livelihoods largely depend on the exploitation of timber and non-timber products.

There has been a strong association between rural settlements and illegal deforestation. When it released a list of the 100 biggest deforesters in the Amazon, in 2008, the Ministry of the Environment put six settlements at the top of the list (Fatorelli and Mertens, 2010). More recently (2012), the Federal Prosecution Office singled out rural settlements as being responsible for one third of the deforestation in the region. This led to a commitment by the National Institute for Settlement and Agrarian Reform (INCRA) to reduce illegal deforestation of the areas under its responsibility by 80%, as well as adoption of measures for their environmental regularization.[18] The great participation of families from settlements in the Green Grant Programme suggests that environmental regularization of these areas is under way.

To be supported by the Green Grant Programme, the families are enrolled and selected by the Chico Mendes Institute for the Conservation of Biodiversity (ICMBIO), for families residing in sustainable use protected areas; by the National Institute for Settlement and Agrarian Reform (INCRA), for families from rural settlements, henceforth "settlers"; or by the Office of Federal Assets (SPU), for agro-extractivist riverbank communities or *ribeirinhos* (Brazil, 2012b). More details on the selection process and the operationalization of GGP are provided below.

Initially, the Green Grant Programme prioritized the Northern region of Brazil, where a greater concentration of federal environmental conservation areas and a larger eligible population were identified (MMA, 2012). This part of Brazil, as previously stated, broadly corresponds to the Amazon biome. The counties with the greatest number of beneficiary families, and which received the greatest volume of payments, are in this region, and particularly in the state of Pará (Figures 8, 9, and 10; end of section).[19] Beginning in May 2012, Green Grant spread into other regions and states, especially in the Northeast (Bahia state) and Southeast (Minas Gerais state) (Figure 5 and Figure 8).

The number of states and counties covered by the Green Grant Programme increased throughout the period under consideration, and after two years of execution, only three states had not yet been reached by the programme: Rio Grande do Norte, Santa Catarina and Rio Grande do Sul. It should, however, be pointed out that the presence of GGP is still incipient in several states. For example, in September 2013, there were fewer than twelve beneficiary families each in the states of São Paulo, Roraima, Ceará, Mato Grosso and Mato Grosso do Sul. Nineteen states totalled only 16.5% of the beneficiary families in September 2013 (Figure 5). After two years, 63.5% of payments went to Pará (US$ 21.5 million), followed by Amazonas (US$ 3.0 million or 8.9%), Bahia (US$ 2.3 million or 6.9%), and Minas Gerais and Acre ($ 1.3 million or 3.8% each). In September 2013, the Green Grant Programme was present in 730 of the 5,570 Brazilian counties (Figure 5).

[18] http://www.prpa.mpf.mp.br/news/2013/incra-se-compromete-a-reduzir-em-80-desmatamento-na-amazonia-legal

[19] Among the counties assisted by September 2013, those most benefited were all in the state of Pará: Santarém (4,155 families, US$ 3.7 million in payments), Bragança (2,432 families, US$ 2.6 million in payments) and Breves (1,697 families, US$ 1.6 million in payments). The state of Pará accounted for 83.4% of the families served when the programme was launched, but its relative share has diminished over time, and was 54.0% by September 2013.

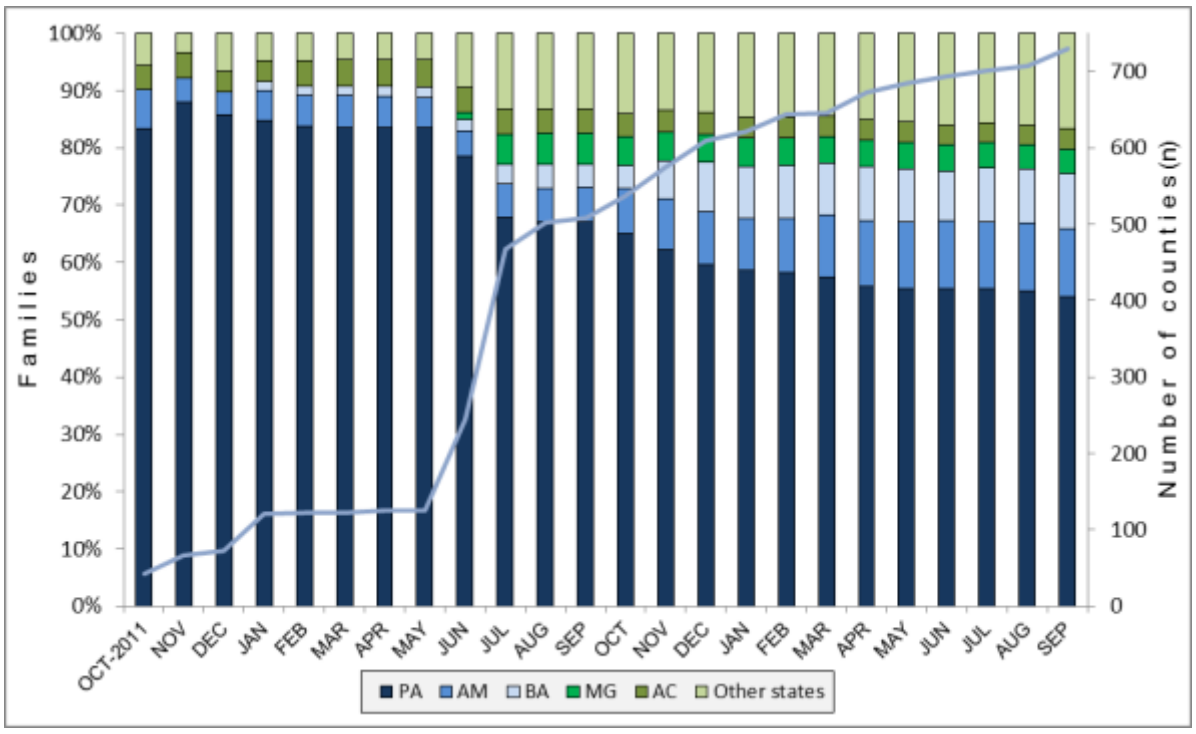

Figure 5. Participation of beneficiary families by state and number of counties served by the Green Grant Programme (Oct. 2011 to Sept. 2013).

States: PA = Pará, AM = Amazonas, BA = Bahia, MG = Minas Gerais, AC = Acre.

The large number of beneficiary families from Pará, in northern Brazil, is explained by the importance of that state as a focus of government activities related to the creation of sustainable use protected areas (RESEX, RDS and FLONA), environmentally differentiated rural settlements, and legalization of *ribeirinho* (riverbank) communities. Thus, the tendency for the largest number of beneficiaries to be located in Pará will probably persist. The proportion of beneficiary families from Amazonas may increase, because that state also has a major share of the activities that have received priority as sources of beneficiaries for the programme (see Table A.2 in Annex 4).

The large participation of northern Brazil, in particular the state of Pará, also indicates that the focus of the Green Grant Programme is the Amazon biome, which received US$ 27 million, or 80.3%, of the total amount of payments made in the first two years of execution (Figure 6). It is followed by the Cerrado biome (US$ 2.4 million, or 7.2%), then the Atlantic Rainforest biome (US$ 1.7 million, or 5.2%). Localities situated in transition areas between biomes were also benefited. As with the price-support policy described earlier, the Pantanal and Pampa biomes have yet to be reached by the Green Grant Programme.

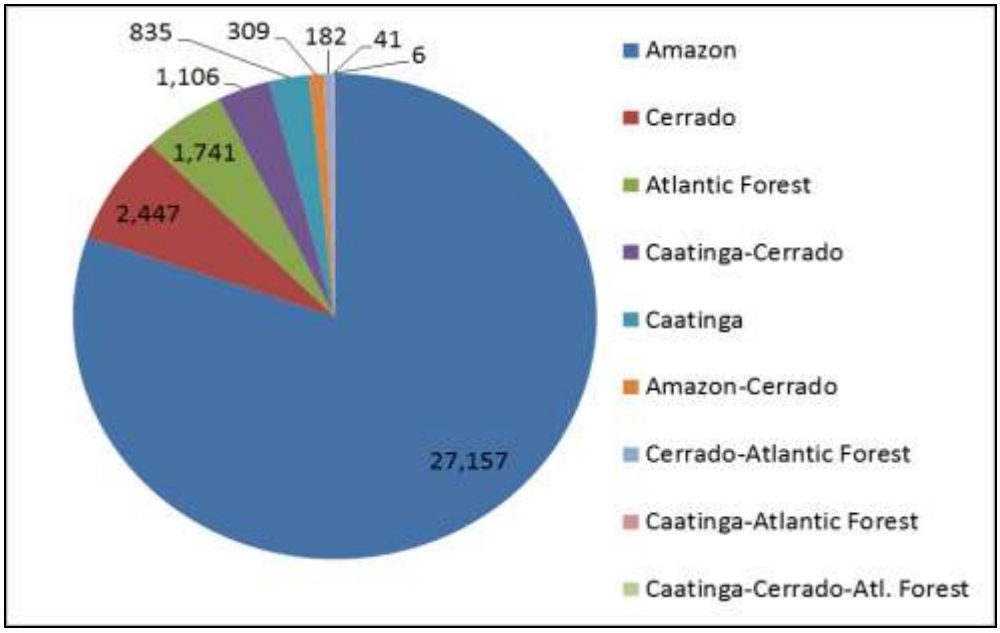

Figure 6. Total amount paid by the Green Grant Programme in the Brazilian biomes from Oct. 2011 to Sept. 2013 (thousand US$).

