MID-TERM EVALUATION REPORT ON THE EFFECTIVENESS OF THE AMAZON FUND 2008-2018

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This report presents the results of the Mid-Term Effectiveness Evaluation of the Amazon Fund. It assesses the Fund's operations during the period 2008 - 2018 and was drafted by an independent team of consultants with technical coordination by ECLAC.

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LIST OF TERMS USED FOR SHORTENING

ABC	Agência Brasileira de Cooperação *(Brazilian Cooperation Agency)*
ABIOVE	Associação Brasileira das Indústrias de Óleos Vegetais *(Brazilian Vegetable Oil Industries Association)*
AFP	Associação Floresta Protegida *(Protected Forest Association)*
AMIQCB	Associação do Movimento Interestadual das Quebradeiras de Coco Babaçu *(Association of Coco Babassu Breakers Interstate Movement)*
APIWTXA	Associação Ashaninka do Rio Amônia - Alto Juruá *(Ashaninka Association of the Amonia River - Alto Juruá)*
APP	Área de Proteção Permanente *(Permanent Protection Area)*
APS	Atividades Produtivas Sustentáveis *(Sustainable Productive Activities)*
ARPA	Programa de Áreas Protegidas da Amazônia *(Amazon Protected Areas Program)*
ASSEMA	Associação em áreas de Assentamento no Estado do Maranhão *(Settlement Association in the State of Maranhão)*
ATER	Assistência Técnica e Extensão Rural *(Technical Assistance and Rural Extension)*
BMZ	Ministério Federal de Cooperação Econômica e de Desenvolvimento *(Federal Ministry for Economic Cooperation and Development - in German, Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung)*
BNDES	Banco Nacional de Desenvolvimento Econômico e Social *(National Bank for Economic and Social Development)*
CAMTA	Cooperativa Mista Tomé Açu *(Tomé Açu Mixed Cooperative)*
CAR	Cadastro Ambiental Rural *(Rural Environmental Registry)*
CDNs	Contribuições Determinadas Nacionalmente *(Nationally Determined Contributions - NDC)*
CEABIO	Centro de Estudos Avançados da Biodiversidade *(Center for Advanced Biodiversity Studies)*
CEC	Comitê de Elegibilidade de Operações de Crédito do BNDES *(BNDES' Credit Operations Eligibility Committee)*
Censipam	Centro Gestor e Operacional do Sistema de Proteção da Amazônia (do Ministério da Defesa) *(Amazon Protection System Management and Operational Center - Ministry of Defense)*

CEPAL	Comissão Económica para América Latina e Caribe *(Economic Commission for Latin America and the Caribbean)*
CH_4	Metano *(Methane)*
CI	Conservação Internacional *(International Conservation)*
CNI	Confederação Nacional da Indústria *(National Confederation of Industry)*
CNPq	Conselho Nacional de Desenvolvimento Científico e Tecnológico *(National Council for Scientific and Technological Development)*
CNUC	Cadastro Nacional de Unidades de Conservação *(National Register of Conservation Units)*
CO_2	Dióxido de carbono *(Carbon Dioxide)*
COFA	Comitê Orientador do Fundo Amazônia *(Amazon Fund Steering Committee)*
COOMFLONA	Cooperativa Mista da FLONA Tapajós *(Tapajós Mixed Cooperative)*
COIAB	Coordenação das Organizações Indígenas da Amazônia Brasileira *(Coordination of Indigenous Organizations of the Brazilian Amazon)*
CONAREDD+	Comissão Nacional para REDD+ *(National Commission for REDD +)*
CONFAP	Conselho Nacional das Fundações Estaduais de Ampara à Pesquisa *(National Council of State Research Supporting Foundations)*
CONTAG	Confederação Nacional dos Trabalhadores na Agricultura *(National Confederation of Agricultural Workers)*
COOPAVAM	Cooperativa dos Agricultores do Vale do Amanhecer *(Vale do Amanhecer Farmers Cooperative)*
COOPERACRE	Cooperativa Central de Comercialização Extrativista do Estado do Acre *(Central Cooperative of Extractive Commercialization of the State of Acre)*
COP	Conferência das Partes (do UNFCCC) *(Conference of the Parties - UNFCCC)*
CPI-Acre	Comissão Pró-Índio do Acre *(Acre Acre Pro-Indian Commission)*
CRA	Cota de Reserva Ambiental *(Environmental Reserve Quota)*
CSS	Comitê de Sustentabilidade Socioambiental (no BNDES) *(Social and Environmental Sustainability Committee - at BNDES)*
CTFA	Comitê Técnico do Fundo Amazônia *(Amazon Fund Technical Committee)*
CTI	Centro de Trabalho Indigenista *(Indigenous Work Center)*
CT&I	Ciência, Tecnologia e Inovação *(Science, Technology and Innovation)*

CVACBA	Centro de Valorização de Compostos Bioativos da Amazônia *(Center for Valorization of Amazon Bioactive Compounds)*
DAC	Comitê de Assistência ao desenvolvimento (do OCDE) *(Development Assistance Committee of the OECD)*
DEGRAD	Mapeamento da Degradação Florestal na Amazônia Brasileira *(Mapping Forest Degradation in the Brazilian Amazon)*
DETER	Sistema de Detecção de Desmatamentos em Tempo Real *(Real Time Deforestation Detection System)*
DETEX	Sistema de Monitoramento da Exploração Seletiva de Madeira *(Selective Logging Monitoring System)*
ECOFORTE	Programa de Ampliação e Fortalecimento das Redes de Agroecologia e Produção Orgânica (do Banco do Brasil) *(Program for Expansion and Strengthening of Agroecology and Organic Production Networks - Banco do Brasil)*
Embrapa	Empresa Brasileira de Pesquisa Agropecuária *(Embrapa Brazilian Agricultural Research Corporation)*
ENREDD+	Estratégia Nacional para REDD+ *(National Strategy for REDD +)*
EUR	Euros *(Euros)*
FA	Fundo Amazônia *(Amazon Fund)*
FADESP	Fundação de Amparo e Desenvolvimento da Pesquisa *(Research Support and Development Foundation)*
FAS	Fundação Amazonas Sustentável *(Sustainable Amazon Foundation)*
FASE	Federação de Órgãos para Assistência Social e Educação *(Federation of Organs for Social Assistance and Education)*
FAPs	Fundações de Amparo à Pesquisa (nos estados) *(Research Support Foundations in the states)*
FBB	Fundação Banco do Brasil *(Banco do Brasil Foundation)*
FBDS	Fundação Brasileira para o Desenvolvimento Sustentável *(Brazilian Foundation for Sustainable Development)*
FBOMS	Fórum Brasileiro de ONGs e Movimentos Sociais para o Meio Ambiente *(Brazilian Forum of NGOs and Social Movements for the Environment)*
FINEP	Financiadora de Estudos e Projetos *(Financier of Studies and Projects)*
FLONA	Florestas Nacionais *(National Forests)*
FMI	Fundo Monetário Internacional *(International Monetary Fund)*
FNABF	Fórum Nacional das Atividades de Base Florestal *(National Forum of Forest Based Activities)*

FNDF	Fundo Nacional para o Desenvolvimento Florestal *(National Fund for Forest Development)*
FNMA	Fundo Nacional do Meio Ambiente *(National Environment Fund)*
FOFA	Fortalezas, oportunidades, fraquezas e ameaças *(Strengths, opportunities, weaknesses and threats)*
FSC	Forest Stewardship Council
FUNAI	Fundação Nacional do Índio *(National Indigenous Foundation)*
FUNBIO	Fundo Brasileiro para a Biodiversidade *(Brazilian Fund for Biodiversity)*
GCF	*Green Climate Fund*
GEE	Gases do efeito estufa *(Greenhouse gases)*
GEF	Fundo Mundial para o Meio Ambiente *(Global Environment Facility)*
Gg	GigaGramas *(GigaGrams)*
GIZ	Agência de Cooperação Alemã *(German Cooperation Agency-German, Deutsche Gesellschaft für Internationale Zusammenarbeit)*
Ha	Hectare(s) *(Hectares)*
IBAM	Instituto Brasileiro de Administração Municipal *(Brazilian Institute of Municipal Administration)*
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis *(Brazilian Institute of Environment and Renewable Natural Resources)*
IBGE	Instituto Brasileiro de Geografia e Estatística *(Brazilian Institute of Geography and Statistics)*
ICB	Instituto de Ciências Biológicas *(Institute of Biological Sciences)*
ICMBio	Instituto Chico Mendes de Conservação da Biodiversidade *(Chico Mendes Institute for Biodiversity Conservation)*
IDSM	Instituto de Desenvolvimento Sustentável Mamirauá *(Mamirauá Sustainable Development Institute)*
IFT	Instituto Floresta Tropical *(Tropical Forest Institute)*
IIEB	Instituto Internacional de Educação do Brasil *(International Institute of Education of Brazil)*
ILPF	Integração lavoura-pecuária-floresta *(Crop-livestock-forest integration)*
IMAFLORA	Instituto de Manejo e Certificação Florestal e Agrícola *(Forestry and Agricultural Management and Certification Institute)*
IMAZON	Instituto do Homem e Meio Ambiente da Amazônia *(Amazon Institute of Man and Environment)*

INCRA	Instituto Nacional de Colonização e Reforma Agrária *(National Institute of Colonization and Agrarian Reform)*
Inmetro	Instituto Nacional de Metrologia, Qualidade e Tecnologia *(National Institute of Metrology, Quality and Technology)*
INPE	Instituto Nacional de Pesquisas Espaciais *(National Institute for Space Research)*
IOV	Instituto Ouro Verde *(Ouro Verde Institute)*
IPAM	Instituto de Pesquisa Ambiental da Amazônia *(Amazon Environmental Research Institute)*
IPBES	Plataforma Intergovernamental sobre Biodiversidade e Serviços Ecossistêmicos *(Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services)*
IPCC	Painel Intergovernamental sobre Mudanças Climáticas *(Intergovernmental Panel on Climate Change)*
Ipê	Instituto de Pesquisas Ecológicas *(Institute for Ecological Research)*
IPEA	Instituto de Pesquisa Econômica Aplicada *(Institute for Applied Economic Research)*
Ipeadata	Base de dados econômicos e financeiros mantida pelo IPEA *(Ipeadata Base economic and financial data maintained by the IPEA)*
ISA	Instituto Socioambiental *(Socio-Environmental Institute)*
ISPN	Instituto Sociedade, População e Natureza *(Institute Society, Population and Nature)*
KfW	Banco de Desenvolvimento do Estado Alemão *(German State Development Bank)*
Km²	Quilômetros quadrados *(Square kilometers)*
LAMA	Laboratório de Ecologia de Manguezal *(Mangrove Ecology Laboratory)*
LGFP	Lei de Gestão de Florestas Públicas *(Public Forest Management Act)*
LIRA	(Projeto) Legado Integrado da Região Amazônica *(Integrated Legacy of the Amazon Region Project)*
LNMC	Laboratório de Neuroquímica Molecular e Celular do ICB *(Molecular and Cellular Neurochemistry Laboratory)*
m³	Metros cúbicos *(Cubic meters)*
MAPA	Ministério de Agricultura, Pecuária e Abastecimento *(Ministry of Agriculture, Livestock and Supply)*
MCTIC	Ministério de Ciência, Tecnologia, Inovações e Comunicações *(Ministry of Science, Technology, Innovations and Communications)*

MDA	Ministério do Desenvolvimento Agrário *(Ministry of Agrarian Development)*
MDL	Mecanismo de Desenvolvimento Limpo (em inglês, *Clean Development Mechanism)*
MMA	Ministério do Meio Ambiente *(Ministry of Environment)*
NDCs	Contribuições Determinadas Nacionalmente (em inglês, *Nationally Determined Contributions)*
NICFI	Norway's International Climate and Forest Initiative
NOK	Coroas norueguesas *(Norwegian Krone)*
NORAD	Agência de Cooperação de desenvolvimento da Noruega *(Norwegian Agency for Development Cooperation)*
OCDE	Organização de Cooperação e Desenvolvimento Econômico *(Organisation for Economic Co-operation and Development* (OECD)
ODI	Overseas Development Institute
ODS	Objetivos de Desenvolvimento Sustentável *(Sustainable Development Goals*- SDGs)
OEMAS	Organizações Estaduais de Meio Ambiente *(State Environmental Organizations)*
ONG	Organização não-governamental *(Non-Governmental Organization)*
OPAN	Operação Amazônia Nativa *(Native Amazon Operation)*
OTCA	Organização do Tratado de Cooperação Amazônica *(Amazon Cooperation Treaty Organization)*
PAOF	Plano Anual de Outorga Florestal *(Annual Forest Grant Plan)*
PAS	Plano Amazônia Sustentável *(Sustainable Amazon Plan)*
PCTs	Povos e Comunidades Tradicionais *(Traditional Peoples and Communities)*
Petrobras	Petróleo Brasileiro S.A. *(Petrobras Petróleo Brasileiro SA)*
PFNM	Produtos florestais não madeireiros *(non-timber forest products)*
PGTA	Planos de Gestão Territorial e Ambiental em Terras Indígenas *(Plans for Territorial and Environmental Management in Indigenous Lands*
PIB	Produto Interno Bruto *(Gross Domestic Product)*
PMFC	Planos de Manejo Florestal Comunitário *(Community Forest Management Plans)*
PNAE	Programa Nacional de Alimentação Escolar *(National School Food Program)*

PNGATI	Política Nacional de Gestão Territorial e Ambiental em Terras Indígenas *(National Policy for Territorial and Environmental Management in Indigenous Lands)*
PNMC	Política Nacional sobre Mudança no Clima *(National Policy on Climate Change)*
PPCDAm	Plano de Ação para Prevenção e Controle do Desmatamento na Amazônia Legal *Action Plan for Deforestation Prevention and Control in the Legal Amazon*
PPCDs	Queimadas no Cerrado *(Action Plan for the Prevention and Control of Deforestation and Burning in the Cerrado)*
PPG7	Programa Piloto para Proteção das Florestas Tropicais do Brasil *(Pilot Program for Protection of Tropical Forests in Brazil)*
PRA	Programa de Regularização Ambiental *(Environmental Regularization Program)*
PRADA	Planos de Recuperação de Áreas Degradadas ou Alteradas *(Plans for the Recovery of Degraded or Altered Areas)*
PRODES	Projeto de Monitoramento da Floresta Amazônica Brasileira por Satélite *(Brazilian Amazon Rainforest Monitoring Project by Satellite)*
PRONAF	Programa Nacional de Fortalecimento da Agricultura Familiar *(National Program for Strengthening Family Farming)*
PROVEG	Política Nacional de Recuperação da Vegetação Nativa *(National Native Vegetation Recovery Policy)*
PRSA	Política de Responsabilidade Social e Ambiental *(Social and Environmental Responsibility Policy)*
PSA	Pagamentos por Serviços Ambientais *(Payments for Environmental Services)*
PTL	Programa Terra Legal *(Terra Legal Program)*
QL	Quadro Lógico *(Logical Framework)*
QR	Quadro de Resultados *(Results Framework)*
RAFA	Relatório Anual do Fundo Amazônia *(Amazon Fund Annual Report)*
RDS	Reservas do Desenvolvimento Sustentável *(Sustainable Development Reserves)*
RECA	(Projeto) Reflorestamento Econômico Consorciado e Adensado *(Consortium and Dense Economic Reforestation Project)*
REDD+	Redução de emissões de gases de efeito estufa provenientes do desmatamento e da degradação florestal, conservação de estoques de carbono florestal, manejo sustentável de florestas e aumento de estoques de carbono florestal *(Reduction of greenhouse gas*

	emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable forest management and increased forest carbon stocks)
RESEX	Reserva Extrativista *(Extractive Reserve)*
RET	Registros de Encaminhamentos e Temas *(Routing and Theme Logs)*
Rioterra	Centro de Estudos da Cultura e do Meio Ambiente da Amazônia *(Center for Amazon Culture and Environment Studies)*
Rio92	Conferência das Nações Unidas sobre o Meio Ambiente e o Desenvolvimento (no Rio de Janeiro 1992) *(United Nations Conference on Environment and Development -Rio de Janeiro 1992)*
Rio+20	Conferência das Nações Unidas sobre Desenvolvimento Sustentável (no Rio de Janeiro 2012) *(United Nations Conference on Sustainable Development (in Rio de Janeiro 2012)*
RL	Reserva Legal *(Legal Reserve)*
R$	Reais brasileiros *(Brazilian Reais)*
SAFs	Sistemas Agroflorestais *(Agroforestry Systems)*
SBPC	Sociedade Brasileira para o Progresso da Ciência *(Brazilian Society for the Progress of Science)*
SEAD	Secretaria Especial de Agricultura Familiar e do Desenvolvimento Agrário da Casa Civil da Presidência da República *(Special Secretariat for Family Farming and Agrarian Development of the Presidential House)*
SFB	Serviço Florestal Brasileiro *(Brazilian Forest Service)*
Sicar	Sistema Nacional de Cadastro Ambiental Rural *(National Rural Environmental Registry System)*
SINAFLOR	Sistema Nacional de Controle da Origem dos Produtos Florestais *(National Forest Products Origin Control System)*
Sisfogo	Sistema Nacional de Informações sobre o Fogo *(National Fire Information System)*
SISNAMA	Sistema Nacional de Meio Ambiente *(National Environmental System)*
SISREDD+	Sistema de Informação sobre as Salvaguardas de REDD+ *(+ REDD + Safeguards Information System)*
SNUC	Sistema Nacional de Unidades de Conservação *(National System of Conservation Units)*
Sudam	Superintendência do Desenvolvimento da Amazônia *(Amazon Development Superintendence)*
tC/ha	Toneladas de carbono por hectare *(Tons of carbon per hectare)*
tCO_2	Toneladas de dióxido de carbono *(Tons of carbon dioxide)*

TCU	Tribunal de Contas da União *(Union Court of Auditors)*
TerraClass	Projeto de Levantamento de informações de uso e cobertura da terra na Amazônia *(Amazon Land Use and Coverage Information Survey Project)*
TI	Terra Indígena *(Indigenous Land)*
TNC	*The Nature Conservancy*
UCs	Unidades de Conservação *(Conservation Units)*
UFPA	Universidade Federal do Pará *(Federal University of Pará)*
USD	Dólares norte-americanos *(American Dollars)*
US$	Dólares norte-americanos *(American Dollars)*
UNFCCC	*United Nations Framework Convention on Climate Change*
WRI	*World Resources Institute*
WWF	*World Wildlife Fund*
QL	Quadro Lógico *(Logical Framework)*
QR	Quadro de Resultados *(Results Framework)*
QUEIMADAS	Portal do Monitoramento de Queimadas e Incêndios *(Burning and Fire Monitoring Portal - INPE)*
ZEE	Zoneamento Ecológico-Econômico *(Ecological-Economic Zoning)*

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The purpose of this evaluation is to analyze to what extent the goals of the Amazon Fund are being met based on the results found from 2008 to 2018[1]. This analysis seeks to make evident the actions and strategies that have contributed to meeting these set goals, and therefore, how to strengthen, amplify, and identify any challenges or obstacles that must be overcome in order to generate recommendations that will support the future implementation of the Amazon Fund. This evaluation does not go into the individual merit of every specific result created from the 103 unique projects supported by the Fund but seeks to analyze the effectiveness of the operation of the Amazon Fund through its general governance, defined goals and the implementation of its group of projects. Additionally, two complementary studies were performed which support this evaluation -- The Amazon Fund's Benefit Distribution and The Rural Environmental Registry – from which a group of related projects was selected and analyzed in depth.

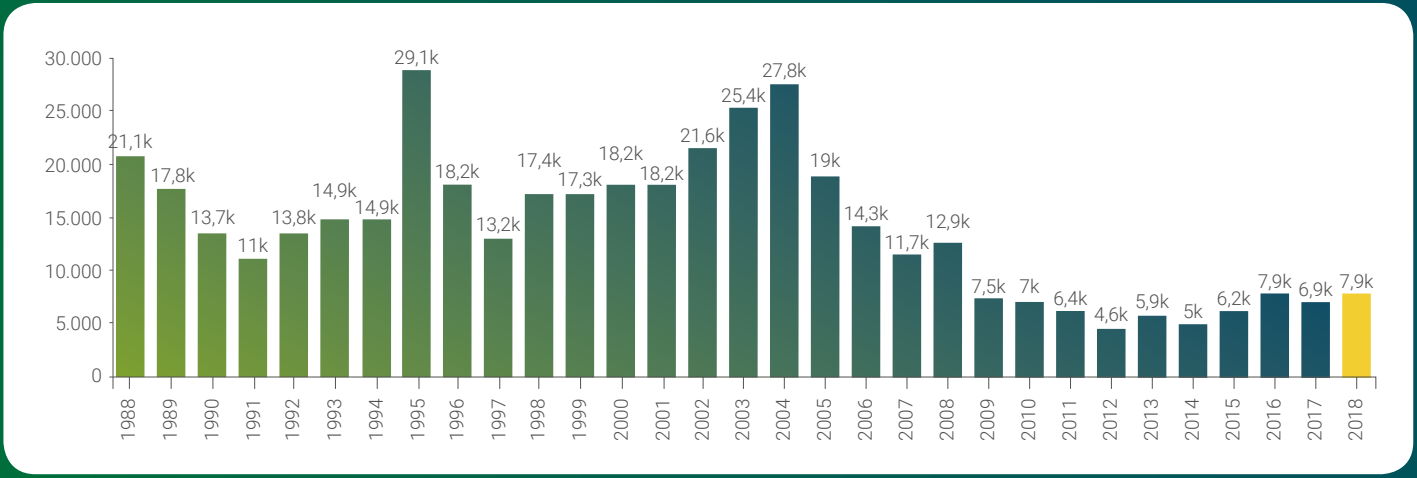
The Amazon Fund was established in 2008 through an agreement between Brazil and Norway and it aims to raise donations for non-repayable investments through preventative actions, monitoring and fighting deforestation, and the promotion of conservation and sustainable growth in the Amazônia Legal (Brazil's Legal Amazon). Up to 20% of the Fund's resources can also be used to develop deforestation monitoring and control systems in other Brazilian biomes and/or in other tropical countries. Its primary donors are Norway and Germany, contributing 93.8% and 5.7% of the donated amounts respectively, whose contributions until the end of 2018 equate to R$3.4 billion[2], about $818 million USD. In addition, 0.5% of the total amount of the Fund is contributed by Petróleo Brasileiro S.A. With the income generated through donated resources over the years, the total value of the Amazon Fund amounts to R$ 4.5 billion (about $1 billion USD).

In the context of the negotiations of the United Nations Framework Convention on Climate Change (UNFCCC) and the role of forests in mitigating greenhouse gas emissions, the Amazon Fund was the first fund that followed the logic of result-based funds in reduction of greenhouse gas emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable forest management and increased forest carbon stocks (REDD+). Developing countries that conduct actions and policies for the REDD+ are expected to be rewarded after obtaining mitigating results. The Amazon Fund is, therefore, an innovative mechanism of financial recognition and compensation for the reduction of deforestation in the Legal Amazon. Its creation was influenced by the international recognition of the great success of the policies to combat deforestation developed by Brazil since 2004, most specifically the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm) (Graph 1). Other factors that led to the creation of the Fund included the capacity to monitor deforestation through satellites, the existence of a trustworthy and manageable institution such as the National Bank for Economic and Social Development (BNDES), and an independent civil society that worked with the government to fight deforestation.

1 This assessment does not analyze the context and discussions that in 2019 involve the Amazon Fund because it was beginning the scope of the Term of Reference that guides the evaluation process.

2 According to RAFA 2018 (BNDES, 2019a), the amount is US $ 1,288,235,378.26 or R$ 3,396,694,793.53.

Graph 1 – Surface deforestation in Brazil's Legal Amazon (1988 to 2018)



Source: INPE/PRODES, 2019. Note: Estimates were used in 2018.

By the end of 2018, the Fund supported 103 projects in total; 15 projects that have already been completed and 35 projects in their final phase. The resources committed to these projects amount to about R$ 1.9 billion (approximately $458 million USD), with R$1.1 billion (approximately $265 million USD) already disbursed. The sectors involved in implementing the projects were third-party organizations (58 projects), state organizations (22), federal organizations (9), cities (7), universities (6,) and international entities (1). In terms of allocated resources, 62% went to government entities.

At the end of 2018, a pipeline of projects totaling approximately R$ 1.376 billion (R$ 394 million in analysis and R$ 982 million in consultation) was carried out in addition to the aforementioned contracted projects. Throughout the 10 years of operation of the Amazon Fund, 55% of the resources that were received (R$ 1.9 billion) were allocated to projects, not including the 11 projects that were approved and subsequently cancelled during this period. If all projects in the pipeline would be approved, the total allocated resources could rise to 97%, taking over 73% of all the Amazon Fund's cash value (resources received plus income). In order to increase the Fund's impact in the coming years, the acceleration of the project approval process is recommended.

The overall goal of the Amazon Fund is to reduce deforestation with sustainable development in Brazil's Legal Amazon. In its Decree[3] of creation, four components are considered to direct the application of resources[4]:

1. Sustainable Production; promoting activities that keep the forest standing and are economically attractive. This component represents 26% of the total resources.

2. Monitoring and Control; supporting government actions that ensure the adequacy of anthropic activities to Brazilian environmental legislation. This component draws in the biggest financial support, 47% of the total resources.

3 Decree No. 6,527 of August 1, 2008.

4 The same Decree considers seven thematic areas: (i) management of public forests and protected areas; (ii) environmental control, monitoring and inspection; (iii) sustainable forest management; (iv) economic activities developed from the sustainable use of vegetation; (v) Ecological-Economic Zoning, land use planning and land regularization; (vi) conservation and sustainable use of biodiversity; and (vii) recovery of deforested areas.

3. Territorial Organization; This component represents 14% of allocated resources.
4. Science, Innovation and Economic Instruments; which possesses a transversal character and whose activities contribute to the recovery, conservation, and sustainable use of biodiversity. This component receives 13% of the supporting financial resources.

The main elements that constitute the governance of the Amazon Fund, whose implementation is a sovereign responsibility of Brazil, are as follows:

- The establishment, management, and raising of donations for the Amazon Fund is a BNDES responsibility. A 3% value of all donations is intended to cover operational costs and expenses related to Amazon Fund.
- The Amazon Fund Steering Committee (COFA) is intended to establish guidelines, criteria, and modalities for the application of Fund resources. COFA is composed of representatives from the Brazilian federal government, distinguished government Ministries, the BNDES, state governments from states in Brazil's Legal Amazon, and civil society; including representatives of social movements, Amazonian indigenous organizations, the business sector and academia.
- The Ministry of Environment (MMA) annually defines the fundraising threshold for the Amazon Fund based on the results which indicate the reduction of carbon emissions caused by deforestation. The Amazon Fund Technical Committee (CTFA), comprised of up to six specialists recognized for their adept scientific and technical knowledge, is responsible for the analysis and validation of the calculations presented by the MMA.
- Initiatives eligible for support from the Amazon Fund must be in accordance with: the PPCDAm, the National Strategy for Reducing Greenhouse Gas Emissions from Deforestation and Forest Degradation, Conservation of Forest Carbon Stocks, Sustainable Forest Management, and Increasing Forest Carbon Stocks (ENREDD+), state-level Deforestation Combat and Prevention plans, the criteria and focal points established by the COFA and the operational policies of the BNDES.

BRAZIL'S LEGAL AMAZON: CONSERVATION IN THE LONG-TERM

A wide variety of scientific literature and evidence shows that Brazil's Legal Amazon and its biomes are of great importance for the ecosystem's services – the conservation of biodiversity, carbon capture and storage, climate stabilization and water production, among others – on a local, national, regional and global scale. One of the most important contributions from the Amazonian biome is tied to the rain cycle in Brazil, especially in the nation's South and Southeast regions. Furthermore, the biome contributes significantly to the water supply for agriculture, hydroelectric dams, industry, and human consumption across South America.

The success of PPCDam changed deforestation patterns in smaller areas. The decrease of areas where deforestation occurs means that the dynamic has become more fragmented and scattered in many small areas, thus making deforestation monitoring and combat via command and control increasingly difficult and expensive. Moreover, the country's

economic crisis from 2014 onwards, impacted the Brazilian federal government's budget and consequently, the federal environmental institutions. Grave financial difficulties also affected the states and, as such, the ability to supervise deforestation, a synergistic activity to the Amazon Fund. Therefore, an increase in deforestation since 2015 can be seen, but this increase does not reach pre-2005 patterns.

The most important factor for deforestation in the region since 2005 has been the strengthening of monitoring and control. It remains indispensable to deforestation reduction, however, it has become increasingly costly due to its new standards. Nevertheless, there is a very clear understanding that only the development of economical alternatives and the sustainable use of the remaining forest can adequately contribute to reducing the overall pressure on forests in the long-term.

It is necessary to create an alternate economic model, linked to the generation and management of knowledge of the Amazonian biome and the development of supply chains for socio-biodiversity products that will aggregate value of the vast natural wealth in the region. Many projects supported by the Amazon Fund have implemented activities that laid the foundations for this socioeconomic sustainable development model, although it is a long-term process that may take decades. The construction of a new model involves the broad mobilization of actors and economic sectors (forestry, agriculture, infrastructure, industry, etc.), extractive communities and Amazonian populations, as well as political will and policy coordination. Due to its innovative and disruptive character, the construction as a result of a cumulative learning process. – is complex yet at the same time, it depends on political will and differentiated investments.

The construction of this alternative model of development requires the creation of favorable conditions for private investments and community initiatives, which historically face logistical delays, regulation problems, and bureaucratic barriers that come with working in the Amazon. This effort demands collaboration and synergistic work between private, public and third parties, action alongside local communities, and the participation of the scientific community through knowledge generation and research application.

The region must take a technological leap towards the construction of sustainable supply chains, which can include species, commodities, and products native to the Amazon, generating knowledge about the Amazon biome. This is possible by utilizing biotechnology and bio-economy, innovative information technology tools, communication and digitization of agriculture, socio-biodiversity and manufacturing chains, value aggregation, and transport logistics. The Amazon Fund plays an important role in building these new models of sustainable production (alongside other projects in the region), proving their economic viability in local, regional, national and international value chains.

AMAZON FUND PERFORMANCE: KEY FINDINGS AND RECOMMENDATIONS

I. AMAZON FUND GOVERNANCE

The implementation of the Amazon Fund over ten years has been a way of learning, building trust and adapting to different actors, and continually improving project support

operationalization strategies. The management of the Amazon Fund, through a financial institution such as BNDES, is one of the key lessons learned for the success in its creation and implementation.

Although BNDES initially had limited experience in managing a fund with similar characteristics to the Amazon Fund, it was possible to see that there was a large professional capacity to answer mandates and challenges. BNDES's highly qualified staff, solid operational practices, and transparency with the use of consolidated resources throughout their ten years of the experience with the Fund is surely a management model that can be replicated in other countries. At the same time, it should be noted that, out of the available resources, unfortunately, not even half were spent throughout this time period. Accelerated project implementation could have benefited from a larger number of initiatives and a wider range of experiences, creating more sustainable growth in the Amazon. On the one hand, there is the difficulty of qualifying projects to BNDES's requirements, on the other hand, it can be concluded that the resources which were implemented went through a rigorous selection process.

It is also relevant to bring up the role of the COFA, which was instrumental in refining strategies and focusing on investments. The management and results from the Amazon Fund have evolved throughout the ten-year term and many projects are still taking place. The 2009 Fund is very different from the 2018 Fund. Throughout this period, management and strategies have been improved and many problems identified at the beginning of this phase have since been solved either partially or in their entirety. Amongst the factors of success which led to achieving impactful results, as well as the overall improvement in performance with the Amazon Fund, it is important to highlight:

- The Amazon Fund has demonstrated the capacity to bring different actors together for a common goal; to promote sustainable development in the region and reduce deforestation. As a result, it was important to build a wide and democratic governance, as well as fulfilling operational transparency requirements in order to inform and analyze the use of resources. Strengthening COFA and its larger interactions with the project operationalization process, carried out by BNDES, is necessary for the Amazon Fund to expand its legitimacy beyond what has already been achieved among its many strategic social actors. The projects supported the relevant beneficiaries (populations that keep the forest standing, state and municipal governments) and the work with third-party organizations allowed for an increased reach of the Amazon Fund, as well as the presence of the State in distant areas.

- Innovation in project implementation, such as initiatives that aggregated small projects through "linking" organizations, resulting in more reach for the Amazon Fund, which reached many small size organizations and local communities.

- The use of hosting open bid calls as a strategy to induce the introduction of good projects in specific and relevant theme areas and to attract a wider and more diverse participation of institutions interested in the themes. The public calls fostered competition among different proponents and provided greater scope for the Amazon Fund to operate. The Fund has increased its ability to mobilize resources through innovations in project implementation and public calls.

- Changing the approach in sustainable supply chains and private sector involvement. The structural proposal of supply chains has been maturing, starting with the prospect and identification of chain delays (logistic, legislative, health issues, etc.) and potential

plaintiffs prior to project implementation. This approach focuses on seeking an approximation with the private sector to ensure the demand for sustainable products, allowing for a more systemic view of the supply chain as a whole. The bonds made amongst members of the small business sector is a key factor in the sustainability of productive projects.

- New directives in the Science, Innovation and Economic Instruments components strengthened the support for scientific and technological research focused on socio-biodiversity product chain, on the management of logging or non-logging forest and the recovery of degraded areas.

II. EFFECTIVENESS OF THE AMAZON FUND

Although there is clear evidence that demonstrates how the Amazon Fund has contributed to a reduced deforestation in the Amazon, it is challenging to estimate this contribution quantitatively. The fund has limited resources compared to that of the Amazon's economy, which is why variations in Amazonian deforestation rates can be attributed to its performance. Furthermore, the Fund was created with the characteristic of additionality to Brazilian government resources, and its results depend, in large part, on the effectiveness of the environmental and economic policies of the federal government. The results of the Fund also inherently depend on the programs and actions of the states and cities geographically tied to the Amazon, specifically those which focused on preventing and controlling deforestation and had the budget and resources available to implement them.

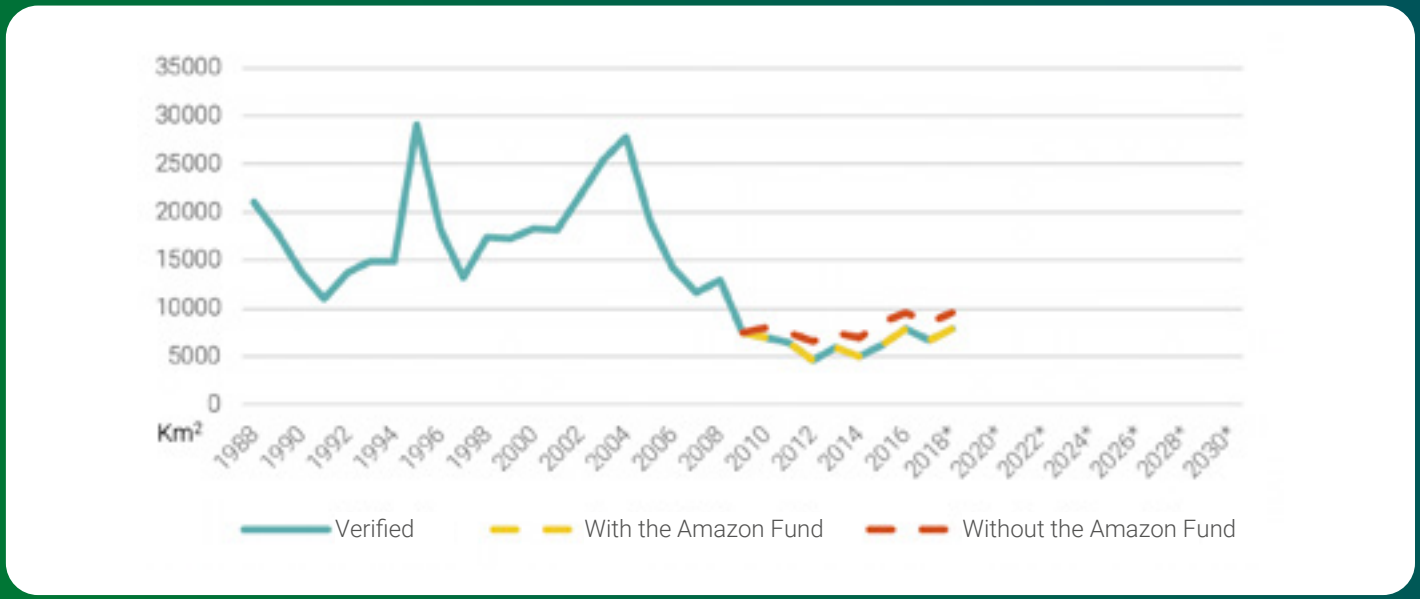
In this sense, the Amazon Fund has made significant investments supporting policies directed at environmental regulation, especially in reference to the Rural Environmental Registry (CAR). Other projects from the Fund also contributed to the reduction of deforestation in an indirect or direct manner. The conclusion is that the Amazon Fund did not alter the deforestation tendencies of the last couple of years, but without its implementation, deforestation would have been even more widespread (Graph 2).

- The complementary study of CAR-projects supported by the Amazon Fund estimates that they have contributed to the preservation of 8.571 km² of the biomes in the Amazon and the Brazilian *Cerrado* – a tropical savannah – from 2014 to 2018. During that same time-span, the analysis demonstrated that a deforestation of 8.244 km² in the Amazonian biome has been avoided, while in the *Cerrado* 327 km² were preserved. With a favorable scenario and the support of synergistic monitoring and control policies, CAR is an important tool used in the fight against illegal deforestation. However, the same study warns that the effect of CAR on deforestation may be only temporary due to lack of enforcement, penalties and weakening control policies, added to the slow process of validation and implementation of other Forest Code instruments (GIZ, 2019b).
- Most of the projects evaluated in the sustainable production axis, including the recovery of degraded areas, show reductions in deforestation in the implemented areas.
- Project support for 65% of the Indigenous Land (TIs) and for 190 Conservation Unities (UCs) in the Amazon, helped to strengthen the territorial categories that constitute the main barrier against deforestation. Supporting the protection of ownership of TIs is one of the most efficient mechanisms to mitigate the emission of greenhouse gases (GEE) through forest conservation. It is worth highlighting that the Amazon Fund's

learning process in constructing partnerships that could make it possible to support the needs of indigenous communities and at the same time, promote the protection of the forests in the TIs. Above all, this knowledge could enable the implementation of a national territory and environment management policy and protection of these lands – the National Policy for Territorial and Environmental Management of Indigenous Lands – supporting the creation and implementation of the Territorial and Environmental Management Plans in Indigenous Lands (PGTAs). Through these supported projects, there is an emphasis on encouraging the participation and promotion of the role of indigenous peoples through plans made in collaboration with states and organizations of traditionally non-indigenous identifying societal partners.

- Projects with the Fire Department had positive impacts for fire prevention and combat, specifically pointing to 23,630 forest fires or non-authorized burns fought by the Military Fire Department. Furthermore, the projects helped to create an interstate conversation between fire departments.
- Finally, the financing of direct action monitoring and control by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) in the field also indicates a contribution to the reduction of deforestation.

Graph 2 – Visual explanation of the contribution made by the Amazon Fund in reducing deforestation



Source: Own creation based on data by INPE/PRODES (2019)

One of the biggest problems the Amazon Fund faces is the lack of information regarding the economic and social impacts of the supported projects, especially those connected to Sustainable Productive Activities (APS). This information is key to generate, register, and disseminate knowledge from all of the lessons learned, to overcome regulatory and economic delays with the development of APS. These promising activities for each local situation create effective mechanisms to structure supply chains of APS, and thus, to point the way for the effective construction of a sustainable model of socioeconomic development in Brazil's Legal Amazon. The replicability and scalability of successful initiatives is only possible with adequate knowledge of project impacts and the vision and support for all the changes needed for a sustainable development model.

- Using the derived information regarding economic impact from the projects that were finished and evaluated up until now, one can note an overall improvement in the quality of life, an increase in income (albeit at times small in scale), the compliance with the Cancun Safeguards and the strengthening of the gender perspective.
- In relation to the Science, Innovation and Economic Instruments Component, the monitoring of deforestation and complementary analysis has been improved. The most important element of this aspect is the project to expand the support of the Amazon Fund to other biomes, in order to have a more complete picture of deforestation in Brazil and the support of the Brazilian Forest Service (SFB) for the National Forest Inventory. Many of these projects produced outstanding results, such as the "Bioactive Compounds of the Amazon" project, which was carried out in partnership with a private company and a cooperative. This project impacted public policies related to the quality of the açaí berry by contributing to the consolidation of three classifications (açaí, clarified açaí and dehydrated açaí, according to Normative Instruction / MAP No. 37 of October 1, 2018). The success of this project has made it possible to raise new funds for research from other sources, which is important for both the sustainability of investments and their expansion. There are also interesting experiences with Payment for Environmental Services (PSA) as an economic instrument for forest conservation, especially regarding services intended for the protection of natural springs

III. UNEXPECTED RESULTS

The interaction between distinctive actors, mainly under COFA and the management of the Amazon Fund by BNDES, had unplanned consequences. These include:

- During this ten-year period, third-party entities eventually learned to work within the BNDES demands, though for many of them it was complex to prepare for, negotiate and implement projects within these patterns and restrictions. Working together created a mutual learning experience for both BNDES and third-parties, recognized throughout years of implementation as positive by both parties. The analysis criteria and the projection selection by BNDES contributed to a professionalization of the entities in terms of financial administration and project management, which helped the parties to access other more demanding resources such as international funds. Some of the interviewed participants mentioned that accessing resources of the Amazon fund functioned as a seal of approval to attest to their good governance.
- Although there were already coordination and collaboration spaces between the states, the participation in COFA allowed them to strengthen the cooperation, exchange of experiences and enhanced the articulation of the environmental management between states.
- The Amazon Fund has become a global reference for climate, biodiversity, and result based-funds. Norway benefited from this experience through its initiative, Norway's International Climate and Forest Initiative (NICFI), which helped to establish other funds and activities in many countries, even if these other cooperation's have not reached the scale of the Amazon Fund, due to lack of institutions with the size and capacity of BNDES. Moreover, the effort by NICFI to include forests in the global climate change negotiation agenda resulted in the inclusion of this theme as part of the 2015 Paris Climate Accord.

IV. CHALLENGES AND RECOMMENDATIONS

The challenges and recommendations associated with the Amazon Fund encompass a variety of distinctive areas. Some of these specific emphases are beyond the scope of the Fund's financing, such as delays related to infrastructure and logistical conditions for storage, processing / industrialization and the outflow of production, and the expansion to the use of communication and information technology. In order to undertake new business, it would be imperative to first assure that adequate internet access will be given to the whole region. Furthermore, other technologies for tracking products and goods must be tested and supported to reduce the competition with illegal production, specifically with regards to logging and fishing.

Land regularization is one of the major obstacles to the sustainable development of the Amazon, as well as being one of the seven thematic areas prioritized by the Amazon Fund. The role that the Fund could have had in this area must be taken into consideration, once the time and resources directly tied to this topic are accounted for, due to high opportunity cost. Suggested examples to improve include: encouraging and supporting the availability of CAR databases of supported projects, despite their inconsistencies; additionally, contributing to water resource planning, granting, and other purposes; and finally, to analyze successful sites and experiences, in addition to increasing technologies made available to support Brazilian institutions responsible for land regularization in Brazil.

- The governance and management of the Amazon Fund faces many challenges.

  i. The sustainability of the Fund in the long-term requires the diversification of donors (besides other countries, i.e. other organizations or non-profit foundations), as well as exploring other options with the private sector (Brazilian or otherwise) and the possibilities of blended financing.

  ii. It is imperative to strengthen the BNDES team with financial and human resources (their own or hired) staff to diminish the waiting time for projects going through the approval process, and therefore making monitoring and follow-up faster with the implementation of efficiency and effectiveness indicators. It is recommended to rethink the presence of representation from the Amazon Fund in strategic places such as in the Amazon and/or in Brasilia. The 3% of the total value of the donations for basic cost coverage and other expenses related to the Amazon Fund must be renegotiated in order to strengthen management in the areas aforementioned. Many organizations that manage similar resources apply percentages above 10%. On the other hand, new opportunities for collaboration and blended finance between projects of the Amazon Fund and other types of financing should be explored, both from BNDES itself, which has increased investments significantly in the environmental area, as well as from other sources.

- The Amazon Fund's strategies of knowledge management and communication must be amplified.

  i. The positive impacts that resulted from the projects and the Amazon Fund are not widely disseminated which weakens its image and reduces its potential to mobilize new resources for the Fund and projects. Although there are extensive communications through the website, it is possible to use other means of

communication and to spread its impact both to a Brazilian and international audience. There are many ways to use new means of communication and social media to reach a wider audience.

ii. It is also necessary to improve the management of project knowledge since the learning experience is not yet sufficiently systematized. Improving the exchange of experiences and mutual learning between projects would make it easier to create opportunities for spillovers and increase the scale and/or replicability of the experience. COFAs potential should be harnessed as a space to exchange experiences, debate and collaborate to invest in greater synergy between social actors.

- The reduction of gender inequality as transverse criteria for project support must be strengthened by encouraging action that promotes women's participation and supports equality. The Amazon Fund has advanced, over the past few years, with the introduction of indicators and specific criteria regarding the theme in its public calls, but there is still much work to be done. For example, praise relevant news or publications, reward projects that present initiatives to develop training programs such as women-focused workshops, promote change made by women's groups or make explicit the contributions that women's participation bring to the project if they can be identified. In addition, all results related to women's participation in all projects, if any, need to be reported.