Note: Payment amount by biome was generated based on counties allotment to biomes. In the case of counties containing more than one biome, these were allocated in a category corresponding to the intercepted biomes.

Operationalization of the Green Grant Programme has involved close collaboration between the Ministry of the Environment (MMA) and the Ministry of Social Development and Fight against Hunger *(*MDS). Under the law, the families must be registered with CadÚnico, a database maintained by the MDS that contains information regarding underprivileged families. This makes it possible for the families to access federal social protection programmes. Besides this legal requirement, integration of the Green Grant Programme with the *Bolsa Família* programme is another aim of the implementation of GGP.

Bolsa Família (Portuguese for Family Grant) is a direct income transfer programme that benefits poor and extremely poor Brazilian families. Bolsa Família, like the Green Grant Programme, is part of the Brazil Without Extreme Poverty Plan (BSM), and its main component. The joint implementation of GGP and Bolsa Família makes it possible to use the same payment system, through the Caixa Econômica Federal,[20] and add up the benefits, since a family under Bolsa Família support can also access the Green Grant. To receive the Green Grant benefit, of BRL 300 per quarter (approximately US$139 per quarter, considering the average value of the dollar in 2013), a GGP grantee uses the same electronic card issued to beneficiaries of the Bolsa Família, with a sticker indicating that the bearer is also served by GGP. Payment of the benefit continues for up to two years, and may be renewed (Brazil, 2012b).

As for the environmental requirements for inclusion in the Green Grant Programme, they are related to the environmental condition of the areas where the family resides. To access the GGP, the family must inhabit a priority territorial unit, and this unit must have an environmental diagnosis which may make it eligible. The diagnosis is conducted by the Brazilian Institute of the

[20] The Caixa Econômica Federal is a public financial institution operating as a bank. The CEF assists with the execution of federal credit policy and renders services assigned by the federal government. For more details see Decree no. 7973/2013, which approves the by-laws of the CEF and makes other provisions: https://www.planalto.gov.br/ccivil_03/_ato2011-2014/2013/decreto/d7973.htm.

Environment and Renewable Natural Resources (IBAMA)[21] or by the System of Protection of the Amazon (SIPAM),[22] based on an analysis of the vegetation coverage of the area with the use of satellite imagery (Brazil, 2012b).

The requirements regarding vegetation coverage are defined taking into consideration the Forest Code (Law 12651, of 25 May 2012). According to that law, every rural property must maintain an area with native vegetation cover as a legal reserve. For rural properties located in the Legal Amazon,[23] the legal reserve must be 80% for properties situated in forest areas, 35% for properties situated in savannah-like vegetation areas, and 20% for properties situated in grasslands. In the other regions of the country, the legal reserve must be 20% of the area of the property.

In addition to being qualified from the viewpoint of the environmental legislation, the areas must also possess management instruments or proper legal titles. For rural settlements, the documents required are the Concession of Real Right of Use (CDRU), the Settlement Development Plan (PDA), the Settlement Recovery Plan (PRA), or the Contract of Concession of Use (CCU). The protected areas, in turn, must have a Management Plan or a Plan of Use; and riverbank communities must have a Sustainable Usufruct Authorization (TAUS) (Brazil, 2012b).

The qualification of a family with regard to social condition is determined through several steps. First, the Ministry of the Environment prepares a list of potential beneficiaries. This is done using records made available by ICMBIO for protected areas families, INCRA for rural settlement families, and SPU for ribeirinho families. Next, this information is forwarded to the Ministry of Social Development and Fight against Hunger, where it is cross-referenced with data from CadÚnico to verify whether the family is registered, whether its monthly income is less than BRL 70 per person (the poverty line), and whether it is a beneficiary of the Bolsa Família. Finally, once these conditions have been met, along with the environmental conditions, the family is authorized to access the programme.

After clearance, the Ministry of the Environment issues the Terms of Adherence to the Programme or “TAP”. The terms explains the rules of the programme and the family's commitment to environmental conservation and the sustainable use of natural resources, including the requirement to comply with the provisions of the instrument of management or legalization of the territorial unit inhabited by the family. The Ministry of the Environment forwards the terms of adherence to the appropriate body (ICMBIO, INCRA, or SPU), whose technical personnel go to the field to present the terms to the families, verifying their interest in adhering. If the families agree to the terms, the TAP is signed, putting into effect the adherence (Brazil, 2012b).

The operationalization of the Green Grant Programme is complex, involving various stages and institutions. In sum, the process begins with the identification and registration of families in the priority territorial units, the forwarding of this information to the programme coordination in Brasilia, and the return of the TAP to the field to gather the signatures of the eligible families.

One example of the challenges faced in implementing the programme is the difficulty reaching the target population. For example, in November 2012 there were approximately 15,000 TAPs with

[21] The Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA) is tied to the Ministry of the Environment (MMA). Among its responsibilities are included environmental licensing and enforcement. For details see Decree no. 6.099/2007, Law no. 9.966/2000 and Decree no. 5.098/2004.

[22] SIPAM is tied to the Ministry of Defense. Its aim is to integrate, evaluate and disseminate information for the planning and coordination of all government activities in the Amazon, with a view to boosting the sustainable development of the region. For details see the decree of 18 October 1999, and Decree no. 7424/2011.

[23] The Legal Amazon consists of the states of Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima, Tocantins and part of Maranhão (west of the 44th meridian). For details see http://www.sudam.gov.br/amazonia-legal.

the field teams awaiting the signature of the eligible beneficiaries. This backlog is said to be a consequence of the logistical difficulties involved in reaching the extractivist families (who normally live in isolated locations) and the way of life of these producers, who sometimes relocate temporarily, or even permanently, to extract non-timber and other forest products or to take up residence in another location offering better subsistence conditions.

The Green Grant Programme aims to serve 73,000 families by late 2014 (Brazil, 2012b). After two years of programme execution, the 44,082 families benefited represented 60.4% of the goal. At that pace of inclusion of beneficiaries in the programme, it is unlikely that the target can be met (Figure 7).

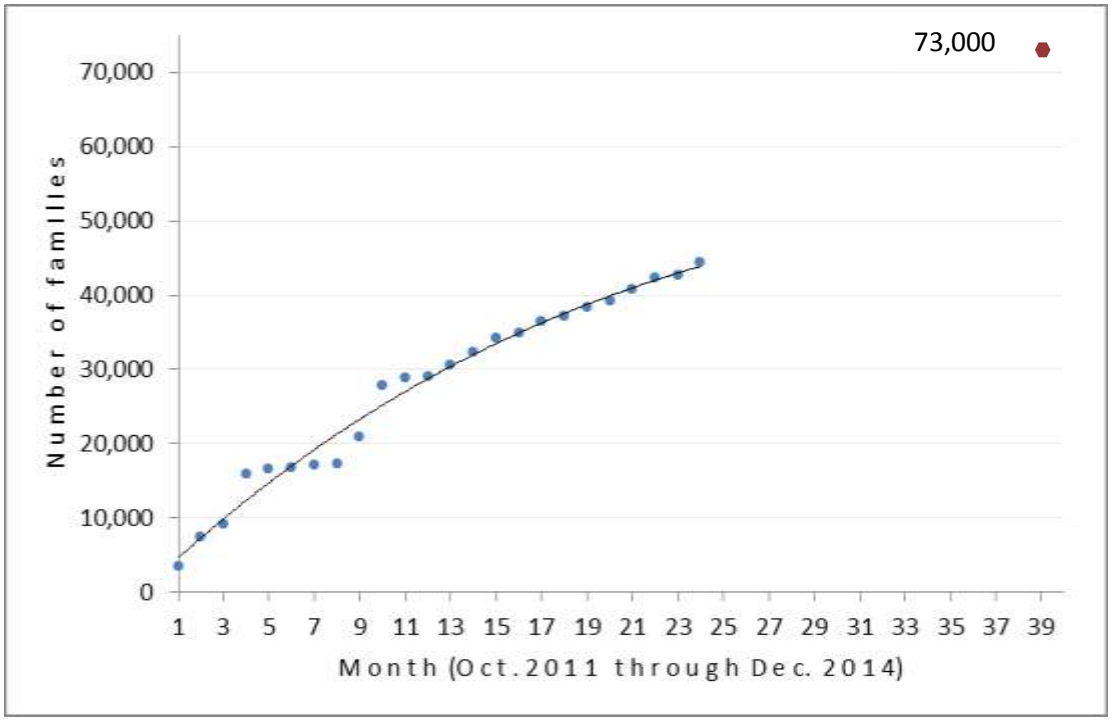

Figure 7. Monthly increase in the number of families in the Green Grant Programme, Oct. 2011 to Sept. 2013, and the programme target for the end of 2014 (73,000).