- The implementation of the Amazon Fund has had problems with public partners. On a federal level, the recent context of fiscal restriction (i.e. contingencies) has led to difficulties in the execution of Amazon Fund projects and federal policies, leading to the risk of loss of additionality. At a state level, the frequent political changes (i.e. electoral cycle) and the reduced number of permanent civil servants lead to priorities and teams being discontinued, generating risks of cancelling activities, loss of institutional memory/learning, and low sustainable potential. All projects which have been managed by cities have had generalized problems in implementation, with the exception of one. Public institutions (including federal, state and municipal ones) are key actors to meet the aims of the Amazon Fund, and it is necessary to support states and cities in implementing projects and to explore working arrangements in mixed arrangements between government, private sector and civil society that enable states and municipalities to execute projects with agility and flexibility.

- Along the work areas of the Amazon Fund there is room to intensify the already initiated efforts to develop the private sector and work with sustainable production chains in an integral manner.

  i. It is of utmost importance that the Amazon Fund advances in the development of economic instruments that support the regulation and the maintenance of forest storage. Furthermore, it is essential to invest in economic activities that value the forest, such as forest management, non-wooden products, and low-carbon agriculture, as alternatives to the irrational exploitation of resources. The private sector's engagement is crucial for the structuring of an economy based on sustainable forestry (both in logging and outside of it) and in defining a participation strategy for the Fund's aims. There is a growing number of companies in the private sector (Brazilian or otherwise) which are concerned with sustainability and are interested in *green deals* that can connect with the Amazon Fund's projects, bringing in additional resources.

ii. Also, in the sphere of private sector involvement, there have been few advances regarding the incrementing of areas under forest concessions. There should be an analysis of the possible support necessary to make sustainable use of wood products in forest concessions. These are strategic investments that can, with the support of the Amazon Fund early in the operation, attract more private investment, span across a larger territorial expansion, occupy lands not under concession where the deforestation rate is larger, and prevent invasions on these lands.

iii. In the area of Science, Technology and Innovation (CT&I), the knowledge of biodiversity is also a strategic area in which the Amazon Fund should participate by supporting applied research projects.

- The investments made in support of policies directed to environmental regulation, especially regarding CAR and synergistic policies, need to be continued so the achieved results are sustainable, such as the 2017 Public Bid for Vegetation Coverage Recovery. Support for the Implementation of Degraded or Altered Area Recovery Plans (PRADA), destined to recover the legal reserves and the permanent preservation areas in the territories that implement the CAR, should be analyzed by the Fund. The experiences of the projects that have worked with recovering degraded areas in the ten years of the Fund's existence and the experiences of other initiatives must be taken advantage of in order to support the development of state programs and spread the implementation capacity by states and cities. At the same time, there are commercial experiences of recovery and sustainable management of tropical forests in Brazil which could strengthen the recovery of degraded lands.
- Finally, a percentage of the Fund's resources must be directed to projects that allow for experimentation and innovation, even though they may produce uncertain results. Technological commercial and management innovation can incentivize new opportunities for the use of natural resources and promote new business models. This could be done through a specific funding line to foster innovation in the area of new product creation, through ways of production, processing, storage, logistics, marketing, etc. This could help to develop valuable supply chains and aggregate more value to the whole of the Amazon Rainforest, creating a new socio-economic model of sustainable growth throughout the region.

INTRODUCTION

INTRODUCTION

I. A BRIEF HISTORY OF THE AMAZON FUND

During the United Nations Conference on Climate Change held in Bali in 2007 (COP 13), Brazil and Norway reached a cooperation agreement and the Amazon Fund was announced. Its creation followed next year supported by Norway and Germany as its primary donors, contributing 93.8% and 5.7% respectively, a combined R$ 3.4 billion in donated funds. Petróleo Brasileiro S.A. (Petrobras) contributed 0.5% to the Fund as well (BNDES, 2019a).

The Amazon Fund was created with the mission to support monitoring and prevention efforts that fight against deforestation; through donations to non-refundable projects which share the reduction of deforestation with sustainable growth in Brazil's Legal Amazon as their goal. Its origin is closely connected with both the United Nations Framework Convention on Climate Change (UNFCCC) negotiations on the role of forests in mitigating greenhouse gas (GEE) emissions, as well as to policies which combat deforestation developed by Brazil since 2004, specifically the Plan of Action to Prevent and Combat Deforestation in the Amazon (PPCDAm).

Decree nº 6.527 on August 1st, 2008, marked the legal creation of the Amazon Fund with 2009 serving as year zero since the first operations were approved, despite no resources being issued that year. As defined in the agreement, the Amazon Fund has supported projects in all areas -- Third Sector, universities, cities, states, union and international projects -- and during these ten years of work the Amazon Fund has supported 103 projects, 15 of which have already concluded.

The Amazon Fund articulated three goals and motivations which are meant to be self-reinforcing (ZADEK et al., 2010):

- To identify and increase the implementation of effective projects, supporting the Brazilian national strategy to prevent deforestation;
- To signal support of the international community to the existence, in Brazil, of policies for sustainable growth in the Amazon and to political and institutional forces which defend the Amazon in Brazil; and
- To direct resources, particularly from the international community, to approaches which act as a catalyst in economic transformations focused on development in the Amazon.

In donation contracts to the Amazon Fund with Norway, Germany, and Petrobras, it is important to highlight the respect of Brazilian sovereignty, and once it is established that resource designated is exclusive "According to its [Amazon Fund] norms, conditions, guidelines and criteria" (BNDES, n.d. a).

The fact that Brazil is the first recipient of a Fund of this magnitude, being the first of its kind to pay for results in the context of the introduction of the forest sector in the UNFCCC, was justified by the donors for the following reasons:

- The International recognition of widely successful Brazilian efforts to reduce the annual deforestation rates in the Amazon region;
- The deforestation monitoring capacity of the National Institute for Space Research (INPE) – with real and reliable data;
- The agreement is anchored in the management capacity and the transparency of a trustworthy institution such as that of the National Bank for Economic and Social Development (BNDES);
- The existence of an organized civil society which can verify results and participate in their implementation, as well as governments committed to confronting deforestation through sustainable development on a state and municipal level.

II. THE EVOLUTION OF DEFORESTATION IN THE AMAZON: CONTEXT AND NUANCES

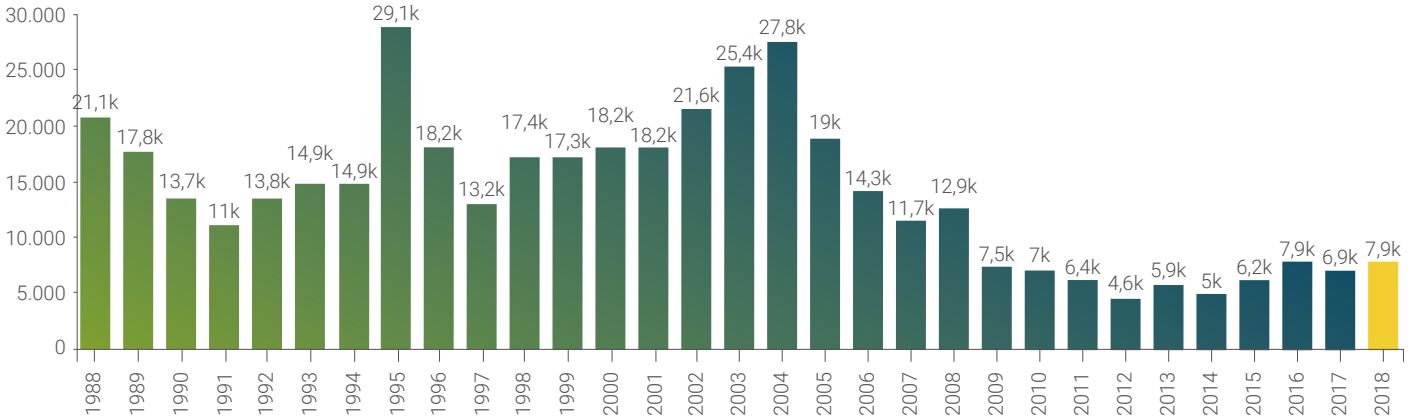
To analyze the Fund's ten years of operation, it is important to keep in mind important previous events as well as an overview of the transformation which the Brazilian Amazon has gone through in the last few years. This section aims to briefly review the context of the implementation of the Fund in its first decade of existence.

Amazonian deforestation became sharper since the 1960s and 1970s due to the geopolitical goals of national integration and territorial occupation (BECKER, 2009). From 1970 to 1980 there was a clear preference for sizeable investments in the road building, energy, agriculture, communication, and mining sectors. The opening of the Amazon is associated with road construction, and through the Amazon Development Superintendence (Sudam), a series of incentives were offered by the government to those interested in producing in the region. In the 1990s, deforestation of large areas began with the adaptation of soy to the Cerrado biome -- the vast tropical savanna ecoregion in Brazil -- and the expansion of livestock breeding.

The United Nations Conference on Environment and Development in 1992, also known as the Earth Summit or Eco 92, put the issue of environmental issues and the Amazon on the agenda of major global discussions. Since then, the vision of the development of the Amazon has shifted, which takes into consideration the importance of conservation and sustainable use of the forest.

The PPCDAm was launched in March 2004, as a result of efforts made by the Permanent Interministerial Working Group, created a year earlier in order to propose measures to reduce deforestation rates in the Amazon. The PPCDAms coordination, which involved 13 ministries, was at the highest political level, the Civil House of the Presidency. That same year, the second-highest annual deforestation rate of the Legal Amazon (27,772 km²) was recorded, according to data from INPE's Brazilian Amazon Rainforest Monitoring Project (PRODES) (INPE / PRODES, 2019) (Graphic 3).

Graph 3 – Deforestation size in Brazil's Legal Amazon (1988 to 2018)



Source: INPE/PRODES, 2019. Note: Estimations were used for the 2018 rate.

As shown in Graph 3, from 2005 on, it was possible to see a consistent and significant decrease in deforestation rates. The annual rate went from 27.4 mil km2 in 2004 to 4.6 mil km2 in 2012, the lowest level since annual measuring began in 1988. There is empirical evidence that the PPCDAm contributed fundamentally to this reduction in deforestation and established a new integrated framework to combat illegal deforestation in the region (CEPAL; GIZ; IPEA, 2011). Other factors that may have contributed to this reduction include the voluntary engagement of the private sector (OCDE; CEPAL, 2016) and the restrictions on access to agricultural credit.

PPCDAm has already had three phases – 2004-2008, 2009-2011 and 2012-2015 –, currently being in its fourth one – 2016-2020, – and was structured in three thematic axes: Land and Territorial Planning; Monitoring and Control; and Fostering Sustainable Productive Activities. This structure remained stable until the last phase, and a fourth axis was added: Normative and Economic Instruments. One of the main changes in the PPCDAm occurred in 2013, when its general coordination changed from the Civil House of the Presidency to the Ministry of Environment (MMA), which demonstrates that the deforestation of the Amazon loses importance in the Federal Government's political agenda.

The results of PPCDam's distinctive phases have been very important. In addition to the reduction of the rate of deforestation by approximately 75% compared to the rate in 2004, we can highlight, among other results, the creation of 50 million hectares of Conservation Units (UCs); the approval of 10 million hectares of Indigenous Lands (TIs); the creation and fine-tuning of monitoring systems such as PRODES, the Real-Time Deforestation Detection System (DETER), the Brazilian Amazon Forest Degradation Mapping (DEGRAD), the Selective Logging Monitoring System (DETEX), and the Amazon Land Use and Coverage Information Survey Project (TerraClass); the improved monitoring of integrated actions between the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), Federal Police, Army and National Force of Public Security; the elaboration of the Ecological-Economic Macro-Zoning (MacroZEE) of Brazil's Legal Amazon; and the Soy Moratorium produced in areas of illegal deforestation in the Amazon.

Another result worth noting is that, with the participation of important ministries and institutions, PPCDAm incorporated the fight against deforestation in other sectors' agendas.

Finally, there was also a significant change in the perception of increased economic risk associated with illegal deforestation regarding what had happened before: between 2009 and 2012 the fines for deforestation reached over 7 billion BRL (US$ 3.1 billion) (PEREIRA; SOUZA JÚNIOR, 2018). From 2008 on, the states in Brazil's Legal Amazon elaborated their State Deforestation Prevention and Control Plans, supporting PPCDAm's objectives from the state level. The success of the PPCDAm led to the creation in 2010 of a similar plan for the Cerrado biome where deforestation was already reaching high levels: the Plan of Action for the Prevention and Control of Deforestation and Burning in the Cerrado (PPCerrado).

Some policies and measures have shown themselves to be synergetic to the goals against deforestation in the context of the PPCDam and the Amazon Fund. Among others, the Central Bank Resolution No. 3,545 of 2008 can be mentioned, which conditioned access to agricultural credit in the Amazon biome to presenting documents proving the registration and environmental regularity of the property. Although there is no clear evidence of the impact of this credit restriction measure, it is possible to highlight the synergy of the goals. Between 2013 and 2015, the self-declared forest credit lines - Eco, Forest and Agroecology - from the National Family Farming Strengthening Program (PRONAF) represented only 0.07% of the total rural credit granted (MMA, 2018a).

Additionally, of great relevance is the Forest Code approved in 2012 (Law No. 12,651 of May 25, 2012), which consolidates the Rural Environmental Registry (CAR). CAR constitutes one of the most important tools against deforestation and will be later treated in greater depth in this report (Section 4.2). Also, noteworthy t is the Terra Legal Program (PTL), established by Law No. 11,952 of June 25, 2009 and amended by Law No. 13,465 in 2017, launched in 2009 by the then Ministry of Agrarian Development (MDA) to regulate the occupation of federal public lands in the Amazon, combat deforestation and promote sustainable development initiatives (OECD; ECLAC, 2016). Until 2017, PTL issued 28,499 titles, both rural and urban, which correspond to 13,416,480 hectares issued (MDA, 2017). In addition, the PTL has also allocated public land for the creation of UCs, forest districts and other purposes, totalling over 20 million hectares of designated areas.

The Soy Moratorium in the Amazon biome was a voluntary initiative with meaningful results in contained the advances of soy over forest areas and was an innovative arrangement between civil society, the private sector and the government instituted in 2008. The results are remarkable since only 1% of the soybean plantation expansion occurred in newly deforested areas after the moratorium. Although the soy grown area in the Amazon biome has more than tripled, going from 1,14 million hectares in the 2006-2007 crop to 4.48 million hectares in the 2016-2017 crop (ABIOVE; AGROSATÉLITE; INPE, 2019), soybean expansion has taken over deforested areas in the past.

The Amazon Protected Areas Program (ARPA), established by Decree No. 8,505 on August 20th, 2015, is a Federal Government program coordinated by the MMA, financially managed by the Brazilian Fund for Biodiversity (FUNBIO) with resources from the Global Environment Facility. (GEF, in Portuguese the World Environment Fund), also involving the World Wildlife Fund Brazil (WWF-Brazil) and the Amazon Fund, through the BNDES. The ARPA aims to promote the conservation of protected areas in the Amazon on a sustainable basis and is considered the largest program tropical forest conservation program in the world. In 2015, this program reached 105 supported UCs, covering an area of 58.3 million hectares.

Throughout the PPCDAM's phases, among their three axes, the most definitive in the fight against deforestation was Monitoring and Control, especially until 2012. DETER was fundamental to progress made in this regard especially when articulated with integrated surveillance. Until 2017, with DETER it was possible to detect only changes in forest coverage in areas over 25 ha. In response to the alteration of the deforestation patterns in the Amazon, a new version is operational that can identify deforestation and other changes in forest coverage in a minimum area next to 1 ha.

The Territorial and Land Planning axis has also achieved significant results, especially in the creation of UCs in threatened areas and the approval of TIs. On the other hand, the axis Promoting Sustainable Productive Activities did not achieve the expected results. The transition to a development model that values sustainable use of the forest and open areas in the region on a large scale is still a challenge (ECLAC; IPEA; GIZ, 2011). It is estimated (PEREIRA; SOUZA JÚNIOR, 2018) that PPCDAm avoided 196,000 square kilometers of deforestation between 2004 and 2015, which corresponds to almost twice the total deforestation observed in the period and 4.9% of the entire Brazilian Amazon rainforest.

From the beginning of the PPCDAm in 2004 until the end of the year 2012, the annual rate of Amazonian deforestation was reduced sharply, as described. However, since 2012, Amazonian deforestation plateaued, with an average rate of about 6.4 thousand square kilometers from 2012 to 2018 (INPE/PRODES, 2019). The significant reduction of deforestation from 2004 to 2012 was in line with the goal set by the National Policy on Climate Change (PNMC), instituted by Law No. 12,187 on December 29th, 2009, to reduce the country's greenhouse gas emissions from 36.1% to 38.9% by 2020 against a projected emissions baseline. Decree No. 9,578 on November 22nd, 2018 provides, as a means of achieving this voluntary commitment, a reduction of 80% in annual deforestation rates in Brazil's Legal Amazon compared to the average between 1996 and 2005.

Furthermore, reducing deforestation is also in line with the Nationally Determined Contribution (NDC) that Brazil voluntarily submitted to the UNFCCC, setting a commitment to reduce the country's greenhouse gas emissions by 37% by 2025, and by 43% by 2030 indicatively. The Brazilian NDC also indicates that the country intends to achieve zero illegal deforestation in the Brazilian Amazon by 2030 (BRAZIL, 2015a).

However, from 2004 to 2015, the deforestation dynamic changed significantly. In the PPDAm and PPCerrado plans in the fourth of the PPCDAm (MMA, 2018a), an analysis evaluates the changes from 2004 to 2015 which can be summarized as follows:

- Private areas, settlements, and plots continue to be among the categories that contribute most to deforestation, although there is a change in the participation of private areas, whose total share of deforested area in the Amazon decreased from 47% in 2004 to 36% in 2015, in addition to settlements, whose share increased from 18% to 27% in the same time-period. The percentage for responsibility of small rural plots in deforestation remains relatively stable, of about 25%. The integral TIs and UCs constitute the main barrier to deforestation (in 2015, they accounted for 1,2% and 0,8% respectively). The participation of the UCs in sustainable use has increased (MMA, 2018) (Image 1).

Image 1 – Deforestation variation in land categories

	Area Private/Other	Settlements	Small Plots	Indigenous Lands	Conservation Units	
					Integral Protection	Sustainable Use
2004	46,9%	18,0%	26,3%	2,2%	1,8%	5,1%
2005	46,6%	20,5%	25,4%	1,9%	1,1%	4,2%
2006	36,6%	22,4%	31,3%	1,8%	2,1%	9,0%
2007	35,2%	22,1%	30,5%	2,0%	1,0%	11,8%
2008	37,8%	24,0%	28,8%	3,0%	0,9%	5,4%
2009	29,5%	28,3%	28,3%	5,0%	0,8%	8,2%
2010	33,1%	25,6%	28,6%	4,2%	0,8%	7,9%
2011	32,6%	28,1%	28,9%	3,7%	0,5%	5,5%
2012	34,0%	27,4%	27,7%	3,3%	0,6%	6,9%
2013	34,9%	27,0%	26,6%	3,0%	0,5%	8,0%
2014	32,6%	23,2%	22,0%	1,6%	0,3%	7,7%
2015	36,1%	27,4%	25,1%	1,2%	0,8%	9,3%

Source: MMA, 2018a.

- There are important changes in deforested surface distribution according to the size of the deforested polygons, although two periods can be distinguished in larger areas. Between 2004 and 2010, the share of polygons above 100 ha, especially those larger than 1,000 hectares from 10% of deforested area in 2004 to 1% in 2010, significantly decreased; between 500 and 1,000 hectares (which decreased from 8% to 1%); and between 100 and 500 ha, (which reduced from 25% to 10%). By 2015, there is a size reversal of deforested polygons, with an increase in the contribution of the three classes from 2010, especially those between 100 and 500 ha, which increased from 10% to 20% of the deforested area (Image 2).

Image 2 – Deforestation dynamics between 2004 and 2015 according to size classes of deforested areas, as a percentage of total deforested area in each year

	Smaller than 10 ha	Between 10 and 20 ha	Between 20 and 50 ha	Between 50 and 100 ha	Between 100 and 500 ha	Between 500 and 1000 ha	Bigger than and 1000 ha
2004	13%	12%	18%	13%	25%	8%	10%
2005	11%	14%	20%	14%	25%	8%	9%
2006	11%	17%	25%	16%	22%	4%	4%
2007	12%	19%	25%	15%	20%	4%	4%
2008	15%	23%	25%	13%	17%	3%	4%
2009	22%	28%	23%	10%	11%	4%	2%
2010	26%	29%	23%	10%	10%	1%	1%
2011	26%	27%	23%	10%	10%	3%	1%
2012	21%	26%	24%	12%	13%	3%	1%
2013	18%	25%	24%	11%	15%	4%	4%
2014	20%	26%	23%	11%	15%	4%	3%
2015	15%	21%	23%	13%	20%	5%	3%

Source: MMA, 2018a.

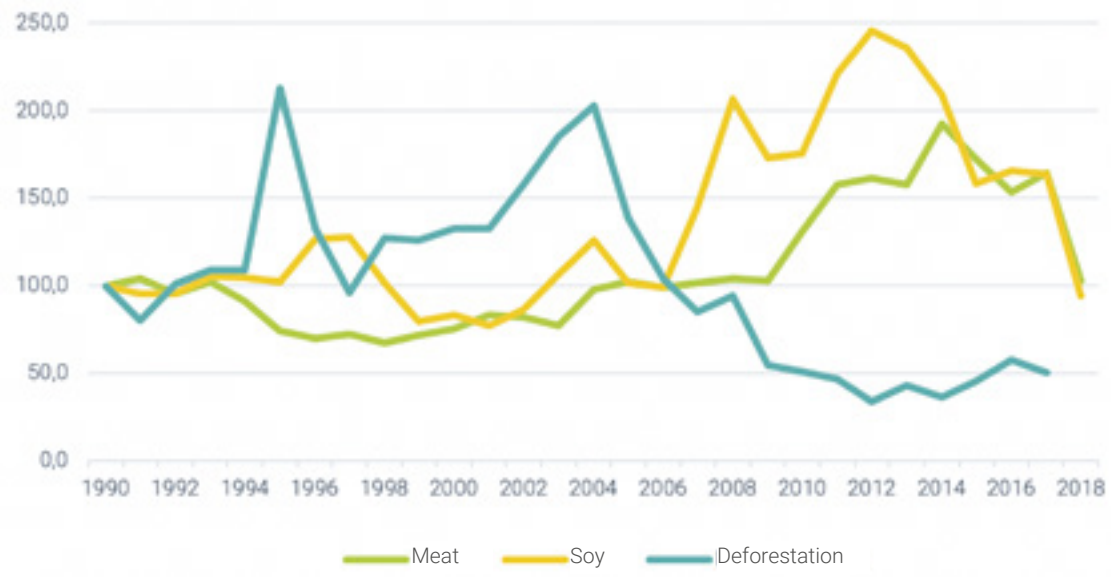
- In smaller size classes, changes followed the opposite direction. By 2010, the total size of deforested area in smaller classes, i.e. up to 10 ha and between 10 and 20 ha, increased its share of total deforestation from 2004 and 2010: the first from 13%

to 26%, and the second from 12% to 29%. Later, in 2015, these classes decreased their participation to 15% and 21% respectively. Classes between 20 and 50 ha and between 50 and 100 ha already remained stable and, in 2015, represented 23% and 13% respectively. The result was a reduction in the share of the total deforested area of polygons with the largest area compared to smaller polygons, especially those smaller than 20 ha. Diminishing areas in which deforestation takes place means that the dynamic has become more fragmented and scattered in many small areas, making it difficult while also increasing the monitoring costs via satellite and the combat through actions of command and control.

- Most pasture areas had already been deforested in 2004, and of the total pasture area (479.7 thousand square kilometers), only 13% (64.6 thousand square kilometers) were converted into forest areas between 2004 and 2015. Regarding temporary agriculture (mainly soybeans), which occupied an area of 45,000 square kilometers in 2004, 17% (7,600 square kilometers) came from forested areas and 40% (or 17,700 square kilometers) originate from pastures and represent most of the increase during the period. Most deforestation for annual crops in forest areas took place before the Soy Moratorium in 2008.

The PPCDAm's results are even more notable considering the significant price boom in commodities that took place from 2004 to 2012, which is to say, at the same time as the significant fall in deforestation rates occurred (Graph 4). At the same time, areas for soy and other temporary crops had substantial increases from 2005 to 2015 -- approximately 50% -- and the bovine herd moderately increased -- approximately 12% (PEREIRA; SOUZA JÚNIOR, 2018).

Graph 4 - Amazon deforestation and commodity prices (1990-2017)



Source: IMF (August, 2019).

The relative success of deforestation policies, along with other aforementioned measures (e.g., the Soy Moratorium), changed the structure of GHGs in Brazil. In 2005, the category

"land use, change in land use, and forests" represented about 70% of the country's total emissions which increased to 26% in 2010 (MCTIC, 2016). This sector represents a reduction not only in its relative share of total emissions but also contributes to the reduction of absolute levels of emissions in the country. With an 81.5% reduction in emissions in the sector from 2005 to 2010, the overall total of Brazilian emissions fell by 52% in the period, as shown in Image 3 (MCTIC, 2016). The greenhouse gas reduction in this sector is, therefore, fundamental for Brazilian gas mitigation targets to be effectively met. Thus, if deforestation is not controlled, other sectors will have to invest more in mitigation to offset Brazilian efforts to contribute with a global warming trajectory of about 2°C, averaging an estimated US$ 5.2 trillion until 2050 (ROCHEDO et al., 2018).

Image 3 – Anthropic emissions by sources and removals by sinks of GHG in CO_2 and by sector in GigaGrams (Gg)

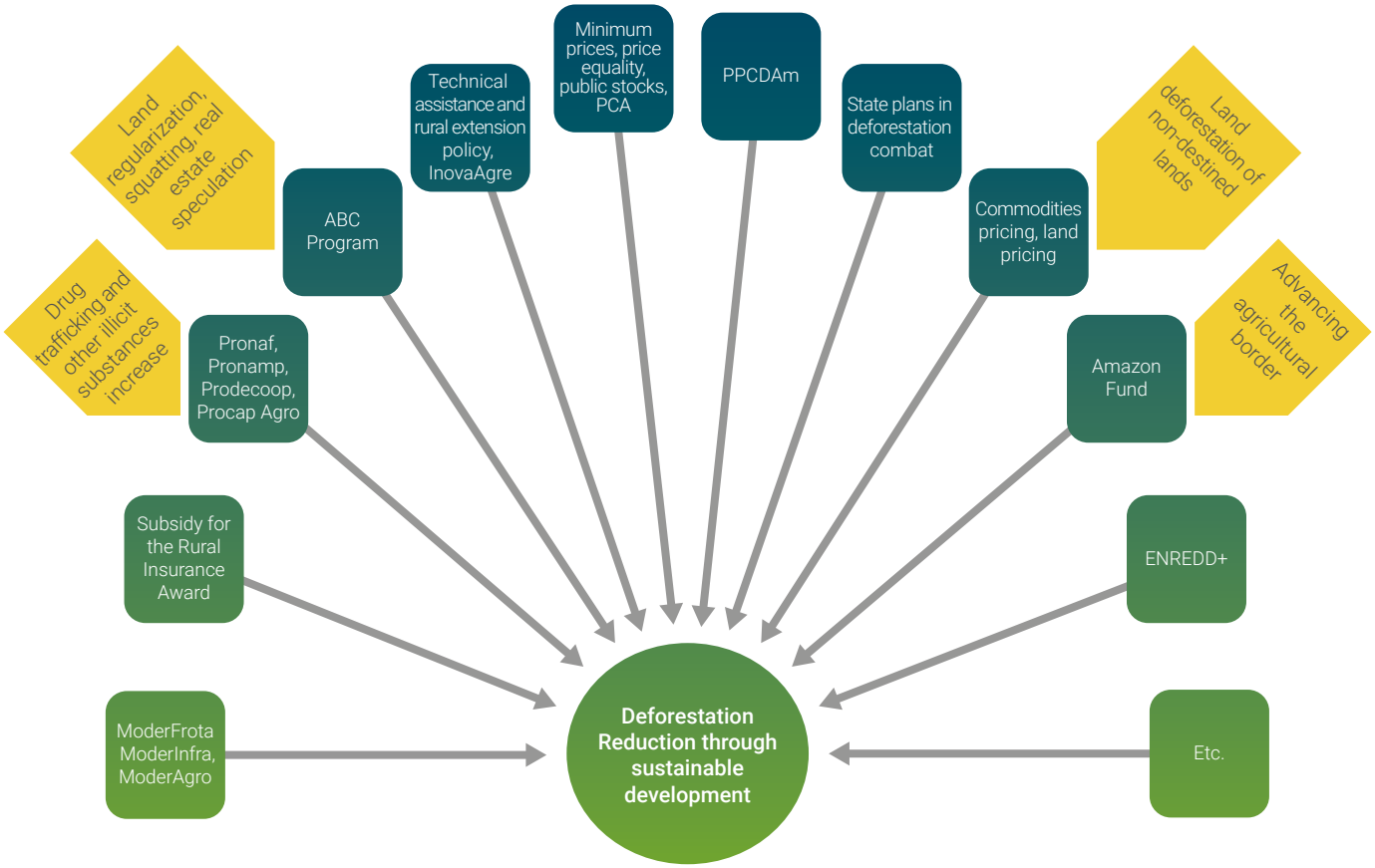
GWP-AR5	CO_2e (Gg)				
	1990	1995	2000	2005	2010
Energy	189.319	226.707	287.395	316.985	374.554
Industrial Processes	52.038	65.283	75.000	79.972	90.866
Agriculture	337.636	371.773	385.027	459.692	472.734
Use of Land, Change in Use of Land and Forests	797.6413	1.946.934	1.276.260	1.921.694	355.002
Residue Treatment	34.027	41.084	50.717	59.613	71.041
Total	**1.410.434**	**2.651.780**	**2.071.399**	**2.837.956**	**1.364.197**

Source: MCTIC, 2016.

Since its creation, the Amazon Fund has been an instrument completely and deliberately synergistic and active, both with the PPCDAm and other Amazon related policies. In fact, initiatives eligible to receive Fund support must follow the priority lines established by the PPCDAm. In addition, the component structure of the Amazon Fund corresponds to the thematic axes established by the PPCDAM, and the incorporation of a fourth axis in the last phase of PPCDAm was similarly accompanied by the creation of a fourth component in the Amazon Fund, called Science, Innovation and Economic Instruments. In this way, the Amazon Fund presents an intrinsic relationship with the main sustainability policies of the Brazilian Amazon, and notably with the PPCDam.

Nevertheless, there are many policies which influence the Amazon territory, with direct and indirect relations over deforestation dynamics and sustainable development in the region (Image 4). In other words, policies to combat illegal deforestation and promote sustainable development are a part of a complex context with many factors and players interacting systematically. For the purposes of this assessment, this means recognizing that the achievement of Amazon Fund's results depends largely on the coordination and degree of synergy with which many policies by the federal, state and municipal governments influence the style of development in the territory, considering that an additional factor of the Amazon Fund is the limit of its resources (Image 4).

Image 4 – Insertion of the Amazon Fund in the context of the various policies that influence the Amazon territory



Source: Self-made

To measure the magnitude of the Amazon Fund resources, Table 1 shows the comparison of resources invested in PPCDAm-related actions funded by the national budget (not including administrative and personnel expenses) with resources invested in the Legal Amazon by PRONAF, mainly those designated to financial activities, teams and infrastructures for family agricultural production[5]. Although the available data from PRONAF and PPCDAm only show results until 2014, it is possible to observe that, due to the size of its resources, the performance of the Amazon Fund cannot explain the evolution of deforestation in Brazil's Legal Amazon or other variables, such as Gross Domestic Product (GDP).

5 There are many other PRONAF lines of credit.

Table 1 - Comparison of Amazon Fund disbursements with other investments in the Legal Amazon in R$ (2009-2018)

YEAR	PPCDAm[(i)] (actions)	PRONAF[(ii)] (Legal Amazon)	Payments[(iii)] Amazon Fund
2009	1,648,881,986	2,606,400,156	-
2010	1,634,138,591	2,468,110,843	18,662,092
2011	1,195,291,104	2,767,544,586	92,675,910
2012	1,276,459,029	2,897,343,593	102,334,304
2013	1,371,266,551	3,975,092,887	108,154,780
2014	1,419,860,240	3,896,746,048	208,191,899
2015	-	-	146,939,297
2016	-	-	143,003,496
2017	-	-	230,530,563
2018	-	-	187,372,391

Source: Self-Made. Note: (i) GCF, (2019); (ii) Banco Central do Brasil; 2015); BNDES, 2019ª.

III. AMAZON RELATED PUBLIC POLICY

This section reviews the relation between the Amazon Fund with other policies and measures to fight deforestation and promote sustainable development in the Amazon. Besides providing resources for the implementation of the predicted actions aligned with the PPCDAm, the Fund was of crucial importance in creating the elaboration of State Deforestation Prevention and Control Plans (MMA 2018a), which required states to become eligible for representation with the Amazon Fund Steering Committee (COFA) and for project proposals.

In addition to the alignment of the Amazon Fund with the PPCDAm, it is important to highlight the Fund's integration and synergy with other policies related to the Amazon. As previously said, reducing deforestation is one of the main actions contemplated by the PNMC and the National Plan on Climate Change. Among the actions related to change through land use, the decree establishing the PNMC establishes a reduction, in 2020, of 80% of annual deforestation rates in Brazil's Legal Amazon compared to the average from 1996 to 2005. In order to meet this target, deforestation in the Amazon cannot exceed 3,925 square kilometers by 2020. Brazil's commitment to the Paris Agreement (2015), made official in its NDC, is even more ambitious, aiming to achieve zero illegal deforestation, and the restoration and reforestation of 12 million forests hectares by 2030 (BRAZIL, 2015a).

Brazil's National REDD+ Strategy (ENREDD+) was developed through a broad and participatory process initiated in 2010. ENREDD+ (MMA, 2016) aims to coordinate and promote synergy between the PNMC, the Native Vegetation Protection Law (New Forest Code), plans to prevent and combat deforestation and other laws, and policies and regulations aimed at reversing forest loss (MCTIC, 2016). The overall goal set by ENREDD

+ is to contribute to the mitigation of climate change by eliminating illegal deforestation, conserving and restoring forest ecosystems, and developing a sustainable low carbon forest economy that generates economic, social and environmental benefits. All activities supported by the Amazon Fund are fully aligned with the ENREDD+ objective. Launched in 2015, the Brazilian ENREDD+ is one of the requirements established by the UNFCCC-defined Warsaw Framework for payments based on greenhouse gas emission reduction from deforestation and forest degradation, carbon stock conservation, sustainable forest management and increased forest carbon stocks (REDD +).

One of the most important areas of the Amazon Fund's work revolves around TIs. The National Policy for Territorial and Environmental Management of Indigenous Lands (PNGATI) was established in 2012 by Decree No. 7,747 on June 5, 2012, with the purpose to

> ensure and promote the protection, restoration, conservation and sustainable use of natural resources of indigenous lands and territories; ensuring the integrity of indigenous heritage, improving the quality of life and physical and cultural reproduction of present and future generations of indigenous peoples in safe conditions, while respecting their socio-cultural autonomy, in accordance with current legislation (BRAZIL, 2012).

The main instrument used in PNAGATI's implementation is the Territorial and Environmental Management Plans for Indigenous Lands (PGTA). PGTAs are instruments developed by and for indigenous peoples, with the collaboration and support of state and civil society partners, and the Amazon Fund has supported the elaboration and implementation of PGTAs in 65% of TIs in the Amazon.

IV. THE AMAZON: A CRUCIAL BIOME FOR BRAZIL AND THE WORLD

The Brazilian Amazon, or the Legal Amazon[6], was established in 1966 and is composed of 772 municipalities across nine states (Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima, Tocantins as well the western part of Maranhão), and its area, 5,020,791 square kilometers, amounts to approximately 60% of Brazilian territory (IBGE, ANO). The GDP of these nine states totaled R$ 543,33 billion in 2016, which represents about 8,7% of the Brazilian GDP in that year (IBGE, 2018). The average GDP per capita in these states is of R$ 20,879.00, with great heterogeneity in the region: the highest value is observed in Mato Grosso, with R$ 37.463,00, and the lowest in Maranhão, with R$ 12.264,00 (IBGE, 2018). The Legal Amazon has a population of 25,364,365 people, which amounts to 13.3% of the Brazilian population, with 72% of inhabitants in its urban zones and 28% in rural zones (IBGE, 2013). Since 1970, the region's population has all but quadrupled and the settlement structure has changed from predominantly rural to urban.

There is a vast wealth in the diversity represented by the Amazon's traditional populations, characterized by hundreds of indigenous ethnicities, about 180 languages and thousands of *quilombola* communities and traditional communities such as artistically fishermen and women, extractivists, riverine people, and rubber tappers, among others. These communities not only express the diversity and cultural and social richness of the Amazon,

6 The Legal Amazon spans through the whole of the Amazon biome and 20% of the Cerrado biome

such populations play a key role in conservation and sustainable use of biodiversity. For example, between 2000 to 2012, the deforestation of the TIs with safe ownership was 2.5 times smaller than outside these areas (DING et al., 2016).

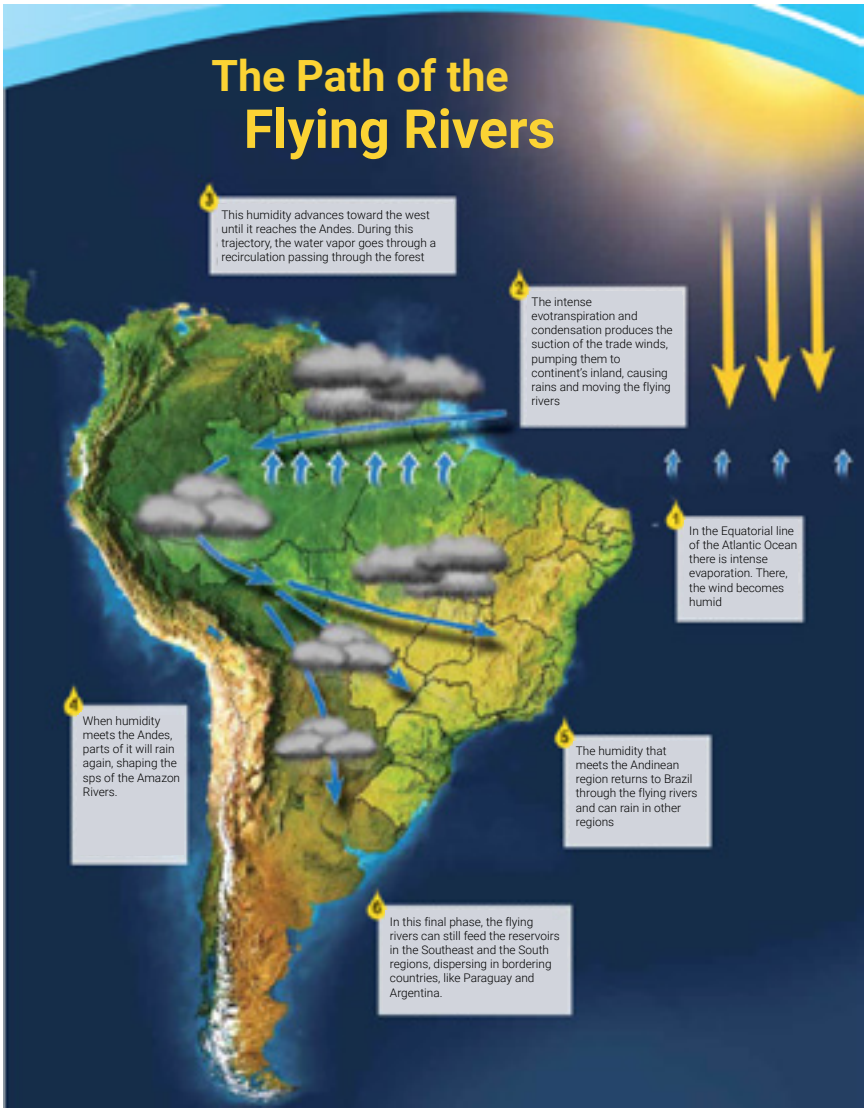
The Brazilian Amazon is part of the largest tropical forest in the world, which plays a determinant role in providing ecosystem goods and services on a local, regional and global scale. The loss of forest coverage in the Amazon endangers the provision of vital ecosystem services to Brazilian socio-economic prosperity, such as water supply, climate regulation, formation and fertilization, among others (IPBES, 2019). The Brazilian exportation sector is keenly sensitive to these risks, as it is increasingly focused on agricultural products and resource-intensive goods (GRAMKOW; GORDON, 2015), whose production depends on the provision of such ecosystem services. Additionally, the megabiodiversity of the country is accompanied by mega-sociodiversity, defined by the rich diversity of its peoples in the forest, water and fields. Such communities are critically dependent on biodiversity maintenance, and as such, are tied to the provision of ecosystem services to maintain their livelihood. Therefore, the health of the Amazon biome is a critical determinant of socioeconomic prosperity in the region's long term.

On a local scale, the effects of deforestation can modify the microclimate causing many negative effects. The changes in the forest coverage affect the water balance and the hydrology of the Amazon, even if precipitation remains constant. Including small hydrographic bays (under 10 km2), runoff and water flow generally increase with increasing deforestation (FOLEY J. et al., 2007), which decreases soil protection and water supply. The conversion of forests to grazing and agricultural land decreases the average annual evapotranspiration and thus, the average annual surface temperature can increase by more than 5° C locally. Landscape fragmentation and temperature elevation facilitate the encroachment of grass along forest edges and, consequently, the occurrence of fires that increase deforestation (COE M. et al., 2017). Extreme drought events and increased incidence of fires are more recurrent at the edges between deforested and forested areas, indicating a relationship between deforestation and fire or burning (MARENGO; SOUZA, 2018).

There are other local effects, such as loss of cultural and biological diversity, decreased supply of timber and non-timber forest products, and reduction of pollinators (FOLEY J. et al., 2007). Lastly, deforestation is also associated with an increased risk of malaria infection when compared to intact forest areas (FOLEY J. et al., 2007).

The Amazon Forest produces large amounts of water. Known as "flying rivers", formed by air masses that carry water vapor generated by evapotranspiration in the Amazon which carry humidity from the Amazon Basin to the Midwest, Southeast and South of Brazil, feeding the two the main fluvial systems of the country: The Paraná/La Plata and São Francisco rivers (FEARNSIDE P., 2019). These rains are the primary water source for energy generation in dams as well as for the agricultural and urban consumption in São Paulo and other large cities in the nation's South and Southeast. Due to the current deforestation level (about 20% of the Brazilian Amazon) and forest degradation, the Amazon has already lost somewhere between 40% and 50% of its capacity to pump and recycle water (MARENGO; SOUZA, 2018).

Image 5 - Graphical representation of evapotranspiration routes generated in the Amazon



Source: Flying Rivers Project.

A study published in Nature Sustainability, Strand J. et al. (2018) estimates that the economic values for a range of ecosystem services provided by the Brazilian Amazon Forest including food production (i.e. Brazil nuts), the supply of raw materials (rubber and wood), GHG mitigation (Carbon emissions), and climate regulation; are leading to income losses for soybean, cattle, and hydroelectricity due to reduced rainfall. Such economic activities in the Brazilian Amazon are usually associated with deforestation, but soybean cultivation, cattle production, and hydroelectricity generation strongly rely on the climate-regulating functions provided by forests, especially rainfall, which depends on forest coverage. Deforestation driven by agricultural expansion can, therefore, have negative repercussions; affecting its productivity due to the detrimental effects on vital ecosystem functions.

The study estimates the income values from exploration agendas, as well as Brazil nut and rubber collection in key production areas, and the potential payment for reduced emissions aiming to mitigate greenhouse gas emissions in regions under deforestation threat. In these regions, the international accords over REDD+, considering a price of US$ 5 per CO_2 ton, can generate upwards of US$ 48 million for Brazil until 2025 if the reduction targets are met.

For soybean and beef production, the study estimates decreased productivity and income reduction due to a decrease in climate regulating deforestation functions which average, US$ 1.81/ha/year and US$ 5.43/ha/year, respectively, but can reach US$ 9/ha/year, i.e. 30% of total income. These reductions focus especially on the edges of the Amazon Forest, particularly in production areas in the north of Mato Grosso, Rondônia and the South and East regions of Pará. Changes in hydroelectric generation represent only an average of US$ 0.32/ha/year, although economic losses can reach US$ 1.84/ha/year depending on how extensive the deforestation damage is. These changes are primarily focused on the transition months between dry and humid season (STRAND J. et al., 2018).

The Amazon's main contributions on a global scale come from climate regulation, both in the production and recycling of water, carbon storage and biodiversity conservation. As deforestation becomes more extensive, the decreases from evapotranspiration and atmospheric warming can weaken humidity recycling in the atmosphere over the Amazon, with great repercussions to South American climate (FOLEY J. et al., 2007). The Amazon Forest represents 10% of all the planet's biomass and therefore provides an important ecosystem climate stabilization service, storing organic carbon in the biomass and soil, thus keeping some of the greenhouse gases (CO_2 and CH_4) out of the atmosphere (FOLEY J. et al., 2007).