Note: The trend line corresponds to the adjustment of a third-degree polynomial curve ($y = 0.422x^3 - 56.251x^2 + 2859.1x + 1839.3$, $R^2 = 0.9831$). According to the equation, in the 39th month (December 2014), the number of families would reach approximately 53,000, i.e. 20,000 fewer than the programme goal.

However, starting in the second half of 2013, the Ministry of the Environment began to make additional efforts to locate potential programme beneficiaries. Recent records of the programme's evolution, made available on the programme website, show the addition of 9,802 families in the six months from October 2013 to March 2014, compared to the 7,241 families added in the six previous months. Thus there is a greater likelihood of meeting the goal, which is what the programme management expects. Nevertheless, the complexity of operationalization of the programme may become an important component of risk for reaching its target. In addition, the easiest families to reach are probably the ones already enrolled in the programme.

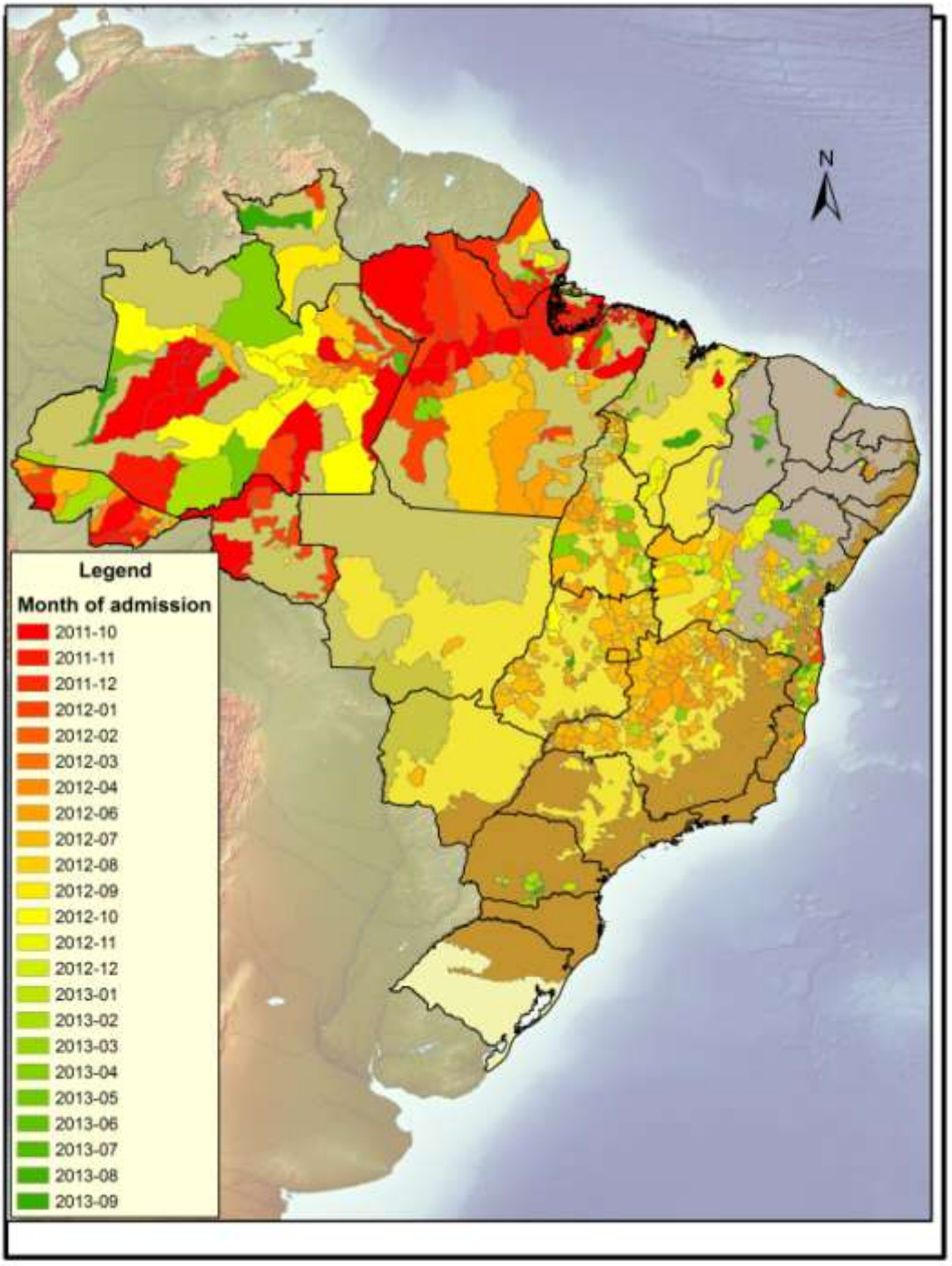

Figure 8. Month of admission of the counties served by the Green Grant Programme (Oct. 2011 to Sept. 2013).

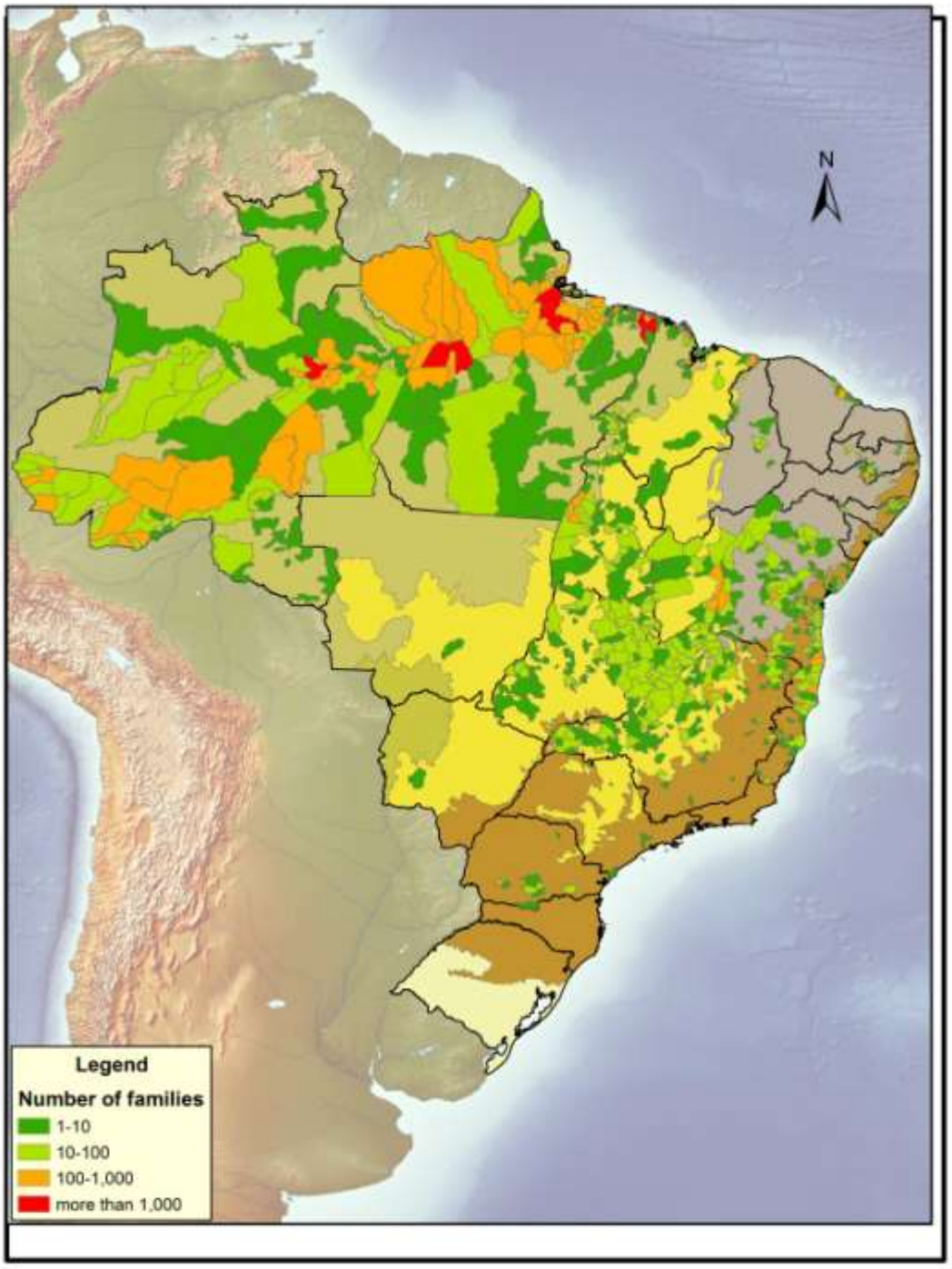

Figure 9. Number of beneficiary families served by the Green Grant Programme by county (Oct. 2011 to Sept. 2013).