It is estimated that between 30% and 50% of precipitation in the Amazon Basin consists of recycled evaporation. The other part of the humidity originated in the Amazon Basin is carried by winds to other parts of the continent and is considered important in the formation of precipitation regions in the Amazon (PIOTROWSKY M., 2019; MARENGO; SOUZA, 2018). According to climate models, if the Amazon was completely or partially deforested, the climate problems that the absence of the forest would cause for agriculture would be felt in the United States, with a decrease in rainfall mainly in the West, and even in China (Marengo; Souza, 2018).

The climate change scenario for the Amazon, projected by climate models and presented by the Intergovernmental Panel on Climate Change (IPCC), point to an increase in average air temperature projected to be by well above 4°C by the end of the 21st century, and a reduction in rainfall of up to 40% in the Amazon (MARENGO; SOUZA, 2018).

Climate models strongly suggest that Brazil's agricultural frontier will be much warmer and drier in the coming decades and extreme drought events will become more frequent as GHG concentrations increase. Thus, in Brazil, the capacity of the Amazon Rainforest to moderate regional climate is becoming clear and preserving tropical forests will be a key component of mitigating future climate change (COE M. et al., 2017). The Amazon is a region at great risk due to climate variations and changes, and synergistic interactions with other existing threats, such as deforestation, forest fragmentation, and burning (MARENGO; SOUZA, 2018).

It is estimated that the Amazon Basin houses at least 10% of the known world biodiversity, with still many species unknown to scientists, especially in the most remote areas (PIOTROWSKY M., 2019). The biological diversity is intimately connected to cultural diversity and to ways of life of the traditional peoples of the Amazon. Beyond the intrinsic importance of biodiversity, there is an important economic potential associated with its sustainable exploration, which is necessary to know and develop, in which the Amazon Fund has played an important role in the last ten years.

Nobre I. e Nobre C.A. (2018), in the document "The Amazon Third Way Initiative: The Role of Technology to Discover the Potential of Economic Economics in Tropical Biodiversity,"

identify more than 200 Amazonian plant species with potential known as raw material for a low-cost early bioeconomy in Amazon and establish value chains. The study presents a reduced listing of 20 species with most promises or those which are widely used and integrate local productive chains or present strong potential in their use in food, cosmetics, perfumery, medicines, advanced materials and biotechnology. The authors bring success stories of agroforestry systems (SAFs) such as acai, which have annual returns of between $ 200 and $ 1,000 per hectare, adding more than $ 1 billion annually to the regional economy. There is a growing demand for bioeconomic products for traditional and innovative uses in the food, cosmetics, perfumery and pharmaceutical industries that have promoted new business opportunities in the Brazilian Amazon.

As part of this tendency, advances in biotechnological research have played a key part in expanding this potential, thus boosting the value chains that have the bio-industries focused on the processing of forest raw materials in biodiversity products as a primary focus (NOBRE I.; NOBRE C.A., 2018). This type of productive activity, usually based on SAFs, allows the ecosystem services of the standing forest to be kept up while taking advantage of the new technologies applied to the sustainable use of biodiversity.

Climate change is not linear. Once the deforested area crosses a (still unknown) threshold, a reduction on the continental scale may occur (COE M. et al., 2017). Some scientists and researchers (PIOTROWSKY M., 2019; NOBRE I.; NOBRE C.A., 2018; COE M. et al. 2017) believe that because of deforestation, climate change and the increase of forest fires, the Amazon is near a tipping point, which would change the stable climate-vegetation balance of the entire Amazon system, with degraded savannas covering most central, southern, and eastern portions of the basin (NOBRE I.; NOBRE C.A., 2018). If this scenario occurs, there could be catastrophic consequences both for the Amazon and Brazil, endangering both Amazonian and non-Amazonian populations, and affecting the main economic activities that depend on rainfall originating in the Amazon. Amazon, especially the agricultural sector endangering both Amazonian and non-Amazonian populations and affecting the main economic activities that depend on rainfall originating in the Amazon, especially in the agricultural sector.

V. MITIGATION THROUGH REDD+ IN THE UNFCCC AND PAYMENT FOR RESULTS

The term REDD+ is an acronym for “Reducing Emissions from Deforestation and Forest Degradation, Conserving Forest Carbon Stocks, Sustainable Forest Management, and Increasing Forest Carbon Stocks”. The purpose of this mechanism, since its initial proposal, was to create a way to financially reward developing countries that could reduce deforestation.

The initial idea of compensated deforestation reduction was presented in 2003 at COP 9 and, since then, Brazilian civil organizations and actors have participated in the process (SANTILLI M. et al., 2005). The Amazonian states themselves pressured the Brazilian Government to accept the inclusion of REDD+ in the Clean Development Mechanism (MDL) or other carbon market mechanisms and began to develop their own voluntary REDD+ schemes (FORSTATER et al, 2013).

REDD+ entered in UNFCCC discussions in 2005 (Eleventh Conference of the Parties, COP 11, Montreal). That year, the Coalition of Nations with Tropical Forests, led by Costa Rica and Papua New Guinea, made a formal proposal to reduce greenhouse gas emissions

from deforestation. The following year, influenced by non-governmental organization (NGO) analysis and Brazilian researchers on international compensation options for deforestation decrease (IPAM; EDF 2005), the Brazilian Government presented its proposal, "Avoided Deforestation", at COP 12 (Nairobi). Finally, the Bali Action Plan (COP 13, 2007) recognized the proposal as an option for mitigating climate change, thereby laying the basis for REDD+ negotiations.

The Bali Action Plan did not establish the mechanism by which developing countries would be compensated for reducing deforestation. In the absence of guidance from the Conference of the Parties, the main options discussed were a market-based and a fund-based approach in which Annex I countries of the Action Plan would deposit resources into a fund administered by a multilateral entity. This dilemma was ended at the COP 19 (Warsaw, 2013), with the Warsaw Framework for REDD+, establishing an international structure to provide incentives for developing countries for REDD+ and reiterating the agreed-upon national or subnational approach to REDD+ implementation in Cancun (COP 16, 2010).

The Warsaw Framework for REDD+ sets out the main international rules and procedures for UNFCCC forest sector mitigation efforts to be recognized and rewarded with performance payments. These decisions provide definitions of aspects such as reference levels, national monitoring systems, results-based financing, and others[7]. Developing countries with verifiable reductions in greenhouse gas emissions and/or increased carbon stocks will be eligible to receive "pay for results" from various international sources, from the Green Climate Fund (GCF). Payments for results must be additional and may be public or private, bilateral or multilateral in origin.

The agreement reached at the COP 16 (Cancun, 2010) on Safeguards for REDD+ was important in the discussion about REDD+ system structure as well. The seven safeguards, known as the Cancun Safeguards, aim to ensure that REDD+ implementation considers factors such as indigenous peoples and traditional communities' rights, biodiversity protection, interest parts participation, the permanence of REDD+ results and adopting measures to reduce emissions displacement, among others.

The first project to be approved in 2019 by the UNFCCC's GCF under the REDD+ results-based pilot payment program, was for $ 96.5 million for the results achieved by Brazil in the Amazon biome in 2014 and 2015. Brazil has met the following requirements set out in the Warsaw Framework:

a) Develop a national strategy or action plan – In 2015 Brazil launched ENREDD+, which focuses on coordinated actions to prevent and control deforestation and forest degradation and to foster recovery and promotion of sustainable development.

b) Submit a national forest emission reference level or a forest reference level (or, as an interim measure, the corresponding subnational levels) – In this case, Brazil has provided forest reference levels and subnational results for the Amazon Biome.

c) Have a robust and transparent national forest monitoring system that enables monitoring and reporting on REDD+ activities (with subnational monitoring as an interim measure) – Brazil's system includes remote sensing data and land data. The resulting information on the dynamics of change in land use has been used to reduce deforestation in the Amazon. The information is produced by INPE in projects that

7 The market-based approach exists in forest carbon projects aimed at the voluntary carbon credit market. These projects are private initiatives that generally follow their own certifications and models for their development.

aim to monitor different activities, such as PRODES, DETER, DEGRAD, TerraClass and INPE's Burn and Fire Monitoring Portal (QUEIMADAS).

d) Have an information system on the implementation of REDD+ Safeguards – Brazil is building a Safeguards Information System (SISREDD+) that provides access to relevant information in a transparent and immediate manner.

The adoption of the Paris Agreement in 2015 ushered in a new phase of the multilateral regime, marked by a greater ambition tackling climate change. Brazil ratified the Paris Agreement in September 2016, affecting its NDC (BRAZIL, 2015a). In terms of mitigation, Brazil commits to reduce greenhouse gas emissions by 37% by 2025 and indicates a 43% reduction in emissions by 2030, and in both cases the year-on-year emissions index serves as a reference. The forestry sector also plays an important role in the commitments made in the Paris Agreement. For the forestry and land-use change sector, Brazil's NDC foresees targets clearly linked to REDD+, such as strengthening Forest Code compliance and, indicatively, zero illegal deforestation in the Brazilian Amazon, as well as the restoration and reforestation of 12 million hectares of forests by 2030.

At the time the Amazon Fund was created (2008), the Warsaw Framework for REDD+ results payment did not yet exist, although the philosophy of the Fund is consistent with UNFCCC's subsequent decisions and REDD's logic of payments for results, in the sense that developing countries that conduct actions and policies for REDD+ should be rewarded after achieving mitigation results. In addition, the Amazon Fund has incorporated UNFCCC decisions such as the Cancun Safeguards and provided resources for strengthening the forest monitoring system.[8]

VI. EVALUATION GOALS

The purpose of this evaluation is to analyze to what extent the objectives of the Amazon Fund are being achieved using the data from the results from the 2008 to 2018 period. In this sense, the analysis seeks to highlight the actions and strategies that have contributed to meeting targets and therefore, they must be strengthened and extended, such as identifying challenges and delays that must be addressed, generating recommendations to support future Amazon Fund activities.

VII. EVALUATION METHODOLOGY

The working methodology of this evaluation is based on environmental performance estimates that the Organization for Economic Cooperation and Development (OECD)

8 There are some criticisms in the sense that a results-based fund is usually defined as cash or material goods transfers conditioned to make a measurable action or reach a predetermined performance goal. For a deeper discussion, one can consult the article Clashing interpretations of REDD+ "results" in the Amazon Fund, by Richard van der Hoff, Raoni Rajão and Pieter Leroy (2018).

regularly conducts in its member countries (ECLAC, 2004). This methodology assesses the degree of compliance with the environmental and sustainable objectives established in the policies of the evaluated countries

In addition to the analysis of documents and studies, this assessment is based on qualitative interviews with a wide range of social actors - managers, observers and beneficiaries - involved in these policies. As a last step, a peer review of results is made, based on mutual trust between countries and the particularities of the evaluation process.

Adapted for evaluation of a specific plan, program or fund, such as the Amazon Fund[9], the OECD methodology has the same goal as this survey: to compare the degree of achieved targets with what was planned. This is an effectiveness assessment that seeks to identify the positive aspects of the Fund's implementation, as well as delays and problems. The purpose is to support decisions about the future of the Amazon Fund, with recommendations that, on the one hand, strengthen the identified positive aspects, and on the other, contribute to overcome the delays and problems detected. With the available information, the evaluation reviews aspects of the Amazon Fund such as:

- Overall strategy and main results;
- Governance and participation of relevant actors
- Financing and resource mobilization;
- Resource implementation system (project planning, monitoring and evaluation);
- Synergies and coherence with Brazilian public policies in the Amazon.

Some additional considerations about the Amazon Fund are needed to contextualize this assessment, such as:

- Many projects are still running, there are few evaluations of completed projects, and in many of these evaluations information is limited.
- Management and results have evolved over ten years. The 2009 Fund is very different from the 2018 Fund. During this period, management improved and many of the problems identified in the initial phase have already been solved.
- Due to their complexity and comprehensiveness, the analysis of some themes was prioritized in a more in-depth way via complementary studies (CAR and Benefit Distribution).
- The most information important sources are projects with final evaluation, complementary studies, technical workshop discussions, documents and other studies of the Fund. Interviews are used primarily to identify successes, existing problems, and collect improvement proposals and recommendations for the Fund's

9 It is important to note that this evaluation considers the OECD Development Assistance Committee (DAC) Principles for the Evaluation of Development Assistance: effectiveness, relevance, impact, efficiency and sustainability as guiding the evaluation, although the focus is on effectiveness. Most recommendations relate to one or more of these criteria. However, the report is not organized around these criteria. The evaluation system involving the five criteria is most appropriate for projects or programs that are fully implemented and limited in scope.

future[10]. The opinions expressed in the interviews are reviewed by the evaluation team and it is up to the team if they will be included in the report.

- Finally, the evaluation does not usually go into the details of individual projects, although it may cite the projects to illustrate the analysis.

Therefore, it is important to highlight, that a comprehensive analysis of the impacts of the Amazon Fund was not part of the evaluation process. This would imply an in-depth study of the impact of its actions on the various public policies for the region with which the supported projects interface, involving a research to raise information and data and doing interviews with a wide range of social actors in the Amazon context for the supported projects, even if they have not been directly involved in the implementation process. These aspects go beyond the scope of a mid-term evaluation of the effectiveness of the Amazon Fund.

This evaluation process consisted of the following steps:

1. Collection and analysis of data and information about the Amazon Fund.
2. Meetings and interviews with relevant actors -- BNDES, federal and state governments (Amazonas and Pará), project implementers and beneficiaries, the private sector, donors, civil society organizations, environmental experts, researchers, people involved in the creation and early stages of the Amazon Fund -- complemented by existing relevant data, studies and/or evaluations and data provided by the different actors involved. This stage was developed in Rio de Janeiro, Brasilia, Belém and Manaus. In addition to interviews and other information gathered, two technical workshops for discussion and analysis of the Amazon Fund were held with the projects' implementing partners in Belém and Manaus.
3. Information analysis obtained during field visits and in complementary interviews.
4. Presentation of preliminary results to the BNDES team involved in the management of the Amazon Fund.
5. Elaboration of the Preliminary Evaluation Report.
6. Peer review, which presents and discusses the preliminary results of the evaluation with experts from Brazil and other Amazonian countries (August 7, 2019).
7. Receipt of contributions and comments on the Preliminary Evaluation Report.
8. Consolidation and publication of the final document.

Throughout the work, the evaluation team reviewed the Amazon Fund documentation and topics covered by it and interviewed nearly 100 representatives of the mentioned sectors and institutions (Appendix A). From January to August 2019, a total of 96 people were interviewed: 16 BNDES employees and managers; 13 representatives of ministries and

10 Some interview information needs additional support from other sources. If an interview mentions results achieved by a project in reducing deforestation, for example, it is necessary to confirm this statement with project evaluations or other sources. In other situations, when many respondents insist on one point, such statements may be accepted, as in the case of information that BNDES requirements for disbursement approval would contribute to better management of some NGOs.

institutions or Federal Government agencies; 14 representatives of state government institutions or bodies; 34 representatives of third sector entities implementing projects; 11 representatives of donor institutions; 3 representatives of Academy institutions; and 5 others. In addition, a total of 27 people participated in two SWOT (strengths, opportunities, weaknesses and threats) workshops held in Belém and Manaus, with some workshop participants overlapping with respondents. On August 7th, 2019, a consultation round was held with 61 participants in Brasilia to discuss and comment on the draft version of this report. The purpose of all interviews and workshops was to gather input for this evaluation. The evaluation team has reviewed the interviews, contributions and suggestions and is at their discretion to include these elements in the report or not.

1. THE AMAZON FUND'S GOVERNANCE

1. THE AMAZON FUND'S GOVERNANCE

The governance of the Amazon Fund (Image 6) is ruled by Decree No. 6,527 of August 1st, 2008, which established the Amazon Fund through the National Bank for Economic and Social Development (BNDES). There were some minor changes in the original decree over the first decade of the Amazon Fund's implementation, but its objective has remained the same. In Decree No. 6,527 and its subsequent modifications, the following aspects were defined:

- The Amazon Fund's goal: "To raise donations for non-repayable investments in actions to prevent, monitor, and combat deforestation and to promote the conservation and sustainable use of forests in the Amazon biome". It also raises the possibility of using up to 20% of the Fund's resources to develop deforestation monitoring and control systems in other Brazilian biomes and/or other tropical countries.
- The seven work areas focused on conservation and sustainable use of the forest, combating deforestation, and restoration of deforested areas, namely:

  I - Management of public forests and protected areas;

  II - Environmental control, monitoring and inspection;

  III - Sustainable forest management;

  IV - Economic activities developed from the sustainable use of vegetation;

  V - Ecological and Economic Zoning, land use planning and land regularization;

  VI - Conservation and sustainable use of biodiversity; and

  VII - Recovery of deforested areas. (BRAZIL, 2008b)

- The actions of the Amazon Fund should be in line with the guidelines of the Legal Amazon Deforestation Prevention and Control Plan (PPCDAm) and the National Strategy for Reducing Greenhouse Gas Emissions from Deforestation and Forest Degradation, Conservation of Forest Stocks, Carbon Sink Conservation, Sustainable Forest Management and Increased Forest Carbon Stocks (ENREDD+).
- The BNDES' formal and legal role in establishing and managing the Amazon Fund and raising its resources, with 3% of the amount donated going to cover its operational costs and other expenses related to the Amazon Fund.
- The Ministry of the Environment's (MMA) responsibility for calculating the effective reduction of carbon emissions from deforestation and the equivalent amount of contribution per reduced ton and the Amazon Fund Technical Committee (CTFA) being assigned the task of certifying the value calculated by the MMA.
- The establishment of an Amazon Fund Steering Committee (COFA) with broad representation: (i) the Federal Government, through different ministries, the Civil House of the Presidency of the Republic and BNDES; (ii) the state governments of Brazil's Legal Amazon that have a State Plan to Prevent and Combat Deforestation; (iii) and

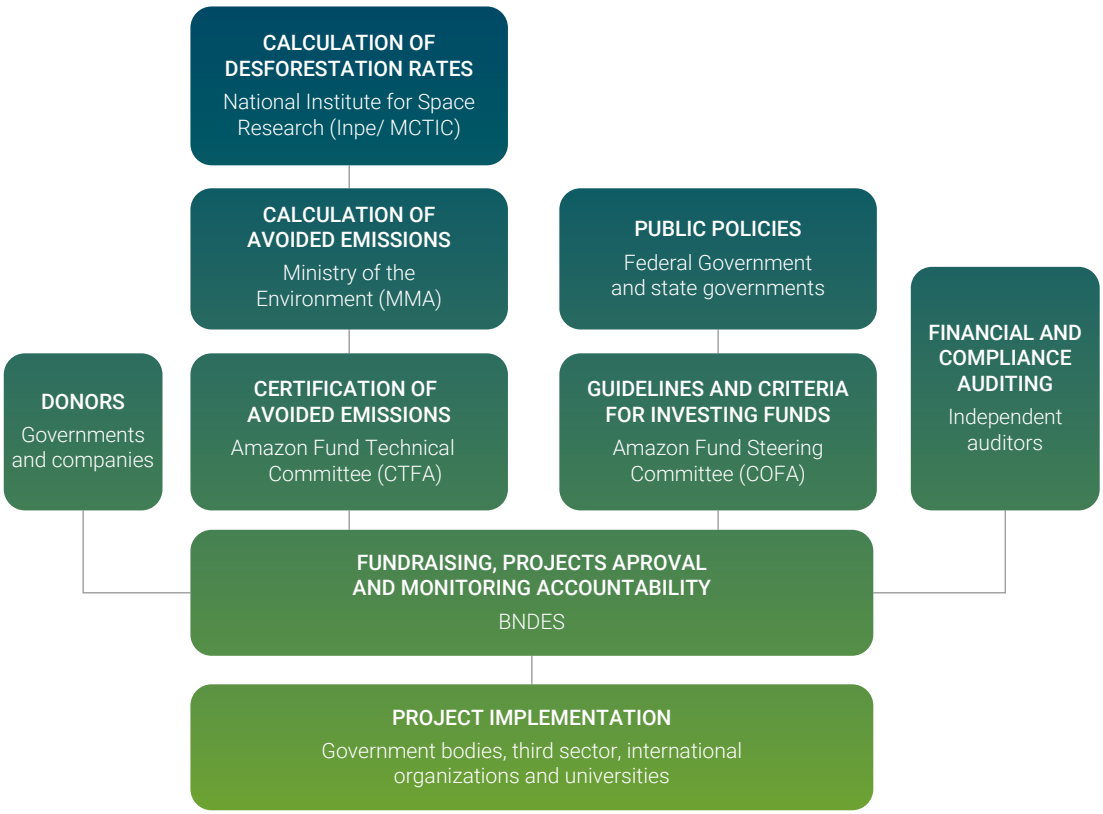
civil society, including representation of social movements, indigenous peoples of the Amazon organizations, the business sector, and the Academy.

- The COFA will be chaired by the MMA and will ensure the loyalty of the Amazon Fund to the PPCDAM and ENREDD+, by establishing guidelines and criteria for resource application.

The management of the Amazon Fund is under the BNDES' "judicial and extrajudicial" responsibility and, therefore the donor contracts are dealt with the bank directly, not going through Brazilian Cooperation Agency (ABC) of the Brazilian Ministry of Foreign Affairs, as is the case of other donations from foreign governments to Brazil.

Finally, regarding the application and use of resources, and the management of the Amazon Fund by the BNDES, the Decree defines the need for an annual independent audit. BNDES has to keep resources separate in accounting records and the cost of the audit is included within the 3% of expected operational resources. In addition, the BNDES and the Amazon Fund are audited by the Comptroller and the Federal Court of Auditors (TCU).

Image 6 – The Amazon Fund's Governance



Source: BNDES, 2019a.

1.1. BNDES

As previously mentioned, the BNDES was formally appointed as an Amazon Fund management entity by Decree No. 6,527 on August 1st, 2008, as a result of discussions in the previous years about which Brazilian entity would be adequate to play this role. The experience implementing the fund for the Pilot Program for the Protection of Brazil's Tropical Forests (PPG7) in previous years, conducted through multilateral institutions led the Brazilian Government to decide on the sovereign implementation of a new fund through a national institution. The multiplicity of instruments created in previous experience lead to scattering of resources and the assumption was that a Brazilian institution has led to a dispersion of resources, and the assumption was that a fund managed by a Brazilian organization could facilitate the integration of funded projects, align with public policies, improve mutual learning and have more impact in the region.

The main reason for choosing the BNDES was that not only was it a Brazilian organization, but it also had the experience and capacity in fund management. As the largest investment bank in Brazil and one of the largest development banks in the world, the BNDES has expertise and international credibility.

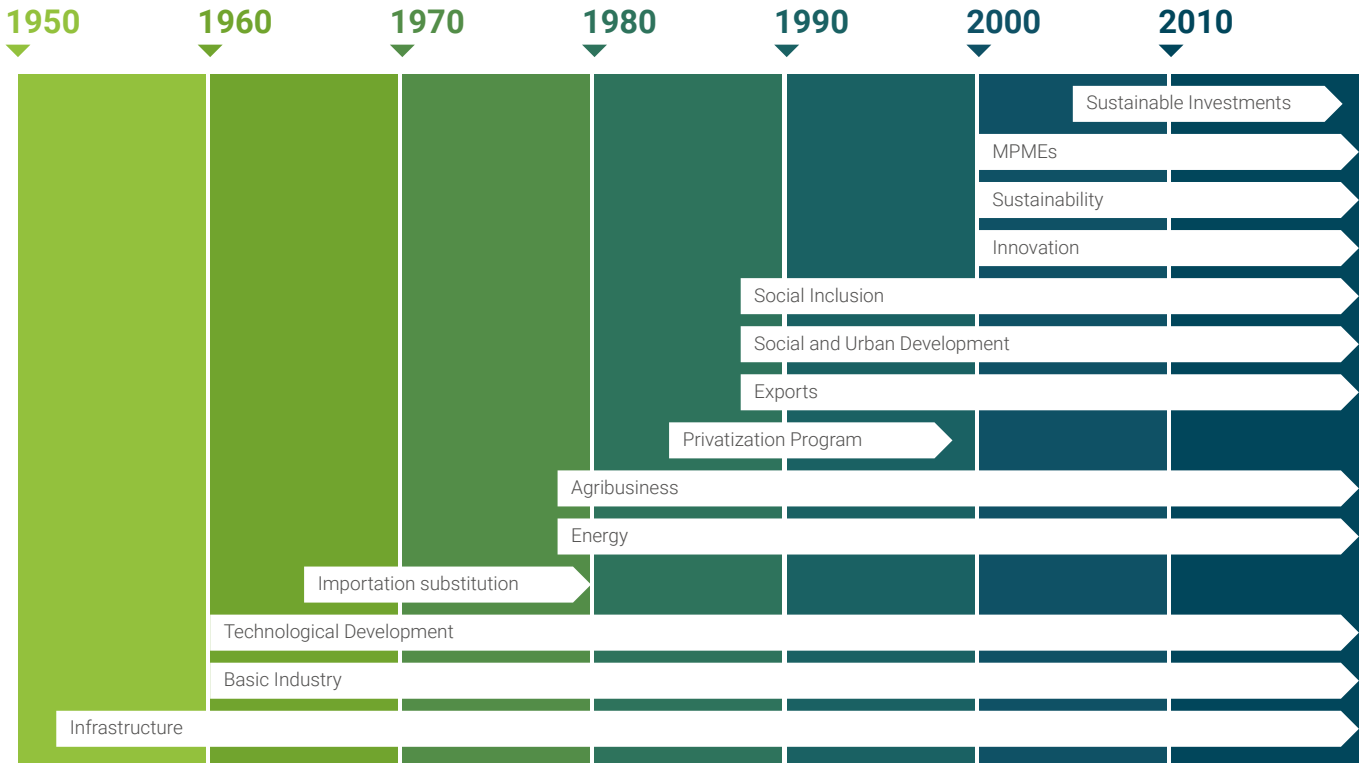
> The National Bank for Economic and Social Development (BNDES) is the manager of the Amazon Fund, responsible for raising and applying resources, monitoring it supported projects, and continuously and transparently reporting results (BNDES, 2019a).

Founded in 1952, the BNDES is an institution with a long history in Brazil. In 1971 it was turned into a public enterprise, which gave it more autonomy and neutrality in management "[...] The change enabled greater flexibility hiring personnel, greater freedom in fundraising, investment operations and resource allocation and less political interference." (BNDES, n.d. b).

Since its creation, the BNDES has been playing a key role in Brazil's economic development, industrialization process, and technological development. In addition to playing a crucial role in financing the country's long-term development, BNDES also had an important role in the countercyclical efforts to address the deleterious effects of the international financial crisis (FERRAZ et al., 2012).

BNDES began in the 1950s and 1960s financing major infrastructure, through the import substitution program in the 1960s and 1970s. From the 1980s on, more emphasis was placed on private sector development in energy and agribusiness areas, and by the end of the decade and the start of the 1990s, in privatization and de-estatization (Image 7).

Image 7 – History of the BNDES



Source: BNDES, n.d. b.

From the 1980s, when the S was added to its name, the bank started to pay closer attention to social, and subsequently, cultural investments. Currently

> All economic segments are covered by the Bank: agriculture, industry, commerce and services, infrastructure, and always with special conditions for micro, small and medium enterprises. Incentives for exports and the strengthening of the capital markets remain strategic actions. Present in all sectors, BNDES promotes increased competitiveness and the strengthening of the national economy, supports social and cultural advancement and contributes to increasing access of all citizens to a better life, with more education, health, employment and citizenship. (BNDES, n.d b).

The BNDES is tied to the Ministry of Economy and, "as a public enterprise and not a commercial bank, the BNDES evaluates supporting concessions which focus on socio-environmental and economic impact in Brazil. Encouraging innovation, regional development and socio-environmental development are priorities for the institution (BNDES, n.d. b). BNDES operates with financial resources, repayable or otherwise, for projects and investments of various kinds. Historically, it has supported infrastructure and long-term loans with below-market interest rates.

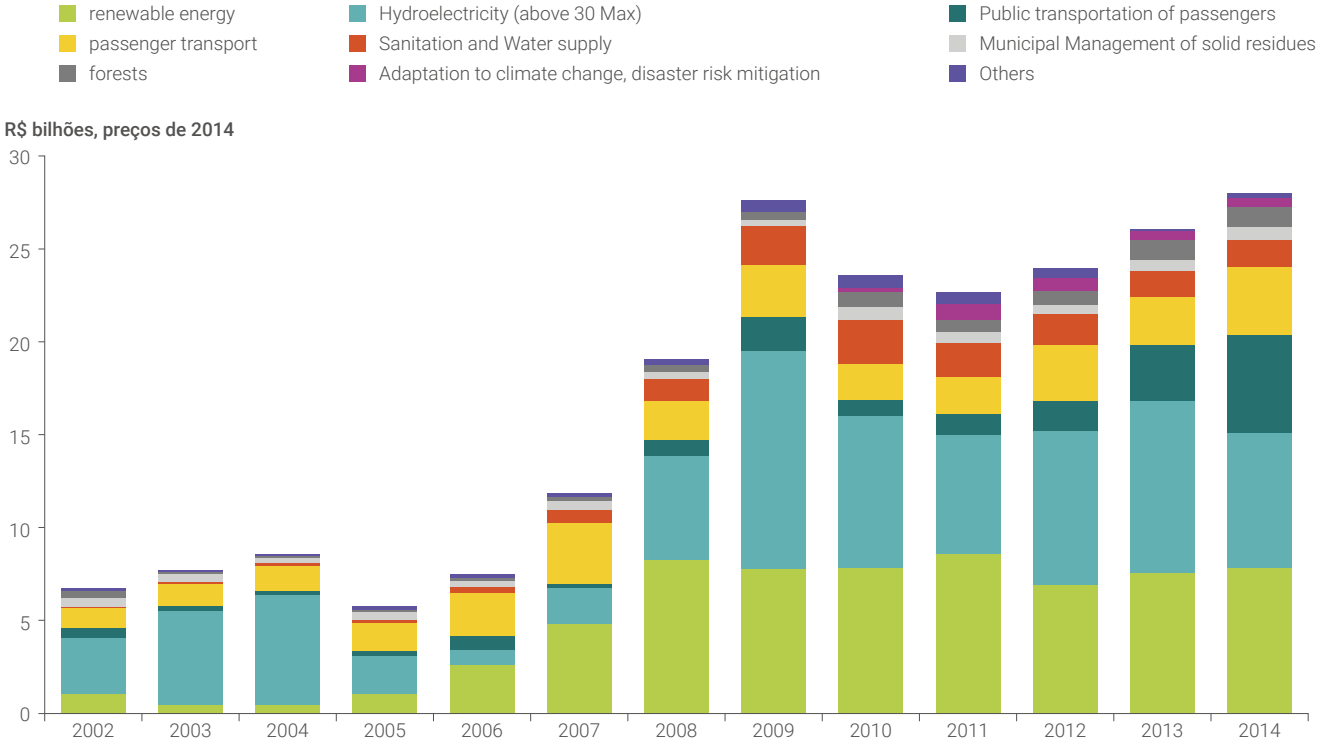
The environment and sustainable development areas were gradually included in the late 1990s and the early 2000s, with the BNDES establishing an Environmental Policy in 2005 (BNDES, n.d. c). Since 2010, social and environmental analyzes have been carried out for

all major projects receiving credit. In addition, sectoral policies and / or environmental safeguards for sectors offer the greatest potential for environmental impact, such as refrigeration, sugar / ethanol, soybeans, thermal plants, fossil fuels and water industries.

Recently BNDES has gone through a reflection and strategic formulation process called "Developing Futures". From this process, short, medium- and long-term directives were established, as well as the statement of purpose of "changing the life of Brazilian generations, promoting sustainable development" (PAIVA et al., 2018).

The total payments from the BNDES increased significantly since 2005, including projects in the environmental area and sustainability with a larger emphasis on renewable energies (OCDE; CEPAL, 2016) (Graph 5).

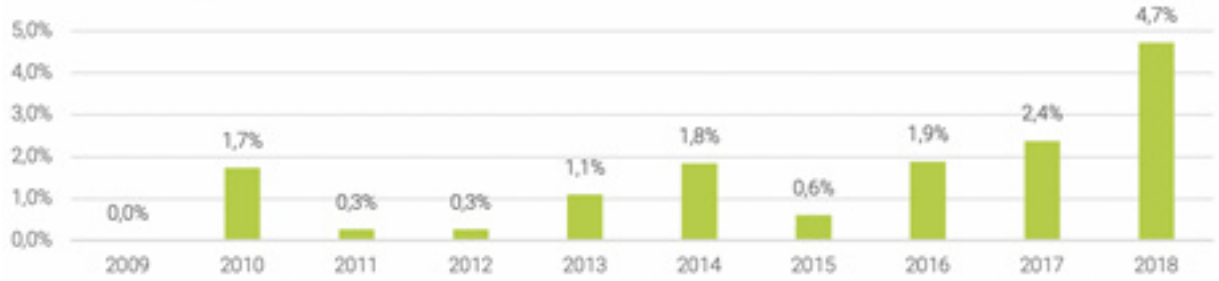
Graph 5 – BNDES payments related to the environment, by sector from 2002-2014 (in billions of R$)



Source: OECD, ECLAC, 2016.

The total amount of resources promised by the Amazon Fund in its ten years is low when compared to total investments by the BNDES in the environmental area (Gráfico 5). The 2018 Amazon Fund Annual Report (RAFA) mentions that in 2014 a total of R$ 168 million was disbursed by the Amazon Fund for projects, while a total of R$ 25 billion was invested by the BNDES in environmental projects. Thus, the Amazon Fund does not reach 1% of these resources. The value of resources destined to the Amazon Fund by the BNDES is also low compared to the total amount of investments made by the Bank in the Amazon (Graph 6). The Amazon Fund represents, therefore, a very small part of the BNDES' project wallet in the Amazon. Many of those interviewed pointed out this difference between the Amazon Fund and other investments made by the BNDES and mentioned the need to create synergy between the diverse kinds of investments done by the bank.

Graph 6 – Amazon Fund proportion in the project wallet hired by the BNDES in Brazil's Legal Amazon, in percentage of the value of hired projects



Source: Own making, based on BNDES(2019b).

The BNDES is an important actor in the context of socio-economic development in Brazil and the Amazon. As a manager of the Amazon Fund, it has accumulated knowledge about the deforestation process and the possibilities and advantages of sustainable development (ZADEK et al., 2010), which could contribute to a more balanced analysis of economic investments for sustainable development in the region.

Ideally, the Fund's investments would multiply in sustainable development activities with other credit instruments in order to reach a more sustainable economy in the region.

1.1.1 HISTORY OF THE AMAZON FUND IN THE CONTEXT OF BNDES

Selecting the BNDES as a manager of the Amazon Fund was a high-level decision made by the Brazilian government and a key element in the success of negotiations with the Norwegian government. The autonomy given to Brazil to name a managing entity resulted in the choice of the BNDES as a responsible party. There was an understanding that BNDES had a managing capacity like those of great multilateral institutions which traditionally operate large funds (ie. the PPG7 in the previous decade). The national and international reputation of the BNDES was shared with donors and both parties agreed on its capacity to manage a fund amounting to a total US$ 1 billion. Therefore, this recognition of national sovereignty converged with the existence of an entity capable of such management (FBOMS, 2010).

On the Norwegian government's part, there was a search for an institution with the managing capacity of the Amazon Fund, that possessed necessary control mechanisms, processes, neutrality and impartiality. Brazilian ownership of the Fund was also important, not only in the sense that Brazil felt like the owner but also truly coordinated its implementation. After the contract was signed and the rules regarding annual payment dependent on results were agreed upon (Section 1.3.2), the selection of the BNDES as an execution entity was confirmed, and COFA's creation as an Orientation Committee and CTFA's as a Technical Committee to check on the results of avoided carbon emissions was established, the responsibility of the Amazon Fund's constitution and implementation were up to the Brazilian Government.

On an international level, the creation of the Amazon Fund signaled Brazil's dedication to establishing an environmental agenda and policies which were adequate and simultaneously contributed to enhancing its role as a commodity exportation point and an important global market player. The BNDES could bolster this positive image through its already recognized soundness and seriousness, and by being the institution to manage the first experience with a pay-for-results fund at a national level in the Reduction of Greenhouse Gas Emissions from Deforestation and Forest Degradation, Conservation of Forest Carbon Stocks, Sustainable Forest Management, and Increased Forest Carbon Stocks (REDD+).

A study by the Overseas Development Institute (ODI) (FORSTATER et al., 2013) highlighted the strong managing capacity of the BNDES, allowing adequate management of the Amazon Fund resulting in transparency in its operations and decisions. "The Fund showed that institutions in developing countries can meet high standards of funding governance and operational transparency." (FORSTATER et al., 2013). This same opinion and positive view in relation to ownership were mentioned by many of those interviewed.

Furthermore, according to the same study by ODI the Amazon Fund is the result of a political commitment led by the Brazilian government and institutions, and above all it involves many stakeholders from Brazilian society and creates opportunities for project implementation for NGOs, universities, state government institutions and municipal government institutions. Nonetheless, "[...] it is shaped by political evolution in Brazil, and the lack of clear political commitment to its objectives creates uncertainty about its role and purpose." (FORESTATER et al., 2013).

An important point in this sense is additionality. Resources operated by the Amazon Fund are not part of the Union's Budget, i.e. they are additional to public budget and were originally designed to be treated as such. In other words, given the condition of additional resources, its application must seek actions which add to those already provided for in public policy. The Amazon Fund, therefore, cannot take on the roles that are the responsibility of the state. The theme of additionality will be further explored in Section 3.3.

In the evaluation done by KfW Entwicklungsbank, the second largest Fund donor, the German Government, reiterates the importance of choosing BNDES as the executing institution:

> Although BNDES was primarily involved in financing large infrastructure and had no experience in financing projects in the environmental sector, all respondents questioned on this point agreed that it was the only national institution with the ability to manage a fund of the size of the AF. The selection of BNDES, notable for its size and profile, brought along not only hope but also a realistic potential to create leverage and a multiplier for national environmental policy. As one MMA respondent mentioned: "The choice of BNDES has put the environmental cause on a different level." In addition, the integration of the FA into BNDES structure and governance meant that the Amazon Fund would be permanently protected against any direct influence from day-to-day policy (KfW, 2016).

In relation to the other countries supported by Norway's International Climate and Forest Initiative (NICFI), Brazilian support is seven times the size of the second and third countries to get support (Guyana and Indonesia) (NICFI, 2019). The perception of the Fund's importance being managed by BNDES is such that there is a direct association between the Fund's existence and the BNDES. According to one of the people interviewed: "It's not possible to make payments [such as the ones in the Amazon Fund] in Indonesia, because Indonesia has no BNDES".

1.1.2 THE BNDES CAPACITIES

As dealt with in Section 1.1.1, the BNDES was the only institution in the country with the capacity to run the Amazon Fund as it was intended, but it lacked experience in the sustainable development and deforestation prevention area as well as specific knowledge on the reality of the Amazon and had relatively low experience with non-repayable funds. Therefore, the projects of the Amazon Fund were treated similarly to other projects financed by the Bank.

A conservative and risk-averse approach is key in loan management, but it can also be an unkind mechanism for organizations with small and/or poorly with low managerial, financial and accounting capabilities, as is the case with many government agencies and civil society which operate in the Amazon. This was confirmed by a study conducted in 2013 (FORSTATER et al., 2013) which concluded that the management of the Amazon Fund by the BNDES followed internal policies and processes that ensure robust and financially sound application of resources but was difficult to access for smaller entities. This situation led to the slow development of project portfolios and payment in its early years and some negotiations.

Issues such as the BNDES' standard contract format with civil society institutions including the close-out netting, for example, were widely discussed during several meetings in the COFA, because it inhibited organization's ability to present proposals. The contract with the Amazon Fund determines that there could be no mistakes or irregularities in the financing audit, subject to immediate and integral devolution of resources. The final solution presented by the BNDES at the COFA's tenth reunion was the inclusion of:

> In the draft of the Amazon Fund standard contract, a clarification of the early expiration clause, to expressly provide for a prior notification procedure by the BNDES to the beneficiary, in case of event occurrence verification that may characterize the breach of contractual obligation (without a fixed term for compliance), giving a period for justification or proof of correction, before the application of the early expiration measure. The solution aimed to meet the Bank's contractual control and standardization and the civil society demand represented in the referred committee (COFA, 2010).

Prior to the creation of the Amazon Fund, the theme of environment and sustainability was already present in the BNDES but was treated as a transversal theme. In response to this responsibility of the Fund, in early 2009, an Environment area was set up at the Bank, made of three departments, one of which was responsible by the Amazon Fund's management, with a small but growing staff

However, during the first two years of the Amazon Fund, the Brazilian Government and the BNDES, together with the donors, signaled the need for additional technical training, which was developed according to the German Cooperation for Sustainable Development through Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). This cooperation began in 2010, many of the respondents stated that partnering with GIZ helped to streamline the Fund's implementation. Germany, and subsequently Norway, financed such technical help (Section 2.1.2).

In order to strengthen the relationship between the Amazon Fund and organizations operating in the Amazon, a regional Fund office was created in the city of Belém in

September 2015. The BNDES' regional offices were a part of the Bank's vision to reduce territorial inequalities, gain legitimacy across the Brazilian territory, and specifically to be present in less economically developed regions.

With such proximity to the region, various NGOs and with the Pará State Government created an opportunity for mutual learning that was valued by respondents from various types of organizations. The importance of this office in relation to the Amazon Fund was pointed by many in entities in the region, and its closure was a setback in the Fund's management and its regional relationship. Respondents recommended reopening an office in the Amazon. The following positive observations in relation to the advantages of the Fund's Belem office were noted:

- Allowed for the Amazon Fund to be close to Amazonian reality;
- Helped the development of a territorial vision by BNDES and the Amazon Fund, emphasizing the intersectoral and territorial integration of projects;
- Gave the BNDES legitimacy as a bank across the country;
- Helped transparency and legitimacy with local actors;
- Provided better articulation and local learning and;
- Allowed for closer proximity of the projects with implementing organizations throughout the process of disclosing edicts, and organizational training in applying, sending and standardizing proposals; in implementing, following up and monitoring projects; and in the evaluation and exchange of experiences between projects.

The Belém office closed in April 2017, in order to reduce costs, and its staff was moved to the BNDES' Brasilia office. Considering the logistics of frequent trips to the Amazon, Brasilia is a more strategic point than the BNDES headquarters in Rio de Janeiro. Furthermore, the Brasilia office had other advantages such as ease of communication and interaction with the MMA, including:

- Proximity with many COFA members to prepare for meetings;
- Ease of interaction with other federal entities;
- Ease of participation in PPCDam committees and the National Commission for REDD+ (CONAREDD+);
- Ease of obtaining technical clarifications with COFA members, but also with many proponents and project managers which have offices in Brasilia;
- Quick interaction with donors through their offices in the Embassies; and
- The possibility to contribute to public policy based on the Fund's experiences.

In summary, the representation of the Amazon Fund's Brasilia offices significantly aids in the creation of common agendas with federal and state entities, which worked from April 2017 and September 2018, during a BNDES restructuring. Because of its relevance, strategic location and action during its operation, many respondents also recommended to review the presence of the Amazon Fund in Brasilia.

During the last restructuring of the Amazon Fund in October 2018, the Amazon Fund and Environment departments merged. This meant a significant decrease in employees available to meet the Fund's needs.

The BNDES had little tradition of managing non-repayable funds for environmental sustainability projects, as most of the funds that the BNDES manages are loans for large public projects and private companies. The logic and dynamics of the type of projects supported by the Amazon Fund -- non-repayable and linked to environmental sustainability -- especially at the beginning of operations, when the projects were smaller, are very different from the BNDES' traditional financing.

There has been continued growth in the BNDES' capacity to run the Amazon Fund and the Fund's technical staff throughout its ten years. This was a cumulative learning process from the supported projects, which allowed a greater knowledge about the reality of the Amazon, particularly from remote areas. It was also a mutual learning relationship, once the BNDES developed more efficient ways to achieve the Fund's goals (eg. by developing specific calls and tailoring procedures to the reality of the Amazon), as project proponents learned how to prepare proposals for the Amazon Fund within the BNDES requirements. This reflected positively on the BNDES's recognition of populations and institutions in the Amazon, especially those of the Third Sector, which previously had almost no relationship with the Bank. At the same time, the implementing entities strengthened their financial and administrative management capacity in relation to projects with the Bank. Several interviewees pointed out that the BNDES's image has become more qualified regarding investments and commitment to sustainable development in the Amazon.

Through interaction with the COFA, the BNDES has created more intensive work relations with other COFA members and especially with other government institutions, such as the MMA and state governments. This group work with other environmental policy institutions allowed the Amazon Fund a greater capacity to contribute to public environmental policy.

The Amazon Fund's communication through its website[11] is seen as very positive, however, there are opportunities for communication in general. The website is easy to use and has plenty of information about the Fund, including projects and results, and serves and an example for other BNDES departments in communication transparency. On an international level, communication happened over events and international conferences, often in cooperation with the donors, Norway and Germany, beyond GIZ. However, the perception among those interviewed is that the Amazon Fund could communicate its results better, making the vast wealth of sustainable development experiences supported through many locations in the Amazon, which involve a plurality of beneficiaries and many sustainable products.

There is, therefore, a communication potential between projects to generate knowledge and lessons learned. It was suggested by the people interviewed, a communication portfolio, including more documentaries and the use of social media (Twitter, Facebook, YouTube, Instagram, etc.) for publicizing images, videos and information which reaches the Brazilian population as to show the Amazonian reality and beauty, as well as the work and results of the Amazon Fund. Another function of the communication portfolio would be to reach a more varied international audience interest in the Amazon, who would be capable of bringing in more resources for the Fund.

11 Amazon Fund Website: http://www.fundoamazonia.gov.br/en/home/

Note that, in general, the BNDES' involvement in the Amazon Fund contributed to a greater understanding of environmental issues within the Bank itself. Throughout its ten years, a significant group of employees went through the Amazon Fund, which was trained, generating, along with an employee rotation policy, a spill-over process by transferring the knowledge acquired in the environmental area to other areas. In addition, due to bureaucratic management processes that normally occur within the BNDES, Amazon Fund financing proposals have gone through several areas, influencing the Bank's investment decision-making processes. Also, the Fund's good practices of transparency, such as annual reporting and disclosure of information through its website, have become a benchmark for the Bank's other areas. Finally, the Amazon Fund also contributed to the BNDES so that it would implement a Social and Environmental Responsibility Policy (PRSA), Central Bank Rule 4,327 of 2014, which obliges all financial institutions to have a PRSA with an implementation plan, including plan advances monitoring. In this sense, the Social and Environmental Sustainability Committee (CSS) was created by the BNDES and made its first plan (2015-2017).

The experience of the Amazon Fund, both internally through COFA discussions with the MMA, state governments, and other interested parties; and externally through communication about the Fund (nationally and internationally), contributed to a better knowledge of the Amazonian value to Brazilian society and helped to raise the environmental issues in the country to a higher level. This recognition has contributed to keeping deforestation rates low for many years and to environmental policies – PPCDAm, National Policy on Climate Change (PNMC) and others -- aligned with this result.

1.1.3. OPERATIONAL COSTS OF THE AMAZON FUND

The Amazon Fund is not a public fund and it is not a part of the Budget of the Union. It is instead a private fund created by the BNDES which has separate and independent accounting from the rest of the Bank's resources. The BNDES designated 3% of the donations from the Amazon Fund to cover its operational costs and related expenses, as established in its creation decree (Decree nº 6.527, August 1st, 2008) and in the Amazon Fund's management agreement, which includes expenses from the CTFA and COFA operational capacity and the costs of hiring audit services.

The 3% operating rate for the BNDES was mutually agreed on by all parties involved. Such a cost is considered very competitive in relation to the cost of managing other national or international funds, for similar operations. In general, the operating cost for this type of fund ranges from 10% to 15% and other additional fees may be charged as well (FORSTATER et al., 2013; ZADEK et al., 2010). It was a deliberate decision not to negotiate a higher amount and, as a result, the BNDES is effectively co-financing the implementation of the Amazon Fund, since the 3% operating rate is insufficient to cover all operating costs undertaken by the Bank, particularly the time devoted by its staff. Thus, compared to the implementation of other similar funds, the BNDES should be recognized as a donor to the Amazon Fund.

With the amount allocated to operating expenses, the BNDES exclusively finances costs such as follow-up trips for supported projects (transportation, per diems), audits (financial and compliance) and communication activities (i.e. the graphic elaboration of RAFAs).

These resources do not finance employee salaries or BNDES infrastructure. According to BNDES, it is not possible to accurately estimate the total contribution time of its employees to the Amazon Fund, because it includes not only the team directly allocated to operational management, but also employees from other areas involved in different stages of the projects, including financial, legal and management analysis, etc. Moreover, the size of the Amazon Fund team has varied over the years, as the institutional position of the team within the BNDES has also sometimes changed. In the last reform of October 2018, the Environment department and the Amazon Fund were merged. All of these factors create challenges in estimating the hours / number of people dedicated to the Amazon Fund.

The insufficient allocation of human resources to address the approval projects and processes could be a risk to the effective implementation capacity of the Amazon Fund, in a context characterized by pressures in other areas of the BNDES. To prevent attention loss and justify the need for enough staffing, donors could rethink the operating cost rate along with BNDES, which could be around 10%, following the pattern of other similar funds in the world.

In terms of replicability of the Amazon Fund to other countries, it would be important for donors and other stakeholders to better understand the operational costs effectively involved in managing this type of fund. It is important to find ways to estimate your total operating cost, including the cost of staff time spent on management and expenses with facilities, telephone, energy, etc., but there is currently no such estimate. This information could even be useful to the BNDES itself in a context in which professional and excellent management of similar funds could become a product.

Another point to be estimated as an important operating cost for the proper functioning of the Amazon Fund is the annual amount that earmarked for GIZ's technical support, which began in 2011. As already mentioned, GIZ plays a key role in streamlining the implementation of the Fund, both in relation to BNDES, and in relation to training beneficiaries and stakeholders. When calculating the actual operating cost, GIZ's contribution amount, which represents approximately EUR 1.5 million a year, could be added to operating costs.

1.1.4. RECOMMENDATIONS

- Negotiate with donors to increase the Amazon Fund operating cost rate to 10%.
- Reduce the physical distance between Amazonian organizations and the BNDES team in Rio de Janeiro with the presence of Amazon Fund representation through an office in the region.
- Improve interaction with federal entities with the Amazon Fund presence in Brasilia.
- Seek out new opportunities for synergy, collaboration and co-investment between the Amazon Fund projects and other types of BNDES financing, or with other NGO funds or blended finance.
- Improve communication and visibility of the Amazon Fund in general within Brazil, communicating results, success, innovations and economic viability of sustainable

development in the Amazon. To reach new audiences, use current communication methods such as social media.

- Improve communication and visibility of the Amazon Fund internationally to attract new donors and partnerships from the private sector.
- Communicate and transfer knowledge about new "green businesses" and sustainable production to the commercial finance sector in the Amazon and Brazil.

1.2. COFA OVER THE PAST TEN YEARS

The Amazon Fund Steering Committee (COFA) was created in October 2008 to establish guidelines, criteria and modalities for the application of Amazon Fund resources. The COFA is also tasked with tracking the results of resources applied to projects and approving the annual report of the Fund's activities but has no managerial responsibilities. The COFA is chaired by the MMA, and the BNDES serves as its executive secretary, providing technical, administrative and financial support as well as the necessary means for the execution, registration, and dissemination of the Committee's work.

The COFA's creation, with representation from government, civil society and business sectors, followed, as already mentioned, the successful experiences of the Brazilian government in the management of the National Environment Fund (FNMA) and PPG7 (FBOMS, 2010). The COFA is aligned with the democratic principles of public policy democracy advocated by the Brazilian Constitution of 1988 (BRAZIL, 1988): political-administrative decentralization of competences between the Union, states and municipalities (Art.23) and citizen participation in monitoring, supervision and social control of public policies (Art.1)[12]. The broad legal framework established in the country, the strength of the BNDES, and the guarantee of social participation in the governance of the Amazon Fund are highlighted by international donors as factors that ensure the support to relevant projects aimed at the continuous reduction of carbon emissions.

COFA's tripartite composition recognizes the shared responsibility of different sectors of society to combat deforestation and the importance of their interaction in promoting the sustainable development of the Amazon. The intergovernmental, multisectoral and participatory nature of Amazon Fund management is innovative for the Amazon, historically treated as a homogeneous region. Experts from different areas have been unraveling the richness and complexity of this territory[13] and converge on the finding that there are

12 Article 1, sole paragraph, of the 1988 Constitution states that "All power emanates from the people, who exercise it through elected representatives or directly," which underpinned the expansion of institutionalized channels for social participation in the decision-making dynamics of the state. And Article 225 recognizes the right of the population to an ecologically balanced environment as a good of common use, essential to a healthy quality of life, and establishes the duty of the public power, together with the community, to defend and preserve the environment for the benefit of the public. of current and future generations.

13 In the first semester of 2009, BNDES gathered specialists and academics in the environmental area to debate ideas for the development, conservation and preservation of the Amazon Region that contributed to the definition of the Amazon Fund's directives. These discussions were summarized in the publications "Amazônia em debate: oportunidades, desafios e soluções", (BNDES, 2010)

several inland Amazons in the north of the country, with distinct territorial peculiarities and diverse social actors, demanding appropriate actions and solutions to their specific characteristics (BNDES, 2010a).

From this perspective, this conformation and defined mission for COFA help the Amazon Fund reach a broad spectrum of social segments and different Amazonian realities, diffusing throughout many areas seeking to overcome its main challenges: becoming an instrument capable of supporting sustainable economic alternatives which are competitive and simultaneously inclusive, promoting initiatives and approaches capable of replacing predatory environmental practices, and fighting deforestation.

Decree No. 9.759, on April 11th, 2019, ended much federal administration including COFA and CTFA. Up until the conclusion of this evaluation, the new governance of the Amazon Fund has not yet been defined.

1.2.1. THE AMAZON FUND'S DIRECTIVES AND FUNCTIONING

In its ten years of existence, COFA met a total of 25 times. In the beginning, still in 2008, Rules of Procedure which officiate all the Committees rules of functioning, as well as the initial directives table for project support presented by the BNDES were agreed upon. In 2009, various meetings were held in order to detail and adjust investment criteria, distribution methods, modalities, resource application limitations, prioritized criteria and the conditions of project support. Among other established parameters, we can point to (BNDES, 2010b):

- The support of projects in towns considered priorities for prevention, monitoring and deforestation combat; projects which involve articulation and execution with public power, the private sector, NGOs, social movements and local communities (diversity of actors); projects dedicated to directing benefits to traditional communities, family settlements and agriculture; and projects with the potential to make the biggest impacts and be replicated.
- The guidance for actions which value the standing forest, such as support to production chains of timber forest and non-timber products which come from sustainable management of the forest; the implementation system of payment for environmental services; the development and implementation of Permanent Protection Areas (APPs) models and Legal Reserves (RL); the consolidation of protected areas, especially Conservation Unities (UCs) and sustainable use and TIs.
- The prioritization of territorial order initiatives and land regulation which support actions meant for the issuing of undetermined public forests, with special attention to community forests.
- The guidelines to structure and integrate control, monitoring and environmental enforcement systems in the Amazon, support for state forest management agencies structuring; the structuring and integration of forest management control systems, environmental licensing in rural properties, and tracking chain of custody in agricultural and forest products; and the widening and intensification of monitoring systems for deforestation and forest degradation.

- The conditions of project support, such as the mandatory demand for documents which prove previous consent to projects involving traditional communities and indigenous peoples; the coherence of actions predicted in the PPCDam and State Plans for Preventing and Combating Deforestation; the presentation of result indicators; the existence of transparency and publication; the counterpoint presentation; the previously defined sustainability strategy of project results post-implementation.
- The condition on additionality of resources: the projects ought to represent additionality to public budgets destined to the areas of the application of the Amazon Fund".
- The equity criteria in resource application, both in geographic distribution between states and biomes to avoid the concentration of resources between types of proponents.
- The resource application modalities for direct application in investments and costing by the executors or by hiring third parties, as well as for service payments, long-term continued services, deforestation or forest degradation monitoring, and forest inventory, among others.
- Limitations on the application of resources to projects with economic purposes that are not geared to local productive arrangements for collective use or projects supporting weakened social groups.

Over the ten years of the Amazon Fund, these directives have been continually refined based on changing the dynamics of deforestation, evaluating experiments being carried out, deepening the dialogue between social actors involved, the new demands presented, changes in the environment and other factors. The set of criteria and guidelines initially deliberated do not establish specific strategies, nor the modus operandi for project analysis and approval, and do not cover all prioritized thematic axes, which have been gradually being detailed over the years. Since 2009, BNDES has been receiving "over the counter" projects from various proponents, which have been contributing to the improvement of the analysis process and the admissibility or not of the support of the Amazon Fund as a pilot initiative.

From 2013, the operational modalities approved by COFA by the Amazon Fund, aiming to direct the investments for certain focus: (i) directive presentation of public policy structural projects and (ii) projects selected through so-called public calls with specific themes, promoted directly by the Amazon Fund through the medium of partnership institutions (Section 3.2).

The definition of the Amazon Fund's investment priorities, the revision of the guidelines and their detailing for project structuring, in order to operationalize support lines and launch calls for the induction of demands are discussed and approved by the COFA every two years.

The creation of working committees among COFA members with the participation of invited specialists, if necessary, the procedure was structured to support decision making by the Committee. Provided for the Rules of Procedure, the composition of these committees is defined by and agreed in plenary.

In ten years, many work commissions were organized. The commissions contributed analyzes, studies and new topic proposals. They were also set up to elaborate guidelines

and define guiding criteria, when there was still insufficient clarity or agreement by the COFA plenary on how to direct them, formulating specific strategies for operationalizing Amazon Fund support for projects. Examples include guidelines to support small projects, lucrative enterprises, and other biomes.

In the COFA meetings data is presented on deforestation analysis and the BNDES project portfolio as well as environmental public policy information and country participation in the Conference of the Parties (COPs) to the United Nations Framework Convention on Climate Change (UNFCCC), beyond of other pertinent themes. Annually, a presentation on the Amazon Fund Activities Report (RAFA) is up for approval. These guidelines allowed the COFA's representation a more sensitive outlook in relation to deforestation based on in-depth analysis and discussions about strategies and results in fighting deforestation and fostering sustainable development in the Amazon. They also have provided the expansion of knowledge, information and data, and the access to a stakeholder network. However, due to BNDES internal policies, the COFA did not have access to the project's performance reports, both of the ongoing actions being supported and the interface of the projects with BNDES' management, which did not allow for following up and a deeper analysis according to interviewees.

The COFA ordinarily meets at least once every six months, and extraordinary meetings can be held at any moment. In 2009 and 2010, four meetings were held a year and in 2015 three meetings were held. 2012 was the only year where there were no Committee meetings. In that year, the United Nations Conference on Sustainable Development, Rio + 20 was held, which involved intense participation from the institutions and public entities represented in COFA. During the Conference, the seminar "The Amazon Fund: Building Its History" was organized.

The COFA meetings are documented in "Routing Reports and Themes" (RET), which, after being approved by the representatives, are made public on the Amazon Fund website, giving the decision-making process transparency. In addition to that, general information about current projects being implemented and the Fund's annual activity reports of the Fund can also be accessed via the internet

In the interviews, there was some concern about the diminishing frequency of the COFA's extraordinary meetings in recent years, considering the Amazon Fund's increased demands and the expectation of greater participation and collaboration through the challenges it has faced, as expressed by the members of the Committee. The existence of a certain gap between COFA's decisions, responsible for detailing guidelines and criteria, and their execution, and management by BNDES was also pointed out. In this sense, greater interaction between the COFA and the BNDES Amazon Fund Operations Department would contribute to good governance practices advocated for by the Organization for Economic Cooperation and Development (OECD) in 2015 and the World Bank, in their "World Development Report 2017: Governance and the Law," which describes governance as a "process by which state and non-state actors interact to formulate and implement policies within a predefined set of formal and informal rules that shape and are shaped by power" (WORLD BANK, 2017).

The COFA's Rules of Procedure establishes in its Art. 8º that the subject to be deliberated by the Committee must be predicted on the record and will consist of:

I - deliberation: when the subject is related to directives and the Amazon Fund's resource allocation criteria;

II - recommendation: when it deals with an issue regarding implementation of the Amazon Fund by BNDES, including:

a) information released by the end of the semester on the application of resources; and

b) statement on the annual report of the Amazon Fund (COFA, 2008)

Greater interaction between the COFA and the BNDES could be reinforced in Internal Regulations, expanding the Committee's participation in initiatives aimed at strengthening articulation and synergy between partners; the definition of new strategies for the management and sharing of knowledge generated by project experiences, for example; and other matters that contribute to enhancing the Fund's progress and consolidating its purposes. It could also broaden the understanding of the attribution, already foreseen in COFA's Internal Regulations, of the deliberation of matters related to the guidelines and criteria for the application of resources of the Amazon Fund, including the definition of the project selection process, both of public calls as well as over-the-counter projects, jointly with BNDES, which is also a member of the Committee (Section 3.1). In other words, narrowing the gap and broadening the harmony between the Fund's operations, which are the responsibility of the Bank, and the definition of directives, guidelines, indications and recommendations by COFA would undoubtedly contribute to greater legitimacy and transparency for the Amazon Fund, especially about the project selection process. Of course, this should be pursued in accordance with the training of the project's proponents, the BNDES legal, administrative and technical procedures and the primacy of the Bank's board of directors as Fund manager and their final approval of the pre-selected projects, which must be aligned with their compliance policies.

1.2.2. SOCIAL ACTORS REPRESENTATION, PARTICIPATION AND NEGOTIATION

The Ministry of the Environment (MMA) presides COFA and plays a relevant leadership role over the creation and development of the Amazon Fund. In 2016, Decree No. 8,773 on May 11, consolidated the presidency of the MMA at COFA. Before that, it was possible to rotate presidents between Federal Government ministries, which never happened.

Until 2015, active presence and participation in the meetings of the first MMA chair and the president of the BNDES in COFA's meetings were a prestigious position for the Amazon Fund and made the implementation process move much quicker. Upon the evaluation of the people interviewed, the proximity to MMA's technicians with the technical team of the Fund at BNDES also contributed significantly to streamline allocations and decisions from both presidencies.

The COFA brings together 23 representations, organized by three block segments: eight representatives from the Federal Government's ministries, nine representatives from the Amazonian States individual governments, and six representatives of civil society

organizations[14]. The terms of office have a two-year duration and can be extended in equal periods. Every block has the right to one vote in deliberations and every member has the right to one vote within its bloc.

Participation in the COFA is not remunerated, but civil society representatives travel expenses for meetings and other instituted activities are paid by the Amazon Fund. Representatives of the Fund's major donors (Norway and Germany) are invited to attend meetings as non-voting observers or to speak. The participation of other entities in COFA meetings is anticipated in the Rules of Procedure, which indicates that representatives of other states, not listed in the Amazon Fund Decree, may participate in the meetings without voting rights, as well as the possibility of the participation of specialists, guests and observers (COFA, 2008). These specialists have the right to speak at the meeting on matters pertaining to them, provided that there is no objection from a full-voting member. As can be seen from the records of Committee meetings, external experts have frequently been presented to support decision-making with relevant information.

The Rules of Procedure established that COFA decisions can only be approved by consensus between the three representation blocs, something which somewhat balanced the majority government presence and marked the equality principle to participation in decision making. The rule induced dialogue and negotiation in the dynamics of the Committee's functioning, leading to the reciprocal recognition of differences without, however, ceasing to arise conflicts of opinion. In practice, stimulating the sharing knowledge to a level between the parties is encouraged and the technical deeper look, especially through the working commissions representatives of the three blocks, which contributed to the training and maturing of initially controversial themes and issues. In a way, the decision by consensus imposed a limit to the radicalization of the political debate between the parties, which could hinder work development, given the significant expectations from all the blocks to bring support to projects from many areas with the Amazon Fund's resources. However, it is worth noting that some of the people interviewed consider that the veto power given to any of the blocs has the potential to make common decisions with most representations unfeasible, and according to this opinion, it can also dilute responsibilities and affect the way the Fund in fulfills its purpose.

The advantages, disadvantages, and costs to effectiveness of the democratic decision-making process by consensus or majority of representatives deliberation in institutionalized participation channels such as the COFA has been a hotly debated topic over the last decades, given the profound transformations of contemporary democracy (PIRES, 2011). The pursuit of consensus among stakeholders has been widely adopted in environmental, local, regional, national and transnational programs and projects since the 2002 United Nations World Summit on Sustainable Development, Rio + 20 in 2012 and the United Nations Climate Summit in 2015, when the Sustainable Development Goals (SDG) were set. The importance of multiple multi-stakeholder partnerships, involving governments, companies, and civil society institutions, has been officially recognized by

14 Federal Government: Ministries of Environment, Science, Technology and Innovation, Foreign Affairs, Agriculture, Livestock and Supply and Industry, Foreign Trade and Services; FUNAI; Civil House of the Presidency of the Republic; and BNDES; State Governments of the Legal Amazon: Amazonia, Acre, Amapá, Maranhão, Pará, Rondônia, Roraima and Tocantins; Civil Society Institutions: Brazilian Forum of NGOs and Social Movements for the Environment and Development (FBOMS), Coordination of Indigenous Organizations of the Brazilian Amazon (COIAB), National Confederation of Agricultural Workers (CONTAG), National Confederation of Industry (CNI)), National Forum of Forest Based Activities (FNABF) and Brazilian Society for the Progress of Science (SBPC).

the numerous countries participating in these events, including Brazil, as a strategy to strengthen cooperation, accountability and transparency, to leverage specific goals for sustainable development. The Amazon Fund is an example of this type of arrangement at a national level.

Early in the COFA's existence, coexistence between representatives was hard, due to the wide range of interests between parties and the different levels of engagement in the structural process of the Amazon Fund, according to the Committee members who have been interviewed. Initial friction was gradually overcome through frank dialogue which, even in moments of profound disagreement, lead to the construction of respectful relationships and understanding among the representatives moved by the common goal to go forward with the Fund's implementation, getting "operational agreements or reasonable disagreements, based respecting the positions and values of other social actors," (MENDONÇA, 2011).

Much progress has been made in methodologies in recent years so that decisions by consensus, as a procedure established in institutional participation channels that bring together multi-stakeholders, do not hinder the development of programs such as the Amazon Fund. Examples on how to qualify and treat possible disagreement by its nature, incidence degree, weight among the representations and other aspects, to be agreed among the interested parts to be better dealt with, can be researched for a better functioning for COFA in the wide existent bibliography and specialized consultants[15].

Prior to COFA meetings, the Amazon Fund team at BNDES organized preparatory meetings with each of the three separate blocks (state governments, the federal government and civil society) to check sensitivities and align information, demands, perceptions and positions. "It is not trivial governance", stated one respondent. These meetings contributed to chart a virtuous path of dialogue and collaboration between the representations for consensus building. Some respondents consider that one of the factors that contributed to this convergence among the COFA representatives' stands was the relative balance reached in the distribution of the Fund's resources in projects that account for the interests of all parties. That is, different segments are being supported. But this can also generate, according to these opinions, some accommodation or positions that can blur the definition of new investment priorities to combat deforestation which appear with each new conjuncture. However, it can be considered that this balance is also demonstrative of the democratic process that has guided the implementation of the Amazon Fund, and it materializes in the access to resources to support projects, being the result of widely debated guidelines, grounded and consistent with the purposes for enabling it. A process that challenges the continuous and increasing qualification of dialogue, negotiation, and interaction between the parties, configuring the Amazon Fund an instrument effectively appropriates by the set of social segments with decisive and committed action in Brazil's Legal Amazon. On the other hand, this process also brings issues, risks and new challenges to the conditions of each moment, to be permanently and carefully worked on.

15 There are numerous studies, methodologies, methods and tools to expedite consensus decision-making, while respecting the difference and balance between divergent positions, on the principle that consensus does not mean unanimity but recognition of what is best and possible for the program at any given time. These studies are available on the Internet and from various consulting firms, as this is a widely adopted procedure in the corporate world and in international cooperation programs.

Hazlewood (2015) identifies that partnerships between organizations from different sectors, public and private, combine their resources and strengths and shared risks to share their agreed goals, and at the same time also meet their individual goals, i.e. all win. It should be noted that partners typically leverage their knowledge, skills, resources and assets to create solutions that none of them could have developed on their own. This can promote inclusive participation in addressing sustainable development challenges in complex regions such as the Legal Amazon, and facilitate programmatic processes and approaches, such as the Amazon Fund, with the potential to create multilevel platforms or networks for greater collaboration and impact.

One aspect also questioned by some respondents concerns a supposed conflict of interest in the composition of COFA's representation of projects supported by the Amazon Fund. If COFA should reflect the priorities, issues, real and effective challenges of the diversity of proactive social actors in the Legal Amazon, how would detailing guiding criteria and project support strategies gain such adherence and organic process without the active presence and direct influence of accumulated stakeholder experience? The trajectory of the Amazon Fund over these ten years (Chapter 3) shows, for example, how incorporating support for small projects could be adequately equated by pressure from NGOs and the overall dispersion that this type of support provides. Or, as the breach of the rule of additionality to support public agency projects, proposed by MFA, COFA's president, gained the consent of all COFA representations, based on the collaborative understanding of the difficulties of the public budget that would objectively focus on priority to the supervision to combat deforestation in the Amazon, the main objective of the Amazon Fund. In other words, the interested parties are gathered to share and defend their interests autonomously, but their strongest reference is the existence in the country of advanced environmental legislation and the well-established and agreed purposes of the Amazon Fund, which support the rationality of the debates and the decisions of common interest over particular interests.

Evidently, there are advances to be made in this process. Questions along this line are pertinent if any of the interested parties have directly participated in the selection process that they have submitted for support. There are, however, rules that can be established and introduced in this situation to avoid a conflict of interest, which can, in turn, nominate specialists and other public and private representations to act through a selection process.

At the COFA, the mutual perceptions of the blocks representatives about the participation and the relationship dynamic can be better understood through appreciation expressed in the group of interviews made in this evaluation, in which the main aspects are summarized highlighted as follows:

1.2.2.1 BNDES

The BNDES had to beat the initial oddness of acting under the directives established by a tripartite committee in the Amazon Fund's management, which did not match the existing internal culture, according to respondents. The demands and detailed bureaucratic administrative procedures added to the slowness of the evaluation process by the different operational areas of the Bank (Section 1.1.2) which were recurrently questioned by COFA's members.

The rules adopted for the Amazon Fund are the same as those applied by the BNDES to other projects. What was interpreted in COFA's plenary as inflexibility, ignorance and

disconnection with the characteristics of the Fund's target audiences, was supported by good practices linked to zeal, care, guarantee of technical compliance and suitability by donors and Brazilian society. These questions required BNDES efforts to simplify procedures, undergoing slow changes over the years, especially during times of analysis and project approval. However, it was the actors interested in seeking support from the Amazon Fund who learned to adapt to the Bank's procedures and standards, supported by BNDES communication efforts on its processes, which eventually contributed to institutional strengthening and training for a series of public and private institutions (Section 4.5 and Section 4.6).

According to those interviewed, BNDES, as manager of the Amazon Fund, went through a long learning curve, which gave it knowledge and more accumulated experience (Section 1.1.2). Furthermore, it dealt with a public it was not used to working with. The approximation between a big development bank and public and private actors dedicated to sustainability in the Legal Amazon is perceived as an indirect positive impact of the Amazon Fund, in bringing two relatively disconnected worlds together through joint work.

The scope of the projects supported by the Amazon Fund that were also distinct from the large infrastructure projects that BNDES has traditionally supported before. These contrasts created challenges for the Fund' to gain momentum and internalize project logic for Bank day-to-day operations in the first five years. Some impatience from the government and NGOs was reported in this early period

On the other hand, this experience provided teams with a greater capacity for social and environmental analysis and the development of good transparency practices which spread from the Amazon Fund to other BNDES' operations. However, it is possible to evaluate that there are still advances in terms of transparency. Although the Bank's internal policies must be respected, information and ongoing project performance data can be better taken advantage of for the betterment of the projects and socioeconomic analysis.

1.2.2.2. FEDERAL GOVERNMENT

The MMA led the representations of other Federal Government ministries and played a proactive role in the COFA, in setting guidelines and in presenting previously formulated and articulated proposals, with referrals that were at times imperative to the majority of respondents. A significant example was the proposal to amend, exceptionally, the additionality rule (Section 3.3), agreed upon in the guidelines for resource application of the Amazon Fund, to support projects from public agencies to oversee deforestation attributed to the Federal Government because of the Union's budgetary constraints. The issue has provoked intense debate and required a leveling-up process among COFA representatives that resulted in a temporary "collaborative approval". However, the interviews revealed that the previously agreed on revised guideline created uncertainties for COFA members about the risk of being too general and extended indefinitely, which may affect the trust and credibility of the agreements in terms of additionality.

On the other hand, most federal public agencies and institutions have found it difficult to prepare and implement projects submitted to the Amazon Fund. Consideration should also be given to the additional challenge, in the case of public administration, of adjusting resource allocation not only to BNDES' relatively strict procedures but also to the calls

and contracts rules established by Law No. 8,666 on June 21st, 1993 and the effective availability of funds for payment as, once they are part of the Union Budget, they may be subject to contingencies. In part, due to this complexity in resource management, no Union project has been completed to date (BNDES, n.d. a).

1.2.2.3. STATE GOVERNMENTS

The participation of state representations is perceived as inconstant, with high turnover, according to the interviewees. The conditionality demanded in the COFA Rules of Conduct, that state governments draw up their State Deforestation Prevention and Control (PPCDs) Action Plan to be entitled to vote at COFA has brought deforestation monitoring and control into the agenda. It served as an opportunity to generate gains from deforestation control / enforcement through the Amazon Fund. The projects with the states are mainly to support the enforcement of the Rural Environmental Registry (CAR) and to monitor, prevent, and combat deforestation and forest fires, as well as some initiatives to promote sustainable development in Acre, Mato Grosso and Pará.

However, the quality of the projects presented by state public agencies required additional technical support and the low level of project implementation was a constant concern expressed in the COFA. Our interviews point out that the state's difficulties are not strictly due to lack of financial resources, but often due to lack of human, political, administrative ones or even lack of specific training for the project activities in the states. According to some reports, state representations had difficulties sharing problems and discussing coping alternatives with COFA, something which could be dealt with through greater communication and trust, helping the states to find ways for faster project implementation. Another important factor is that state governments, just like the Federal Government, are subject to the bid and contract rules established by Law No. 8,666 on June 21st, 1993.

Nevertheless, the participation of state representatives at COFA encouraged the articulation and development of mutual interest issues in the Amazon, which indirectly contributed to strengthen the Amazon State Governors Forum and new partnerships between state and civil society, for example. Another contribution from the COFA to state governments, highlighted in the interviews, was the qualification of the State Environmental Organizations (OEMAS), with the participation of state secretaries in Committee meetings.

1.2.2.4. CIVIL SOCIETY INSTITUTIONS

Institutions participating at COFA have very specific organizational political profiles, interests and cultures, in line with the diversity of social segments they represent: indigenous people, rural workers, entrepreneurs, academia, intellectuals, scientists and environmentalists. There are reports that, at first, there was mutual distrust between the civil society representatives. There were no convergences or common strategies for the block's actions at Committee meetings, according to the interviewees. This situation mobilized articulations of each segment and among themselves to elaborate proposals that would contribute to the implementation of the Amazon Fund.

The interviews found that in relation to BNDES, there was a familiarization and learning period from the institutions about the procedures and rules that guide the Bank's management as

well. Among the respondents, there are mixed perceptions of the bureaucratic procedures required by BNDES, which some see as overly rigid and exclusionary, and for others are simpler than other similar (international) funds. In regard to the relationship with the MMA, there is the perception that the reciprocal permeability to dialogue has advanced throughout the debates.

In interviews conducted with a variety of actors, there was unanimous recognition of the importance of civil society representation at COFA. But, there, were also questions about this participation being proportionally minority actors (civil society accounts for about one-third of COFA's composition) compared to total government representation, especially considering that the civil society block reflects interests from entirely different sectors. Furthermore, some reported that there was unbalanced access to the agendas of some meetings, which made preparation for discussions and better quality of participation in the Committee difficult.

Civil society representatives had a proactive role in the COFA, which is now recognized and valued by other members of the Committee and other stakeholders in the Amazon Fund. Civil organizations have demonstrated the ability to put projects to practice, offer overall dispersion in reaching the final beneficiaries, present results and contribute to the overall quality of the dialogue in the Committee, either by bringing information and knowledge resulting from the direct dealings with organizations and populations based in the Amazon, or technical and scientific contributions, which contribute to the overall design of the Fund's strategies.

Over the years, there has been a process of building mutual trust between representatives of civil institutions and the other blocks at the COFA, so that disagreements eventually became the basis for joint dialogue, building effective actions for the Amazon Fund.

1.2.3. CONSIDERATIONS

The balance in the correlation of forces between the government, the BNDES and civil society representations at COFA has changed over time, especially due to the changes in key government representatives. However, formally, the governance process of the Amazon Fund has not changed since its inception. Operating and financing decisions are made by BNDES, using its own systems, in accordance with the guidelines established by COFA, using national public policies as references - specifically the PPCDAm and the Sustainable Amazon Plan - and, since the 22nd COFA meeting, with the alignment of the Amazon Fund guidelines with the National REDD+ Strategy (ENREDD+) and the National Native Vegetation Recovery Policy (PROVEG) (COFA, 2017a).

The COFA created a space for discussion among social actors that, over the course of ten years, provided extensive learning about the reality of the Amazon and created a database of knowledge and experiences about what works and what does not work in the different situations in the region. Furthermore, it provided interaction, exchanges, building trust, quality dialogue and greater synergy between actors who historically did not have a relationship based on trust and constructive dialogue. These are the benefits pointed out by Hazlewood(2015) in multi-stakeholder consensus-seeking partnerships to boost sustainable development programs. COFA also contributed to channel and respond to real demands that were previously scattered and fragmented across the Amazon region and to broaden the overall dispersion of the Amazon Fund.

The COFA, as a space for the elaboration and deliberation of proposals, gave legitimacy to the Amazon Fund, conferred on by the plurality of representatives of different governmental and non-governmental actors participating in the process. However, some factors that affect the quality and effectiveness of the deliberative process (SILVA, 2018; ALMEIDA et al., 2016) can be improved, such as the intensity of the work agenda, prior and equal access to information to guide the decision-making process, greater attention to the incorporation the focus discussed by COFA in the operationalization of the Fund, as highlighted by some respondents, and further clarification of the project selection process (Chapter 3).

As a participatory body of governance, COFA has so far proven to be an effective and instigating channel for innovation, which has ensured the alignment of the Amazon Fund with national public policies to foster sustainable development and reduce deforestation, strengthening the institutions that implement and operate them.

1.2.4. RECOMMENDATIONS

- Strengthen COFA's crucial role in the Amazon Fund's governance, while maintaining a balanced representation of all stakeholders. COFA should be a space for dialogue and consensus-building, as well as for ever-improving guidance and support of the Amazon Fund.
- Evaluate the inclusion of a private sector representative from the Amazon Region in the COFA. There is an agribusiness sector that has supported initiatives to reduce deforestation (e.g. the soy moratorium) and plays an important role in the regional economy.
- Evaluate the inclusion of an institution representative of other segments of traditional populations[16], other than the indigenous already represented, such as rubber tappers, extractivists and riverside communities.
- Create mechanisms that contribute to making COFA members' participation in the discussions and decision-making increasingly better (preparatory subsidies for meetings, prior agenda sharing, among others) enhancing their contributions to the Amazon Fund
- Increase the frequency of COFA meetings. Meetings held quarterly are suggested.
- Create specific working committees within the COFA to monitor and collaborate more closely with the BNDES, considering the Fund's demands for quality increases, such as stronger articulation and synergy between partners; knowledge management from lessons learned from project experiences, among others.
- Involve COFA in the project selection process, along with BNDES, appointing members to the Selection and Classification Committees, in the case of public calls, or, in the process for project selection "over the counter" (Section 3.1).

16 According to Decree No. 6.040 of 2007, Traditional Peoples and Communities (PCTs) are: "culturally differentiated groups that recognize themselves as such, that have their own forms of social organization, that occupy and use territories and natural resources as a condition for their cultural reproduction. , social, religious, ancestral and economic, using knowledge, innovations and practices generated and transmitted by tradition ". According to the MMA, there is a great socio-diversity among the PCTs in Brazil, among them are Indigenous Peoples, *Quilombolas*, Rubber Tappers, Chestnut trees, the most present in the Legal Amazon.

- Establish new rules to avoid high turnover in the COFA's governmental members, which may hinder discussion dynamics and lead to discontinuity and unevenness of information among committee members. One possibility to improve these continuity issues is to provide permanent monitoring of the government's political representatives at COFA by technical representatives.
- Harnessing the COFA's potential as a space for exchanging experiences, debating and collaborating to identify new action strategies, best practices and how to overcome hurdles (often common between different projects). Explore possibilities for upscaling and increasing synergy between Fund project implementers, public policy implementers and other relevant actors.
- Create web platforms specifically for COFA members and project executors to exchange information and experience by BNDES.
- Organize rotative COFA meetings in the various states of the Amazon for greater rapprochement with partners, dissemination and recognition of the work of the Amazon Fund.
- Explore the possibility of creating state or regional committees to foster greater interaction between social organizations, the business sector and government managers, as well as greater integration throughout the Fund's lines of action.

1.3. THE CTFA

According to Decree No. 6,527 of August 1st, 2008, in the creation of the Amazon Fund, it is the MMA's task to annually define the fundraising limit for the Amazon Fund, based on the result of the reduction of CO2 emissions from deforestation. The Amazon Fund Technical Committee (CTFA), established by MMA Ordinance No. 345 on October 22nd, 2008, is responsible for analyzing and validating the calculations presented by the MMA. Validating the amount of emissions avoided is fundamental for the transparency sought by the Amazon Fund and it is a guarantee that the resources raised annually indeed match the CO2 emissions avoided by the reduction of deforestation.

The CTFA is composed of up to six experts of recognized scientific and academic technical knowledge, nominated by the MMA in consultation with the Brazilian Climate Change Forum. Members have a three-year term, with only one term-extension and no remuneration, as it is considered a public interest activity. The Brazilian Forest Service (SFB) is the MMA-related body responsible for performing an executive secretary role: to convene, record and report the results of the annual CTFA meeting.

The methodology for calculating the deforestation area is based on data provided annually by the Brazilian Amazonian Satellite Forest Monitoring Project (PRODES) from the National Institute for Space Research (INPE). In summary, the method adopted to obtain the avoided emission reduction values in tons of carbon, results from the difference between the historical average deforestation rate -- considering periods of ten years, and these decades are updated every five years -- and the area of deforestation effectively measured in the year in question (historical average deforestation rate minus annual deforestation rate). This result is multiplied by the emission coefficient in question, i.e. the amount of carbon present in the biomass of the forest, in tons of carbon per hectare (tC / ha) (BNDES, 2010b).

Initially, the calculation adopted as a parameter the coefficient of 100 tC / ha of biomass and the standard price of US $ 5.00 / tCO 2. In 2011, CTFA members suggested improvements to the MMA regarding the avoided emissions calculation methodology. They estimated that, up to that point, a conservative average of 100 tC / ha had been adopted, which underestimated the average amount of carbon present in the Amazon Forest biomass and the actual capacity of the Amazon Fund to reduce emissions. They also recommended reviewing and replacing the carbon density used in the calculations from 100 tC / ha to 132.2 tC / ha, which was incorporated by MMA. This value was legitimized by Decree No. 7,390 of December 9, 2010, which regulates the National Policy on Climate Change (PNMC), based on the Second Brazilian Inventory of Anthropic Emissions from Sources and Removals by Non-Greenhouse Gases. Controlled by the Montreal Protocol (MCTIC, 2016).

The CTFA also proposed widening its attributions for the COFA (COFA, 2011) to:

- To provide a technical and scientific evaluation in carbon emissions from deforestation and other sources in the Amazon;
- To develop the study for comparative analysis in many existing scientific approaches for the calculation of carbon density, to meteorological refinement and for future adjustment of the parameters of avoided carbon emission from deforestation;
- Analyze the environmental effectiveness of investments in supported projects by the Amazon Fund.

These suggestions would imply increasing the number of members in the CTFA to integrate new expert profiles and resource allocation to make its actions viable. Its developments are detailed below.

1.3.1. OPPORTUNITIES FOR SCOPE OF ACTION EXPANSION

The proposal to broaden the CTFA's scope of action got a positive response from the COFA. The possibility of the CTFA playing an even more relevant role, contributing guidance, knowledge and technical-scientific analysis that supported the evaluations and the formulation of new proposals from the Amazon Fund, was repeatedly discussed by the COFA. In this format, the CTFA would function as a technical body, a scientific advisory body, which could bring scientific contributions and innovations to the Amazon Fund's vision. The CTFA could also contribute as a "link between the government and the COFA," according to one respondent, due to allegedly not being imbued with specific corporate or political interests.

However, some considerations about the operational capacity and effectiveness of these proposals were also mentioned during the interviews, such as possible difficulties due to the relative distance of the academic world from reality; lack of consensus between the parties regarding the delimitation of roles, contribution flow and forms of insertion in the dynamics of the COFA; and risk perceived by donors that expanding the CTFA's scope of action could compromise its autonomy and authority as a certification body for emissions calculations. Finally, the CTFA has not had its assignments expanded.

In the interviews made, the important role by CTFA at the beginning of the Amazon Fund was recognized, especially in the review of the carbon emission coefficient that was then adopted. With this, it was evaluated that CTFA only attested "proforma" the emission reduction calculation presented by MMA. Although reports indicate that, during the COFA's meetings, the under-utilization of CTFA was highlighted at various times, given the recognized scientific quality of its members, no new referrals to review its attributions have progressed up until 2018.

1.3.2. DEFORESTATION INDICATOR

The CTFA's parties receive annual deforestation data provided by the INPE and approve the amount of avoided emissions (Image 8). However, the estimated amount of validated emission reductions does not directly imply in obligations for the donors, but merely establishes the limit amount for the Amazon Fund's fundraising in this period.

The CFTA's emission assessment authorizes the BNDES to issue a degree of recognition of the amount of the contribution determined by each donor. These degrees are nominal, non-transferrable, and do not generate rights or credits of any time. In 2017, for example, the estimated emission reduction was estimated at 58 million tons of CO2, and the limit value was around US$ 300 million (considering the price of US$ 5,00/tCO2), however, Norway's donations for emission reduction has reached the value of US$ 70 million this year.

Image 8 – CTFA Annual meetings

Meeting	Date	Year of reduction	Estimated total of reduced emissions (million tonnes of CO_2)
1st	11.10.2008	2006	200.0
		2007	303.0
2nd	12.1.2009	2008	245.7
3rd	12.13.2010	2009	445.9
4th	10.20.2011	2010	462.9
5th	11.14.2012	2011	490.2
6th	11.26.2013	2012	580.2
7th	9.10.2014	2013	516.1
8th	11.5.2015	2014	558.8
9th	11.8.2016	2015	500.8
10th	10.4.2017	2016	12.0
11th	10.9.2018	2017	58.0

Source: BNDES, 2019a.

1.3.3. RECOMMENDATIONS

- Strengthen the CTFA as a means of verifying the calculations of results in reducing emissions associated with deforestation not only in the Amazon biome.
- Generate the required conditions so new studies and researches seeking to improve the methodology of the calculation of emissions reduction can be done by the CTFA
- Create the necessary conditions for other relevant technical and scientific analysis can be done by the CTFA, including interaction with other funding agencies, such as the Financier of Studies and Projects (FINEP), CNPq (National Council for Scientific and Technological Development), Research Support Foundations (FAPs), and CONFAP (National Council of State Supported Research Foundation).
- Develop strategies to take advantage of potential scientific contributions and innovations from CTFA members, which will not put their authority nor credibility at risk as they validate reductions in the rate of emissions.

2. AMAZON FUND FINANCING: DONOR PARTNERSHIP

2. AMAZON FUND FINANCING: DONOR PARTNERSHIP

The Amazon Fund would not exist without external financing. The total amount raised by the end of 2018 from Norway, Germany and Petrobras reached a total of R$ 3,396,694,793.00 (US $ 1,288,235,378.00) (BNDES, 2019a.). Norway, besides being the first, is also the largest donor of the Amazon Fund (93.8%), followed by Germany (5.7%), and Petrobras (0.5%). In addition, due to the income generated by the resources received over the years, the total value of the Amazon Fund has reached R$ 4,5 billion. The use of these donations must follow the sovereign will of Brazil, as it is confirmed by the donation agreements signed between the donors and the National Bank for Economic and Social Development (BNDES), which determines that resources must be aligned with the goals of the Amazon Fund, "according to its rules, conditions, guidelines and criteria" (BNDES).

The creation of the Amazon Fund has followed years of discussions, based on negotiations of the United Nations Framework Convention on Climate Change (UNFCCC), on how to incorporate forest conservation into greenhouse gas mitigation mechanisms. Brazil, as the country with the largest tropical forest, was the first recipient of a fund of this magnitude. Consequently, the Amazon Fund is considered a pioneer mechanism worldwide when considering the role of the forest sector in international climate negotiations and, at the same time, the first national experiment with this mechanism.

For Norway, the Amazon Fund represents an opportunity to test the relationship between forest preservation and payment for results, which "creates countless expectations and interest by cooperation agencies, governments, companies, press, and specialists all over the world," (FBOMS, 2010). For international donors it was fundamental that the design of the Fund was defined based on three important factors:

i. Result-based financing[17];

ii. A governance system with representation from the interested parties;

iii. Low cost through the BNDES.

Another important approach was to begin to implement the Amazon Fund with a lean structure from which it was possible to learn and adjust through its implementation (ZADEK et al., 2010).