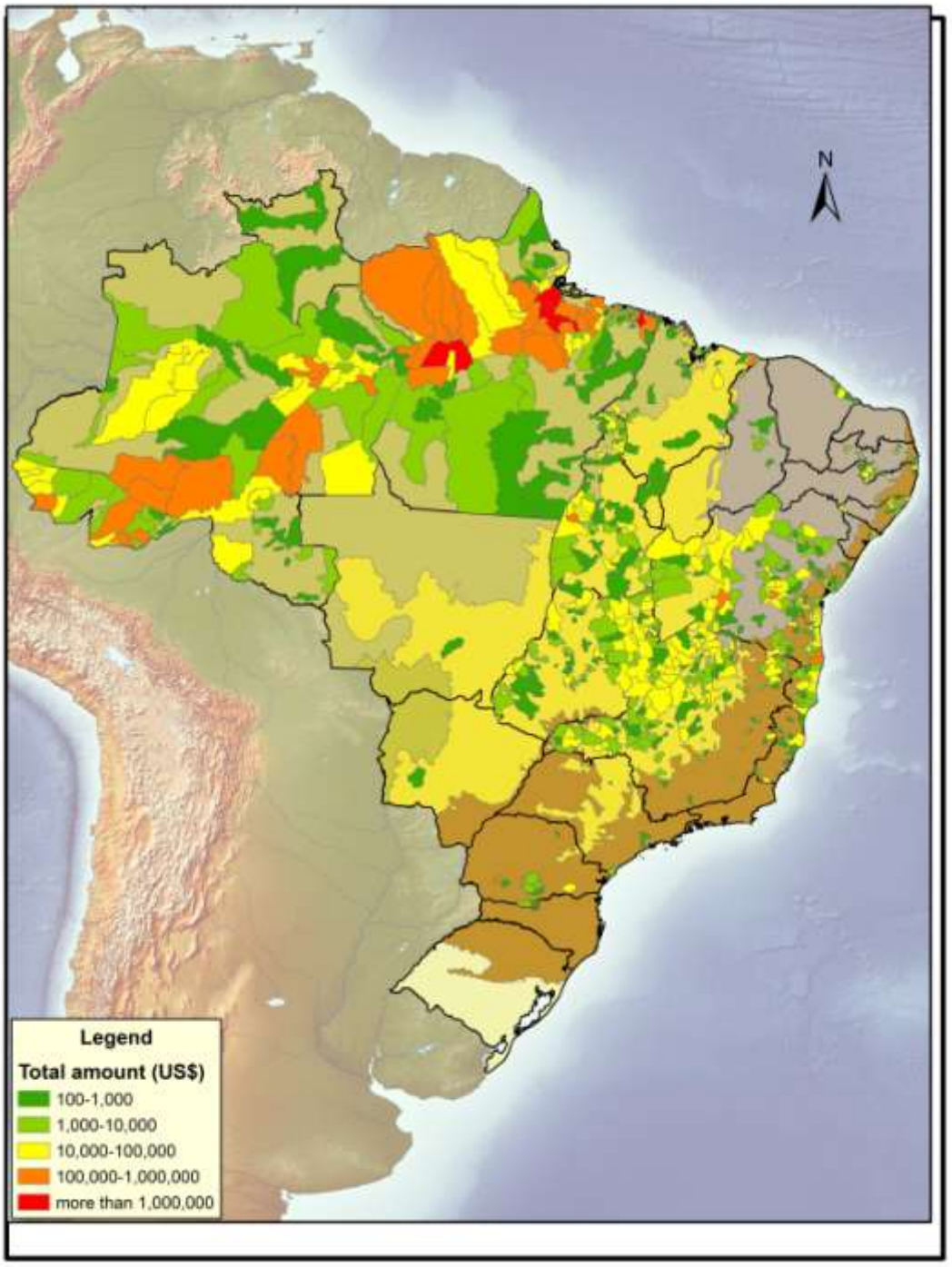

Figure 10. Cumulative value of the benefit in the counties served by the Green Grant Programme (Oct. 2011 to Sept. 2013).

5. IMPACT, REFINEMENT AND EXPANSION OF THE PRICE-SUPPORT POLICY AND GREEN GRANT PROGRAMME

Taking advantage of policies with socio-economic and development objectives, such as the PSPBIO and GGP, the Brazilian government, starting in 2009, has added substantial investments with potential to contribute to national efforts toward biodiversity conservation and ecosystem recovery (Table 6).

In the case of the PSPBIO, for example, it is likely that the subsidy paid does support biodiversity conservation and ecosystem recovery because it promotes better income for the extractivists, inside and outside protected areas, for, as we know, poverty tends to result in the adoption of unsustainable practices of utilization of natural resources. PSPBIO also contributes toward adding value to socio-biodiversity products, to job creation and to the strengthening of the production chains of these products. In addition, it also supports the processes that result in the empowerment and strengthening of the extractivists and their organizations. Together, all these elements help increase the economic and social importance of biodiversity and favour ecosystem conservation and recovery.

In the case of the Green Grant Programme, in principle, meeting the environmental conditions should ensure that the priority areas benefiting from the programme contribute to biodiversity conservation and ecosystem recovery, in that it keeps natural vegetation cover within the parameters established by legislation, or because it promotes the restoration of native vegetation in illegally deforested areas.

Although these two public policies do have the capacity to leverage ecosystem conservation and recovery, the effects have differed across the Brazilian territory, as we have seen. The Amazon, Atlantic Rainforest and Cerrado biomes benefited from the largest amounts of funding – especially the Amazon, which has received almost 72% of the total (Table 6).

Table 6. Total disbursements (in million dollars) under the Price-Support Policy for Socio-Biodiversity Derived Products and the Green Grant Programme by Brazilian biomes and transition areas

Biome	PSPBIO	GGP	Total	%
Amazon	3.10	27.16	**30.25**	**71.9**
Atlantic Rainforest	3.08	1.74	**4.82**	**11.4**
Cerrado	1.42	2.45	**3.87**	**9.2**
Caatinga-Cerrado	0.00	1.11	**1.11**	**2.6**
Caatinga	0.03	0.83	**0.87**	**2.1**
Amazon-Cerrado	0.65	0.31	**0.96**	**2.3**
Cerrado-Atlantic Rainforest	-	0.18	**0.18**	**0.4**
Caatinga-Atlantic Rainforest	-	0.04	**0.04**	**0.1**
Caatinga-Cerrado-Atlantic Rainforest	-	0.01	**0.01**	**0.0**
Total	**8.28**	**33.82**	**42.10**	**100.0**

As pointed out above, this preponderantly Amazonian focus is a consequence of the concentration of related governmental actions in that part of Brazil. In the case of the Green Grant Programme, in the short term, the share of that region is likely to increase, because, according to information gathered, recent efforts to reach new beneficiaries are being directed to that part of the country, especially the state of Pará. Concentrating efforts to locate beneficiaries in that region makes

sense from the administrative standpoint, as a more efficient strategy to reach the programme target, the deadline for which is getting closer. On the other hand, this focus on the Amazon may be seen as an equity issue, as one might expect a better-balanced distribution of socio-economic and development policies capable of leveraging ecosystem conservation and recovery in the country.

When analysing the operationalization of the first three years of the price-support policy described above, Viana (2013) concluded that it would be difficult to expand the policy to the southeast and south of Brazil (which predominantly correspond to the Atlantic Rainforest and Pampa biomes, and to a lesser degree, to the Cerrado), because of the level of transformation of the natural landscape in those parts of the country, in turn a result of the manner in which human occupation and economic development occurred in Brazil.

Species that were traditionally exploited in those regions now have their use restricted or prohibited by regulation; some are endangered species. This is the case, for example, with jussara, a typical palm tree of the Atlantic Rainforest. It yields palmito (heart of palm), whose extraction from nature is prohibited, implying as it does the destruction of the plant. Or the case of araucaria, also known as Paraná pine, a typical tree of the forests of southern Brazil, the seed of which, the piñon (pinhão or pine nut), forms a part of the regional cuisine. Since the 1970s, federal regulations have specified that the piñon can only be gathered during a certain period of the year, to ensure the reproduction of the species.

In the case of the jussara palm, the fruit, which is utilized in a manner similar to assai, has recently been included on the list of products supported by PSPBIO. In turn, the piñon is a potential candidate for extending the benefits of the PSPBIO to the extractivists of the south of Brazil, bearing in mind, of course, respect for the regulations regarding the period authorized for gathering the product. Several other plants products, mostly from palm trees, as well as one species of fish (under specified conditions to avoid overfishing), are also being evaluated for possible inclusion on the PSPBIO list (Annex 2).[24]

However, it is necessary to do more than expand the number of products. It is necessary to take greater advantage of the potential of the price-support policy to benefit extractivists, for, as we have seen, the scope of the policy is still limited. If the scope is limited, its potential to promote ecosystem conservation and restoration is also limited.

One alternative for returning more benefits to the extractivists would consist of updating the definition of the price-support policy, including not just variable production costs but also environmental costs. For that to happen, it would be necessary to overcome the resistance manifested in the past by the economic area of the government. In the opinion of the technical personnel, political support is essential. However, that as yet seems to be insufficient, considering that to date minimum prices for socio-biodiversity derived products are still defined based only on variable production costs.

The Green Grant Programme, for its part, is now in full execution and had already reached 60.4% of its target two years after payments were initiated. However, the complexity of operationalization is an important risk factor. There are several institutions involved, as well as

[24] In the case of the fish, the bony tongue *Arapaima gigas*, only specimens from areas under special fisheries management schemes (as described, for example, in Viana *et al.,* 2007) would have subsidies made available by CONAB. This is because of the status of the species, the capture and commercialization of which have been controlled under Brazilian law since 1996, due to overfishing. The inclusion of more products in PSPBIO will certainly contribute to an expansion of its scope within Brazil, to increase the number of beneficiaries, and to better distribute its coverage throughout the Brazilian territory.

points of verification and control. These are necessary, because the appropriate qualification of the families to access the programme must be guaranteed. However, the centralization of the GGP's coordination in Brasilia, far away from the beneficiaries, contributes even more to the complexity of the operation.