Furthermore, the following factors contributed to explaining why Brazil was interested in trying a fund such as this:

- International recognition of the great success of Brazilian efforts to reduce the annual deforestation rates in the Amazon;

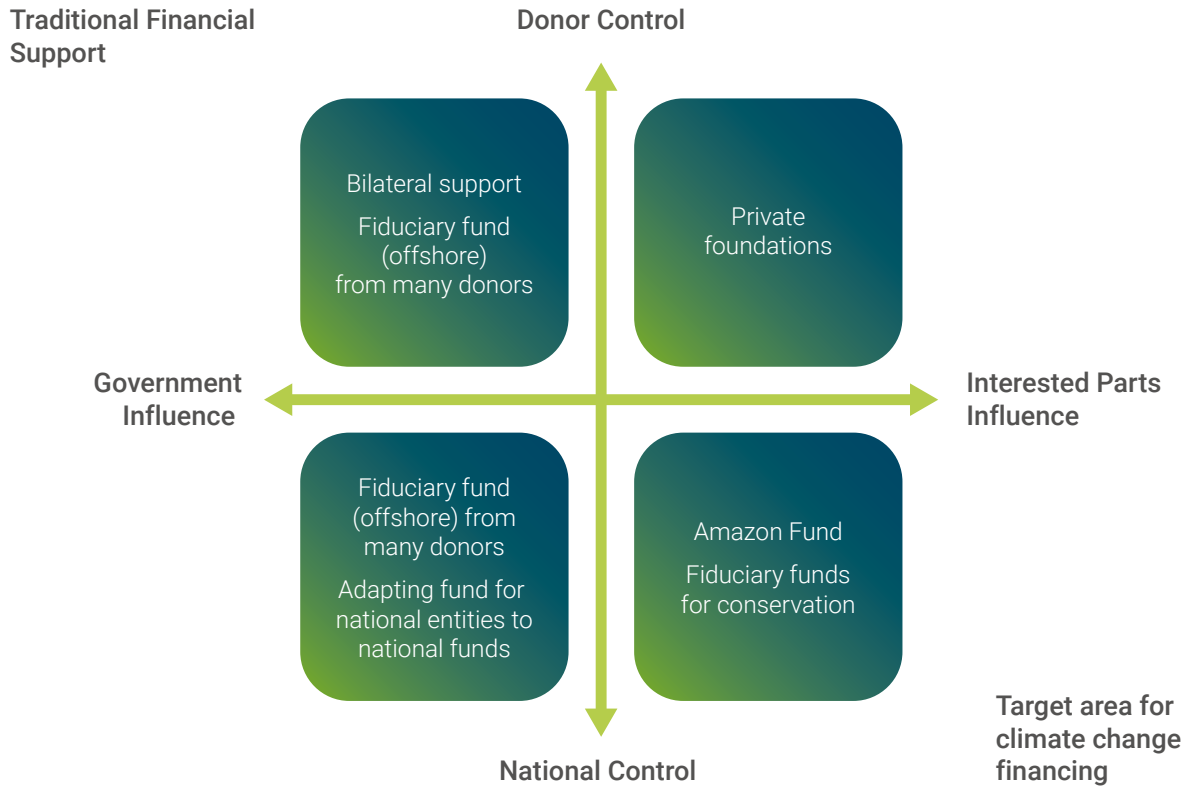
17 In fact, the Amazon Fund has special characteristics, as most of the donations were made based on deforestation reduction results obtained prior to its creation. (Section 1.3).

- The existence of satellite system for deforestation monitoring made by the National Institute of Space Research (INPE), which generates real reliable data and whose methodology is internationally recognized;
- BNDES' international reputation as a reliable institution with managerial and transparency capacities.

The Amazon Fund's system of governance inspired donors' trust in its effective and correct implementation, underlying the importance of stakeholders, but especially civil society participation in the management, through the Amazon Fund's Guiding Committee (COFA), based on previous Brazilian experiments.

Zadek et. al (2010) (Image 9) identified the Amazon Fund with sovereign management through BNDES and the governance system of COFA as an instrument under the influence of the interested parties (multi-stakeholders) and as a fund under national control.

Image 9 - Finance mechanisms and stakeholders' alignment



Source: Zadek et al., 2010.

The donors found themselves having to justify their contributions to the Amazon Fund in their respective parliaments and the fact that Brazil is a middle-income country implies a greater need to present a solid basis in order to advocate for financing this kind of cooperation. In this sense, signaling an increase in deforestation rates since 2015 in the Legal Amazon since could put future contributions at risk.

The annual deforestation rates to be used in the calculation of emission reduction must be compared yearly to the average deforestation rate over the last ten years, as detailed in

Section 1.3, and these registers must be updated every five years. For the period between 2016 and 2020, the years referenced (2006-2015) are associated with an average rate of deforestation of 8.141 square kilometers a year[18] (MMA, 2017). This rate is near the current data of deforestation in the latest years - in 2018, there was an estimated rate of 7,9 thousand square kilometers (PRODES/INPE, 2019) - which may impact future contributions.

2.1. NORWAY

The Amazon Fund was the first project to receive funding from Norway's International Climate and Forest Initiative (NICFI) (NORAD, n.d.). At COP13, held in Bali in 2007, Norwegian Prime Minister Jens Stoltenberg announced the creation of NICFI and Norway's intention to send funds of up to 3 billion Norwegian Crowns[19] annually to reduce deforestation in tropical forests. NICFI's current agreement with the Amazon Fund runs until 2020.

NICFI is under the responsibility of the Ministry of Climate and Environment. In 2018, with the Amazon Fund's 10th anniversary, Norway reaffirmed its commitment to allocate up to 3 billion annually to reduce deforestation. NICFI finances various types of projects and programs, including bilateral agreements with large forest countries such as Brazil, multinational organizations, and direct funding for civil society projects. So far, Norwegian funding has supported efforts to reduce deforestation in more than 70 countries.

Approval of Norwegian resources to support the Amazon Fund was a multi-year parliamentary decision. The funds are intended for international cooperation through the NICFI. In the context of reducing greenhouse gas emissions from deforestation and forest degradation, conserving forest carbon stocks, sustainable forest management and increasing forest carbon stocks (REDD+), emission reductions are the basis for payments made annually and these emissions are not accounted for as emission reductions by Norway.

The Government of Norway, through its International Cooperation Agency (NORAD), already had a long history of supporting environmental and social projects in Brazil, both with the Brazilian Government and with civil society entities, with a specific interest in conservation and sustainable use of forests. Many of these projects directly or indirectly supported indigenous organizations (FBOMS, 2010)[20]. NORAD has the important responsibility of monitoring the effects of NICFI investments. In addition to the support for the Amazon Fund, Norway currently also supports non-governmental organizations (NGOs).

NICFI's idea was to create a global fund that would follow a simple payment model for avoided deforestation. In negotiations with Brazil, this translated into the creation of the Amazon Fund. As some of those interviewed said, Norway had money, and Brazil had forests and deforestation reduction policy. Thus, Norway became the Amazon Fund's

18 The average deforestation rates to compare annual rates in the periods 2006-2010 and 2011-2015 were 19,625 and 16,531 square kilometers respectively.

19 Approximately 300 million euros per year.

20 Document the representative of the Brazilian Forum of NGOs and Social Movements for the Environment and Development (FBOMS) at 7th meeting of COFA, held in March 2010 and updated on August 15, 2010.

first investor. The relationship of trust between the two governments helped to make this process viable and fast (ZADEK et al., 2010; FORSTATER et al, 2013).

As already stated, Brazilian sovereignty in the Amazon Fund was important to Norway. NICFI does not have the institutional capacity to control the details of the Fund's implementation. There is a simplified follow-up process by the Norwegian government, in which a representative of the Norwegian Embassy in Brazil is invited to attend COFA meetings as an observer and BNDES organizes an annual donor meeting. Another way donors can follow-up and ensure good resource management practices is through an annual external audit, with a report open to the public. As this is a public resource from the country of origin (Norway), it requires transparency and care. In addition to monitoring done by NORAD, a general audit by NICFI is also done.

Although on the one hand there are criticisms of the delayed implementation and use of resources from Norway due to internal conflicts and political changes in recipient countries, in addition to Norway's lack of monitoring capacity; on the other hand, the Norwegian government is pleased with the NICFI. However, Norway would like to have more support from other countries on the issue of tropical forests, in order to be able to focus more on monitoring resource implementation (GAWORECKI, 2018). NICFI makes contributions to the Amazon Fund annually, based on the established pay-as-you-go calculation (Section 1.3.2). However, "Norway has also reserved the right to withhold payment if the fund deviates from its targets and goals, fails to report and audit or is poorly managed financially" (ZADEK et al., 2010).

The Amazon Fund agreement between Brazil and Norway logically placed the BNDES at the center of attention on the national and especially the international stage, regarding its management capacity and achievement of expected results. All eyes have turned to the BNDES and Brazil on the Amazon Fund, due to the innovation it represented and the potential to both contribute to the reduction of deforestation-causing emissions and to financially compensate developing countries for such results. As a result, this created the high expectation that Brazil could maintain a low level of deforestation and reach zero illegal deforestation by 2030.

The cooperative experience between Brazil and Norway is considered satisfactory during the period reviewed in this evaluation. The implementation of the Amazon Fund was not perfect, but its innovation and continuously ongoing learning process over the years has become a global benchmark for climate funds, biodiversity and result-based funds. Experience with the Amazon Fund has helped NICFI establish other funds and activities in a number of other countries, although these have not reached the scale of the Amazon Fund since these countries lacked institutions of BNDES size and capacity. NICFI's effort to put forests on the global climate negotiations agenda has also meant the subject was included as part of the 2015 Paris Agreement.

The Norwegian Government intends to continue with the NICFI until 2030, which may represent an opportunity for continued cooperation with Brazil through the Amazon Fund. Efforts and policies to reduce deforestation, i.e. producing results (to be financially compensated) and political will, are important conditions for continued cooperation.

2.2. GERMANY

The German Government has been an important international partner and project donor in Brazil for decades. It is well known that Germany has played an important role in leading and mobilizing international donors under the Pilot Program for the Protection of Brazil's Tropical Forests (PPG7). In addition to be the second-largest donor for the Amazon Fund, it has other cooperation programs and projects with Brazil as well, both as a financier and a technical advisor.

Germany's resources for the Amazon Fund come from the Federal Ministry for Economic Cooperation and Development (BMZ, in German) through a specific budget allocation, which is not a common tool in international cooperation. Each year, payment must be approved by the German Parliament. The implementers, the German State Development Bank (KfW) and the German Cooperation Agency (GIZ), produce data to defend support to the Amazon Fund in the German Parliament and in the Economy Ministry.

Discussions for annual approval can be deep, due to Brazil's relative degree of development and the fact that the Amazon Fund is an ex-post payment instrument, which means it is based on past performance rather than performance indicators related to the specific donations. Added to this is the fact that the REDD+ approach is not yet agreed upon in Germany. The German perception that the Amazon Fund has contributed to positive results in reducing deforestation and sustainable development has been important to approve lending.

Germany's financial support to the Amazon Fund is managed through KfW, with a total of 55 million euros transferred, compared to the total funding of 100 million euros (GIZ, 2019; KfW, 2016).

Germany's technical support for the Amazon Fund is implemented by German Cooperation for Sustainable Development through GIZ, and funding for this technical support for the period 2011-2021 amounts to €14.62 million (GIZ, nd). The German government, through BMZ, started its support in 2010 and reached a total of 8.02 million euros, while the Norwegian government co-financed the technical support (carried out by GIZ) in 2015 with a total value of 6,60 million of euros.

GIZ's technical support with the Amazon Fund has focused on support for improving project implementation and training. With long experience in the environmental area in Brazil, GIZ is used to working on environmental management policies and the project implementation obstacles faced by governmental and non-governmental entities in the country. GIZ also has experience working on improving project execution globally and has developed its own instruments, processes and systems that support its technical assistance globally.

In the area of training, GIZ works with implementing entities, organizing and facilitating workshops, practical training and virtual courses. It also supports entities that want to submit projects to the Amazon Fund. One of the areas that GIZ contributes to is training public administration institutions to improve their project implementation performance; for example, by better understanding the procedures and implementing the bidding processes.

Another area of GIZ's work is the "Collaborative Actions," which deals with working with federal or state entities to improve Amazon Fund supported projects. When there are delays

in project implementation, GIZ, along with implementation agencies, seeks to diagnose barriers and delays along with implementation agencies, followed by an action plan in order to solve the problem(s). Technical support helped improve the average project's financial performance by 45%, which led to a 21% increase in project payments. Specifically, payment to the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), in the context of its deforestation control project, increased by 84% (GIZ, 2019).

GIZ also provides technical support for ex-post evaluations of completed projects, for which an ex-post evaluation methodology (based on the OECD) has been developed. This created a learning process from implemented projects that is fundamental to produce knowledge for the managers themselves, the BNDES, COFA, and the environmental sector of the Brazilian government. Evaluations have shown significant contributions to reducing deforestation and sustainable development (GIZ, 2019).

The GIZ's technical support has been unanimously recognized in the present assessment, by a wide variety of actors, as a key element in improving the Amazon Fund's performance. This is a remarkable recognition given the diversity of actors interviewed -- representatives of federal and state governments, civil organizations, beneficiaries, Amazon Fund managers and their projects, donors, among others. Indeed, the evidence gathered from the interviews, points to a very important role for GIZ in helping the Fund to achieve its objectives effectively and efficiently.

Cooperation between Brazil and Germany in the context of the Amazon Fund, both with financial support and technical support via GIZ, is seen as very successful.

2.3. FUNDRAISING

In 2010, the study by Fundación AVINA (ZADEK et al., 2010) observed that the Brazilian Government could not mobilize resources for the Amazon Fund other than those from Norway and Germany, besides a small contribution from Petrobras. Overall, the fund has not been proactive in diversifying donors.

The Amazon Fund has reached a growing resource investment capacity but remains dependent on just about two major donors. Funding from non-profit organizations or foundations and establishing arrangements with the private sector, Brazilian or international, to finance the Fund's activities have not been explored during the period analyzed.

2.4. RECOMMENDATIONS

- Operating costs must be fully estimated and analyzed so that BNDES and donors can secure enough funding to provide a technical team of adequate size to manage the Amazon Fund.
- The long-term sustainability of the Fund requires donor diversification – in addition to other countries, nonprofit organizations or foundations – as well as exploring arrangements with the private sector (Brazilian or international) and mixed funding possibilities.

- In order to increase the technical capacity of Amazon Fund projects implementation, in addition to analyzing the operational costs, it is essential to have a diversification strategy for technical support beyond GIZ, which may include BNDES internalization and /or partnerships with an institution network of Brazilian technical support. GIZ could work with BNDES on a strategy to transfer technical support to the BNDES and other national actors in the mid/long-term.
- Donors can play an important role in communicating project results and in the Amazon Fund's governance model so that it can serve as a replicable model in other countries. Better results reporting could also leverage resources from other bilateral and private donors (foundations and corporations).

3. THE AMAZON FUND'S IMPLEMENTATION

3. THE AMAZON FUND'S IMPLEMENTATION

The implementation of the Amazon Fund, guided by the aim of reducing deforestation with sustainable development, meant a process detailing and gradually consolidating guidelines, criteria, resource allocation modalities and conditions for support for projects that guided the operationalization and functioning dynamics. Based on Decree No. 6,527 of August 1, 2008 and the "Table of Guidelines and Criteria" approved by the Amazon Fund Steering Committee (COFA) in 2009, adjustments have been made within these ten years to enable partner operations (BOX 4). The Fund's implementation also meant an intense process of rapprochement, dialogue and negotiation with public and private institutions related to their thematic action ranges, in order to substantiate and synchronize them with the Amazon region's existing conditions and the real demands of their target audiences.

In the following items, we present a brief historical review of the development process of the Amazon Fund throughout its ten years[21], highlighting three phases that marked significant performance changes. At the end of each item, in a box entitled "Project Cycle", some of the instruments, mechanisms and procedures implemented to operationalize project support are described and analyzed. The content of these boxes goes beyond the period of each phase, as they report to all the institutional engineering that was necessary to be built to make the Amazon Fund viable.

3.1. INITIAL PHASE: CREATING A PROJECT PROGRAMMING SYSTEM (2008–2011)

In the initial implementation phase, intense work was done to develop the concept, the operation strategies and the structure to make operationalization possible, that counted on the efforts not only from the Brazilian Government but also from civil society. It was a period of experimentation, learning, identifying what works and completing its first operations (BNDES, 2010b).

With COFA's installation and the approval of the inaugural set of guidelines, criteria, modalities and conditions for Amazon Fund support of projects, proposals began to be received by the National Bank for Economic and Social Development (BNDES) in the second half of 2009. There was an effort to publicize the Amazon Fund in a round of presentations across the Amazon states lead by the BNDES team.

The first round of approved projects included more structured and publicly recognized large non-governmental organizations (NGOs), such as the Sustainable Amazon Foundation (FAS), the Brazilian Fund for Biodiversity (FUNBIO), the Amazon Institute of Man and Environment (IMAZOM), among others. There was also direct support to state

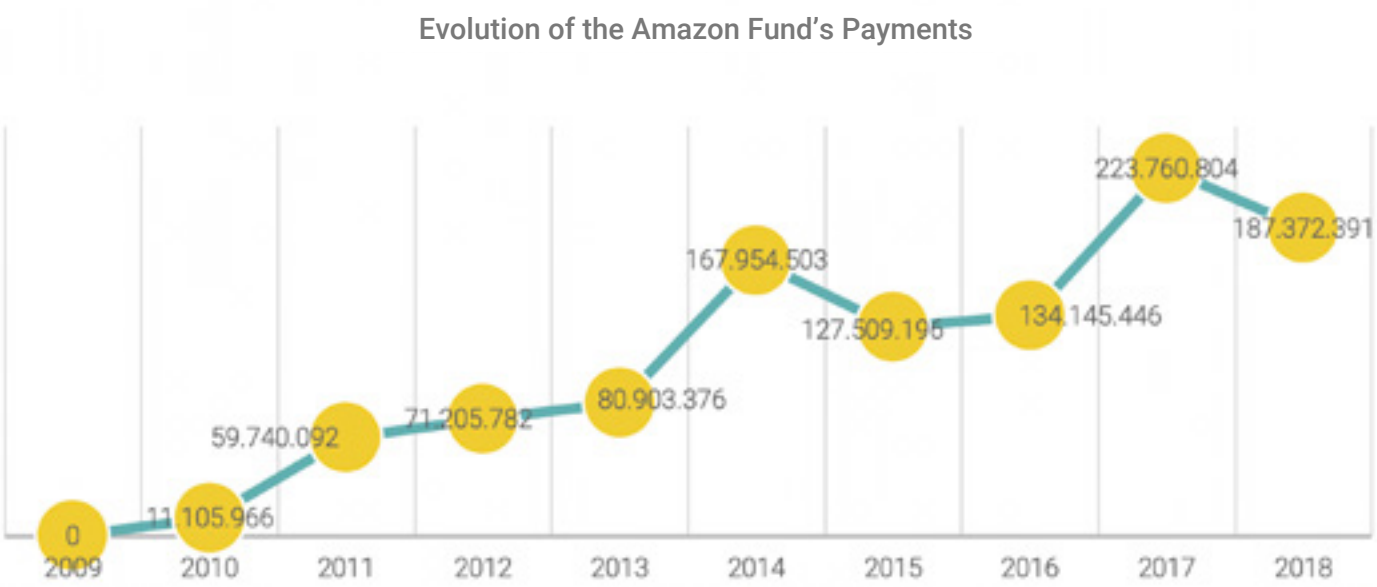
21 All information on the history of development of the Amazon Fund was taken from the Referrals and Issues Records (RETS) of the 25 COFA meetings held between 2008 and 2018 and the 9 Annual Fund Activity Reports (RAFAS) of 2009 to 2018, available on the Amazon Fund website.

and municipal government institutions, and by the end of 2011, 61% of ongoing projects were from the public sector.

Partly due to a restriction placed by the COFA that stated the value for a single project should not exceed 10% of the total amount available for the year, in order to avoid concentrating resources on a few projects at this early stage when the resources were less ample, investments focused on proposals that were already working or had simplified implementation. For example, the support that was given to firefighting (firefighters corp) for the purchase of machinery, equipment and assets, which had a high price but represented an operation that BNDES was used to performing (ie acquisition of capital goSDG). In other words, investments with lower risk were privileged, even though they amounted to a significant portion of the allocation of investments from the Amazon Fund.

Even so, in the early years, project and payment approvals fell short of expectations. The low initial speed can be attributed to both the process of detailing the guiding criteria and the operationalization of the selection of proposals. BNDES had to create and train a team and adjust the Amazon Fund in its bureaucratic processes. At the beginning of 2009, the Amazon Fund Operations Department only had 8 employees, and by the end of 2010, there were 27. According to the BNDES, the processes were poorly adapted to act within the institution's procedures and to do the necessary due diligence of the proposals. The difference between granting credit for large infrastructure projects and providing non-repayable support for deforestation reduction projects in the Amazon is big, but it has taken some time to gradually internalize it. As a result, many projects were not approved in the first three years of the Amazon Fund's existence. Up until December 2011, of the total amount granted by the donors, approximately 30% or R$ 260,730,294.90, was committed to 23 projects.

Graph 7 – Evolution of Amazon Fund payments



Source: BNDES, 2019a.

According to the interviewees, until 2011, since the Amazon Fund budget was limited, a diversified amount of resources was applied to different projects and executor profiles.

There was an attempt to contemplate all the components and the largest number of themes, which meant the results were also scattered and fragmented, as no clearer strategies were designed for them. The multiplicity of proponents and projects by theme, size and scope demonstrated the challenge of managing this mosaic of projects which were presented directly to the BNDES over the counter and the importance of defining strategic priorities.

The COFA meeting records indicate that, early on, there was pressure from civil society institutions regarding the decision to exclude support for small projects, especially from more vulnerable territories and populations, whose organizations were unable to meet all BNDES requirements for admissibility.

In the evaluation carried out by the Brazilian Forum of NGOs and Social Movements for the Environment (FBOMS) in 2010, which presented suggestions for the implementation of the Amazon Fund, it was pointed out that:

> ...to better achieve the Amazon Fund's aims, it is necessary to: (1) adjust the procedures to the reality of the Fund's public and priority actions; (2) ensure the structural conditions necessary for the management of such a fund, with its own specialized team; and (3) give greater transparency to the process of project analysis (FBOMS, 2010).

The COFA launched a study on the experiences of funding small project support and organized a workshop on the topic. The BNDES began to develop a proposal to induce demands, aiming to stimulate the projects with more consistent results and impacts which were in accordance with the strategic priorities of the Amazon Fund. It also sought to align the project portfolio with BNDES' technical project analysis requirements.

In 2010, COFA approved the first guidelines and criteria amendment regarding the modality of resources application to small projects, including "indirect applications through small project aggregation initiatives, including funds and other forms of project implementation organization." (COFA, 2017b). From this decision, the projects could then be presented "over the counter" and BNDES could already analyze the proposals in this modality, although there are no specific strategies yet.

At the same time, triggered by the BNDES, which needed more clarity to deal with private sector projects provided for in the COFA guidelines, detailing of guiding criteria for for-profit projects was expanded on. It was agreed that projects of this nature should have collective benefits related to productive infrastructure for collective use, as well as provide studies, technologies, innovations, training and other collective benefits identified in the project evaluation process.

These changes created the necessary references for the launch of the first public bid in the "merged modality" (BOX 2), approved by COFA in 2011 and publicly launched in 2012, aimed at supporting sustainable productive projects.

The Amazon Fund assessment conducted by the Overseas Development Institute (ODI) in 2013 highlights that

> The Amazon Fund has always been aimed at supporting sub-national activity and creating incentives for more ambitious actions at the state level to combat deforestation.... Simply limiting the size of projects that the Amazon Fund could support has not resulted in a portfolio that meets the needs of forest dependent communities. The Amazon Fund now finances small grant programs implemented by partner institutions to better address this need (FORSTATER et al, 2013).

Investing in building partnerships was the way for the Amazon Fund to expand its performance as the BNDES was unable to approve and manage many direct operations with low unit value. Partnerships with states and towns aimed at organizing an initial agenda in line with the thematic axes defined by the COFA -- control, environmental regularization and Rural Environmental Registry, CAR -- work and income generation projects and institutional strengthening of the environmental secretariats (state and municipal), triggering a new phase of the Amazon Fund.

BOX 1: PROJECT CYCLE: (1) SELECTION, APPROVAL AND CONTRACTING PROCESS

The National Bank for Economic and Social Development (BNDES) as a financial institution does not develop (i.e., design or implement) projects and the same goes for the Amazon Fund. As manager of the Amazon Fund, BNDES analyzes and approves proposals based on its internal funding rules and guidelines and criteria set by the Amazon Fund Steering Committee (COFA) and is responsible for monitoring and the financial control during project implementation.

The Amazon Fund accepts projects in which the proposer is an institution, public, private company or non-governmental organization that will be directly responsible for its execution. Project applications may be made through public calls with specific themes launched by the Amazon Fund or presented directly "over the counter", respecting the guiding criteria established by COFA. All proposals received follow the same steps as other projects submitted to BNDES: prior consultation, preliminary analysis, analysis, approval, contracting and payment.

The route to project approval begins with the submission of a prior consultation on a form provided by BNDES for initial information about the bidder (from 2016 onwards the form will be made available electronically), in order to assess its technical and managerial capacity, and whether the proposal is in line with the guidelines and guiding criteria established by COFA. Prior consultations are received and evaluated by the BNDES planning and credit area. Based on this information, a preliminary project assessment is made, resulting in the submission to the BNDES Credit Operations Eligibility Committee (CEC) of a technical recommendation on the eligibility of the consultation: proposal discarded for not meeting minimum requirements; proposal disqualified for not meeting the minimum score of the booking register; or proposal classified.

In the case of projects received by public bid, prior to submission to the CEC, the BNDES first verifies that the projects meet the qualification requirements. Subsequently, a Selection and Classification Committee, constituted by BNDES with different institutions, is responsible for the preliminary analysis of the scope of the proposal and its classification, based on a scoring system associated with predefined criteria previously disclosed in the notice (BOX 2), a process that gives competitiveness to the proposals presented.

As for the projects received over the counter, the same procedure is performed by the BNDES team, but there is no more detailed or published information about the

selection process, besides the necessary alignment with the guiding criteria and biennial priorities established by COFA. Greater transparency could be achieved by the creation of Analysis and Selection Committees for projects received "over the counter" with their members being nominated by COFA, which could also give greater legitimacy to these selection processes.

One of the main advantages of the prior consultation is that the proposer does not have to provide, at this early stage of eligibility verification, all the information necessary for the analysis. But the difficulty slow pace of this process in the operational instances of BNDES. A significant number of projects are eliminated at this stage, mostly for not meeting institutional requirements, required documents, are not indicative of administrative financial management capacity, or for presenting an inadequate scope of the proposal.

After the project is framed, the proponent should detail it for the legal and technical analysis of the Amazon Fund Management Department, which includes technical visits and meetings to define counterparts, budget, execution schedule, among others. Projects can last from one to six years.

The tenderer must present a detailed work plan and budget, with a mandatory counterpart with no minimum percentage established, but showing complementarity and / or additionality to the requested support. The counterpart can be in the form of financial resources directly invested in the project or by offering infrastructure, personnel and other items to be evaluated in the process of technical and legal analysis. In the case of government projects, they must demonstrate additionality, that is, the requested resources must aggregate and have a multiplier effect for Amazon Fund investments and not simply replicate an activity already performed by the public agency that, therefore, already has its own budget resources.

Note that analyzing project budgets in the Amazon region is not an easy task. There are projects with the same thematic focus, but because they are in areas that require different access and operation logistics, often complex and difficult, they do not allow to establish common or comparative technical and cost parameters between them. Each proposal must be considered in the specifics of the context in which it will be implemented. In this sense, one of the merits of the Amazon Fund pointed out by most respondents, was the open-mindedness to understand the diversity of conditions, resources and available infrastructure and socioeconomic dynamics of the Amazon region.

This stage of the analysis is a stage of dialogue and negotiation, and the physical distance between organizations in the Amazon and the BNDES team in Rio de Janeiro is a factor that hinders communication and interaction needed to give consistency and coherence to the project and to contemplate the aims and interests of all actors involved (Section 1.1.2, on experience with offices in Belém and Brasilia). Once the project goes through adjustment, a back-and-forth process of clarification and compliance analysis begins that takes a varying timeframe, depending on the speed of responses and the complexity of the project. This route took, in some cases, up to two years to complete, which led to intense questions from partners and beneficiaries about the impacts on project implementation: possible budget lags in relation to the initial proposal, demobilization and demands from partners and beneficiaries, and even inconsistencies in the work plan due to possible changes in the initial context in which the project was conceived.

Particularly in the case of projects of the most vulnerable indigenous communities, the distance between the first project formulation and the final approval may negatively affect the relationship between the implementing entity and the communities involved. There were times when it was necessary to use other resources (from other donors) to deal with the expectations of the communities according to the interviewees. In the case of entities asking for project continuity into a second phase, there are reports that administrative management had to resort to additional resources from the institution itself or from other donors to maintain staff and conditions necessary so that the work was not compromised.

Training the Amazon Fund's technical team at BNDES to analyze projects in the different contexts of the Amazon reality took time, which also focused on this process. Initially, the Fund divided project management by themes and managers took care of all project stages in their respective areas. The teams' specialization in performance areas was pointed as a positive point by the interviewed proponents, as it allowed the team to act more effectively in the specific areas. On the other hand, in these ten years, there have been member turnover changes in the distribution of duties and, since 2016, the reduction of staff.

At the end of a project review, a technical recommendation is issued regarding financial support, which is sent to the BNDES board for approval or not. If approved, the project may be contracted immediately or be included in the reserve stock. This stock is a result of the COFA guideline that the amount invested in each of the four thematic lines should not be less than 10% or greater than 40% of the resources available in the year. When the total value of the projects exceeds the full available limit, or by thematic line, the projects will be analyzed, but will form a ranked reserve stock, according to a score to be defined by BNDES based on the priority criteria defined by COFA. In the case of projects received via public bid, they may remain in the reserve register, according to the classification order of the Selection and Classification Committee, if they meet the minimum grade established and other criteria and requirements established in the notice.

Projects approved for immediate start are immediately contracted. Payments occur in installments during their implementation and follow the deadlines established in the respective physical-financial schedules and in accordance with the delivery of Performance Reports and accountability of the previous period.

3.2. STRUCTURING PHASE: CREATING A MORE STRATEGIC PROJECT PORTFOLIO (2012-2015)

In 2012, a new phase of the Amazon Fund began with support for larger projects, larger territorial scope, more resources and diversification of social actors. The focus on fostering structuring projects, as defined by COFA in 2013, has expanded support for state government projects. In public agencies, projects are very focused on institutional strengthening and training to improve public policies. There has also been a focus on support for, and significant expansion of, environmental regularization in the states of the

region with the implementation of the CAR, which had recently been integrated into federal public policy with the approval of the new Forest Code in May 2012.

In this phase, the first structuring project presented by the Federal Government through the Brazilian Forest Service (SFB), the "National Forest Inventory -- Amazon", whose role is considered strategic, was also approved. The project is aimed at carrying out the forest inventory of the Brazilian Amazon, with an extensive survey on forest resources, carbon stock and land use by the populations of the region.

In 2014, a flagship project for the Amazon Fund to combat deforestation in the region was approved: the expansion and improvement of environmental monitoring by satellites carried out by the National Institute for Space Research (INPE).

This period also initiated the international action of the Amazon Fund, with the approval of the project proposed by the Amazon Cooperation Treaty Organization (ACTO), "Monitoring of Forest Coverage in the Regional Amazon", the Fund's first and only international project, which covers seven other South American countries also sharing the Amazon Biome with Brazil. This project aims to systematically monitor the forest coverage of the biome.

In addition to structuring projects, the strategy adopted to gain territorial coverage and include diverse audiences was the focus on expanding public calls (BOX 2), as well as helping to organize the flow of projects and streamline the work of the Amazon Fund's technical team. The organization of public calls with specific thematic focuses recognized the challenge of reaching different social actors, particularly the most vulnerable ones in the Amazon region.

In 2012, the launch of the first public call to support sustainable production projects attracted a broad spectrum of beneficiaries. Support for uniting projects with administrative management capacity mobilized communities and organizations that would not be able to access the Amazon Fund on their own. In 2014, the second public bid for the preparation and implementation of Territorial and Environmental Management Plans for Indigenous Lands (PGTA) was launched to support the indigenous people of the Amazon, who play an important role in the conservation of the biome and whose territories occupy more than 20% from the Amazon region.

The participation of Third Sector institutions with these calls showed that they have a large variety of project profiles and social actors involved, are present in remote regions, reaching greater overall dispersion, and comprehensively cover issues such as territory protection, production, and sustainable development, for example, which contributes to local development and the strengthening of socio-territorial identity.

In its second phase of implementation, the Amazon Fund has built a more robust project portfolio with a more mature set of applications and experiences. The Fund was at a more advanced stage, which allowed it to build a more strategic portfolio aligned with its objectives, gaining scale and widespread diffusion. However, in 2015, COFA's attention turned to the difficulties of implementing some projects in federal and state agencies. Problems related to delays in bidding, team demobilization, project discontinuity, delays in obtaining licenses and / or compliance by environmental agencies, and difficulties in systematizing accountability and to enable or prove compensatory measures were also identified.

These situations lead to requesting the beneficiary in-charge to accelerate implementation or reduce the scope of these projects or eventually come to the conclusion that taking the project forward is impossible, and it was preferable to cancel the contract and submit a

new proposal at risk of undermining the credibility of the Fund (COFA, 2015a; COFA 2015b). From 2009 to 2018, 11 approved and contracted projects were canceled, according to the Amazon Fund Activity Report (RAFA).

However, the country's worsening economic crisis, starting in 2014, impacted the Federal Government budget and serious financial difficulties also affected the states, which brought to COFA's agenda the concern with the deforestation supervision and its significant increase in the Amazon, given the scarcity of government resources to address them (Section 4.5). It was in this context that the additionality rule of support to public agency budget resources was put under discussion at COFA at the end of 2015 (COFA, 2015b).

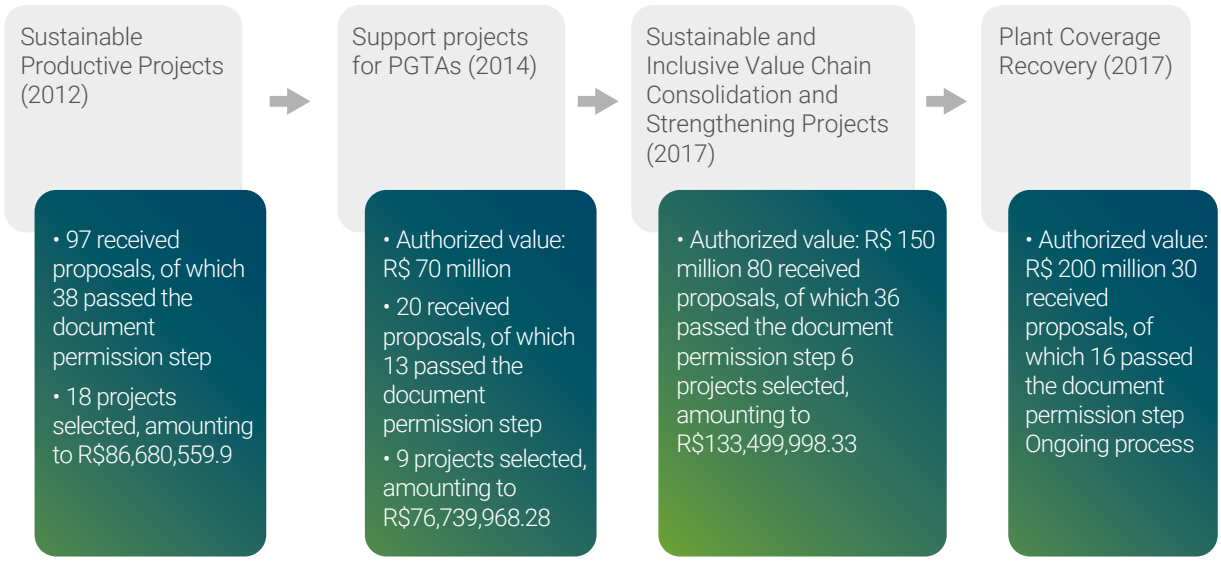
BOX 2: PROJECT CYCLE: (2) OPERATIONAL MODALITIES

Projects are selected through (i) public calls, promoted directly by the Amazon Fund or partner institutions, and (ii) by directly presenting the project "over the counter".

Public Calls

Public calls were adopted by the Amazon Fund as a strategy to introduce good projects in specific and relevant thematic areas and to attract the broadest and most diverse participation of institutions interested in the themes. The calls provided greater coverage and overall dispersion in the Fund's operations. In these ten years, four public calls were made, that selected about 38 projects[22], totaling a commitment of R$ 520 million.

Figure B2.1 - Characterization of public calls made by the Amazon Fund from 2012 to 2017



Fonte: Elaboração própria com base em BNDES (n.d. a).

22 There will be 38 projects contracted if the Public I for Vegetation Coverage Recovery projects selects only the five projects foreseen in the public notice. But by the end of 2018 the selection process had not been terminated, this number may increase.

Public calls also give competitiveness, legitimacy, visibility and transparency to the project selection process by detailing objectives, technical parameters, target audience, expected activities and results, selection criteria and composition of the Selection and Classification Committee, in addition to the amount of resources allocated and the number of projects to be selected, according to the theme in focus[23]. They are promoted directly by the Amazon Fund and can be launched by partner institutions following the same guidelines if they prove to have the necessary conditions to organize them. Bid notices are posted on the Amazon Fund website and other communication channels.

It can be noted that the allocation of resources from the Amazon Fund to calls increased substantially from 2014 to 2018, which increases project competition, contributing to a higher proposal quality. It also shows the correctness of this strategy for the expansion of the Fund's portfolio.

Figure B2.1 - Composition of the Project Selection and Classification Committees and selection criteria for calls actions carried out by the Amazon Fund from 2012 to 2017

Calls	Selection Criteria	Selection Committee
Public Call for Sustainable Productive Projects (2012)	• Criterion 5: Contribution to job and income generation; Sustainability and permanence of results; • Criterion 4; Action strategy, clear definition of objectives and proposal methodology; History and technical capacity of tenderer; • Criterion 3: Consistency between personnel, market costs and results; Relationship between the number of families benefited and the amount requested; Integration with public policies; Gender and youth issues; • Criterion 2: Financial compensation; Innovation.	Representatives of BNDES, MMA, MAPA; MCTIC; SFB; the civil society benches and COFA state governments; and 1 representative nominated by the Forum of State Secretaries of Environment of the Legal Amazon.
Public Call for Projects Supporting Territorial and Environmental Management Plans in Indigenous Lands (2014)	• Criterion 2: History of action with indigenous peoples covered by the proposal; Indigenous lands inserted in the municipalities targeted for the Axis Promoting Sustainable Productive Activities of PPCDAm; Indigenous lands located around major infrastructure projects; Projects that benefit a significant set of indigenous lands and communities; Have proven experience with indigenous populations of the biome; • Criterion 1: Well-designed project with well-defined objective, scope and methodology; Projects that include cultural promotion activities; Insertion of gender and youth issues.	2 of MMA; 2 from Funai; 2 from COIAB; 2 from BNDES; and 1 nominated by the representation of states in COFA

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23 Information about public calls is on the Amazon Fund website. Available at: http://www.fundoamazonia.gov.br/en/como-apresentar-projects/chamadas-publicas/.

Calls	Selection Criteria	Selection Committee
Public Call for Sustainable and Inclusive Value Chain Consolidation and Strengthening Projects (2017)	• Criterion5: Well-designed project, with well-defined objective, scope and methodology; • Criterion 3: History and technical ability; impacts and financial sustainability; • Criterion 1: Insertion of gender and youth	1 of MMA; 1 from SEAD; 1 of the states; 1 from civil society; 1 from the business sector under the COFA (indicated by the civil society bench); and 1 indicated by the BNDES.
Public Call Plant Coverage Recovery (2017)	• Criterion 20: Tenderer's managerial and organizational capacity; • Criterion 16: Technical cover recovery activities • Criterion 12: Costs; Spatial priority; Social and ecological importance of restoration of vegetation cover in the region; Production chain, training and income generation; • Criterion10: Synergy with public and / or private sector activities aimed at restoring vegetation cover • Criterion 06: Gender and Youth.	1 of MMA; 1 from SEAD; 1 of the states; 1 from civil society; 1 from the business sector under the COFA (indicated by the civil society bench); and 1 indicated by the BNDES.

Source: Own making based on data from the Amazon Fund website (BNDES, n.d. a.)

It has already become protocol in public calls to hold workshops in several states of the Legal Amazon, which contribute to make the elaboration of projects easier, clarify doubts and guide innovative strategies. These workshops, organized after the launch of the call for tenders, are actively collaborated by GIZ and offer an information set to stimulate the submission of unpublished proposals to achieve more effective results.

The relatively small Amazon Fund / BNDES team has a limited operating capacity to absorb more public calls, according to the interviewed, a situation that also impacts project approval performance and, consequently, the Fund's payment volume. An alternative would be to build other arrangements with other institutional partners to expand the overall dispersion of the Fund.

Regardless of the calls, however, the Amazon Fund remains open to the direct, over-the-counter submission of structuring and other projects, if they focus on the actions prioritized in the guiding criteria set by the Amazon Fund Steering Committee (COFA) for the biennium.

Merged Projects *(Projetos Aglutinadores)*

In 2011, the Amazon Fund established the strategy to fund projects and institutions that receive funds to support subprojects, especially from small organizations such as associations and cooperatives. According to the Amazon Fund Annual Report (RAFA)

2018 (BNDES, 2019a), over the past ten years, 2,659 small projects and 91 medium and large projects were supported through mergers *(aglutinadores)*.

The pioneering projects in the larger institution model were contracted by the Amazon Fund before the launch of the 2012 Public calls and served as a basis for experimenting with this partnership modality: Amazonas Sustainable Foundation (FAS) in 2010, Brazilian Fund for Biodiversity (FUNBIO) - ARPA Phase II - in 2010, Federation for Social Assistance and Education Organs (FASE) in 2011, Kayapó Fund in 2011, Banco do Brasil I Foundation in 2012 and the Society, Population and Nature Institute (ISPN) in 2012.

Since the first call in 2012, the proposals presented have been shaped in three different operating models:

i. The intermediary is an institution that launches a public notice to support community projects. The FASE-coordinated DEMA Fund, for example, has already made seven public calls to select cooperatives and associations to execute small sustainable production projects (up to R$ 30,000), which by 2018 covered a total of 112 beneficiary institutions.

ii. One institution receives support from the Amazon Fund to work alongside other organizations, already identified earlier in the project. FAS, for example, works with associations that develop work within and around Conservation Units (UCs).

iii. An institution receives support for merged projects. The Banco do Brasil Foundation, for example, which awards a benchmark project (good practices) and finances projects that replicate award-winning projects in various areas, such as agroecology (ISPN), forest management (COFLONA), support for UCs (Instituto Ipê), support to indigenous associations (Indigenous Work Center - CTI) and many others.

Mergers reach beneficiaries who would not be able to be contacted by the Amazon Fund directly, making them more accessible, more visible, and partnering with actors who are deeply rooted in their territories. Achieving a significantly higher degree of dispersion also generates additional costs because mergers represent an additional actor in the support chain.

This additional cost, according to respondents, is higher in the mergers that support community projects from associations and small grassroots organizations, which often need to pay for the investments in the organizations they support. These investments include, for example, training for project design, monitoring, accountability and evaluation, and support to organizations so they might meet the requirements of the National Bank for Economic and Social Development (BNDES), such as environmental licensing, broad institutional and supporting documentation, consent of beneficiaries and consent of organs such as the Chico Mendes Institute for Biodiversity Conservation (ICMBio) for projects with UCs, National Indian Foundation (Funai) for projects with indigenous lands (TIs) and National Institute for Colonization and Reform Agrarian (INCRA) for projects with settlements.

However, the additional cost is perceived as a necessary investment to reach the overall dispersion desired by the Amazon Fund. The gains provided by the mergers challenge the Fund to invest in new arrangements and to study ways to relax the requirements from BNDES operating areas[24] to reach a higher number of final beneficiaries.

Mergers faced problems with the accountability of smaller organizations. It is assessed that it is difficult to reconcile the accountability of small projects with the parameters

24 The bureaucratic requirements for the approval of projects under a wider institution are the same as for the other projects of larger institutions sent to the Amazon Fund and are subject to compliance analysis for BNDES eligibility.

of a large company, which demanded from BNDES. On the other hand, according to the interviewees, these requirements helped smaller institutions to develop managerial (especially in project management), accounting and financial skills, which enabled them to participate in other calls, such as ECO FORTE, from Fundação Banco Brazil, and the National School Food Program (PNAE), from the Federal Government.

In addition, the mergers were encouraged to exchange experiences and use new social technologies, such as less polluting cassava ovens that generate savings in the use of wood, farming without fire, new methodologies of Agroforestry Systems (SAFs), mini fruit processing plants for pulp production, among others.

Given this, the Amazon Fund could scale new calls for merged projects, aiming at building a qualification path, strengthening the protagonism, innovation and development of small organizations.

Structuring Projects

Structural projects are defined by their contribution to the strengthening of public policy, the degree of resoluteness they present to a given situation or problem, and their scale in the territory, for example covering a set of towns, settlements or protected areas, a state region or the surroundings of major infrastructure works. These projects may be proposed by Federal and State Government entities, private non-profit organizations and companies. In 2018, at the 24th COFA meeting, the insertion of multilateral institutions as the proponent of structuring projects was approved, considering that, in partnership with governments and other institutions, they can contribute to project faster submission, aligned with the implementation of public policies.

As already mentioned, (BOX 1), government project proposals must demonstrate additionality, that is, the requested resources must be added to an activity, and therefore, also includes their own resources from the agency's budget. In exceptional situations, projects may seek to commit resources to activities already performed if they prove a lack of capacity to do so otherwise. This was the case of the projects intended to strengthen control and environmental monitoring to combat illegal deforestation in the Amazon (Phases I and II) carried out by IBAMA, which supported environmental surveillance and deforestation control activities in the Legal Amazon.