Viana (2013) suggests decentralization to state or regional branch offices of the partners of the Ministry of the Environment in programme implementation (ICMBIO, INCRA, SPU), in order to streamline execution by diminishing the distance between the target population and the operational coordination. The northern region, particularly branches in the state of Pará, would have top priority for receiving a decentralized managing unit, because of its current and future importance to the programme.

Another way to improve the Green Grant Programme would be to initiate beneficiary training or capacity-building programmes, as well as implement the programme´s monitoring system, as anticipated in the programme's design.

According to the GGP managers, the Ministry of the Environment (MMA) is developing a strategy to present the programme to the families in an appropriate manner. The strategy for the family capacity-building programme would, in addition to the module with information regarding the programme (the rules, the instrument of management of priority territories, and other environment-related concepts), provide information on government productive inclusion policies such as PSPBIO and others related to the target population. This shows the opportunities that exist for these programmes to develop ways to cooperate in order to further increase their results, with both socio-economic and environmental benefits.

With regard to monitoring, the design of the Green Grant Programme provides that it is to be done using three strategies: i) monitoring of natural vegetation cover via satellite imagery; ii) periodic deforestation and fire warnings via remote sensing techniques; and iii) on-site monitoring with periodic visits to the families, to evaluate both environmental impact and rural area performance (Brasil, 2012b). Once initiated, the monitoring system will make it possible to objectively monitor the effectiveness of the Green Grant Programme, both in terms of its promotion of improved social conditions for the beneficiary families and of its capacity to conserve and restore ecosystems.

Also with regard to monitoring of the GGP, the availability of programme-related data should be increased. Information on the percentage of families served in relation to the total number of families in the priority rural areas, or the percentages of beneficiary families that are or are not eligible to receive the benefit, would make it possible to estimate programme coverage among the families residing in the areas served.

The Ministry of the Environment should also make available information regarding families that no longer receive the Green Grant benefit, and the reasons why. The exclusion of families may be due to either not meeting the socio-economic criteria (something that is basically positive, indicating that income has risen), or not meeting environmental conditions (in principle a negative phenomenon, indicating that environmental rules have not been respected). Their exclusion could also be a consequence of the identification of inconsistencies in the families' records.

Whatever the reason or reasons for exclusion, the percentage of excluded families is very small: 0.7% in relation to the total number of families served by the programme. In comparison, in 2011, after an operation to check the profiles of fishermen and women, the Ministry of Fisheries and Aquaculture cancelled 86,900 records,[25] corresponding to about 8% of the certified workers

[25] http://sepaq-pa.blogspot.com.br/2011_04_01_archive.html.

registered at that time in the General Fishing Registry (RGP). This certification, issued by the government, is required for fishermen and women to have access to the no fishing insurance,[26] which is equivalent to the unemployment insurance of other workers. It is a right of fishermen and women to access this unemployment support during the closed season, the annual suspension of fishing declared by the government, in order to protect fish reproduction. The percentage of records cancelled was more than ten times that observed for GGP beneficiaries.

The goal of the Green Grant Programme is to reach 73,000 families by the end of 2014. This is feasible, provided the additional efforts to locate families meeting the programme's conditions, which got under way in the second half of 2013, are intensified. If the target is met, the benefit paid to the families will reach ca. BRL 87.6 million (approximately US$ 39.8 million) per year.

According to government estimates presented at the justification of the decree instituting the Brazil without Extreme Poverty Plan, there are 213,000 families (or 1.5 million individuals) residing in the 145 million hectares of Brazilian public community forests, distributed as follows: 76% on indigenous lands (*terras indígenas*, TIs), 17% in sustainable use protected areas (RESEX and RDS), and 7% in environmentally differentiated settlement projects (PAEs, PDSs and PAFs). It should be noted that this estimate did not, at the time, include classic rural settlements, which are now one of the main sources of families for the Green Grant Programme.

Indigenous peoples have not yet benefited from the programme, at least not in their capacity as dwellers on indigenous lands.[27] The inclusion of indigenous lands in the programme would undoubtedly increase the probability of meeting the programme target, while expanding the list of beneficiaries to include an extremely needy portion of the rural Brazilian population. Inclusion of indigenous peoples will require the support and mediation of the National Indian Foundation (FUNAI),[28] and should take into consideration the cultural and social organizational aspects of this diverse group of the Brazilian population.

Furthermore, inclusion of indigenous peoples would also contribute to the implementation of the recently instituted National Policy on Territorial and Environmental Management of Brazilian Indigenous Lands. This policy aims to support the maintenance of healthy ecosystems and biomes of the indigenous lands through the protection, conservation and restoration of natural resources indispensable to the physical and cultural reproduction of their inhabitants; as well as territorial and environmental protection and improved quality of life in the areas designated for the use of these populations. It thus opens one more opportunity to leverage the conservation and recovery of Brazilian ecosystems via socio-economic and development policy.

[26] Certified fishermen or women are workers which largely depend on fishing as their main source of income, working individually or in family groups. The no fishing insurance (*seguro defeso*) is equivalent to the monthly minimum wage (currently BRL 724, or approximately US$ 330 per month). Normally the closed season lasts three or four months out of the year, depending upon the fishing area or fisheries. Because of accusations of fraud, the programme is being audited by the government control agency (TCU, 2013). Campos and Chaves (2014) estimate that 54% of disbursements for no fishing insurance in 2010 may have found their way into the pockets of ineligible people.

[27] There are cases of partially superposed protected areas and indigenous lands (*terras indígenas*) in Brazil, so it is possible that indigenous peoples are being served by the GGP as protected area residents.

[28] FUNAI is a federal agency tied to the Ministry of Justice. Among other things, it aims to establish guidelines and guarantee compliance with policy on native Brazilians.

6. LESSONS LEARNED

The drafting and execution of the Price-Support Policy for Socio-Biodiversity Derived Products and the Green Grant Programme provide several lessons regarding the opportunities to leverage conservation of biodiversity and restoration of ecosystems based on public policies with socio-economic and development objectives.

Undoubtedly, the most important lesson is related to building legal and institutional structures. This process was discussed in section 2. In both the cases presented here, it became clear that it was essential to build legal and institutional structures that could eliminate existing restrictions and make operationalization of the policies legally viable. This has taken time, and is a process that is being continually refined.

Once again, the importance of inter-institutional linkages and networking should be stressed. The process of leveraging the conservation and restoration of ecosystems based on public policies with socio-economic and development objectives has involved the combined efforts of four sectors of government – the Ministry of Agriculture, Animal Husbandry and Supply (via CONAB), the Ministry of Agrarian Development, the Ministry of Social Development and Fight against Hunger, and the Ministry of the Environment – which have sought to increase the results of their actions through collaboration and coordination. Various other sectors and partners have also contributed, directly and indirectly, to the process. On the other hand, this convergence of interests is not necessarily unanimous, as shown by the issue of the resistance of the economic area of the government to the adoption of a method of calculation of minimum prices that takes into account not only the variable costs but also environmental costs.

Another lesson to be highlighted is that undertaking such actions has the potential to promote, or even deepen, integration among the objectives of different sectoral policies, such as in the case of inclusion of classic rural settlements in the Green Grant Programme. Initially, only the "environmentally differentiated" settlements were included among the priority rural areas defined by the federal government. However, in the course of its execution, the programme came to include important participation of families from classic rural settlements. This was one consequence of seizing opportunities created by parallel actions that were under way.

According to information gathered, the National Institute for Settlement and Agrarian Reform *(*INCRA) had been acting since 2012 to regularize the environmental situation of settlements, structuring and implementing the "Green Settlements" Programme. In regularizing the environmental situation of the settlements, INCRA was collaborating, indirectly and in parallel, in making these areas eligible to access the Green Grant Programme. The eventual implementation of the capacity-building strategy of the Green Grant Programme, with a module dedicated to the dissemination of information regarding productive inclusion policies such as the policy-support policy described above (PSPBIO), is another example of the potential for promotion and deepening of integration among distinct sectoral policies. The same is true for the possible inclusion of indigenous lands and peoples in the programme.

From an operational viewpoint, the outstanding lesson is that it is not a trivial task to undertake governmental actions focusing on the target populations of the PSPBIO and the Green Grant Programme. Extractivists, people living in conservation units, in rural settlements and riverbank populations invariably belong to the poorest strata of the Brazilian population. Such persons have, in the course of their lives, accumulated a number of deficiencies, due to the lack of or difficult access to the most basic public services, such as health and education. It is not unusual for potential beneficiaries to be missing their basic personal documents. Thus the execution of such policies implies pursuing supporting lines of action, such as campaigns for issuance of personal

documentation. The logistics required to reach isolated places is another challenge, because the potential beneficiaries reside in remote areas.

In the effort to make the Green Grant Programme reach those who have a right to the benefit, areas known to have greater likelihood for successful location of eligible people have been given greater priority. Thus, adverse social and environmental conditions end up imposing a situation where programme operationalization began where the obstacles were fewer and chances of success were greater.

One last lesson, also relevant, is that public policies with socio-economic and development objectives, such as the PSPBIO and the GGP, constitute a viable strategy for attracting financial resources for ecosystem conservation and restoration. This is not to be underestimated, given that the development and execution of environmental programmes normally face restrictions and intense competition for space in the budget.

7. REFERENCES

ANDERSON, A. B.; JARDIM, M. A. G. (1989). Costs and benefits of floodplain forest management by rural in habitants in the Amazon estuary: a case study of açai palm production. *In*: BROWDER, J. O (Ed.). Fragile lands of Latin America: strategies for sustainable development. Boulder: Westview Press, 1989. pp. 114-129.

BALZON, R. D. (2006). Avaliação econômica dos produtos florestais não madeiráveis na área de proteção ambiental – APA de Guaratuba – Paraná. 2006. Doctoral dissertation, Universidade Federal do Paraná, Curitiba, 2006.

BARATA, L. E. S. (2012). A economia verde: Amazônia. Ciência e Cultura, v. 64, n. 3, pp. 31-35, 2012.

BRASIL (2008). Subsídios para a formulação de políticas públicas aprovados nos seminários regionais – Cadeias dos produtos da sociobiodiversidade: agregação de valor e consolidação de mercados sustentáveis. Brasília: MMA; MDA; MDS, Brasília, 2008. Available at http://comunidades.mda.gov.br/o/963129. Accessed June 2013.

_____. Ministério do Meio Ambiente – MMA (2009). Preços mínimos para os produtos da sociobiodiversidade. Brasília, [2009]. Available at http://www.mma.gov.br/estruturas/sedr_sociobiodiversidade/_arquivos/tabela_pgpm.pdf.

_____. Ministério do Meio Ambiente – MMA (2010a). Fourth National Report to the Convention on Biological Diversity: Brazil. Brasília, 2010a. Available at http://www.cbd.int/doc/world/br/br-nr-04-en.pdf.

_____. Ministério do Desenvolvimento Social e Combate à Fome – MDS (2010b). Programa de Aquisição de Alimentos. Brasília, [2010b]. Available at http://www.mds.gov.br/segurancaalimentar/aquisicao-e-comercializacao-da-agricultura-familiar/saiba-mais/publicacoes/caderno-balanco-paa-2003-2010a.pdf.

_____. Ministério do Desenvolvimento Social e Combate à Fome – MDS (2011). Plano Brasil Sem Miséria. Brasília, [2011]. Available at http://www.brasil.gov.br/sobre/cidadania/brasil-sem-miseria/album_tecnico_final_modificado-internet.pdf.

_____. Ministério do Desenvolvimento Social e Combate à Fome – MDS (2012a). Devolutiva Diálogos Governo – Sociedade Civil: Plano Brasil Sem Miséria. Brasília, 2012a. Available at http://www.brasilsemmiseria.gov.br/noticias/noticias-eventos/dialogos-governo-sociedade-civil/cartilha-dialogos-bsm-a4.pdf.

_____. Ministério do Meio Ambiente – MMA (2012b). Programa de Apoio à Conservação Ambiental – Bolsa Verde: Erradicar a extrema pobreza e conservar o meio ambiente – histórico, gestão e monitoramento, balanço geral. Brasília, 2012b.

CAMPOS, A. A.; SANTOS, H. L. (2009). Plano Nacional de Promoção das Cadeias de Produtos da Sociobiodiversidade – PNPSB. [s.l: s.n.], [2009]. Available at http://comunidades.mda.gov.br/o/3757038. Accessed March 2013.

CAMPOS, A.G.; CHAVES, J.V. Seguro-defeso: diagnóstico dos problemas enfrentados pelo programa. Text for discussion no. 1956. Instituto de Pesquisa Econômica Aplicada (IPEA), Brasilia, 2014. Available at http://www.ipea.gov.br/portal/images/stories/PDFs/TDs/td 1956.pdf.

CARMÉLIO, E. C. (2010). Soerguimento econômico e tecnológico do extrativismo na Amazônia: mapeamento e avaliação da carga tributária incidente sobre produtos florestais não-madeireiros. Brasília: SAE, 2010. Available at http://www.sae.gov.br/site/wp-content/uploads/Soerguimento-econ%C3%B4mico-e-tecnol%C3%B3gico-do-extrativismo-na-amaz%C3%B4nia.pdf.

CARVALHO, N. L.; MATOS, E. R. J.; MORAES, R. O. (2000). Contabilidade ambiental. Pensar Contábil, n. 8, 2000.

CBD – CONVENTION ON BIOLOGICAL DIVERSITY (2010). Decisions adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting. Nagoya, Japan, 18-29 October 2010. Convention on Biological Diversity, United Nations Environment Programme. Available at http://www.cbd.int/doc/decisions/cop-10/full/cop-10-dec-en.pdf. Accessed 15 April 2013.

CERQUEIRA, E. B.; GOMES, J. M. A. (2012). Extrativismo, conservação ambiental e Política de Preços Mínimos para Sociobiodiversidade. VI Encontro Nacional da ANPPAS, 18 to 21 Sept., Belém, Pará, 2012.

CONAB – COMPANHIA NACIONAL DE ABASTECIMENTO (2010a). Plano Operacional Anual de Apoio à Comercialização de Produtos da Sociobiodiversidade Safra 2010/11. Brasília, 2010a. Available at http://www.conab.gov.br/OlalaCMS/uploads/arquivos/b0d8e992de2cb83cecdecca53984d3ce..pdf.

_____ (2010b). Conjuntura Mensal: açaí (fruta), período 1 a 30 de junho de 2010. Brasília, 2010b. Available at http://www.conab.gov.br/OlalaCMS/uploads/arquivos/b0d8e992de2cb83cecdecca53984d3ce..pdf. Access March 2013.

_____ (2011). Plano Operacional Anual de Apoio à Comercialização de Produtos da Sociobiodiversidade Safra 2011/13. Brasília, 2011. Available at http://www.conab.gov.br/OlalaCMS/uploads/arquivos/11_07_18_08_28_46_plano_operacional_2011-13_aprovada_16-06-2011..pdf.

_____ (2012). Conjuntura Mensal: açaí (fruta), periodo 1 a 30 de Novembro de 2012. Brasília, 2012. Available at http://www.conab.gov.br/OlalaCMS/uploads/arquivos/12_12_06_17_17_23_acaifrutonovembro2012.pdf.

_____ (2014). Plano Operacional Anual de Apoio à Comercialização de Produtos da Sociobiodiversidade Safra 2014/16. Brasília, 2014.

CORADIN, L.; SIMINSKI, A.; REIS, A. (2011). Espécies nativas da flora brasileira de valor econômico atual ou potencial: plantas para o futuro – Região Sul. Brasília: MMA, 2011. Available at http://www.mma.gov.br/estruturas/sbf2008_dcbio/_ebooks/regiao_sul/Regiao_Sul.pdf.

CORDEIRO, A. (2007). Resultados do programa de aquisição de alimentos – PAA: a perspectiva dos beneficiários. Brasília, CONAB, 2007. pp. 79.

FATORELLI, L.; MERTENS, F. (2010) Integração de políticas e governança ambiental: o caso do licenciamento rural no Brasil. Ambiente e Sociedade, Campinas, v. 13, no. 2, pp. 401-415.

FERREIRA, A. M. M.; SALATI, E. (2005). Forças de transformação do ecossistema amazônico. Estudos Avançados, v. 19, n. 54, pp. 25-44, 2005.

GUIMARÃES, A. P. F. V. (2013). A promoção das cadeias de produtos da sociobiodiversidade: o reconhecimento das populações tradicionais e a castanha-do-brasil como mecanismo de desenvolvimento e sustentabilidade. Revista âmbito jurídico, Rio Grande, ano XVI, n. 108, 2013. Available at http://www.ambito-juridico.com.br/site/?n_link=revista_artigos_leitura&artigo_id=12684&revista_caderno=6. Accessed March 2013.

IBGE – INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (2009). Produção da Extração Vegetal e da Silvicultura – PEVS 2009. Rio de Janeiro, v. 24, 2009. Available at http://www.ibge.gov.br/home/estatistica/economia/pevs/2009/default.shtm.

_____ (2010). Produção da Extração Vegetal e da Silvicultura – PEVS 2010. Rio de Janeiro, v. 25, 2010. Available at http://www.ibge.gov.br/home/estatistica/economia/pevs/2010/.

_____ (2012). Produção da Extração Vegetal e da Silvicultura – PEVS 2011. Rio de Janeiro, v. 26, 2012. Available at http://www.ibge.gov.br/home/estatistica/economia/pevs/2011/default.shtm.

_____ (2013). Produção da Extração Vegetal e da Silvicultura – PEVS 2012. Rio de Janeiro, v. 27, 2013. Available at http://www.ibge.gov.br/home/estatistica/economia/pevs/2012/.