Over the past ten years, COFA has been detailing focal points and guiding criteria for structuring projects presented "over the counter" (published on the Amazon Fund website) as a way to foster and prioritize themes, among the guidelines for resource allocation from the Amazon Fund. By the end of 2018, the following themes were detailed in guiding criteria:

i. Rural Environmental Registry (CAR)

ii. Strengthening and expansion of enforcement actions, investigations and environmental crimes and infractions enforcement, aiming to prevent and combat deforestation and forest degradation in the Amazon;

iii. Prevention and combat of forest fires and unauthorized fires, guidelines for the support of the Amazon Fund to the Military Fire Brigade in the states of the Legal Amazon;

iv. Ecological-Economic Zoning (ZEE)

However, there are still guidelines to be detailed in the guiding criteria for structuring projects to be presented over the counter.

Project Support Strategies Evaluation

A critical assessment of the different modalities of project support, instituted throughout the Amazon Fund's ten years of existence, could not fail to point out that the combination between them has established a virtuous path: the strengthening of environmental and territorial public policies and the gradual gains in structuring projects; resolving bottlenecks to environmental preservation in TIs through public calls; stimulating the inclusion, experimentation and socio-productive innovation with mergers (aglutinadores) projects; among others. Evidently, these lessons and experiences bring about the design of new frameworks to capture new projects, the challenge of increasing quality, intersectionality, scalability, sustainability and replicability. For the governance of the Amazon Fund, the challenge is promoting new interinstitutional, financial and operational arrangements to make them faster and more viable.

Some initiatives to promote the exchange of experiences among the supported projects, eg. those already carried out in the context of sustainable production projects, contribute to enhance the knowledge built and to create new articulations that contribute to this perspective. However, there is still a long way to go regarding the interaction between social actors (governments, the private sector and third sector institutions), as well as in defining parameters for replicating successful projects aiming at increasing gains with quality and sustainability. The Amazon Fund could invest in systematizing knowledge and strengthening the exchange of experiences of partners and supported projects, either through a specific project or by organizing a support structure for it.

The Amazon Fund has sought to respond using these support methods with the many issues from different Amazonian realities on various fronts. Unlike the perception that there is a fragmentation of their investments, pointed out by a few interviewees, it can be seen that cumulatively the scope of their work has an increased focus on the four thematic components / axes under which it has been structured since its inception, and with the projects have been consistent with it. The diversity of projects and social actors involved in this period converges towards the construction of a sustainable development process and contributes, directly or indirectly, to the fight against deforestation in the region. This is the Fund's differentiating factor, compared to other international cooperation contributions targeted at the region's resources, and it was valued by most respondents.

3.3. IMPLEMENTATION ACCELERATION PHASE: LARGER PROJECTS AND WIDELY-DISBURSED (CAPILARIDADE) IMPLEMENTATION (2016-2018)

The most recent implementation phase of the Amazon Fund began to focus resources on large structuring projects, especially those of state governments to add support to public policies, and on investment in new public bid and representing projects that increased their

overall dispersion in the Sustainable Productive Activities (APS) axis. The Fund further expanded its operations to states in other biomes and developed a broader range of partners by including multilateral institutions in structuring projects, as initially predicted in the guidelines and criteria established by COFA.

However, the economic environment marked by fiscal constraint, which imposed strong contingencies on the budget of public agencies (Section 4.5), generated pressures on the Amazon Fund, especially regarding support for deforestation monitoring. In 2016, the difficulties stemming from Federal Government expenditure cuts threatened to weaken the capacity of environmental agencies to act. The Ministry of the Environment (MMA), along with BNDES, drafted a proposal to override, exceptionally, the additionality of the contribution of resources condition of the Amazon Fund's investments in public agencies that were included in the guidelines and criteria established for application. In 2009, the Amazon Fund was authorized by COFA to support projects in the Amazon aimed at continuing or improving environmental monitoring and deforestation control presented by federal or state public agencies or institutions with a legal mandate to carry out the actions, without the condition that they contribute with their own resources (COFA, 2016a).

Policies to combat illegal deforestation and promote sustainable development fall into a complex context with many interacting factors and forces, as discussed in the Introduction. The Amazon Fund's additionality and limited resources mean that its results depend largely on the results of federal and state government policies. From this understanding, COFA highlighted the importance of breaking additionality as an emergency and temporary solution that should not become a rule and should not undermine the credibility of the Fund. The need to approach and reconcile command and control agendas with that of sustainable development has been reinforced, increasing the encouragement of forest-based activities to provide minimum living conditions for populations living and effectively protecting the forest (COFA, 2016b).

In 2016, a project was approved by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) to develop its environmental monitoring and inspection activities in the Amazon. And, in 2017, new criteria were approved by COFA to support states' environmental inspection structuring projects, to strengthen and broaden the support for inspection, investigation and environmental crimes and infractions enforcement actions.

The priority for CAR support, in this last stage, was increased with COFA approval of new conditions that reinforce the importance of the use of the register by the states, not only as an instrument of territorial planning but also for the supervision of environmental regularity and deforestation control. Support was conditional on the states' structuring projects involving a set of towns and the priority was given to newly integrated projects or in that were in the process of integration into the National System of Control of Origin and Forest Products (SINAFLOR), in compliance with Article 35 of Law no. 12,651 of May 25, 2012.

In 2017, the first public bid for the recovery of vegetation cover was launched, aiming at the environmental regularization of rural properties with the recovery of degraded areas of at least 3 thousand hectares of vegetation cover, considered one of the largest financial incentives in this area in the country (BNDES, 2019a). This initiative also represents an advance in the process started with CAR's implementation, aiming at strengthening land use planning policies with environmental regularization of rural properties. Investments

made in support of these policies need to continue, as well as synergistic policies for the results achieved to be sustainable.

The 1st Workshop for Exchange of Experiences between Projects of Sustainable Productive Activities was held under the thematic axis Fostering Sustainable Productive Activities, in 2016, in which the Amazon Fund brought together more than 100 people, including technicians, project managers and their beneficiaries (indigenous people, extractivists and small farmers). The second public bid for merged projects was launched in 2017, aimed at strengthening sustainable and inclusive value chains, giving priority to projects that promote community-based enterprises that preserve the standing forest.

Regarding sustainable production experiences, COFA has established a new guideline for the development of methodologies to attract private investment associated with lost fund investments. The idea is to structure productive chains starting with prospecting, identifying chain bottlenecks (logistics, legislation, health issues, etc.) and potential claimants, prior to the development of the chain itself. It is based on seeking a rapprochement with the private sector to ensure demand for sustainable products from a more systemic view of production chains. In the context of the nationwide growth of social impact investment funds and sustainable project support initiatives, it is estimated that there is interest from private investors to be found.

The Amazon Fund's trajectory and the experience accumulated since its inception has enabled another significant change: the expansion of the Amazon Biome's area of operation to the Legal Amazon, which allows part of the Cerrado and Pantanal biomes to benefit from the Fund's non-repayable resources. Although support for other biomes was predicted in Decree No. 6,527 of August 1, 2008, this alignment was only detailed in the wording of Decree No. 8,773 of May 11, 2016 (COFA, 2016b)

Finally, between 2017 and 2018, working committees formed by COFA members analyzed and detailed guiding criteria for project support under two themes:

a) Rural settlements – support to projects in settlements aimed at reconciling the development of productive activities with environmental and land regularization, in order to consolidate the occupation of these territories.

b) Ecological-Economic Zoning (ZEE) – as an instrument of territorial intelligence to gather integrated information about the territory for planning on a sustainable base, knowledge of its limitations, potentialities, conception and spatialization of public policies, aiming to promote a rational and sustainable occupation of its natural resources.

The set of actions developed in recent years not only significantly expanded the scope of the Amazon Fund but also consolidated its activities with greater synergy between the thematic axes to combat deforestation with sustainable development. These advances challenge the Amazon Fund to increasingly disseminate its knowledge and broaden the exchange of experience in the various areas in which it operates, as well as referencing the creation of initiatives in other countries.

BOX 3: PROJECT CYCLE: (3) MONITORING AND EVALUATION

The contracted projects are monitored by the Amazon Fund / BNDES' technical team throughout the execution period, in order to prove their implementation and monitor the results indicators and other procedures, aiming to prevent or solve situations that put their implementation at risk. Depending on evaluations, an approved project may be subsequently canceled, an experience that occurred with 11 projects in these ten years.

Project monitoring and evaluation are carried out in the following stages:

1st. Stage: All bidders are advised to build, in the final version of the project document, a Logical Framework and a Monitoring Plan for products and services. During execution, the bidder fills in the progress of the results achieved in the Performance Reports that must be sent to the National Bank for Economic and Social Development (BNDES), within the deadlines established in each contract. These reports accompany accountability, a requirement for further payment. Accountability follows detailed guidance and audits are performed for all smaller projects and by sampling for large projects. Each payment is subject to compliance verification with the relevant contractual rules and clauses.

At the end of 2018, a new accountability system was implemented by BNDES to facilitate monitoring, communication, gain efficiency and reduce project financial management time, which was very well received by partners.

2nd Stage: Field visits by Amazon Fund staff to selected projects (approximately 70% of projects receive annual visits), at the discretion of BNDES. These visits a new payment and the beneficiary must have already submitted the Performance Report;

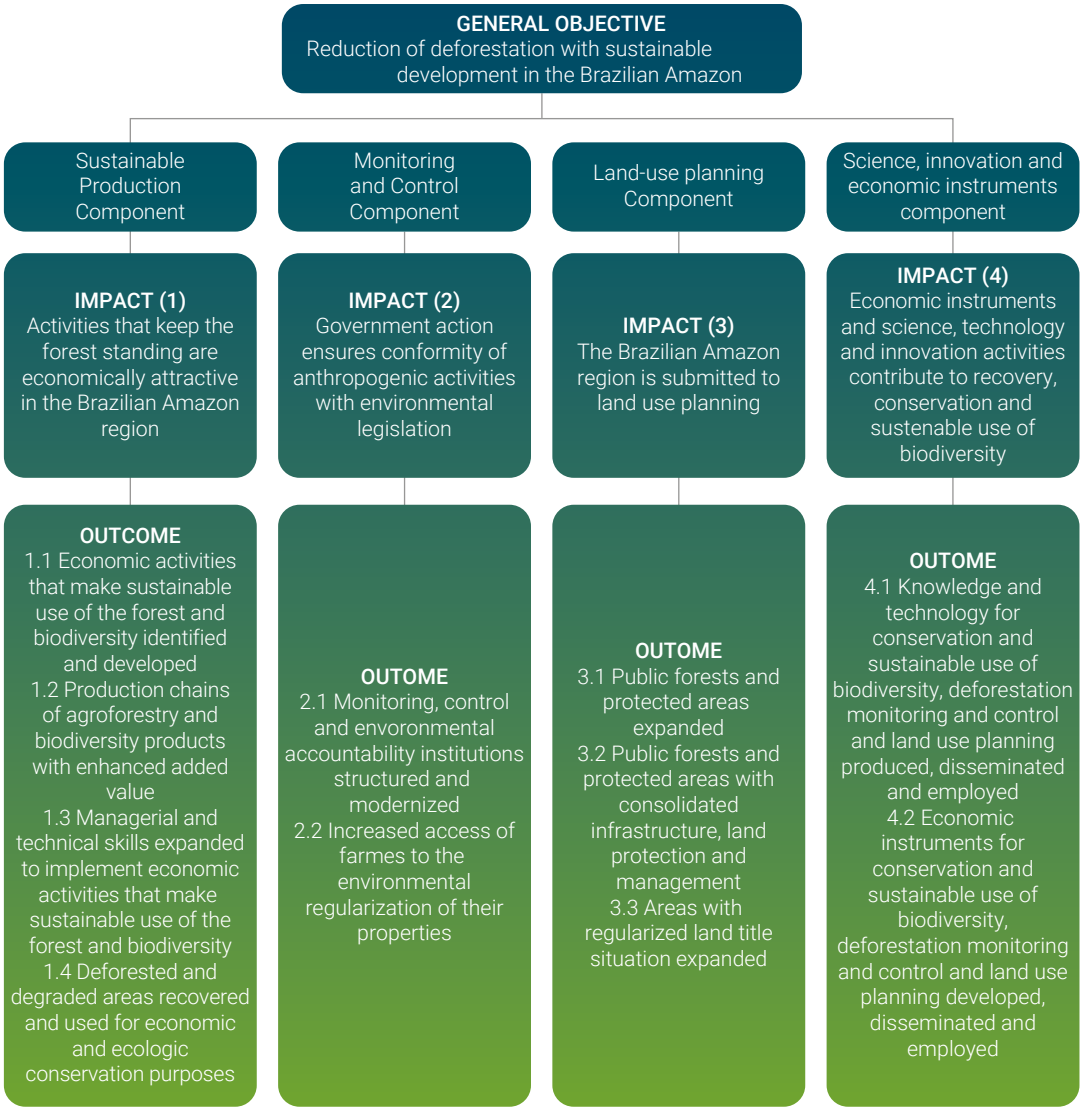
3rd Stage: Final project report, which should provide information about the supported project's execution and its results and impacts, is usually written by the executor in collaboration with BNDES. The document should also contain the monitoring of the indicators of its results framework, the strategies of sustainability of the results, the problems that arose in its implementation, as well as the generated knowledge and lessons learned;

4th Stage: Project ex-post effectiveness assessment by independent consultants currently coordinated by GIZ. To carry out these evaluations there is a reference document entitled "Conceptual Framework for Evaluating the Effectiveness of Projects Supported by the Amazon Fund" which is available on the Amazon Fund website. This document was prepared under Technical Cooperation with GIZ in 2016. It should be noted that by the end of 2018 only 15 projects were completed and only 6 external ex-post evaluations were carried out.

Logical framework

The Amazon Fund Logical Framework (Image B3.1) is a reference for structuring support for Amazon Fund projects and it is essential for proponents to prepare their proposals. This is a tool built for planning, management, monitoring and evaluation, aiming to contribute to a better performance of the Fund. Created in 2009, consolidated in September 2010 and revised in 2017, the Logical Framework was prepared internally by BNDES with the participation of several external collaborators, based on Decree No. 6,527 of August 1, 2008, and the general guidelines of the Action for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm).

Image B3.1 - Logical framework of the Amazon Fund



Source: BNDES, 2019a.

The Logical Framework is a methodology that spells out the relationship between supported actions and the overall objective of the Amazon Fund. It is a matrix that describes the general logic of the interventions, relating the aims, the direct and indirect effects to be achieved and their respective indicators.

For the Amazon Fund's general aim, the reduction of deforestation with sustainable development in the Legal Amazon, the direct effects are related to the four components, which constitute its thematic axes of action: 1. Sustainable Production; 2. Monitoring and Control; 3. Territorial Planning and 4. Scientific and Technological Development and Economic Instruments. Indirect effects are associated with the seven themes that structure the actions, which detail the expected products and services: I. Management of public forests and protected areas; II. Environmental control, monitoring and inspection; III. Sustainable forest management; IV. Economic activities developed from the sustainable use of the forest; V. Ecological-Economic Zoning (ZEE), land use planning and land

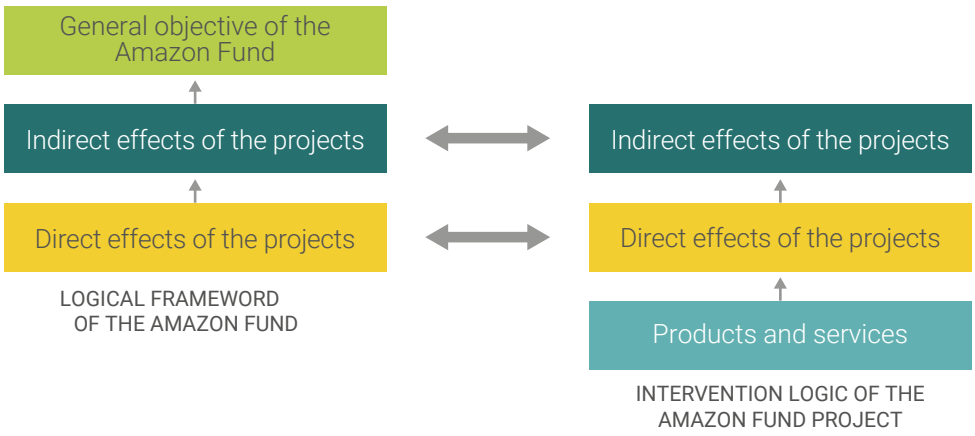
regularization; VI Conservation and sustainable use of biodiversity; and VII Recovery of deforested areas.

The Logical Framework also presents some regional policy-related indicators that the Amazon Fund aims to strengthen with project support. They are analyzed against their overall aim and indirect effects to measure the Fund's evolution and to better understand progress in promoting deforestation reduction with sustainable development in the Amazon.

However, it is noteworthy that it is not trivial to establish a direct cause and effect relationship with the actions of the Amazon Fund, as many other factors affect such impacts, which go beyond the Fund's activities. Indicators related to the overall aim of the Amazon Fund (reduction of deforestation and changes in regional GDP) may lead to the misconception that there is a direct relationship between its performance and the decrease of deforestation and increase GDP of the Legal Amazon, since, in the absence of synergistic policies, the Fund's resources cannot explain the evolution of these variables.

For each supported project, an "objective tree" was constructed with the beneficiaries relating them to the overall objective of the Amazon Fund, and their indirect and direct effects (Image B3.1). Based on these "trees", the Logical Frameworks of each project were elaborated, detailing the expected results and the respective indicators referenced in the objectives of the Amazon Fund's Logical Framework, which allows relating the contribution from each project to the Amazon Fund's logic and aims. The objectives tree guided the preparation of the Monitoring Plan for each project's implementation and all the Fund's activities, making it possible to visualize the resources distribution in each area.

Image B3.2 - Objective Tree



Source: BNDES (2017)

The Monitoring Plan for each project presents outcome indicators (or products) agreed upon between the executors and the Amazon Fund's technical team. However, the first projects prepared by the Fund had their Logical Frameworks and Monitoring Plans subsequently prepared directly by the Amazon Fund's technical team and improved with the executors. Some of these did not have targets or baselines and were to be completed year by year and sent with the Performance Reports and accountability, to get new payments.

The technicians of the Amazon Fund are responsible for visiting each of the projects hired to monitor their execution. The timing of the visits is defined as the project progresses and is usually performed after the submission of Performance Reports and should reflect a brief audit of technical and financial performances by the project. The monitoring records of each project's outcome indicators are made in spreadsheets containing each indicator, target, baseline, source, and annual update control. There is no information on other qualitative recording instruments of these visits, although project results have been aggregated and presented by the technical staff themselves in their annual reports (RAFAs) in the regional indicators monitoring chapter. However, in the case of projects that have implementation problems identified, collaborative actions can be triggered with the support of GIZ and in agreement with the executor, as already explained (Chapter 2).

Ongoing project monitoring reports are not available to the public and do not allow COFA to identify learning and improvement opportunities that could contribute to implementation efforts and to the development of Amazon Fund strategies. In addition, there are doubts as to the extent to which, in monitoring, priority is given to administrative and compliance analysis of expenditures rather than the technical quality of outcomes and impact to the aims of the Amazon Fund.

According to the interviewees, it is estimated that only 70% of the projects were visited, due to the workload of the technical team. You can understand the difficulties surrounding these visits, as many projects are located in remote regions that can only be accessed through complex logistics that require time and resources. For this reason, the Amazon Fund could better structure the annual project monitoring process by hiring partners for systematic field visits and building more robust, qualitative and quantitative tools for on-site verification of projects, which helps project recommendations, enhancement, etc. "Strengthening real-time monitoring and reporting on results can help increase the Amazon Fund's fundraising potential and inform about the efforts needed to strengthen the Fund's impact on Brazil and the region" (FORSTATER et al., 2013).

The description of some projects presented in the RAFA observes that the selected indicators and / or the difficulties in capturing the information associated with them did not allow for important information to be used to evaluate contributions to the Amazon Fund's general aim. Although there are BNDES efforts to capture revenue and production data from key projects' value chains, there is a general absence of systematized socioeconomic data to identify changes in the economic and social conditions of project beneficiary populations for these purposes. The same happens with the contribution of some projects for reducing deforestation. Estimating the income of beneficiary populations, linking it to project activities is a major challenge, considering that other factors and externalities, which vary in each specific context, also have a strong impact on income. One should start by trying to estimate and systematize changes in revenues derived from project activities and others related to social conditions.

There are also cases where indicators can be improved. The preliminary assessment of the five finished Science, Innovation and Economic Instruments (GIZ, 2019c) projects, for example, criticizes the simplified indicators adopted between 2010 and 2017, in the sense that they reduce relevant information (eg patent for product development with commercial potential). As a cross-sectional component, the publications' indicators should be more

closely linked to the activities of the other Components and therefore to the overall project objective. The indicator for economic instruments does not include pay systems for environmental services, which are directly related to forest protection.

The indicator improvements in various dimensions have meant a permanent adjustment process that accompanies the advances the Amazon Fund developments, in line with the evolution of public policies and their own developments. In 2017, the Amazon Fund Logical Framework underwent a review, due to the expansion of the Amazon Fund's operation area to the entire Legal Amazon, encompassing all the actions it supports, in 2016. There have also been changes in the dynamics of deforestation and the emphasis on public policies, especially regarding PPCDAm which had its fourth phase released at the end of 2016.

In 2018, with the definition of a new BNDES Monitoring and Evaluation System, it was established for all areas of the Bank that the effectiveness assessment would be based on the analysis of the results. This will also be adopted by the Amazon Fund. The Logical Frameworks of each project are being replaced by a Results Framework (QR), in which the objectives are directly related to the results to which the project contributes, along with the values associated with each objective and the effectiveness indicators to be monitored. The Results Framework, a reference for the elaboration of the individual QRs of each project, can be found in RAFA 2018 (BNDES, 2019a).

This change aims to align the performance of the Amazon Fund with the procedures followed by other BNDES operating units and enables the digitization of the macro process, with quality gains. The Logical Framework for the entire Amazon Fund remains with the same systemic indicators, but a set of thematic indicators is provided for each component, where each project can select and adhere to its specific objectives and outcomes. That is, each project should include in its Results Framework those indicators presented by the Amazon Fund that will contribute to the indirect, direct effects, products and services.

Once the project is completed, an Evaluation Report with its results is prepared by the proponent and subsequently, an external evaluation of the impact of the results achieved with its implementation is carried out by GIZ / BNDES. By the end of 2018, 15 projects had been completed and five ex-post evaluations had been carried out and made available on the Fund's website.

One of the challenges of this cycle is the end of the Amazon Fund's support for the project. Although proposers will have to present, in the initial proposal, strategies for the activities' economic sustainability after their completion, in practice it is not always possible to implement it. For example, sustainable production projects may run into limitations stemming from the relatively early stage of developing a more sustainable economic model that values their products and favors market access to certain products and areas in the region. That is, depending on the profile of the beneficiaries and the characteristics of the projects, new actions and support are needed to ensure the sustainability of the investments made.

This issue the challenge of developing more long-term strategies for the Fund's thematic axes of activity, generating references that allow delineating the limits and opportunities of the actions developed by each project profile within the perspective of sustainability.

3.4. PROJECT PORTFOLIO EXPANSION: OTHER BIOMES, OTHER COUNTRIES

Since the beginning of the Amazon Fund's activities, up to 20% of its resources have been used in the development of deforestation monitoring and control systems in other Brazilian biomes and other tropical countries. Thus, most resources had the Amazon biome as their main destination.

The decisions and referrals from COFA caused some important changes for the Amazon Fund, one of the most important being (2016) the modification of its coverage area from the Amazon biome to the Legal Amazon. Part of the Cerrado biome, present in some states, has also become the object of the Fund's actions without previously noted restrictions (projects to develop deforestation monitoring and control systems).

Outside the Legal Amazon and within Brazil, the Amazon Fund began to support the environmental regularization process through the CAR in other states, such as Bahia, Ceará and Mato Grosso do Sul. In 2017, the project was approved for the development and the implementation of deforestation monitoring systems for the Atlantic Forest, Caatinga, Pampa and Pantanal biomes, as well as the calculation of CO 2 emissions from deforested areas in these biomes, through the Environmental Monitoring of Brazilian Biomes project. This project, implemented by INPE, is of great importance as it will make progress in monitoring deforestation on a national scale, eliminating the risk of avoided emissions displacement (leakage) and allowing pay for results systems on a national scale, as has always been advocated by Brazil in international negotiations on climate change.

The Amazon Fund's only international project is Forest Coverage Monitoring in the Regional Amazon in ACTO member countries, including the transfer of INPE's satellite monitoring technology and the exchange of experiences with the Amazonian countries, where its completion phase is already underway.

BOX 4: SUMMARY OF THE AMAZON FUND'S PRIORITIES FOR BI-YEARLY ACTION DELIBERATED BY THE COFA

Since 2013, biennial priorities have been discussed and approved by the Amazon Fund Steering Committee (COFA) the year prior or at the beginning of the first year of the biennium. The following are highlighted action foci defined for each biennium.

Biennium 2013/2014

The biennium focus of action aims to facilitate the acceleration of Amazon Fund processes and include the four thematic axes. Support for these axes will be through the modalities of structuring projects and public calls.

Monitoring and Control Axis

- Support for the structuring of municipal environmental agencies will be done exclusively through operations with the states, which will have the responsibility of gathering municipal demands and making efforts to cover all municipalities of their territory in a more merged and structuring perspective.

- Support to CAR will primarily be through operations with states, but support will be open to non-governmental organizations.

Promoting Sustainable Productive Activities Axis

- Prioritize, as the focus "the implementation of the Green Settlements Program" projects that include settlements located in municipalities included by the Ministry of Environment (MMA) in the list of priorities to combat deforestation and settlements with greater forest cover.
- Broaden the focus on support for timber forest management by incorporating any sustainable timber forest management activity and not just community timber management.
- Expand the focus on "supporting the recovery of the extractive economy" for protected areas located in towns included by the MMA on the priority list to combat deforestation. Contemplate support for sustainable productive activities of communities made up mostly of family farmers.

Land and Territorial Planning Axis

- Approval of the launch of the public bid for the elaboration and implementation of Territorial and Environmental Management Plans for Indigenous Lands (PGTA), aimed at supporting the indigenous peoples of the Amazon who play an important role in the conservation of the biome and whose territories occupy more than 20% of the Amazon region.

Science, Innovation and Economic Axis

- Contemplate support for socioeconomic research with participatory methodologies for new sustainable development standards for the region.

Biennium 2015/2016

The new focus of support for the 2015-2016 biennium exempts, exceptionally, the additionality constraint for projects that aim to continue or improve environmental surveillance and control of deforestation, presented by federal or state public agencies or institutions with legal mandate to carry out inspection actions, within the scope of the National Environment System (SISNAMA).

Land and Territorial Planning Axis

- New guiding criteria for detailing the public bid for projects to recover vegetation cover for environmental regularization of rural properties were approved.
- Referred to the analysis and detailing of new guiding criteria to support projects aimed at the elaboration, review, detailing and implementation of Ecological-Economic Zoning (ZEE).

Monitoring and Control Axis

- Referred to the analysis and detailing of new guiding criteria for detailing support for state environmental surveillance projects, with the aim of strengthening and broadening support for enforcement actions, investigating and combating environmental crimes and infractions, and thus preventing and combating deforestation and forest degradation in the Amazon. Among the defined criteria, we highlight the support to projects of the Military Fire Brigade of the states of the Legal Amazon to prevent and combat unauthorized forest fires and burns.
- Support new CAR projects submitted by state governments provided that the interested state is in the process of implementing CAR in its territory, with resources from the Amazon Fund, it's own or from other sources. Priority for new projects submitted by states that are integrated or in the process of integration into the National System of Control of Origin and Forest Products (SINAFLOR), in compliance with Article 35 of Law No. 12,651 / 2012.

Promoting Sustainable Productive Activities Axis

- Referred to the analysis and detailing of new guiding criteria for project support in land reform settlements.

Science, Innovation and Economic Axis

- Transformation of the Scientific and Technological Development axis into "science, innovation and economic instruments", resulting from a revision of the Action Plan for the Prevention and Control of Legal Deforestation (PPCDAm), which introduced the use of economic instruments as a new line of action to prevent and combat deforestation.

Biennium 2017/2018

The focus of the biennium is to broaden partnerships with states in larger structuring projects, to make a public bid with specific focuses, and to expand the role of the Amazon Fund to states in other biomes. The criterion projects consistency was altered with the National Strategy for REDD + (ENREDD +), in place of the Sustainable Amazon Plan (PAS), and inclusion of alignment with the National Policy for Native Vegetation Recovery (PROVEG).

Monitoring and Control Axis

- Support structuring environmental inspection projects in the states, to strengthen and broaden the support to inspection, investigation, and enforcement of environmental infractions and crimes.
- Support Military Fire Brigades of the Legal Amazon States projects to prevent and combat forest fires and unauthorized fires.

Land and Territorial Planning Axis

- New guiding criteria were approved for the support of projects aimed at the elaboration, review, detailing and implementation of the ZEE.
- Approved the launch of the public bid to finance projects for the recovery of vegetation cover, contributing to the technical and managerial structuring of the reforestation sector's production chain and the environmental regularization of rural properties. Eligible projects must provide for the recovery of a minimum area of 3,000 hectares, considering different techniques (conducting natural regeneration, densification, planting of seeds, planting of seedlings, etc.) and strategic arrangement with potential partners.

Promoting Sustainable Productive Activities Axis

- Approved the launch of the Public Bid for Consolidation and Strengthening of Sustainable and Inclusive Value Chains to fund projects that promote or strengthen community-based enterprises that preserve the forest. Projects must be submitted in the mergeded mode and cover at least one of the following economic activities: timber and non-timber forest management (may include wildlife management); aquaculture and fishing arrangements; alternative agroecological and agroforestry-based production systems; and community-based tourism.
- Approval criteria for project support in land reform settlements accepted.

Science, Innovation and Economic Instruments axis

- Deliberated to support studies aimed at business ecosystem and other impact actions in the Legal Amazon, as well as economic instruments to combine the resources of the Amazon Fund with private resources or other sources.

3.5. RECOMMENDATIONS

- Support BNDES staff with more financial and, especially, human resources / capital, to streamline the process of project analysis and adequacy, improving the time between project application and approval, and to support projects in the implementation phase. Rethink 3% operating costs and adjust it to the level needed to maintain a team compatible with the growth of the project portfolio and the implementation and monitorization of the Amazon Fund. Compared to other funds and international entities of this nature, 10% seems to be an appropriate amount.
- Devote a percentage of the Amazon Fund budget, as well as within the budget of each supported project, for monitoring and, in particular, for data collection related to efficiency and effectiveness indicators, by considering institutional partnerships, how

to make it possible systematically, and using appropriate, previously agreed upon, methods and instruments.

- Scale other dissemination strategies for Amazon Fund proposals and strategic guidelines to reach remote regions of the Amazon, considering the difficulty of accessing the internet and other means of communication.
- Create the necessary operational conditions to expand the launch of a public bid and strategic orientations, seeking arrangements with other partners, such as other regional financial institutions to support towns and states, for example, to expand the Amazon Fund's overall dispersion.
- Continue to foster project competition and resource allocation in specific thematic areas using the public bid mechanism.
- Study ways of easing the BNDES operating area requirements for small organizations whose projects are supported by larger institutions, which currently must meet the same administrative and bureaucratic requirements of larger projects from more structured institutions with greater administrative capacity.
- Create strategies with merged project executors to empower smaller organizations with the potential to become direct project proponents and new merged. For example, include predefined criteria in calls that ensure a qualification path, strengthening the role, innovation and institutional development of smaller organizations brought together by a larger one.
- Increase the transparency and legitimacy of the project selection process. Establish Project Classification and Selection Committees with their members' nominations agreed in COFA and BNDES, both for projects originating from public calls and those presented "over the counter", ensuring the participation of institutions and / or experts relevant to the thematic focus of the project, and respecting the bidder qualification process and BNDES' legal, administrative and other requirements for the selection processes.
- Scale new institutional arrangements that allow for greater efficiency and effectiveness in project execution, such as the mixed implementation between the private sector and the Third Sector.
- Scale project exit strategies to ensure sustainability after closure.

4. RESULTS OF THE AMAZON FUND AND PROJECTS

4. RESULTS OF THE AMAZON FUND AND PROJECTS

During its ten years of existence (2008-2018), the Amazon Fund went through three implementation phases, as highlighted in Chapter 3, and had 103 projects approved (in addition to 11 canceled projects) with a total payment of R$ 1,1 billion. These projects contributed to the Amazon Fund's overall objective of 'Reducing Deforestation with Sustainable Development in the Legal Amazon' and acted through direct effects within one or more of the four components of the Logical Framework (Figure B3.1, BOX 3): 1 - Sustainable Production; 2 - Monitoring and Control; 3 - Territorial Planning; and 4 - Science, Innovation and Economic Instruments.

In addition to these contracted projects, at the end of 2018, there was a project pipeline of approximately R$ 1,376 billion (R$ 394 million under analysis and R$ 982 million under consultation). In ten years of operation of the Amazon Fund, 55% of the funds received (R$ 1,9 billion) were allocated to projects, not accounting for the 11 projects that were approved and subsequently canceled in this period, which would increase this number. If all projects in the pipeline were approved, the total of allocated resources would rise to 97%, reaching 73% of the entire Amazon Fund value in cash (funds received plus income). To increase the Fund's impact, it is recommended that the project approval process is accelerated in the coming years.

This chapter analyzes the results by component of the Logical Framework and analyzes the two groups implementing entities: federal, state, and municipal governments (Section 4.5), and Third Sector entities such as Non-Governmental Organizations (NGOs) and larger representative institutions for traditional communities, indigenous peoples, family farmers, etc., and academic institutions (Section 4.6).

Two complementary studies were performed by two different teams that supported these reviews. Interviews were conducted with almost 100 people, two FOFA workshops (strengths, opportunities, weaknesses and threats) were organized in Belém and Manaus, a consultation round was held in Brasilia, as well as documentation of already evaluated projects, reports from the Amazon Fund and other additional documents. The two complementary studies focused on:

- Benefit Distribution (BOX 5) (GIZ, 2019a).
- Rural Environmental Registry (CAR) (GIZ, 2019b).

Table 2 indicates the number of projects per implementing institution sector with the total approved value. Only 38% of the total amount went to the Third Sector, while the majority, 62% of the funds went to government entities.

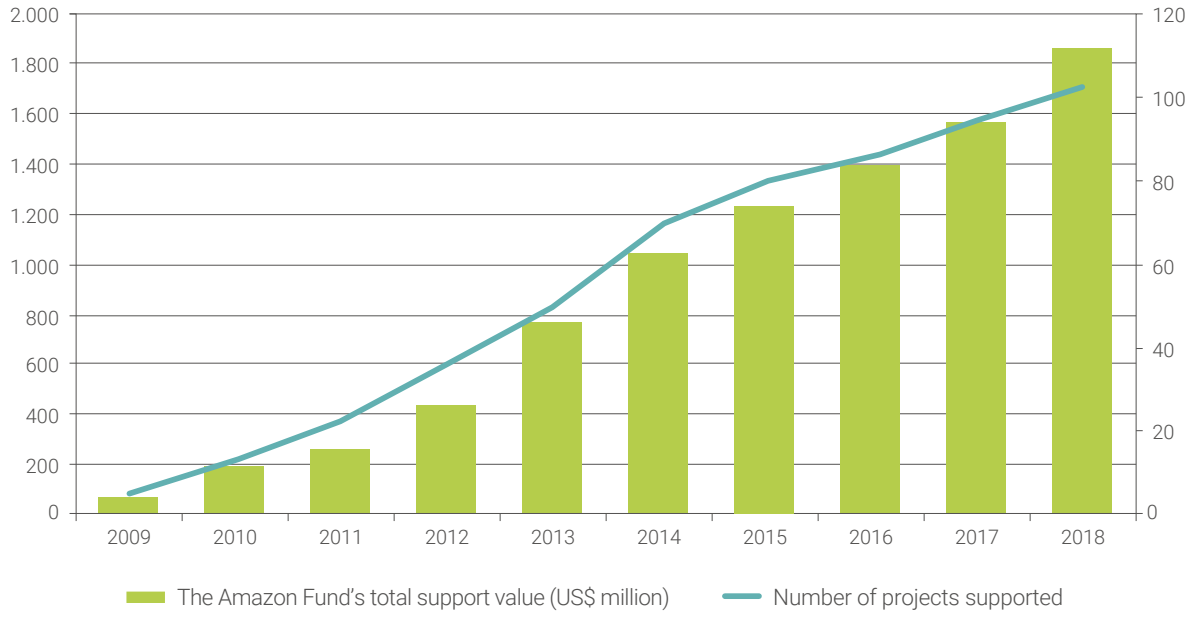
Table 2 - Number of projects funded by sector

Sector	Number of Projects	Amounts (R$)	%
Third sector	58	706,352,997.71	37.97
States	22	577,766,547.17	31.06
Unity	9th	521,254,711.75	28.02
International	1	23,693,641.00	1.27
Universities	6th	16,430,974.32	0.88
Counties	7th	14,654,218.71	0.79
Total	**103**	**1,868,063,712.85**	**100.00**

Source: GIZ (2019a) based on BNDES data (nda)

In the Amazon Fund's first three years of operation, resource approval was slow and, like in 2012, project support has grown (Graph 8). However, the total amount approved is just over R$ 1.8 billion, which represents only 55% of donations received.

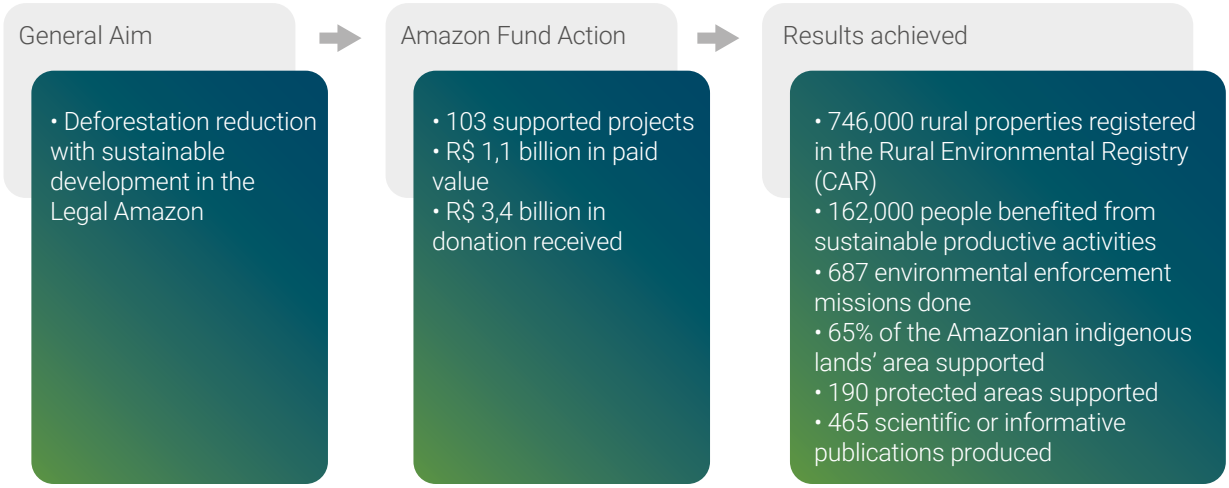
Graph 8 - Evolution of Amazon Fund support (cumulative)



Source: BNDES, 2019a.

The Amazon Fund Annual Report (RAFA) 2018 Diagram (Image 10) summarizes the main results achieved by the Amazon Fund in its ten years of existence. Despite still having a large amount of financial resources not yet implemented - R$ 2,3 billion - the Fund's results cover all areas of the Logical Framework and have created significant numbers in all four components.

Image 10 - Main results achieved by the Amazon Fund



Source: BNDES, 2019a.

RAFA 2018 reports that a total of 162,195 individuals benefited, of whom 34,146 were women and 49,318 were indigenous. In addition, 4,330 rural properties benefited from sustainable production projects and 7,801 properties with technical assistance. 746,905 thousand producers have registered their property in CAR, which represents an area of over 90 million hectares. In the protected areas, 3,177 individuals were trained, 1,311 of which are indigenous. In government entities, almost 6,100 employees were trained, 776 of them women.

4.1. SUSTAINABLE PRODUCTION COMPONENT

Component 1

Activities that maintain the forest standing are economically attractive

Indirect Effect Component 1

1. Activities that maintain the forest standing are economically attractive

Direct Effects

1.1 Economic activities that make sustainable use of the forest and biodiversity identified and developed

1.2 Production chains of agroforestry and biodiversity products with enhanced added value

1.3 Managerial and technical skills expanded to implement economic activities that make sustainable use of the forest and biodiversity

1.4 Deforested and degraded areas recovered and used for economic and ecologic conservation purposes.

RAFA 2018 (BNDES, 2019a) identifies that 26% of Amazon Fund resources have been allocated to support sustainable productive activities (APS). Projects supported by the Sustainable Production Component are consistent with Amazonian development strategies and the Action Plan for the Prevention and Control of Legal Amazon Deforestation (PPCDAm), which seek to support supply chains that enable sustainable use of standing forest, intensify agricultural production and recover degraded areas. The scope of projects covers a variety of economic activities, ranging from extractive production, storage and processing of extractive products, family farming, food security activities, crafts, and community-based tourism. These activities are linked to a wide variety of forest conservation products, including rubber, cassava flour, cocoa, babassu, açaí, pirarucu, wood, honey, resin, soaps, oils, seeds and crafts, and to community tourism.

This component is possibly the main driver for the long-term sustainability of the Amazon Fund's mission -- reducing deforestation through sustainable development -- because only by consolidating an economic model that generates income and economic attractiveness from standing forests can sustain low deforestation rates in the long term. By acting on APS development, this component directly contributes to this end. There is a consensus among the interviewees about the need to create an alternative economic model that allows reconciling the socioeconomic development of the Amazon with the conservation and sustainable use of the standing forest. The construction of this alternative is linked to the generation and management of knowledge of the Amazon biome and the development of productive chains of socio-biodiversity products, which aggregate value to the great wealth of natural capital in the region.

The different PPCDAm phases have advanced significantly in reducing deforestation (Introduction), but the results are less pronounced in terms of creating and complementing an alternative productive model for agricultural activities. On this point, it should be noted that developing a more sustainable alternative socio-economic development model is a long-term process that can take many decades, involving a broad mobilization of actors and economic sectors (forest, agriculture, infrastructure, industrial, etc.) and the coordination of policies which, due to its innovative and disruptive nature, is nonlinear. Instead, it is the result of a cumulative learning process.

Monitoring and control, perceived as the most important factor in reducing deforestation in the region, remains essential for reducing deforestation, although it is becoming increasingly costly due to the new patterns of deforestation (Introduction). However, there is a very clear understanding that only the development of economic alternatives and the sustainable exploitation of standing forests can contribute to their long-term sustainability.

The Amazon Fund benefited, mainly through projects carried out by Third Sector entities, more than 160,000 individuals, of which 34,000 are women, with support for sustainable production projects (GIZ, 2019a). A total of 4,330 rural properties benefited from sustainable projects and 7,800 properties with Technical Assistance and Rural Extension (ATER). A total of 357 family farming and extractivism processing units were created and nearly 10,000 individuals were trained to practice APS, using the knowledge gained effectively, according to the preliminary results of the Benefit Distribution Report (GIZ, 2019a). Despite these significant results in terms of the extent to which the projects represented the final beneficiaries and the development of APS, there are only six completed projects already evaluated in the Sustainable Production Component, of which the Bolsa Floresta Program is practically the only one that presents economic impact estimates (GIZ, BNDES, 2019).

From the evaluations of closed projects (BNDES, nd a), interviews and workshops conducted in the context of this evaluation and the Benefit Distribution Report (GIZ, 2019a), the following main results and challenges of this component were identified:

- There are projects to support the intensification of family agriculture and livestock with good results. For example, the Olhos D'Água da Amazônia project in the town of Alta Floresta, state of Mato Grosso, where, in the 20 properties directly benefited by the project activities, there was a favorable evolution in the stocking index per hectare, from one to three heads of cattle per hectare. The intensification of agricultural production can reduce the pressure on forests, increasing environmental and land regularization (GIZ; BNDES, 2016a).

- In degraded area recovery projects, recovery is often linked to agroforestry systems (SAFs), other productive activities, or the development of systems for Payments for Environmental Services (PSA)[25], with direct income generation during the project implementation period. It is noteworthy that in PSA systems, in order to become a sustainable long-term source of income, financing alternatives must be sought that may continue beyond the duration of the Amazon Fund's support. Most of these projects, however, recovered degraded areas but did not develop income-generating activities. There are four PSA projects that have benefited a total of 1,900 families and there are projects that have developed economic activities. For example, the Olhos d'Água da Amazônia Project, which, in its second phase, allowed the creation of a PSA system, SAFs and other productive activities (milk, beef cattle, fish farming) in a context of recovery of degraded lands and environmental regularization (GIZ; BNDES, 2016a). It is also possible to highlight the Sementes do Portal project, with 1,246 hectares recovered with SAFs (GIZ; BNDES, 2016b). Among the focal points, in the 2017-2018 years, for Amazon Fund support of the APS component projects is the restoration of degraded and altered areas. It was reported among interviewed that the Amazon Fund's support for this type of activity generated knowledge and learning relevant to the development of degraded area recovery techniques and SAFs, especially about the early stage of these activities. This evidence indicates that support for the recovery of degraded areas and SAFs has generated relevant learning to build a productive model that can become economically profitable in the future.