IPEA – INSTITUTO DE PESQUISA ECONÔMICA APLICADA (2012). A Comissão Nacional de Desenvolvimento Sustentável dos Povos e Comunidades Tradicionais na Visão de seus Membros: Research report. Brasília, 2012. Available at http://www.ipea.gov.br/agencia/images/stories/PDFs/relatoriopesquisa/120409_relatorio_comunidades_tradicionais.pdf.

JENKINS, N. C.; JOPPA, L. (2009). Expansion of the global terrestrial protected area system. Biological conservation, v. 142, pp. 2.166-2.174, 2009.

JESUS, N. B.; GOMES, L. J. (2012). Conflitos socioambientais no extrativismo da aroeira (*Schinus terebebinthifolius* Raddi), Baixo São Francisco - Sergipe/Alagoas. Ambiente & sociedade, v. 15, n. 3, pp. 55-73, 2012.

MAGALHÃES, R. M. (2011). Obstáculos a exploração do baru (*Dipteryx alata* Vog.) no Cerrado goiano: sustentabilidade comprometida? 2011. Doctoral dissertation – Universidade de Brasília, Brasília, 2011.

MOURA, L. A. A.(2013). Economia ambiental: gestão de custos e investimentos. 2. ed. São Paulo: Editora Juarez de Oliveira, 2003.

NEVES, F. C. (2001). Getúlio e a seca: políticas emergenciais na era Vargas. Revista brasileira de história, v. 21, n. 40, pp. 107-129, 2001.

OECD - ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (no date). Public works programmes and social protection. Publication date unknown. Available at http://www.oecd.org/dac/povertyreduction/47466739.pdf.

PRATES, R. C.; BACHA, C. J. C. (2011). Os processos de desenvolvimento e desmatamento da Amazônia. Economia e sociedade, v. 20, n. 3, pp. 601-636, 2011.

RIOS, M. N. S.; PASTORE Jr., (2011). Plantas da Amazônia: 450 espécies de uso geral. Brasília: Universidade de Brasília, Biblioteca Central, 2011. Available at http://www.ittorolac.org/enciclopedia-botanica/productos/productos/download.

SHANLEY, P. (2005). Frutíferas e Plantas Úteis na Vida Amazônica. (2011). Belém: CIFOR, Imazon, 2005. Available at http://www.fca.unesp.br/Home/Extensao/GrupoTimbo/frutiferas.pdf.

SILVA, M. S.; FANTINI, A. C.; SHANLEY, P. (2011). Látex de Amapá (*Parahancornia fasciculata* (Poir) Benoist, Apocynaceae): remédio e renda na floresta e na cidade. Boletim do Museu Paraense Emílio Goeldi. Ciências Humanas, v. 6, n. 2, pp. 287-305, 2011.

SILVA, J. M. C.; TABARELLI, M.; FONSECA, M. T. F.; LINS, L. V. (2003). Biodiversidade da caatinga: áreas e ações prioritárias para a conservação (organizers). Brasília, DF: Ministério do Meio Ambiente: Universidade Federal de Pernambuco, 2003.

SPU – SECRETARIA DO PATRIMÔNIO DA UNIÃO (2010). Balanço de Governo (2003/2010): ação da SPU na Amazônia Legal. Brasília, 2010. Available at http://patrimoniodetodos.gov.br/pastaarquivo.2009-07-09.3759851862/BALANCO%202003-2010_SPU%20AMAZONIA%20LEGAL_CGAL_23nov2010.pdf.

TCU – TRIBUNAL DE CONTAS DA UNIÃO. Acórdão nº 524/2013 – TCU – Plenário. Available at http://www.camara.gov.br/internet/comissao/index/mista/orca/tcu/..%5Ctcu%5CPDFs%5CAcordao5242013-TCU-Plen%C3%A1rio.pdf.

VIANA, J. P. *et al*. (2007). Community-based management of *Arapaima* in the Mamirauá Sustainable Development Reserve - Amazonas, Brazil. In: PRATES, A. P.; BLANC, D. (Eds.). Aquatic protected areas as fisheries management tools. Brasília: MMA, 2007. Available at http://www.mma.gov.br/estruturas/sbf2008_dap/_publicacao/149_publicacao16122010110613.pdf.

VIANA, J. P. (2013). Avaliação de duas ações governamentais recentes em apoio a extrativistas – garantia de preços mínimos para produtos da sociobiodiversidade e bolsa verde. In: BOUERI, R.; COSTA, M. A (Eds.). Brasil em Desenvolvimento v.2. 399-420. Brasília, Ipea, 2013. Available at http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/livro_brasil_desenvolvimento2013_vol02.pdf.

VIEIRA, R. F. *et al.* (2006). Frutas nativas da região Centro-Oeste. Brasília: Embrapa Recursos Genéticos e Biotecnologia, 2006. Available at http://www.agabrasil.org.br/_Dinamicos/livro_frutas_nativas_Embrapa.pdf.

Annex 1 – Products covered by the Price-Support Policy for Socio-Biodiversity Derived Products

Common name	Scientific name (Family)[1]	Use[2]
Assai palm fruit, açaí	*Euterpe oleracea* Mart. (Arecaceae)	Foodstuff, handicrafts (seeds)
Crabwood seed, andiroba	*Carapa guianensis* Aubl. (Meliaceae)	Medicinal
Babassu palm seed, babaçu	*Attalea brejinhoensis* (Glassman) Zona (Arecaceae)	Foodstuff, cosmetics, medicinal
Baru, cumaru (fruit)	*Dipteryx alata* Vogel (Fabaceae)	Foodstuff, medicinal
Rubber, borracha	*Hevea brasiliensis* (Willd. ex A.Juss.) Müll.Arg. (Euphorbiaceae)	Latex for rubber production
Brazil nut, castanha-do-brasil	*Bertholletia excelsa* Bonpl. (Lecythidaceae)	Foodstuff, cosmetics
Cocoa bean, cacau	*Theobroma cacao* L. (Malvaceae)	Foodstuff
Carnauba palm powder and wax, carnaúba	*Copernicia prunifera* (Mill.) H.E.Moore (Arecaceae)	Foodstuff, medicinal, cosmetics (wax and ceriferous powder)
Cabbage palm fruit, jussara, juçara	*Euterpe edulis* Mart. (Arecaceae)	Foodstuff
Mangaba (fruit)	*Hancornia speciosa* Gomes (Apocynaceae)	Foodstuff, medicinal
Souari nut, pequi	*Caryocar brasiliense* Cambess. (Caryocaraceae)	Foodstuff, cosmetics
Piassaba palm fibre	*Leopoldinia piassaba* Wallace (Arecaceae) - species exploited in Amazonas state; *Attalea funifera* Martius (Arecaceae) - species exploited in Bahia state	Handicrafts (manufacture of brooms, brushes, cords, baskets, ceilings, screens)
Brazil plum (fruit), umbu	*Spondias tuberosa* Arruda (Anacardiaceae)	Foodstuff

[1] Classification in accordance with the List of Species of the Brazilian Flora, Rio de Janeiro Botanical Garden. Available at http://floradobrasil.jbrj.gov.br/.

[2] Coradin *et al.* (2011), Rios and Pastore Jr. (2011), Silva *et al.* (2003), Shanley (2005), Vieira *et al.* (2006).

Annex 2 – Products under study for coverage by the Price-Support Policy for Socio-Biodiversity Derived Products

Common name	Scientific name (Family)[1]	Use[2]
Plant products		
Scheelea palm fruit, bacuri	*Attalea phalerata* Mart. ex Spreng. (Arecaceae)	Foodstuff, handicrafts, cosmetics, medicinal
Moriche palm fruit, buriti	*Mauritia flexuosa* L.f. (Arecaceae)	Foodstuff, handicrafts, medicinal
Yerba-mate (leaves), erva-mate	*Ilex paraguariensis* A.St-Hil. (Aquifoliaceae)	Foodstuff, medicinal
Fava d'anta (legume fruit)	*Dimorphandra mollis* Benth. (Fabaceae)	Medicinal
Licuri palm nut	*Syagrus coronata* (Mart.) Becc. (Arecaceae)	Foodstuff, handicrafts, medicinal
Macaw palm fruit, macaúba	*Acrocomia aculeata* (Jacq.) Lodd. ex Mart. (Arecaceae)	Foodstuff, handicrafts, medicinal
Nance (fruit), murici	*Byrsonima crassifolia* (L.) Kunth (Malpighiaceae)	Foodstuff, medicinal
Murumuru (fruit)	*Astrocaryum murumuru* Mart. (Arecaceae)	Foodstuff, medicinal
"Pine nuts", pinhão, piñon	*Araucaria angustifolia* (Bertol.) Kuntze (Araucariaceae)	Foodstuff
Fish products		
Bonytongue, "pirarucu de manejo" (from areas under special fisheries management schemes)	*Arapaima gigas* Schinz, 1822 (Osteoglossidae)	Foodstuff, handicrafts (scales, tongue)

[1] Classification of plants according to the List of Species of the Brazilian Flora, Rio de Janeiro Botanical Garden. Available at http://floradobrasil.jbrj.gov.br/.

[2] Coradin *et al.* (2011), Rios and Pastore Jr. (2011), Silva *et al.* (2003), Shanley (2005), Vieira *et al.* (2006).

Annex 3 – Rural priority areas served by the Green Grant Programme

Protected areas *(Unidades de conservação)*

The Brazilian legislation establishes two groups of protected areas: total protection and sustainable use protected areas.

The first group – total protection protected areas – encompasses five categories, including National Parks, where visitation to certain areas is allowed, and Biological Reserves, where access is highly restricted.

The sustainable use protected areas group encompasses seven categories. Among these, three allow for the presence of local populations: Extractive Reserves (RESEX), Sustainable Development Reserves (RDS) and National Forests (FLONA).

The management of federal protected areas is under the Chico Mendes Institute for the Conservation of Biodiversity (ICMBIO).

Sustainable use protected areas (*Unidades de conservação de uso sustentável*)
- 7 kinds in all; 3 kinds allow local populations: RESEX, RDS, FLONA

Category	Objective(s)	Additional observations
Extractive /Extractivist Reserves RESEX *(Reservas Extrativistas)*	Protect the livelihoods and culture of extractivists, assure the sustainable use of the natural resources of the area.	A RESEX is an area used by extractivist, traditional populations, whose livelihood relies on extraction of forest products, subsistence farming and small animal husbandry. A RESEX is under public dominium, meaning that the use is conceded to traditional populations and private properties lying within the area should be expropriated. It is managed by a Deliberative Council, chaired by the responsible body and constituted by representatives of public entities, civil society organizations and traditional populations inhabiting the area.
Sustainable Development Reserves RDS *(Reservas de Desenvolvimento Sustentável)*	Preserve nature and, at the same time, assure the livelihoods and quality of life and exploitation of natural resources by traditional populations; while valuing, conserving and improving the traditional knowledge and techniques for environmental management developed by these populations.	An RDS is a natural area that hosts traditional populations, whose existence is based on sustainable use systems of natural resources, developed through generations and adapted to local ecological conditions, that perform a fundamental role in the protection of nature and in the conservation of the biological diversity. An RDS is under public dominium and private properties lying within the area should, when necessary, be expropriated. The management of this type of conservation unit is similar to that of a RESEX.
National Forests FLONA *(Florestas Nacionais)*	Promote the multiple and sustainable use of forest resources and scientific research, emphasizing the methods for sustainable exploitation of native forests.	FLONA is an area with forest coverage with predominantly native species, under public dominium. Private properties lying within the area should be expropriated. Traditional populations are allowed to remain within a FLONA if they inhabited the area as of its creation. The management is through an Advisory Council, chaired by the responsible body and constituted by representatives of public entities, civil society organizations and traditional populations inhabiting the area.

Rural settlements *(Assentamentos rurais)*

The Brazilian Constitution establishes the implementation of an agrarian reform, abiding by the set of norms that discipline the procedures by the responsible body and the Justice. The rural settlements are key components of this constitutional determination, which aims to reduce landholding concentration in the country.

The rural settlements are allocated to landless family farmers and are divided in two major groups: the "classic" settlements and the "environmentally differentiated" settlements.

In the classic settlements group, only the Settlement Projects (PA) are so far served by the Green Grant Programme.

In the environmentally differentiated rural settlements group, all three categories are served by the Green Grant Programme: *Agro-extractivist* Settlement Projects (PAE), Sustainable Development Projects (PDS) and Forestry Settlement Projects (PAF).

The National Institute for Settlement and Agrarian Reform (INCRA) is in charge of the management of federal settlements.

Category	Objective(s)	Additional observations
"Classic" settlements (*Assentamentos "clássicos"*) - only 1 type is involved in the Green Grant Programme		
Settlement Projects PA *(Projetos de Assentamento)*	Promote better land distribution, aiming at achieving the principles of social justice and a rise in productivity.	The settlements should favour the well-being of rural families, assuring the conservation of natural resources and respecting the legal provisions that regulate fair work relations between those who own the land and those who work on them. The settlement projects should have a Settlement Development Plan (PDA), which shall guide the establishment of technical norms for their implementation and the respective investments.

"Environmentally differentiated" settlement projects (*Projetos de assentamento ambientalmente diferenciados*) - 3 categories, all involved in the Green Grant Programme		
Agro-extractivist Settlement Project PAE (*Projeto de Assentamento Agroextrativista*)	Same as PA, plus: exploit areas holding extractive resources, through economically viable, socially just and ecologically sustainable activities through populations that inhabit or come to live in these areas.	The allocation of areas shall be done through the concession of use, under a communal regime, following the form decided by the communities to which the concession is given – association, condominium or cooperative. It was created to replace the category *Extractive Settlement Project*.
Sustainable Development Project PDS *(Projeto de Desenvolvimento Sustentável*)	Same as PA, plus: meet social and ecologic needs associated with populations that exert or shall exert in the future extractive or agriculture activities in areas of environmental conservation.	The settlements shall be created under the supervision of INCRA and federal, state or county environmental bodies, or authorized non-governmental organizations (NGOs). The participation of the bodies in the PDS shall be defined during the elaboration of the instrument of settlement management (Settlement Development Plan -- PDA), taking note that for a PDS created in the area of the Legal Amazon, the participant NGO should be the National Council of Extractivist Populations (CNS). Elsewhere, INCRA together with the federal environmental body, shall select a partner NGO.
Forestry Settlement Project PAF (*Projeto de Assentamento Florestal)*	Same as PA, plus: manage forest resources in areas suitable for family, community, sustainable forest production, especially applicable to the Northern region of Brazil.	The allocation of areas for such projects is similar to PAE. A variety of timber and non-timber products can be extracted through sustainable forest management: wood, medicinal essences, ornamental plants, vegetal oils, latex, resins, gum, tannins, fruits, seeds, dyes, handcraft materials (branches, vines or roots) and fauna. Other possibilities for income generation include services related to biodiversity conservation, carbon offsets and activities with low environmental impact such as ecotourism, information generation, and supply of genetic materials for the development of biotechnology.

Riverbank community occupancies

These areas are inhabited by *ribeirinhos*, name given to the inhabitants of riverbank areas, constituting a traditional population group who largely depend on fishing, non-timber products and subsistence agriculture for their livelihood. According to the Brazilian Constitution, the waters, forests and areas influenced by the waters and tides belong to the Federal State. Since 2003, the Office of Federal Assets (SPU), has developed programmes intended to regulate the areas occupied by *agro-extractivist* ribeirinhos. After having the area regularized, the ribeirinho families gain access to a variety of federal programmes related to family farmers and extractivists, including the Green Grant Programme.

Annex 4 – Supplementary data related to implementation of the Green Grant Programme

Table A.1. Green Grant Programme: amounts paid, number of new beneficiaries, and number of payments processed in each month (Oct. 2011 - Sept. 2013)

Month	Amount (US$)	Number of new beneficiaries[1]	Number of payments processed[2]
October 2011	640,657	3,577	3,577
November	707,284	3,947	3,949
December	297,672	1,662	1,662
January 2012	1,591,016	6,791	10,366
February	706,794	656	4,605
March	289,778	231	1,888
April	1,628,773	292	10,612
May	723,064	108	4,711
June	845,544	3,616	5,509
July	2,701,627	7,009	17,602
August	873,785	987	5,693
September	865,497	144	5,639
October	2,926,942	1,544	19,070
November	1,156,349	1,848	7,534
December	1,144,070	1,819	7,454
January 2013	2,746,802	700	19,755
February	1,251,112	1,469	8,998
March	1,146,691	747	8,218
April	2,929,783	1,153	20,761
May	1,374,305	876	9,884
June	1,373,331	1,659	9,877
July	3,090,795	1,466	22,229
August	1,432,564	383	10,269
September	1,379,867	1,704	9,924
Total	33,824,101	44,388	229,786

[1] According to the Green Grant Programme managers, when a family is excluded from the programme, the information corresponding to the beneficiaries is deleted from the online monitoring system. Thus the values presented in this table differ slightly from those made available on the Ministry of the Environment (MMA) website. According to the analysis conducted by this study, 306 families had been excluded from the programme by September 2013. Thus the actual number of families enrolled after two years was 44,082. The MMA website does not provide information regarding the identity of the families or the reason they were excluded from the programme.

[2] Beneficiaries receive payments every three months.

Table A.2. Total number and area of sustainable use protected areas (RESEX, RDS and FLONA) managed by ICMBIO, number of environmentally differentiated settlements and number of families settled by INCRA, and number of counties and number of families served by the SPU riverbank community occupancies legalization project, in Pará, Amazonas and other Brazilian states

	Sustainable use protected areas		Environmentally differentiated rural settlements		Riverbank community occupancies	
State	Quant. (n)	Area (km^2)	Quant. (n)	Families (n)	Counties (n)	Families (n)
Pará	35	109,365	343	78,339	47	32,494
Amazonas	18	115,572	71	24,230	13	491
Other states	72	63,266	98	11,074	13	541
Total	**125**	**288,203**	**512**	**113,643**	**73**	**33,526**

Sources: Protected areas: Department of Protected Areas of the Office of Biodiversity and Forests of the Ministry of the Environment (MMA), Dec. 2012; rural settlements: Division of Creation and Installation of Settlement Projects of the National Institute of Settlement and Agrarian Reform (INCRA), Dec. 2012; riverbank community occupancies: SPU, 2010.