- Several projects were aimed at sustainable forest management with income-generating potential through increased timber production and efficiency. In this area of work, the Tropical Forests Institute's "Dissemination and Improvement of Sustainable Forest Management Techniques" project worked with local communities. In the case of this project, evidence of this potential is the 10% increase in productivity, as well as the possibility of access to sustainable forest management certification - Forest Stewardship Council (FSC) - through reduced impact exploration (GIZ; BNDES, 2018). The main activities carried out in the project were related to training (1,933 people trained in 140 courses) and supporting the approval and implementation of Community Forest Management Plans (PMFCs). The results of the community of Itapeua are noteworthy. Located in the Green Forever Extractive Reserve (RESEX), where an average additional family income of R$7,000[26] is estimated in 2018, and logging by communities in the

25 Subsequently included in the Science, Innovation, and Economic Instruments Component.

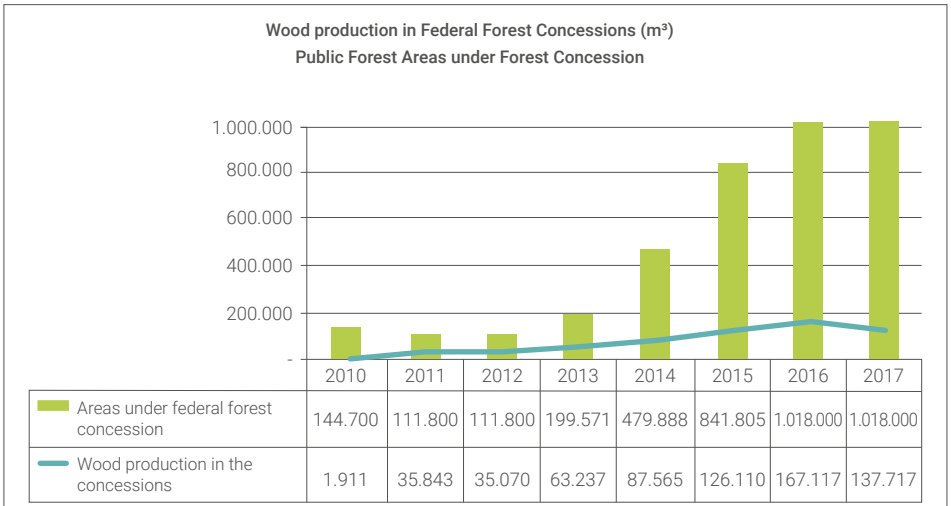
26 Although these results cover a small number of households, they are important in showing the potential of

Jamari National Forest (FLONA) (GIZ; BNDES, 2018). This last project also had results in the area of applied research, which contributed to the continuous improvement of knowledge and practices of sustainable forest management. However, it is noted that among the interviewees unanimously that there is no possible competitive use of sustainable timber in the timber market until there are effective policies to combat illegal deforestation. The economic future of sustainable forest management critically depends on effective means to combat illegal logging.

- Sustainable timber production may be one of the greatest potentials for standing forest use at different scales. Federal Law No. 11,284 of March 2, 2006, called the Public Forest Management Law (LGFP), defines how the management of public forests for sustainable production should be done. Public forests are forests located on public lands managed by the government (federal, state and municipal). One of the main instruments created by LGFP are forest concessions, whereby the federal, state, or municipal government delegates to a concessionaire the right to practice sustainable forest management for the use of products and services in a public forest area. These concessions can have great potential for territorial expansion of sustainable forest exploitation.

There are currently 1,018,000 hectares under federal forest concession with a production of 137,717 cubic meters of roundwood (see Graph 9). Expanding the extent of forest concession areas has been one of PPCDAm's objectives since its inception. In the current phase (2016-2020), financing proposals via the Amazon Fund could support the expansion of forest concessions. The goal would be to reduce utility production costs by sharing costs (MMA, 2018a).

Graph 9 - Log production by federal forest concessions (m³) and federal public forest areas under forest concession (ha)



	2010	2011	2012	2013	2014	2015	2016	2017
Areas under federal forest concession	144.700	111.800	111.800	199.571	479.888	841.805	1.018.000	1.018.000
Wood production in the concessions	1.911	35.843	35.070	63.237	87.565	126.110	167.117	137.717

Obs: these production data do not include: community handling production, an index which is hard to obtain and depends on the states; the production of Handling Plans authorized by the state environmental institutions in private areas or in state forests under concession.

Source: MMA, 2018b.

sustainable forest management.

Well managed forest concessions can result in economic development and social, economic and environmental benefits for society, especially for people in the towns and states in which they are located and for communities near their areas. In addition to job creation, boosting the local economy, sustainable use of forest resources, and increasing protection of granted areas, forest concessions, generally located within Conservation Units (UCs), generate financial resources through payment for products obtained and services operated by dealers.

Another important effect is the legal and sovereign occupation of the territory, which could be the object of illegal occupation in the absence of concessions, and which, in the long run, is beneficial for attracting investments and increasing the legality of the sector. Forest concessions may also favor small-scale logging in areas close by. In regard to climate change, the use of legal timber, both for construction and other uses, is one of the most effective strategies for carbon storage, although few countries have explicit policies to intensify its use.

A study commissioned by the Brazil Climate, Forests and Agriculture Coalition in 2016 (WWF Brazil; IMAFLORA, 2017) estimated how much could be added to the forest economy if all current demand for timber in the region was met by timber from Responsible Forest Stewardship, for a stipulated value of area under forest management of 20 million hectares of forests[27]. If this target were implemented, the main estimated economic impacts would be:

i. An increase of R$ 3.3 billion in Brazilian Gross Domestic Product (GDP) - considering forest production directly and, indirectly, the industrial part of timber products manufacturing;

ii. Tax collection of around R $ 250 million for the aggregate economic sectors;

iii. Generation of about 170 thousand direct and indirect jobs between 2016 and 2030;

iv. Projected revenue potential, between 2016 and 2030, of R$ 357 million for town housing concession areas, R$ 340 million for the Brazilian Forest Service (SFB), R$ 309 million for the Chico Mendes Conservation Institute of Biodiversity (ICMBio), R$ 256 million to the National Forest Development Fund (FNDF), R$ 230 million to the states, R$ 168 million to the state funds, R$ 126 million to the state managing bodies and R$ 99 million to the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA).

There are projects from the Amazon Fund that work with certified timber and export markets, which offer higher prices for legalized timber than the domestic market. It would be important, in the context of the Fund's support for this activity, to undertake an exploratory study of the export market sustainably potential for sourced timber using advanced tracking systems (eg blockchain technologies) and additionally considering the strength that the Sustainable Brazilian Amazon brand may have in order to achieve its long-term sustainability.

Where there is effective forest management there are possibilities for sector expansion, state governance, traceability, land security, transparency and protection against

27 According to the data by the Annual Forest Use Plan of 2017, from the Brazilian Forest Service, in 2017 there were about 13 million hectares of public forest without restrictions for the concession process

invasions. The main challenges identified in the area of concessions and sustainable forest management are as follows:

- Competition with illegal timber, which has lower absolute and relative production costs.
- Slow environmental licensing and Management Plans approval. More active state participation is important, as approvals of Management Plans, logging permits and sawmill licenses and other forest-based enterprises are the responsibility of state environmental agencies.
- The uncertainty of the land ownership situation of public forests, even in designated areas, which remains the main obstacle to the process of granting forest concessions. Legal certainty for private investment is crucial for sector expansion.
- Many projects worked with production chains of socio-biodiversity products. More information needs to be generated on economic results, including monitoring of these results after project closure. By supporting a wide range of APS activities and products, the Amazon Fund can play the important role of producing and compiling knowledge about which APS, how and under what conditions have the greatest potential to effectively contribute to building a development sustainable model in the Legal Amazon[28]. Amazon Fund projects involving support for the making of socio-biodiversity products face the following issues: Health surveillance issues (difficulties in complying with health standards); Challenges of uniformity in production; Documentation requirements for land regularization; Flow challenges and logistics and storage infrastructure, including warehousing, refrigeration and transportation equipment.
- In the Bolsa Floresta Program, the Amazônia Sustentável Foundation (FAS) mapped 16 economically attractive production chains and, in a participatory manner, six priority chains were established to operate in the Bolsa Floresta (Forest Allowance) Income mode: (i) sustainable timber forest management; (ii) management of Pirarucu fishing lakes; (iii) community-based tourism; (iv) Brazil nuts; (v) handicrafts and (vi) canteens (GIZ; BNDES, 2019). In ex-post evaluation, there is detailed information on project performance in these supply chains. The support of this project was concentrated in bottlenecks for the economic attractiveness of these activities. For example, in the case of pirarucu, it was feared that the rapid increase in supply over a short period of time could lead to a decrease in prices with a consequent reduction in income. Thus, the project made investments in cold rooms, which allowed for inventory and sales management, so that sales and production could be planned for the higher price periods, ensuring a higher economic return. All supply chains supported by the Bolsa Floresta project have somehow added value to products and services in priority chains. An interesting indicator is that, in some areas of the project, there has been an increase in the share of activities related to sustainable forest use in income, from an average of 9% in 2011 to 18.4% in 2015, maintaining this share at 19.5%, in 2018. Conversely, agriculture's share of income composition has declined over time, falling from 65% in 2011 to 42.5% in 2015, and maintaining this level of participation in 2018. There

28 In terms of production value in 2016, the non-timber forest products (NTFP) that presented the most significant results were açaí (fruit) with R $ 540 million, Brazil nuts with R $ 110 million and babassu (almond) with R $ 85 million. Since 2010, acai and Brazil nuts have grown in production value, while babassu has tended to fall. In 2016, the three accounted for approximately 94% of the total amount generated by NTFP production in the Legal Amazon (PAOF; SFB, 2018).

is an average monthly household income increase in the Sustainable Development Reserves (RDS) analyzed, from R$ 491.00 in 2011 to R$ 1,006.00 in 2018, although the evaluation considers that the increase in income cannot be exclusively attributed to the project. Despite this increase, the per capita income of these populations remains very low (below the extreme poverty line). Comparing the income of families assisted by Bolsa Floresta with those not served by it, in most areas, the income of the former is higher than the latter, but this difference has narrowed. Evidence of the effective structuring of these chains is not robust since there are still challenges in increasing the gross revenue of each chain. It should be noted that structuring new value chains (from production / supply to sale / demand) is a long-term process that depends on many factors and can take many years to establish.

- Some of the entities that have been working with APS for many years have also been supported by the Amazon Fund. The RECA Project, for example, sparked a push by taking production to another level through the supported project "Concretize". A total of 315 ha of SAFs were planted with fruit plants and forest species (peach palm, cupuaçu, acai, Brazil nuts, andiroba, cumaru, copaiba and rubber). Expansion and / or modernization of the cupuaçu and other fruit processing units were also carried out and the physical facilities of the vegetable oil processing unit and the nut and seed storage structure were rebuilt. With a supply-chain verticalization strategy, the RECA Project has already reached the level necessary to become a supplier for large companies such as Natura and L'Occitane. This initiative exemplifies a set of APS that has been successful in developing the value chain from production to commercialization with support from the Amazon Fund.
- In regard to the impact on deforestation in the evaluated sustainable production axis projects, there is evidence of reduced deforestation in most project areas (although some have increased), the causal relationship is clearer in some cases than in others. When monitoring the evolution of deforestation through data at the level of towns involved in the projects, the estimate may not consider other factors that act for or against deforestation, which is a multifactorial process, as argued in the Introduction of this report. In towns under a lot of deforestation pressure, it is possible that projects have contributed to preventing further deforestation.

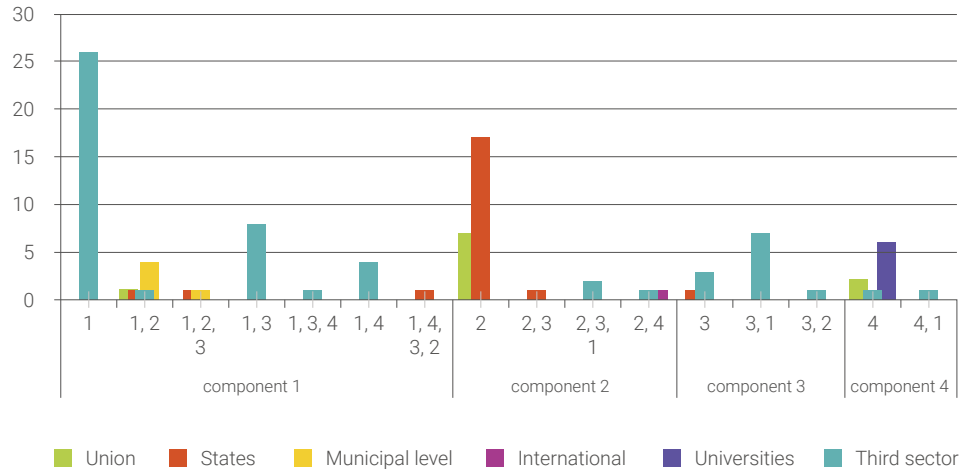
BOX 5: COMPLEMENTARY STUDY: BENEFIT DISTRIBUTION IN AMAZON FUND PROJECTS

Study on benefit distribution in Amazon Fund projects

1. Resource Allocation

The Amazon Fund has 103 projects in its portfolio. Of this total, nine are from federal agencies; 22 from state agencies; and seven from towns. Third Sector organizations have 58 projects, in addition to six projects with federal universities and one project with an international entity (Graph B5.1).

Graph B5.1 - Projects by sector implementation and Amazon Fund Component (1,2,3,4 or combination)

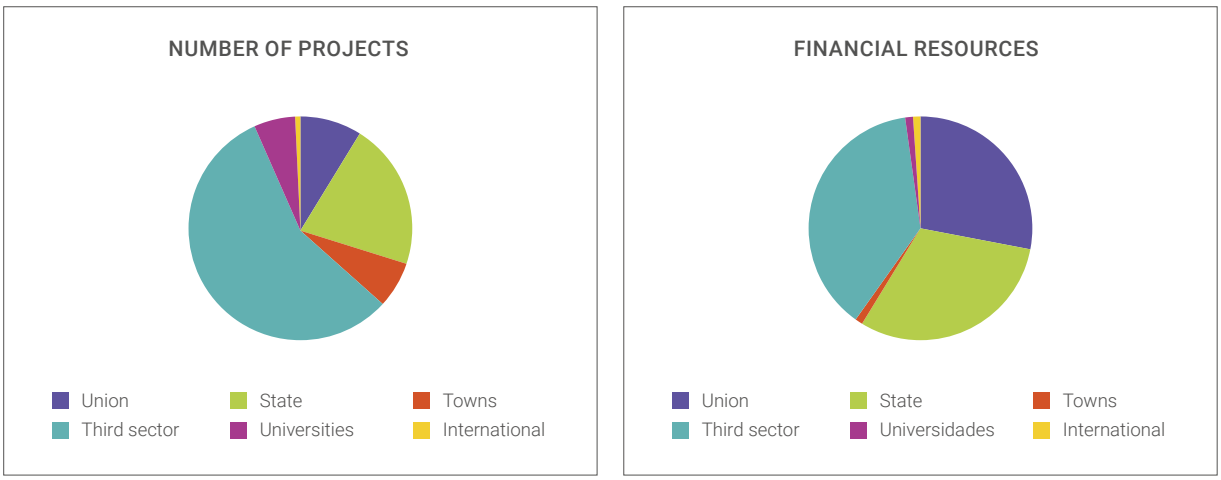


Source: Authors elaboration based on Amazon Fund / BNDES.

2. Majority Support to the Public Sector

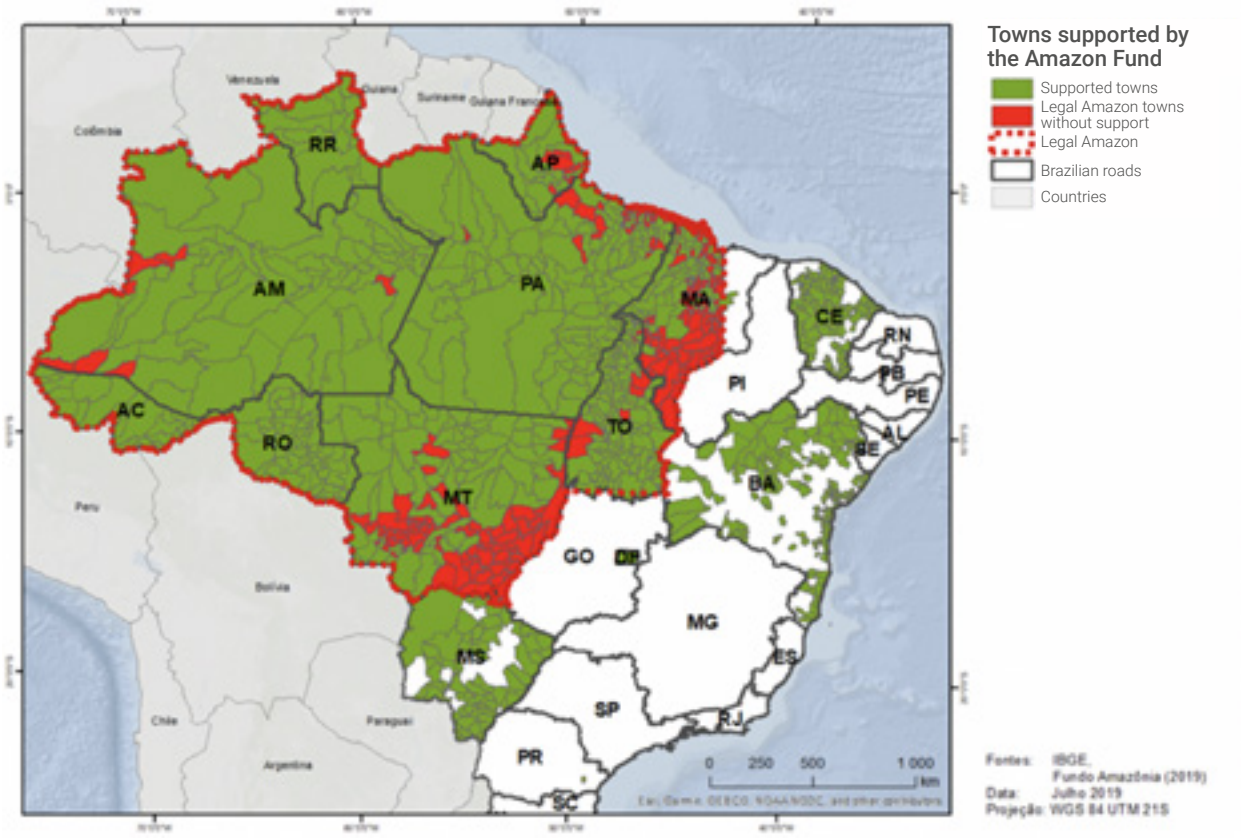
Most of the resources (62%) were allocated to the public sector (international, federal, state, municipal and universities), mainly for environmental management, monitoring and enforcement activities (Chart B5.2 and Image B5.1).

Graph B5.2 - Distribution of Amazon Fund support by sector



Source: Authors elaboration based on Amazon Fund / BNDES.

Image B5.1 - Total towns supported by Amazon Fund resources in the Legal Amazon and other biomes.



Source: Philipp Mack (2019), with IBGE and Amazon fund data.

3. Support for CAR Implementation

366 towns in the Legal Amazon were supported by the Amazon Fund to adapt rural properties to environmental legislation through the Rural Environmental Registry (CAR) (Image B5.2), constituting 47% of towns in the region. In addition, 343 municipalities outside the Legal Amazon, in the states of Bahia, Ceará, Espirito Santo, Mato Grosso do Sul and Paraná, received support for this purpose. The Amazon Fund supported the registration of 750 thousand properties, which corresponds to 12.6% of all properties registered in CAR in the country. For the most part, CAR provided support through state projects inside and outside the Amazon, but there are also cases of projects from the Third Sector and towns that aimed to implement the register.

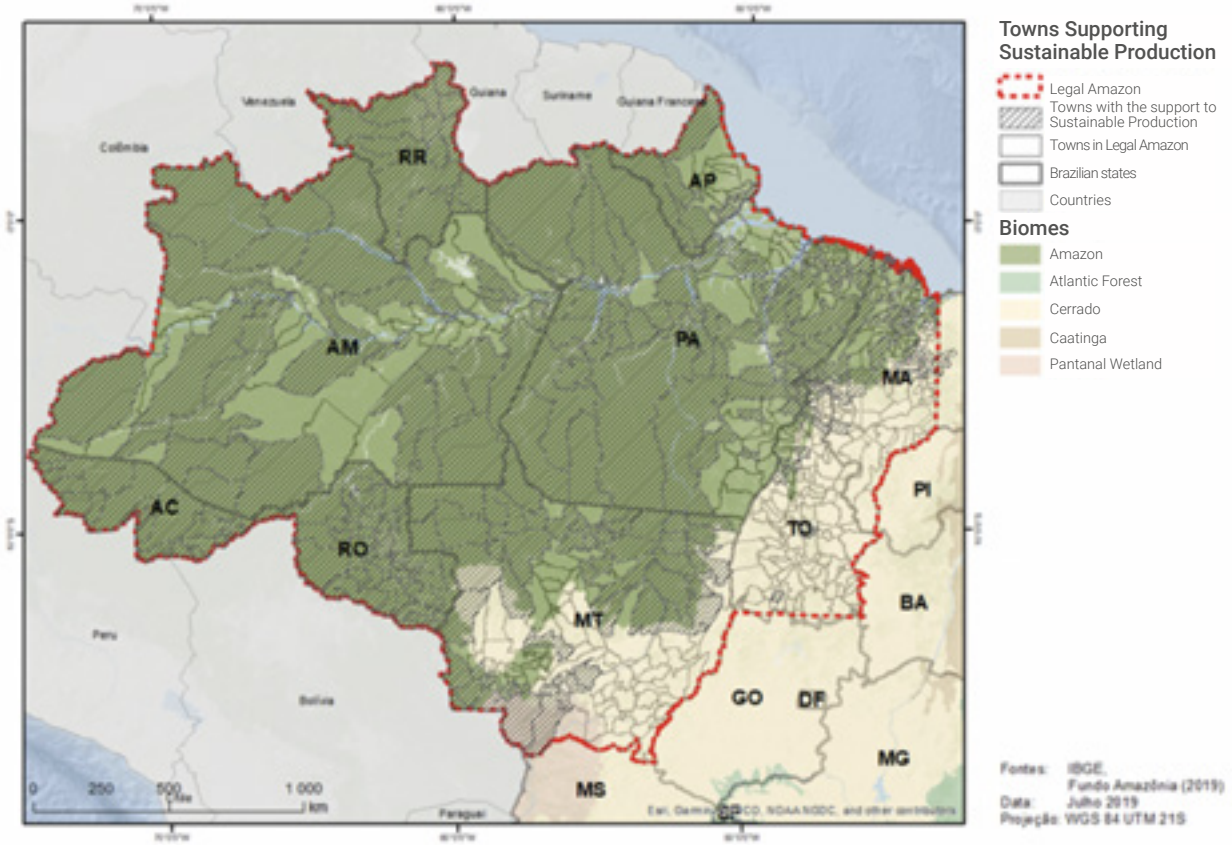
4. Sustainable Production Coupled with Standing Forest Maintenance and Reduced Deforestation

Sustainable production activities are the largest of all Amazon Fund axes and demonstrate that sustainable development is possible by reconciling production and forest conservation (Image B5.2 4). Supported mainly by the Third Sector, the Fund has funded more than 7,500 sustainable production initiatives, benefiting over 160,000 individuals, of which 34,000 are women. 4330 rural properties were benefited from sustainable projects and so were 7800 properties with Technical Assistance and Rural Extension (ATER). 357 processing units for

family farming and extractivism were created and nearly 10,000 individuals were trained to practice sustainable economic activities, effectively using the knowledge acquired.

However, the major challenge is sustaining these activities or even the expanding and replicating of experiences in a poor economic and social context. Among the main barriers to scale are structural factors such as low ATER availability; the lack of policies appropriate to the local reality, such as appropriate regulation of products from socio-biodiversity; and compliance with phytosanitary standards. The Amazon Fund should support structuring initiatives, if possible, in coordination with other BNDES instruments, to develop an appropriate context for the growth of production and marketing of forest products. This may include supporting ATER, promoting the inclusion of products in local markets, improving logistics and outlets, investing in origin certification programs and adding value to such differentiated products, as well as initiatives and policies that improve the articulation between production and marketing.

Image B5.2 - Towns contemplated with support from Sustainable Production Component activities



Source: Phillip Mack, 2019.

5. Support for the consolidation of protected areas

The Amazon Fund supported 190 Conservation Units (UC) and 101 Indigenous Lands (TI), directly benefiting almost 50,000 indigenous people. By 2019, support was provided for training over 3,000 individuals in the management of protected areas, 1,300 of which are indigenous.

6. Diverse Third Sector and Contribution to Public Policy Implementation

38% of the resources were allocated to the Third Sector. The generalized term "Third Sector" hides a diversity of institutions with different foci, including (i) productive organizations such as cooperatives and producer associations; (ii) scientifically oriented organizations; (iii) organizations with operational or resource transfer orientation; (iv) organizations focused on training; (v) organizations focused on social organization; (vi) organizations focused on the environment; and (vii) organizations focused on advocacy and empowerment.

In addition, this sector's projects act as an important driver in the implementation of public policies. Among the main policies supported by civil society organizations are CAR, the National Policy for Territorial and Environmental Management in Indigenous Lands (PNGATI), the consolidation of federal Conservation Units (UCs) and the implementation of state environmental policies. This demonstrates an important synergy and complementation quality in implementing public policy, as well as an integrated strategy of the Amazon Fund to organize different actors around one aim. **If the value of these projects were to be added to public sector support, the total allocated to the public sphere would total 77% of the resources of the Amazon Fund**. The Third Sector allowed the Fund to reach populations that live in remote regions and with little access to public services and precarious presence of the State.

7. Joining Interests

The strategy of merged projects with smaller institutions has significantly expanded the overall dispersion of the Amazon Fund. All projects with this approach were coordinated by Third Sector organizations. However, the level of management by the larger organizations (mergers) and the empowerment of the smaller organizations varies substantially depending on the project. In some cases, financial transfers are made to the smaller institutions, while in others the transactions are brokered by the project proponents and the smaller institutions receive support in project activities, training, goods and services.

There are good examples of improving the administrative and financial management of smaller institutions, even cases where they were able to raise funds from other sources after this process. However, to ensure that smaller institutions can emerge more empowered from this process, it is essential that the Amazon Fund assess and monitor the relationships between merged institutions and smaller organizations to ensure greater involvement and institutional training for these institutions.

8. Poverty Reduction and Income Generation

The Sustainable Production Component demonstrates that it is possible to make sustainable development viable by reconciling production and forest conservation. However, in general, projects supported by this axis need greater economic guidance that includes productive activities in consumer markets, especially with greater community access and training for low-impact forest activities.

Supporting initiatives and actors that help create a business environment welcoming to socio-biodiversity product chains is essential for scalability. In order to get more meaningful results in poverty reduction and income generation initiatives, having clear indicators effect on income

and economy and to establish stronger baselines. It is also necessary to better connect sustainable production actions with market economies, thus ensuring the effectiveness and socioeconomic sustainability of projects. Working on these points is essential to measuring effectiveness and aligning the results of the Amazon Fund with other policies related to poverty reduction and income generation. Projects already completed focused on income generation in the Sustainable Production component come to a total of over R$ 35.4 million.

9. Support for the private sector

Currently, the private sector is not a beneficiary of the Amazon Fund, at least not directly. There are, however, private sector initiatives such as monitoring and tracing supply chains, which reflects a growing niche in the production-related market that follows sustainability principles. It is crucial that the Fund defines a strategy on how to promote its goals with private sector participation.

10. Contribution to the implementation of the SDGs

The Amazon Fund contributes as a whole to the implementation of the Sustainable Development Goals (SDGs) and their existence contributes to SDG 17 - Partnerships and means of implementation (Image B5.3).

Through the analysis of the supported projects, it is found that SDG 15 - Terrestrial Life makes up 84 of the 103 projects, most focused on combating deforestation and preserving and restoring degraded areas.

Contributions to SDG 12 - Responsible consumption and production make up 82 of the 103 projects, most of which focus on sustainable production of agricultural and agroforestry products in the Amazon region. This indicates a significant investment in stimulating alternative activities to deforestation and production with negative environmental impact.

SDG Contributions 13 - Action against Global Climate Change make up 80 of 103 projects, including combating burning and deforestation.

SDG Contributions 8 - Decent work and economic growth make up 57 of 103 projects. Most of these (93%) also contribute to SDG 12 - Responsible Consumption and Production, both of which are closely linked to initiatives supported by the Amazon Fund.

The objectives which were addressed the least were SDGs 7 - Clean and Affordable Energy, SDG 14 - Life on Water, SDG 16 - Peace, Justice, and Effective Institutions.

Accounting for each project's contribution to the SDGs is essential for the Amazon Fund to be able to invest based on evidence and focus on supporting more strategic goals.

Image B5.3 - Sustainable Development Goals (SDGs).

Source: UN, n.d.

11. Contribution to Gender Inequality Reduction[29]

The Amazon Fund has advanced in gender issues over the last few years, including the insertion of specific indicators and criteria on the public bid themes, but much remains to be done. By listing the reduction of gender inequality as a cross-sector support criteria, the Fund adopts the strategy of making gender a mainstream issue.

Nevertheless, only about 6% of projects clearly cite supporting women as one of their intended goals. Another 22% affect women, even if this is not their stated aim, and almost 38% of projects do not affect women but have the potential to do so, generally constituting initiatives that promote training, courses, workshops or activities that enhance public skills. However, the number of women who benefited was not reported. Conversely, approximately 34% of projects do not expect a focus or impact on women due to their very nature.

Thus, the fund must not only increase gender equality support actions, but also report on gender-related outcomes in all projects, if any.

4.1.1. RECOMMENDATIONS

Recently, there have been some changes in the Fund's approach to sustainable supply chains of socio-biodiversity and forest products. Project proposals should all be considerate

29 Numbers according to data available until June 2019.

of the production chains' links, including private sector involvement in the relevant links, particularly as trading partners generating demand for Sustainable Productive Activities (APS) products. The technical aspects of sustainable production have been strengthened in this axis (more efficient forest management, more family agriculture, storage and processing and recovery of degraded areas), and so were the communities' management, production, marketing, administrative and financial capacities. This learning and capacity building are fundamental to these new chains' long term development.

One of these lessons refers to a better understanding of the importance of commercialization and the need for a private sector partnership. Structuring sustainable supply chains without involving the private sector is seen as impossible, though the safeguards of the Amazon Fund and the roles of different actors must be respected. The efforts to give chains a deeper look, from the first link of supply chains to the last link of the final demand, should continue, as it contributes to their long-term sustainability. The following are recommendations to overcome the identified bottlenecks, but some are outside the scope of the Amazon Fund, either because it depends on other actors (federal government and states) or because they demand much bigger investments. In this sense, the interaction between the Amazon Fund and other existing BNDES financing lines could increase sustainable production and connect the Fund with private sector actors. One example would be through an integrated sustainable territorial action strategy by the Bank.

- Other aspects that limit the development of APS are related to bureaucracy and state capacities in aspects such as environmental licensing, approval of Forest Management Plans and health standards applications.
- Collaboration between producer entities and states, or state agencies, is needed in public procurement and other state policies, which can streamline markets by promoting local legal productions.
- It is essential for the Amazon Fund to advance its engagement with the private sector in order to structure a sustainable forest-based economy (timber and non-timber) and to define the sector's participation strategy in furthering the Fund's aims. The number of private sector companies (Brazilian and otherwise) concerned with sustainability and interested in "green business" that could partner with Amazon Fund projects is increasing, contributing to additional resources.
- Monitoring of the Fund's project's economic impacts should be improved, especially those linked to APS. The Amazon Fund can play the important role of generating, recording, and disseminating knowledge of the lessons learned to overcome regulatory and economic bottlenecks for APS development, and show examples of more promising activities for each local circumstance, and more effective ways and mechanisms for structuring APS chains. It can also, in general, lead the way for the effective construction of a sustainable model of socioeconomic development in the Legal Amazon.
- Consideration should be given to possible Fund support for forest concessions. These are strategic investments that, with the support of the Fund at the beginning of operations, could attract more private investments, cover more land and occupy concession land where the deforestation rate is higher.
- There are important results in the Science, Innovation and Economic Instruments Component that can support the Sustainable Production Component to generate value

and greater economic returns for innovation in the Amazon. There is an interesting space for interaction between these two components.

- Finally, the Amazon Fund has accumulated successful experiences, such as technological innovations in forest management and other productive areas, as well as greater technical and managerial capacities. The biggest challenge is scaling these actions up to size for a long-term sustainable effect in the region.

4.2. MONITORING AND CONTROL COMPONENT

Component 2

Governmental actions ensure the conformity of human activities to environmental legislation.

Indirect Effect Component 2

2. Governmental actions ensure the conformity of human activities to environmental legislation

Direct Effects

2.1 Monitoring, control and environmental accountability institutions structured and modernized

2.2 Increased access of farmers to the environmental regularization of their properties

Over the first ten years of the Amazon Fund's operation, from 2008 to 2018, the Monitoring and Control Component received almost half of the resources (47%), representing a total of R$ 883 million (BNDES, 2019a). Of these resources, 90% were allocated to government entities. The objectives of the Monitoring and Control Component are:

- Contribute to the supervision and fight against environmental crimes and infractions, improving the institutional environmental capacity at the federal and state levels and integrating state and federal systems; promote integrated environmental surveillance actions of several federal institutions in conjunction with state institutions; and support the integrated digitization of state forest management data to the National Forest Products Origin Control System (SINAFLOR),
- Effectively implement CAR and support registration of small properties; support the integration of state CAR systems with the Rural Environmental Cadastre System (SICAR); support the implementation of State Environmental Regularization Programs (PRA) and Environmental Reserve Quotas (CRA); support the Degraded and Altered Areas Recovery Programs (PADRA); and operationalize the environmental regularity of rural properties.
- Prevent and combat forest fires by supporting government agencies operating in the Legal Amazon, as well as military fire brigades and NGOs; additionally, it will include

focus actions on settlements, UCs and Indigenous Lands (TIs); and promoting the integration of information into the National Fire Information System (Sisfogo).

- Improve monitoring of vegetation cover to analyze levels of deforestation, burning and forest degradation.

Since its launch in 2004, PPCDAm has been very successful in reducing deforestation, which has become an important motivation for donors in supporting an innovative pay for results mechanism. In this context, the Monitoring and Control Component aims to assist in the continuation of these historically successful efforts to monitor and reduce deforestation and, above all, to support government entities at the three federal levels in the implementation of the PPCDAm objectives. In addition, there was an effort to strengthen collaboration between them (Sections i, ii and iii - Introduction). RAFA 2018 (BNDES, 2019a) highlights that "the 'monitoring and control' axis has been recognized in independent PPCDAm assessments as the one that has evolved the most and, consequently, the one with the largest role in reducing deforestation in the Amazon since 2004." PPCDAm's effectiveness has led to major changes in deforestation patterns, as discussed in the Introduction of this report. One of the biggest challenges is addressing small-scale deforestation, which is difficult and costly to monitor through command and control actions.

The Monitoring and Control Component projects supported by the Amazon Fund, according to BNDES (2019a), contributed to:

> a) expansion and strengthening of the Rural Environmental Registry (CAR) as a tool for rural environmental management and deforestation monitoring in rural real estates;
>
> b) expansion and improvement of satellite environmental monitoring carried out by INPE and implementation of an Amazon deforestation detection system using orbital radar images by the Ministry of Defense and the Amazon Protection System Management and Operational Center; and
>
> c) control of deforestation in the Legal Amazon through inspection actions carried out by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA).

The results for this Component's main indicators are presented in Board 1.

Board 1 - Monitoring and Control Component Indicators (2)

Monitoring and Control Indicators (component 2)	Until 2018 (cumulative)
Strengthened environmental agencies (federal, state and municipal)	304
Servers trained (total)	6,091
Servers trained (women)	667
Amount disbursed for projects to combat forest fires and illegal burnings (R$ thousand)	74,349
Individuals trained in monitoring technologies	344

Monitoring and Control Indicators (component 2)	Until 2018 (cumulative)
Environmental inspection missions carried out	687
Unauthorized forest fires or fires fought by the Military Fire Brigade	23,630
Servers trained effectively using the knowledge acquired (total)	5,329
Rural properties registered in the CAR (protocol)	746,905
Area of rural properties registered in the CAR (protocol) (ha)	90,343,357
Area with vegetation cover recovered for conservation or environmental regularization (regeneration in progress)	13,420
Infraction notices issued for infractions against the flora	9,158

Source: GIZ, (2019a) based on BNDES data (BNDES n.d. a.)

This set of component's projects supported knowledge creation activities on deforestation through technologies such as the Real Time Deforestation Detection System (DETER) in partnership with the National Institute for Space Research (INPE). These actions, among other effects, strengthened management and state and municipal environmental capacity in this area, learned about rural properties through the implementation of CAR (supporting the implementation of the Forest Code) and, finally, prevented and combated illegal deforestation and forest fires, through support for IBAMA, the Fire Department and to state and municipal entities. This component comprises a group of projects with the following key characteristics:

- Over the ten years analyzed, municipal capacity has grown significantly (700%) in the number of municipalities able to license activities with local environmental impact (BNDES, 2019a). In addition to the municipalities, most projects also supported the states. In this sense, the Amazon Fund played an important role in the training of state and municipal environmental entities through the training of employees. This resulted in the strengthening of municipal environmental management and what many respondents called "municipalization of environmental management". Training results were not the same in all states, as noted in the differentiated capacity to implement Amazon Fund projects, including CAR.
- In 2011 and 2012, some major projects were approved, such as the financing of several state fire brigades in the prevention and combat of forest fires. These were simple execution projects, basically for the acquisition of machinery, equipment and other assets. Respondents were asked if this type of project breaks the rule of additionality and why state governments themselves do not finance it. On the other hand, projects with fire brigades had positive impacts on fire prevention and firefighting. The results indicate that 23,630 unauthorized forest fires or burnings were fought by the Military Fire Brigade. In addition, the projects helped create an interstate fire brigade. In 2018, the Amazon Fund supported the workshop (BNDES, 2019a) "Amazon Fire Department: Synergies, Integration and Governance", which aimed to strengthen synergies between the Legal Amazon fire department projects. This workshop supported the elaboration of the "Guidelines for Fund support to the Military Fire Brigade of the states of the Legal Amazon for the prevention and combat of forest fires and unauthorized fires"

- As explained in BOX 1 (Section 3.1), after lengthy discussions in the Amazon Fund Steering Committee (COFA), it was decided that additionality could be broken, which opened the possibility of approving the IBAMA project to control deforestation in the Legal Amazon through inspection actions carried out by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA). The project, approved in 2016, was able to circumvent the budget cuts that IBAMA had suffered that affected monitoring and inspection actions. The resources of the Amazon Fund, totaling R$ 140 million, contributed to IBAMA's inspection activities could progress. This project achieved a 47% growth in the number of environmental surveillance missions, reaching a total of 687 missions. In addition, the number of notices issued (9,158) was increased by 81% (BNDES, 2019a). This work was instrumental in reducing deforestation rates and the resources of the Amazon Fund contributed to maintaining the institutional capacity, execution, logistics and surveillance of environmental illicit. The project supported activities throughout the Legal Amazon, but with emphasis on areas of higher deforestation pressure, such as the deforestation arc.
- INPE's first project "Environmental Monitoring by Satellites in the Amazon Biome" was followed in 2018 by the project "Environmental Monitoring of Brazilian Biomes", which are of great importance since they will allow the advance of national deforestation monitoring, eliminating the risk of emissions avoidance (leakage) and allowing for national-scale payment systems for results, as advocated by Brazil in international negotiations on the issue. Its seven subprojects support data generation on deforestation and land use status, namely: (i) mapping land use and coverage in the Legal Amazon; (ii) improvement of TerraAmazon software ; (iii) improvement of reception, distribution and use of INPE's remote sensing images services; (iv) improved monitoring of outbreaks of wildfires and forest fires; (v) study of the trajectories of patterns and processes that characterize deforestation dynamics in the Amazon; (vi) making available land use change modeling tools; and (vii) improvement of biomass estimation methods and land use change emissions estimation models (BNDES, nd a). The project has contributed to improving DETER systems and methodologies, and TerraAmazon assists in modeling land use change and land cover. These and other technologies contribute to an improved understanding of deforestation, land use and CO_2 emissions.
- In addition to supporting projects in the Legal Amazon, the Monitoring and Control Component supported projects in five Brazilian states outside the Legal Amazon (Bahia, Ceará, Espirito Santo, Paraná and Mato Grosso do Sul), which add up to a total of R$ 112 million to support CAR's implementation and deforestation monitoring in other biomes.
- The only international project, costing R$ 17 million, was the "Forest Coverage Monitoring in the Regional Amazon" project in the member countries of the Amazon Cooperation Treaty Organization (ACTO), including the transfer of satellite monitoring technology from INPE and the exchange of experiences with other Amazonian countries. A second project with ACTO, still being prepared, aims to monitor forest degradation, which is a major technical challenge.

CAR was created as a result of the new Forest Code (Law No. 12,651 of May 25, 2012), which defined the rules for the protection and use of native vegetation in the Brazilian

territory, formally called the Native Vegetation Protection Law. "The New Forest Code aims to reconcile the aim of preserving biodiversity and forests to ensure a good business environment for agriculture, one of the main sectors of Brazil's economy" (OECD; ECLAC (2016).

The overhaul of the old Forest Code of 1965 took over a decade, and the CAR is a key instrument of this new Law. Rural properties and land that do not comply with the Forest Code requirements must participate in state environmental regularization programs. This is important for homeowners as CAR registration has become a requirement for access to rural credit (OECD and ECLAC (2016).

The Amazon Fund has supported rural property owners of up to 4 tax modules registering their properties and providing the location and environmental information related to the Forest Code requirements through the State Environmental Secretariats. 746,000 real estate records provide a map of rural properties in relation to Permanent Protection Areas (APP) and existing Legal Reserves (RL) and show overlaps with other properties and areas. Registration is the first step in the environmental regularization process, which is followed by a situation analysis and PRA and PRADA. BOX 6 below provides detailed information on the Amazon Fund's support for CAR.

BOX 6: COMPLEMENTARY STUDY: CAR PROJECTS IN THE AMAZON FUND

CAR projects in the Amazon Fund

The Forest Code (Law No. 12.651 / 2012) established general rules on the protection of native vegetation and procedures for the recovery of degraded areas through the environmental regularization of rural properties. To this end, the Code established the Rural Environmental Registry (CAR), a national electronic public register, mandatory for all rural properties, with the purpose of integrating environmental information about rural properties, forming a database for control, monitoring, environmental and economic planning and deforestation combat.

The Amazon Fund allocated R$ 332 million to 17 projects and, taking into consideration the areas of the towns supported and according to data in the National Rural Environmental Registry System (Sicar), the 1.2 million properties of up to 4 fiscal modules (MF) were identified in the CAR. This support corresponds to 38% of the amount allocated in the Amazon Fund's Monitoring and Control component and led to the registration of about 40.9 million hectares in Sicar.

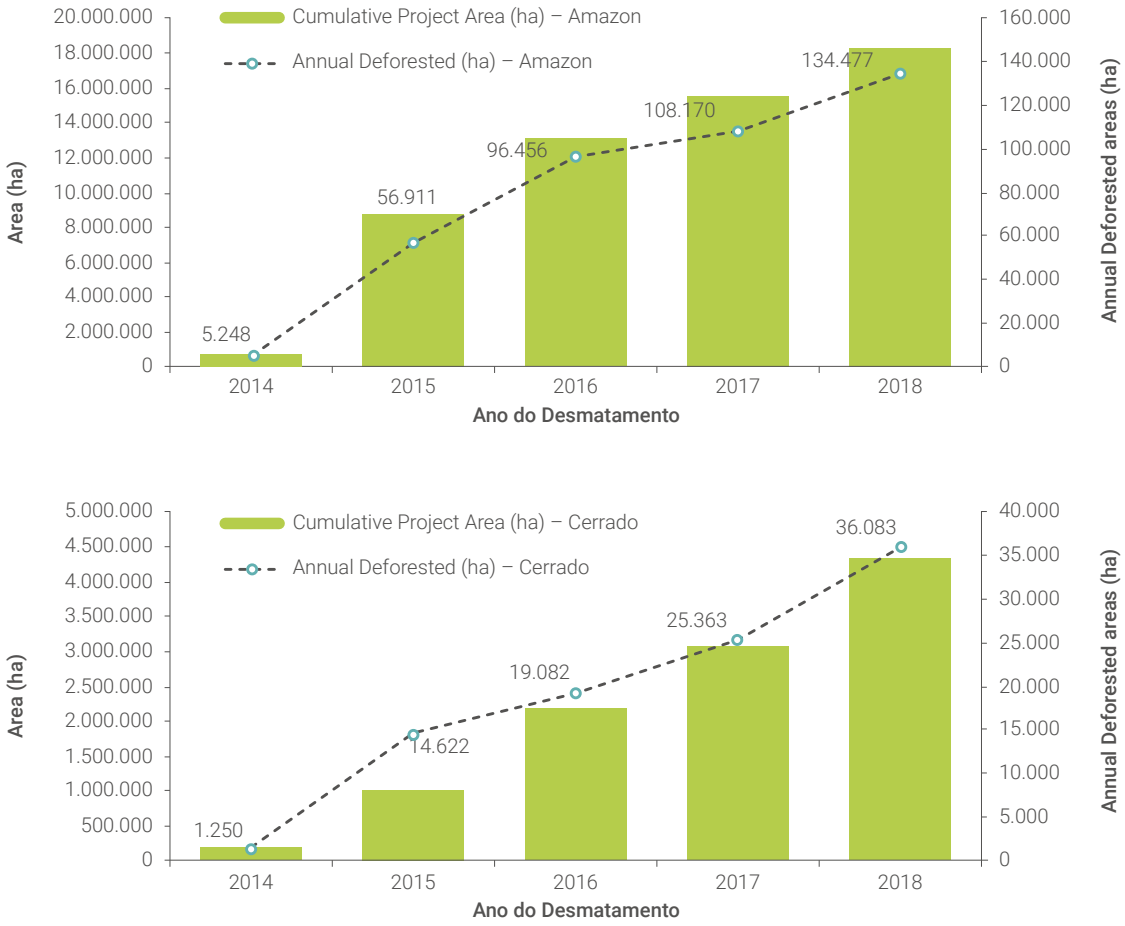
To identify the direct and indirect effects of the Amazon Fund's support for CAR implementation, this analysis was divided into two parts. The first part looked at the dynamics of deforestation in CARs up to 4 MF. CAR data were obtained from the SICAR database (April 2019), delimited by the towns supported by the Fund projects, and deforestation data were taken from PRODES / INPE. In this stage, 10 projects were analyzed[30]. The second stage focused on identifying the use of CAR in monitoring, control

30 The 10 projects evaluated in relation to deforestation are: CAR Tocantins Legal; CAR Acre; CAR Bahia; CAR Mato Grosso do Sul; Green Municipalities Program; Socioenvironmental Management of Municipalities of Pará - IMAZON (Completed), Green Turn - TNC (Completed), CARmRO, and SDS AM, SEMAS PA. The CAR ES, CAR MA and CAR RR projects have not made CAR so far. The CAR Paraná and CAR Ceará projects do not have deforestation data. The Olhos d´Água (MT) Project has no CAR entry data.

conservation and environmental services, as well as land planning and economic nature, identifying progress in legal frameworks and governance aspects. At this stage, interviews were carried out with project proponents that were in state governments and some Third Sector organizations, demonstrating the synergy between different instances in the implementation of this public policy. There was a total of 11 interviews.[31]

The spatial analysis of the projects supported over the period from 2014 to 2018 demonstrated the expansion of the registered real estate area in the range up to 4MF, being 24% in the Amazon biome and 22% in the Cerrado biome. Considering the expansion of properties in the area, there was also an increase in deforested areas, a 25% increase in the Amazon biome and a 28% increase in the Cerrado. This behavior is the same as when analyzing projects individually.

Graph B6.1 – Annual deforestation and cumulative area registered in SICAR with support from Amazon Fund projects



Source: Author elaboration

Contributions and main impacts and the effects on public policies under the Forest Code

In order to raise some contributions from Amazon Fund support, within the scope of CAR projects, the Ministry of Environment (MMA) methodology approved by the Amazon

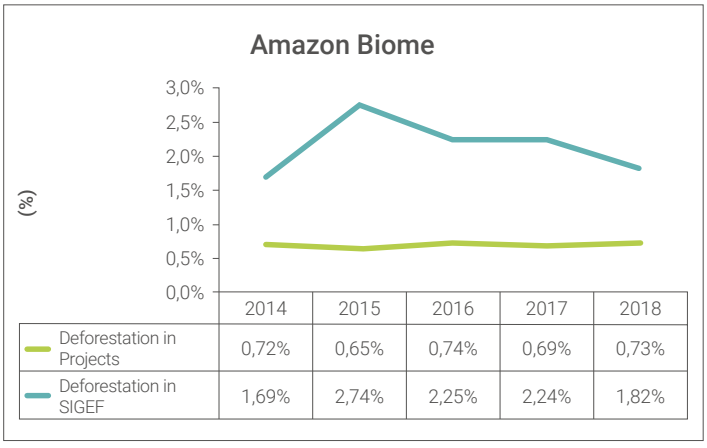
31 The 11 projects considered in the qualitative analysis are carried out by the states: Acre, Amazonas, Bahia, Ceará, Espírito Santo, Maranhão, Mato Grosso do Sul, Pará, Paraná, Rondônia and Roraima.

Fund Technical Committee was also applied in order to measure quantitatively what it represents so far in terms of contributions to public policies under the Forest Code. The analysis carried out showed that **the supported CAR projects contributed to preventing the deforestation of 8,571 square kilometers in the Amazon and Cerrado biomes from 2014 to 2018.**

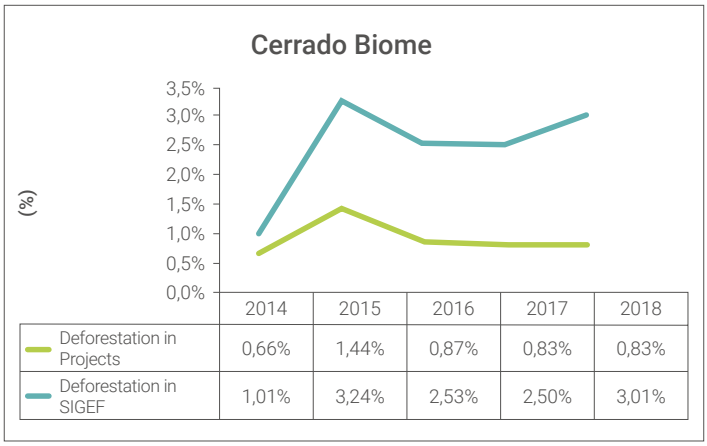
In the Amazon biome, the analysis showed that 8,244 square kilometers of deforestation were avoided in the period from 2014 to 2018, while in the Cerrado there were 327. In terms of emissions, the projects contributed to avoid the emission of 5,170 million tCO2, of which 405 million tCO2 were avoided in the Amazon biome, and 4.765 million tCO2 in the Cerrado biome. This amount of avoided deforestation is roughly equivalent to the entire area of Legal Amazon deforested in 2018, and it's greater than the amount of avoided emissions that the state of Acre achieved in the period from 2012 to 2015, which was 4.102 million tCO_2.

The comparative analysis between the percentage of deforestation in areas to the 4MF bracket registered in SICAR and those outside of it (SIGEF) showed that deforestation within the CAR is lower than in non-registered properties in both biomes. In the Amazon, the average deforestation percentage in the total area registered is 0.71%, while in properties up to the 4MF bracket not registered in the CAR this percentage was 2.1%. In the Cerrado, the behavior is similar. The deforestation percentage in the registered area is 0.93%, while in similar sized non-registered properties the percentage is 2.4%. This shows that despite continuing to increase in absolute terms in areas in CAR, deforestation is a percentage lower in registered areas than in non-registered areas (Graph B6.2). This result may indicate a CAR related effect by exposing properties to monitoring and enforcement. Properties up to 4MF outside the register are less likely to be penalized by the government, and this may influence deforestation dynamics.

Graph B6.2 – Percentage of deforested area in properties up until 4MF within CAR (SICAR) and outside SICAR (SIGEF base) in the Amazon and Cerrado biomes.



	2014	2015	2016	2017	2018
Deforestation in Projects	0,72%	0,65%	0,74%	0,69%	0,73%
Deforestation in SIGEF	1,69%	2,74%	2,25%	2,24%	1,82%



	2014	2015	2016	2017	2018
Deforestation in Projects	0,66%	1,44%	0,87%	0,83%	0,83%
Deforestation in SIGEF	1,01%	3,24%	2,53%	2,50%	3,01%

Source: Author elaboration

One of the expectations from CAR's actions is precisely to facilitate monitoring and accountability of landowners who illegally clear their properties, creating a mechanism for transparency of Forest Code compliance, and thus improving the environmental performance of rural properties. However, it is **important to highlight that CAR is an environmental regularization instrument that needs to be used alongside other public policy actions in order to enact real changes in land use. Two studies analyzing the relationship between CAR with deforestation found deforestation went down in small rural properties associated with CAR in the states of Pará and Mato Grosso**. This effect, however, did not persist over time due to lack of enforcement, penalties and the slow process of validation and implementation of other Forest Code instruments, weakening control policies, like the practice of listing critical deforestation towns.

Detailed studies on land use dynamics in municipalities with projects should be undertaken to understand observed behavior, since the opportunity cost of land use, market conditions, infrastructure, remaining forest areas, the land situation and the profile of farmers and the region where the properties are located greatly influence this dynamic.

Qualitative analysis with the supported states

The support from the Amazon Fund computers, bases and systems infrastructure, in addition to training, has put states on a new level of monitoring and control capacities. The CAR, as a base tool for territorial planning, became a reality through the georeferencing of rural properties, areas of native vegetation, consolidated use, environmental assets and liabilities, springs, among other features available. Thus, the base allows for planning of various current and urgent issues, such as water resources management, recovery of degraded areas, vegetation restoration, management and conservation of biodiversity, climate change, among others.

The qualitative analysis of CAR projects implementation through monitoring and control policies, as well as conservation and environmental services, territorial and land planning of economic nature, and the advances in the legal frameworks and governance aspects, had **the following Results / effects:**

Monitoring and control Structuring of the departments with physical and technological infrastructure, geospatial analysis systems and georeferenced environmental information databases, directly contributed to the increase of state control and monitoring capacities.

The CAR is used for environmental licensing in all states, and most also use it for the inspection of environmental crimes and accountability of landowners. However, there are restrictions given the secretaries' limitations. Registering properties up to 4 MF expanded the states' capacity and overall dispersion in environmental management. Support from the Amazon Fund was important for the states to have human, financial and infrastructure resources to expand the registration of small properties.

Biodiversity conservation and ecosystem services. The increase in registrations expanded the scale Legal Reserve areas and identified Permanent Preservation Areas and shed light on their conservation status. The available information is fundamental to support biodiversity conservation planning measures, such as the definition of ecological corridors and valuation calculations of ecosystem services at scale. However, its use for these purposes is affected by the small number of records analyzed so far, which indicates a demand for further future CAR analysis.

Territorial and land use planning. Most states today do not use CAR with Ecological-Economic Zoning (ZEE). Most ZEEs are out of date and not used for land use planning. CAR is not a valid instrument for land regularization, but its network today represents a more up-to-date land use database than what land management bodies usually have. Access to the CAR database by land agencies can help identify the current land occupant, reducing time and cost of land conflict resolution operations.

Economic aspects. The registration of small properties has an important effect on increasing access to rural credit, which has CAR as a mandatory requirement. The family farming public, predominantly on properties up to 4MF, is often invisible due to social and isolation issues, but its representation in CAR has advanced significantly because of the projects. It is still early in terms of access to institutional markets (lack of regulation) to see its impacts. In terms of private markets, livestock (restrictions imposed by the Public Prosecution Service) and timber (legal restriction) are product chains that demand CAR for its commercialization. There are not enough instruments to enable environmental restoration and protection for remaining native vegetation.

Normative Instruments. Strengthening states through CAR support has contributed positively to advancing state regulatory frameworks. The development of the national system (SICAR) and CAR's database are assets that encourage decentralized environmental management. Few towns are currently in a position to assume greater responsibilities for environmental management, as required by the Complementary Law 140/2011, although their participation in CAR analysis and the process of environmental recovery monitoring is recognized by states as being of fundamental importance.

Governance. The projects were fundamental for the Forest Code's governance agenda to go forward with the Brazilian Forest Service (SFB). Since 2014, SFB brings together state representations to discuss demands for system customizations, legal guidelines regarding standardization gaps, among others. Communication campaigns and local actors' training on CAR and environmental regularization increased these states' rural populations' knowledge about the Forest Code's rules. This movement was recognized as a way of internalizing the state's presence in remote areas.

Conclusions and Recommendations (listed)

Implementing CAR in traditional peoples and communities (PCTs) areas is a challenge today, as this group can be idiosyncratic in terms of territory definition and legislation. **The Fund's increased support for the registration of PCTs may stimulate the development of innovative methodologies to meet this public's (I) demands.**

Articulation between different government agencies in the implementation of CAR-related policies has advanced. Partnerships between State Environmental Organizations (OEMAs) and rural extension and technical assistance agencies **broadened the scope for dialogue CAR use for small farms (II) planning and management.**

The qualitative analysis shows that, although CAR is an instrument used in the licensing, monitoring and inspection of most of the state environmental agencies interviewed, it is not used to its full potential due to the unreliability of declared information. **At this moment, it would be essential to accelerate registries analysis by the responsible environmental agencies (III).** State agencies' monitoring and enforcement priorities should also focus on licensed ventures and protected areas, not including **small farms, which should be included in a deforestation monitoring and prevention (IV) program.**

Still, the use of rural credit is associated with conventional productive activities, which are related to the increase in deforestation. **It is important that technical assistance and rural extension policies are adequate and help rural production to use good production practices, in the context of family farming, the main public in small rural properties (V).** All these factors contribute to the **limited use of CAR in deforestation control. Thus, it is necessary to create strategies and preventive instruments that encourage sustainable production (VI) to control deforestation.**

For CAR use to be expanded to a variety of environmental management policies, it will be necessary to move forward with a baseline analysis, which will require significant effort from the states. Continued support for CAR analysis is understood by states as fundamental to the sustainability of results obtained VII). The Fund's scale allows for wide development and for efficient methodologies and initiatives across projects to disseminate. **Broadening support for innovation and encouraging the exchange of experiences between projects will broaden the project's scope for results and positive impacts (VIII).**

4.2.1. RECOMMENDATIONS

In summary, the Monitoring and Control Component played a decisive role in CAR's implementation in the Legal Amazon, as well as contributing to the Forest Code. It also aided state and occasional municipal organizations with training in how to properly register properties on CAR. The Amazon Fund supported the decentralization of environmental management and strengthened monitoring and enforcement of illegal deforestation on a state and municipal level. It also helped combat deforestation, and the prevention

and combat of forest fires. It also supported IBAMA's enforcement capacities, including operations along with other federal entities such as ICMBio, FUNAI and state entities. The following are a few recommendations:

- In view of the National Policy on Climate Change (PNMC) commitment to achieve an 80% reduction in the deforestation rate in the Legal Amazon by 2020, compared to a historical average (meaning, in practice, to reach a maximum of 3,925 km^2 of deforestation), monitoring and control efforts should be increased, with IBAMA strengthened and collaboration with state and municipal entities improved.
- Reaffirming recommendations from OECD and ECLAC (2016), CAR implementation should be strengthened through economic incentives to stimulate registration, promote compliance and support sustainable management and restoration of Legal Reserves (RL); expand CAR's information system to improve compliance monitoring, land use planning and policy setting; and support state environmental regularization programs, expanding their implementation by states and municipalities.
- Although the breach of additionality was fundamental to IBAMA's inspection and control operations, in principle these costs should be part of the Union Budget. Increasing IBAMA resources in the Union Budget, so that Amazon Fund resources are indeed additional, is recommended.

4.3. LAND-USE PLANNING COMPONENT (SNUC, PNGATI, ZEE)

Component 3

The Brazilian Amazon is submitted to land-use planning

Indirect Effect Component 3

3. The Brazilian Amazon is submitted to land-use planning

Direct Effects

3.1. Public forests and protected areas expanded

3.2. Public forests and protected areas with consolidated infrastructure, land protection and management

3.3. Areas with regularized land title situation expanded

3.4. Areas with land use planning defined by ecologic-economic zoning (ZEE) expanded

The 2018 RAFA (BNDES, 2019a) shows that the Territorial Planning Component received 14% of the total Amazon Fund investment, corresponding to R$ 253 million. Support focused primarily on projects aimed at territorial protection and environmental management of

protected areas, covering 190 Conservation Units (UC) and 101 Indigenous Lands (TI). These areas are under special management regime and protections, with conservation objectives. Their limits are legally defined by the government, and they make up extensive mosaics or corridors of protected areas that block deforestation advances in the Amazon, despite constant pressure.

Many areas are facing difficulties related to structuring and implementation land regularization actions, due to illegal and illegal occupations, and the added challenge of promoting productive activities that guarantee the development, sustainability and permanence of the historical populations. These situations aggravate social conflicts and the risks of deforestation, forest degradation and vulnerability of the traditional peoples and communities that live there. The Amazon Fund's investment on management of these territories is consistent with PPCDam's orientation to prioritize actions in critical areas, to prevent and control of deforestation. In addition to the strategic role that protected areas have for the future of the Amazon:

> The existence of these large protected areas, which can be preserved in the long term, will be fundamental to preserve the complex rainfall pattern of that "green ocean" and to avoid future fragmentation of the large contiguous forest as a result of further deforestation (SANTILLI, 2010).

In the period from 2009 to 2018, the Amazon Fund supported 27 projects under the Territorial Planning Component (BNDES, n.d. a), most of which were associated with the Sustainable Production Component and the Monitoring and Control Component, involving the following types of actions:

- Territorial planning actions in TIs, combined with sustainable production activities, biodiversity conservation, recovery of degraded areas, surveillance and control activities. Along with crosscutting training actions for environmental agents, as well as for management, surveillance, associations that represent the local population and the culture and way of life of traditional communities. We highlight eight projects more focused on land use planning, focused on developing Territorial and Environmental Management Plans (PGTAs) in TIs, an implementation instrument of the National Policy for Territorial and Environmental Management of Indigenous Lands (PNGATI), coordinated by FUNAI. Plan elaboration, updating previous plans, involves the drawing expectations and management of territory for cultural, environmental and economic purposes, which requires agreement among the communities that inhabit it. These processes are sometimes slow because they involve many family groups in their cultural specificities (COFA, 2013a). Reading the projects supported by the Amazon Fund (BNDES, n.d. a), it's possible to see that emphasis is placed on encouraging indigenous leadership participation in the drawing plans and in collaborating with states and / or civil society partners
- Actions with a more specific focus on an isolated segment of the indigenous population, such as investigations, localizations and improving records of isolated indigenous groups and recent contact; implementation of territorial management strategies that contribute to their protection; training civil servants working on FUNAI's Ethno-Environmental Protection Fronts in indigenous policy and ways to protect isolated indigenous peoples.

- Consolidating state UCs through georeferencing and demarcation, followed by the support for their management plans. The Management Plan is an instrument for diagnosing socioeconomic, socio-environmental conditions of PAs and includes zoning of permanent use, occupation, conservation areas, as well as others, based on environmental management rules and regulations built and agreed upon with traditional resident communities. In UCs categorized as National Forest, there should be elaborated a guiding document, in the form of a Community Based Logging Management Plant.
- Supporting the initial phase of the municipal Ecological-Economic Zoning (EEZ), so state conservation unions in the surrounding states are protected.
- Diagnosing the land situation in the states of Amazonas, Mato Grosso, Pará and Rondônia, in order to improve public policies on land ownership regularization.

These actions benefited 49,318 indigenous people according to the 2018 RAFA (BNDES, 2019a) and provided training for 3,177 people in public forests and protected areas management activities, of which 1,311 are indigenous representatives.

The approach in indigenous and UC projects supported by the Amazon Fund was verified to have followed the Safeguards to Reduce greenhouse gas emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable forest management and increase (REDD +). The Cancun Safeguards regarding the rights of indigenous peoples and traditional communities, their social participation, the preservation of natural ecosystems and respect for their own forms of social organization, occupation and use of natural resources using ancient knowledge and practices were also followed.

The TIs amount to 723 areas across Brazil, which occupy 13.8% (ISA, n.d. a.) of the country's land. Most TIs are concentrated in Brazil's Legal Amazon: there are 424 areas, which occupy 23% of the Amazon territory, where about 60% of Brazil's indigenous population lives. Out of this region's UCs 346 are federal and 143 are state-based. They occupy 28% of the total Amazon area, with about 3% of the system's extension overlapping with 7% of the indigenous lands located there according to the National Land Units Registry Conservation (CNUC).

Amazon Fund support contributed to the creation of 7,083 square kilometers of UCs, for example by supporting georeferencing for demarcation of defined areas. It also contributed to the expansion of environmental management, infrastructure and control in an area of 425,974 square kilometers according to BNDES (2019a). These contributions corroborate the two indirect effect indicators of the Territorial Planning Component defined in the Amazon Fund Logical Framework. The first indicator measures the extent of protected federal areas with an elaborated territorial management instrument and the second tracks the deforestation rate in protected areas (federal and state protected areas, as well as TIs in Brazil's Legal Amazon):

Table 3 – Total of Federal UCs and TIs in the Legal Amazon with a territorial management plan (Management plans or PGTAs)

Protected Areas	Number of Federal UCS and TIs with a territorial management instrument		2018/2009 Variation (%)	Federal UC and TI area (km²) with a territorial management instrument		Area variation 2018/2009 (%)
	2009	2018		2009	2018	
Federal UCs	28	83	196	160.741	431.130	168
TIs*	33	90	173	75.741	469.707	520
Total	**61**	**173**	**184**	**236.482**	**900.837**	**281**

Source: Self-made, based on RAFA 2018 database (BNDES, 2019).

The implementation of PGTAs and TIs, and of management plans in federal PAs, contributes to inhibiting deforestation vectors in these protected areas. The 2018 RAFA (BNDES, 2019a) reports, based on data from the Brazilian Amazonian Satellite Forest Monitoring Project (PRODES) from the National Institute for Space Research (INPE), that the deforestation area grew 32% in the 731 monitored protected areas throughout the country - on federal and state levels - considering the period from 2009 to 2017. However, there is a 25% reduction in deforested area in TIs and of 38% in federal protected areas in the same period, which indicates a substantial increase in deforestation in state UCs. These data demonstrate the importance of strengthening state agencies responsible for supporting and monitoring protected areas and highlight the strategic role of indigenous peoples in preventing deforestation.

According to Santilli (2010), the accumulated historical deforestation within the Amazonian TIs is not significant, being part of the way indigenous people culturally occupy their territories. These uses include areas used for the construction and expansion of villages and agricultural uses, while the other part of it arises from past non-indigenous occupations, prior to the official land recognition process, or present, related to ongoing invasions.

A study by the World Resources Institute (WRI) (DING, H. et al., 2016) showed that over the 12-year period from 2000 to 2012, annual deforestation rates within legally demarcated indigenous forest areas in Brazil were 2.5% lower than in others. When analyzing the cost-benefit of protecting the ownership of indigenous areas in Brazil to assess whether this effort is worthwhile from an economic perspective, the study concluded that the investment represents a low cost compared to the high environmental benefits it provides, such as a set of ecosystem services, including carbon sequestration, hydrological services, nutrient retention and pollination, among others. In addition to generating local and regional benefits, carbon mitigation has a global reach. The estimated economic benefits over a 20-year period are about US $ 1.165 billion for Brazil, while the protection costs of these territories reach a maximum of 1% of the total benefits[32] (DING, H. et al., 2016). In the

32 According to the WRI study, quantifying the benefits of ecosystem services consists of four steps: (i) comparative analysis to estimate the total legally demarcated indigenous forest areas of annual deforestation; (ii) quantification of selected ecosystem services through annually avoided deforestation; (ii) unit values of selected services (measured in US $ / ha / year) provided by indigenous forest areas are estimated based on the literature; (iv) the unit value of services is multiplied by the quantity available to calculate the total economic benefits of legalized indigenous lands. Benefits and costs are expressed in monetary terms and adjusted to the dollar value in 2015 (DING H. et al., 2016).

context of global climate negotiations, "protecting ownership of indigenous forest areas and communities is a low-cost solution that can help governments meet their climate targets in their Nationally Determined Contributions (CDNs)" (DING, H. et al., 2016).

It is worth mentioning the Amazon Fund's learning process in building partnerships that made it possible to support the demands of indigenous communities while promoting forest protection in the TIs and, above all, the implementation of territorial and environmental management policy. It should also be considered that most indigenous organizations lack the institutional structure and managerial capacity to directly receive resources from the Amazon Fund or to meet the requirements demanded by BNDES. FUNAI, an important Amazon Fund partner in this arrangement, was also not prepared for it according to COFA (2013a). Support for the implementation and consolidation of UCs and TI management has been mainly provided by Third Sector organizations, and the beneficiaries are the populations residing in UCs and TIs. The strategy of articulating civil society entities and protected area management bodies was fundamental for the support of the Territorial Planning Component to gain scale and strengthen these areas' public policies.

The Kaiapó Indigenous Lands Conservation Fund project, initiated in 2010, coordinated by the Brazilian Fund for Biodiversity (FUNBIO) and supported by the Amazon Fund, was a pioneer in direct support for the development of projects of five Kayapó associations through a merged mode. Kayapos TIs have the largest protected area in the Amazon and this project supported sustainable productive activities, institutional strengthening, deforestation prevention, biodiversity conservation and territory protection. An indication of the successful protagonism achieved by the native population intended by the project was the fact that one of the smaller institutions associations, the Protected Forest Association (AFP), submitted its project for implementing and updating PGTAs of three more Kayapó TIs in 2014 directly to the Amazon Fund. This was the only Public Bid project aimed at supporting PGTAs in TIs presented directly by an indigenous organization, being the second Amazon Fund project with direct support to indigenous organizations. It is worth noting that the Amazon Fund can strengthen the participation of indigenous peoples and the traditional communities of the UCs as direct project proponents and beneficiaries, through the expansion of public calls, workshops and support materials. Outside protected areas, the Amazon Fund has made slow progress in supporting projects that address the bottlenecks that affect land regularization of Legal Amazon properties, one of the main effectiveness "critical knots" of various land-use initiatives.

The effectiveness review of the Pará Municipal Socio-Environmental Management project (2011-2014), carried out by the non-governmental organization IMAZON (GIZ; BNDES, 2017), points out the difficulties to advance with land regularization from the municipalities, which stems from complex problems within the state and the Federal Government. In the land regularization diagnosis in Pará, for example, IMAZON identified pending land regularization in 39% of the territory, with these areas representing 71% of deforestation in the state. Among irregular areas in the state of Pará, about 92% were not even going through regularization processes. Analysis of the difficulties faced by state agencies in real estate regularization, the problems identified were, among others, a shortage of human resources, lack of definition for legal procedures, use of inadequate cartographic bases and land data. These conclusions substantiated the review of COFA's guidelines to support public land ownership regularization, adopting new guidelines to support the digitization of the land registry, creating or enhancing state's land cartographic bases and the digitizing real estate and state land institutions records.

The Terra a Limpo project, by the Mato Grosso state government, is the first project, "over the Counter" approved project by the Amazon Fund (2018) that aims to promote the regularization of public lands and land reform settlements, as well as the improvement of state land management. The project was prepared based on the current state of Mato Grosso's land diagnosis, which points to overlapping property titles, illegal deforestation and "land grabbing" (illegal occupation) of public lands, as well as serious land conflicts.

Finally, it is worth noting that the detailing of guidelines and guiding criteria for support of projects aimed at ZEE preparation, review, detailing and implementation was only approved by the COFA in December 2018. Based on these guidelines, the Amazon Fund can already receive, analyze and support structuring projects about this instrument, considered fundamental for deforestation control, which is of interest to the states. ZEE is an instrument predicted in the National Environmental Policy to develop territorial intelligence based on a sustainable, decentralized and participatory strategic planning. It is based on a diagnosis of integrated territory analysis and its vulnerabilities and potentialities; prognosis, with prospective scenarios and the definition of management guidelines; and implementation, with the definition of action plans, monitoring and evaluation indicators, as well as communication and capacity building strategies.

4.3.1. RECOMMENDATIONS

- Expand support for UC environmental and territorial management so they can implement their already prepared plans.
- Invest in supporting state UCs, as they are responsible for deforestation growth in protected areas. One way to meet this challenge would be to strengthen state public agencies responsible for supporting and monitoring these protected areas.
- Expand support for the environmental and territorial management of more Legal Amazon's ITs through new public calls.
- Promote the increased participation of indigenous peoples and traditional communities in UCs as direct proponents of Amazon Fund projects, with the broader dissemination of public calls, workshops and support materials for project creation.
- Introduce the production of subsidies and instruments that contribute to the speeding up of the land regularization process in the states to project presentation.
- Detail broader guiding criteria focusing on land regularization to stimulate project presentation.

4.4. SCIENCE, INNOVATION AND ECONOMIC INSTRUMENTS COMPONENT

Component 4

Economic instruments and science, technology and innovation activities that contribute to the recovery, conservation and sustainable use of biodiversity.

Indirect Effect Component 4

4. Economic instruments and science, technology and innovation activities that contribute to the recovery, conservation and sustainable use of biodiversity.

Direct Effects

4.1. Knowledge and technology for conservation and sustainable use of biodiversity, deforestation monitoring, and control and land use planning produced, disseminated and employed.

4.2. Economic instruments for conservation and sustainable use of biodiversity, deforestation monitoring, and control and land use planning developed, disseminated and employed.

According to RAFA 2018 (BNDES, 2019a), support for the Science, Innovation and Economic Instruments Component represented 13% of the project portfolio value (R $ 244 million), with a large growth in 2018 - 82% over the accumulated total payments by 2017. This component's result indicators show an accumulated 465 scientific, pedagogical or publications produced, 368 supported researchers in the Amazon region[33], two patents, and the establishment of PSA systems in four specific projects that benefited 1,902 families.

The main ongoing projects related to this component are National Forest Inventory - Amazon, under the responsibility of SFB; Integrated Amazon Project, implemented by the Brazilian Agricultural Research Corporation (Embrapa); and Environmental Monitoring by Satellite in the Amazon Biome, INPE (BNDES, 2019a). In 2017, the project for the development and implementation of deforestation monitoring systems for the Atlantic Forest, Caatinga, Pampa and Pantanal biomes was approved, as well as the development of a calculation of CO2 emissions from deforested areas in these biomes - the project Environmental Monitoring of the Brazilian Biomes -, which will be implemented by INPE. This project is of great importance as it will advance in monitoring deforestation on a national scale, eliminating the risk of avoided emissions displacement (leakage) and enabling national-scale payment for results systems, as Brazil has always advocated in international negotiations on climate change.

The Science, Innovation and Economic Instruments Component includes the only international project of the Amazon Fund, which is carried out with the Amazon Cooperation Treaty Organization (ACTO), amounting to nearly R$ 24 million, and aims to develop deforestation monitoring, changes in land use and forest use in the organization's member countries. Through investments in equipped observation rooms and technical geoprocessing classes taught by INPE's Amazon Regional Center (CRA / INPE), the countries' institutional capacities and the transfer of knowledge and technology between Brazil and the other ACTO members were strengthened through a regional cooperation strategy. During the project, five regional deforestation maps were produced in the years 2000-2016, along with three regional land cover and use maps in the 2000-2014 period (BNDES, 2019a). 218 technicians were trained in radar mapping and imaging systems

33 The indicator refers to researchers and technicians involved in scientific and technological research activities residing in the Amazon region during project execution, which does not imply permanence in the Amazon after project completion. The North region has only 2,382 research groups, corresponding to 6.3% of the national total (GIZ, 2019c), a very small number given the enormous challenge of expanding scientific knowledge in the region.

through 17 training courses. ACTO has recently submitted another project proposal to monitor forest degradation.

There are five closed and reviewed projects including activities related to Science, Technology and Innovation (CT&I) Component, which corresponds to the first stage of the Amazon Fund. The economic instruments item was not yet in force at this stage. In the Preliminary Report on the Effectiveness of the Amazon Fund Supported Science, Technology and Innovation Projects (GIZ, 2019c), there is an in-depth analysis of these projects, namely: Biodiversity, Amazon Bioactive Compounds, Mangrove Forests, Policy Incubator Amazonas and Belém Islands. These projects were started between 2012 and 2014 and ended between 2015 and 2018. The support amount from the Amazon Fund to each project ranged from R$ 1.1 million to R$ 4.6 million, for a total of R$ 12 million. All evaluated projects were done by different departments of the Federal University of Pará (UFPA), with financial execution by the Research Support and Development Foundation (FADESP). The following analysis is based on the preliminary CT&I project evaluation (GIZ, 2019c), which highlights three of the five projects.

All projects focused on strengthening ST&I infrastructure and biodiversity knowledge in the Amazon and thus had an indirect impact on recovery, conservation and sustainable use of the Amazon biome. Only the Mangrove Forests project had a direct effect, by implementing reforestation actions in mangrove areas. In general, the evaluated projects met their established targets, resulting in increased infrastructure, equipment and technical capacity for high-impact scientific research in the Amazon; as well as training, capacity building and establishment of human resources, scientific publications; patents, and the expansion of new research networks.

The Biodiversity project aimed to build and strengthen UFPA's ST&I infrastructure, focusing on biodiversity studies in the Amazon. Supported by the Amazon Fund, the project made it possible to build and equip the first Center for Advanced Biodiversity Studies (CEABIO) in the northern region of the country, as well as to reform the drug planning laboratory and the Molecular and Cellular Neurochemistry Laboratory (LNMC) of the Institute of Biological Sciences (ICB).

However, the emphasis on basic research did not arouse interest from the private sector. The production of knowledge about biocompounds with potential for uses in the drug, dermocosmetics and bioherbicide sectors also did not result in relevant contributions. As it was eminently infrastructure project, the results of its research were not immediately evident, but with the installed infrastructure, the potential to enhance new projects, strengthen and expand new research networks focusing on Amazonian biodiversity is promising.

One of the projects with the most outstanding results is the Amazon Bioactive Compounds, carried out in partnership with a private company (Amazon Dreams) and a cooperative (Mixed Cooperative Tomé Açu - CAMTA). It produced bioactive compounds on a pilot scale and carried out research on purity, antioxidant capacity, functionality, chemical stability, as well as the optimization and development of new processes obtained from Amazonian biodiversity products. CAMTA obtained cocoa almonds with added value and Amazon Dreams developed compounds capsules extracted from acai. This strategy proved successful in terms of scientific dissemination in different media and technological applications, such as the development of partially defatted acai (light) and its dissemination.

Thus, the project Bioactive Compounds of the Amazon presented relevant results in their research, as they respond to real market demands. The results were also impactful because they were sustainable and widely disseminated. The project impacted public policies related to the quality of acai, helping consolidate the three product classifications (acai, clarified acai and dehydrated acai, according to Normative Instruction / MAPA No. 37 of October 1, 2018), which gives more transparency to the value chain and health security of the acai consumer market. This project also made it possible to raise new research resources from other sources, which is important for both the sustainability of investments and its expansion. The other resources accessed were public - National Council for Scientific and Technological Development (CNPq) and Funding for Studies and Projects (FINEP) - and private (companies). Another result of the project was the generation of patents in the categories "Invention Patent and "Utility Model".

One of the most relevant impacts of the Amazon Bioactive Compounds project was that it contributed to the strengthening of the research group and the Amazon Bioactive Compounds Recovery Center (CVACBA). CVACBA, after accreditation by the National Institute of Metrology, Quality and Technology (Inmetro), is expected to become the first national reference center in the validation of bioactives and food products - such as acai and other antioxidant-rich products - and to exercise an important role in producing scientific and technological knowledge applied to the conservation and sustainable use of Amazonian flora. Thus, the innovation services provided by CVACBA to small producers, associations, cooperatives and public and private companies will follow the rigor required by this standard. It is an extremely important factor for the internationalization of Amazonian research. Overall, this project fully achieved its goals and went further in its cooperation and integration networks, presenting viable promising arrangements in the university / private company relationship and thus contributing to sustainable development and bioeconomy in the Amazon.

The Mangrove Forests project has fully achieved its goals related to the creation and equipping of the new Mangrove Ecology Laboratory (LAMA), the development of technologies for the recovery of degraded areas and in generating models for estimating biomass, sequestration and carbon stocks in mangrove forests. The interaction between ICMBio, the beneficiaries and researchers in the management of marine extractive reserves was important. The project had a positive impact on mangrove management plans in UCs. It also raised almost R$ 6 million in new resources from Petrobras.

> generated knowledge for the economic use of biodiversity by developing products and enterprises based on biodiversity use. However, research from the other three projects points to territorial management, with a more direct effect on the Amazon Fund's aim, but also sensitive to the socioeconomic and environmental context, which, being more dynamic, can make the results of these researches less sustainable (GIZ 2019c).

ST&I development in the Amazon region is strategic to change the predominant economic model and to protect the standing forest. However, the role of the Amazon Fund in this area and its decisions in selecting and prioritizing investments is not an easy task, as many initiatives contribute to the Fund's objective. Evaluating these projects provides important conclusions for decisions about future Amazon Fund investments in this component. Some focuses were identified for this component's support in 2017-2018 (BNDES, 2019a):

- Support for scientific and technological research focused on socio-biodiversity product chains, including the development of new products from the Amazonian biodiversity, including pharmaceuticals, phytopharmaceuticals, medicines, cosmetics and others, which can be of interest to the chemical and food industry.

- Support for scientific and technological research on timber and non-timber forest management, the restoration of degraded areas (including species selection, seed management and methSDG for optimizing recovery), crop-livestock-forest integration (ILPF), sustainable fisheries and aquaculture, water and soil conservation.
- Support for land use development, implementation and improvement, land cover monitoring and deforestation, forest degradation, regeneration and burning for the purpose of quantifying deforestation control, to support deforestation prevention and combat.

4.4.1. RECOMMENDATIONS

Successful actions at projects have revealed the strategic importance of the Amazon Fund's Science, Innovation and Economic Instruments Component, especially in a biome where research still faces enormous difficulties in terms of infrastructure, equipment and qualified human resources.

Some of the recommendations have already been implemented by the Amazon Fund through the identification of support focus. The main guideline is to focus on applied research rather than basic research. Although this falls outside the scope of the Amazon Fund, it is necessary to revise the legislation on biodiversity and bioprospecting. This would have a major impact on this Component, given bureaucracy when dealing with biodiversity research in the region, possibly inhibiting initiatives from both academia and the private sector.

- Encourage research that responds to the demands of communities and the private sector. This can be done through specific public calls for representatives in project design and defining strategies.
- Expand and strengthen University / business partnerships (for example, by developing model partnership protocols) to build cooperation between academia and business and facilitate private fundraising.
- Developing a strategy for exhibiting results that reach different new potential audiences and stimulates the production of new knowledge.
- Demand that evidence of integration between scientists, government, the private sector, traditional communities and local residents must be presented when submitting proposals.
- Improve integration with other components. Encourage partnership models in which non-research projects can aggregate relevant applied research components, aligned with project objectives, producing evidence that can underpin decisions and elevate project and policies outcomes.
- Adequate this component's project execution time, especially if there are investments in infrastructure and equipment involved.
- Given the cross-cutting character of this Component, Logical Framework indicators should show, in a clear manner, that publications, patents, and other findings from the Science, Innovation, and Economic Instruments Component support other specific projects or work areas prioritized by the Amazon Fund.

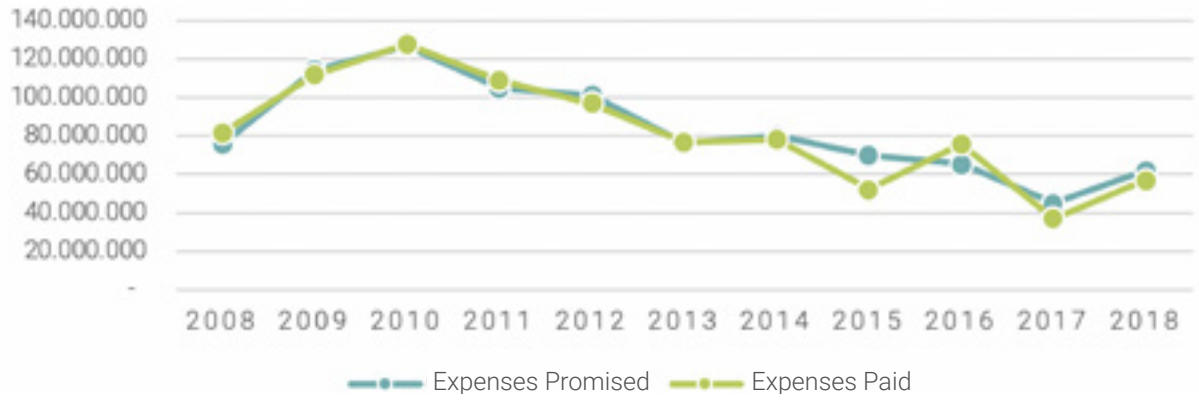
4.5. ENVIRONMENTAL INSTITUTIONS CAPACITY (FEDERAL, STATE AND MUNICIPAL) TO IMPLEMENT ANTI-DEFORESTATION POLICY

The Amazon Fund has contributed significantly to environmental management public agencies to implement public policies to combat deforestation. As argued below, the impact is very clear at the state and municipal levels, but progress is also happening at the federal level. Challenges are also being met in public administration execution of Fund projects.

Brazil underwent a phase of federal environmental spending and human resources allocated to federal environmental agencies increase from 2001 to 2014 (GRAMKOW, 2018). The Environment Ministry (MMA) and its branches saw a 23.2% increase in committed spending from 2001 to 2014 (GRAMKOW, 2018). During this period, the number of permanent civil servants in MMA more than doubled, from 261 in 2001 to 794 in 2014. States and municipalities also saw their capacity increase during this period (WWF, 2018). This phase coincided with a period of significant deforestation reduction in the Legal Amazon (Section ii - Introduction).

For most of the period under review (2008-2018), the economic crisis has resulted in budget cuts for entities directly involved in deforestation prevention and control in the Amazon biome. In Graph 10, we can see IBAMA's budget decrease in the environmental control and preservation subfunctions deflated to constant real values of 2018[34]. This expenditure[35] went from just over R$ 126 million in 2010 - when it peaked in the period from 2008 to 2018 - to values close to R$ 60 million in 2018, representing a 52.4% decrease in real terms. Although these are Brazilian wide data, the surveillance in the Amazon also suffered budget cuts.

Graph 10 – IBAMA expenses in the environmental control and preservation subfunctions in R$ from 2008 to 2018



Source: Own making from data from SIGA-Brasil (Senado Federal, n.d.).

The approval of the Constitutional Amendment No 95 of December 15, 2016 (the so-called "expenditure ceiling") sets the Union's primary expenditure at a time when it was already on a downward path. More acute cuts in environmental management are expected, as

34 For deflators, the data provided by Ipea data (2019) were used.

35 Two-step budget execution expenditures (committed spending and paid expenditure) were considered for the purpose of making the outcome more robust. The convergence of the two series corroborates the downward trend. These expenses reflect what the agency actually spent, which is more accurate than the authorized expense, for example, which is not always executed. The expense paid includes the unpaid remainders as paid.

they are perceived less as important than other policies, especially those with a spending floor, such as health and education. The current Brazilian context of fiscal cuts, coupled with the freezing of primary spending, poses challenges for federal agencies to execute Amazon Fund projects, as any resource that enters the Union Budget is subject to cuts or contingencies. This context already has an impact on Amazon Fund's projects with federal administration. At a state level, the context of constraining fiscal space poses similar challenges.

In addition to the fiscal context, there is a relatively rigid context for public spending through the procurement rules and contracts established by Law No. 8,666 of June 21, 1993, which govern public sector procurement at all levels (federal, state, district and municipal). About policy, the change in overall PPCDAm coordination from the Presidential Civil House to the MMA in 2013 has already been mentioned (Section II - Introduction). It was an indication of actions against deforestation in the Amazon's loss of political importance.

The Amazon Fund financed two projects in 2016 (R$ 56 million) and 2018 (R$ 140 million) for IBAMA field inspection actions[36]. The exception established by COFA for these projects broke the additionality condition, which was seen by many actors as a setback. The impression was that the State failed in its responsibility to devote a specific budget to the pursuit of ongoing public policies. However, in 2014, 92% of the total investments in Amazonian illegal deforestation combat activities were funded by the Union Budget, including PPCDAm actions and the institutional costs of entities involved in the Plan's implementation. 8% of investments were made by the Fund[37]. The relative contribution from international support to the fight against deforestation in the Amazon biome has increased in recent years, although most investments continue to be funded from the Union Budget (Green Fund project 2018).

In addition to providing resources for the implementation of actions planned in and/or aligned with PPCDAm, the Amazon Fund was fundamental for the elaboration of the State Deforestation Prevention and Control Plans (MMA, 2018), a COFA represented requirement. The Amazon Fund has grown in importance for state governments, with 27 projects approved along with state agencies, 5 of which were canceled. The amount allocated to the remaining 22 projects with state entities totals R$ 577,766,547.17, equivalent to 31.06% of the Amazon Fund's total of resources allocated (GIZ, 2019a). Most of the investments were destined to CAR implementation, including in states outside Brazil's Legal Amazon, and for projects with structuring investments and environmental management, such as the Mato Grosso Sustentável project. The Amazon Fund also allowed public agencies to use their resources in actions to combat deforestation, including partnerships with fire brigades on a state level, and the adoption of sustainable production policies. Participation in COFA also allowed for cooperation with State Environmental Organizations (OEMA) and the exchange of experiences, enhancing environmental management articulation between states.

At a municipal level, the Amazon Fund has approved 10 municipal government projects, but with three having been canceled. Over the years, there have been changes and many discussions regarding support to municipalities with Fund resources. From

36 Beyond IBAMA, other federal institutions supported by the Amazon Fund were the Brazilian Forest Service (SFB), the Brazilian National Space Research Institute (INPE) and the Brazilian Agricultural Research Company (EMBRAPA). These last two are analyzed in the Science, Innovation and Economic Component.

37 Does not include state contributions to combat deforestation.

2013[38], COFA established that support to towns and cities would be carried out mainly through projects with state governments. Of the projects under the direct responsibility of the municipal government, the project Olhos D'Agua stands out, coordinated by the town of Alta Floresta, with significant results in the deforestation rate reduction and the regularization of previous environmental illegality. The municipal level was also supported in environmental management through Third Sector projects, such as the Pará Municipal Socio-Environmental Management Support project, implemented by the NGO IMAZON, involving 11 towns in Southeast of Para. This project's external review shows positive results on deforestation control, which includes, among others, three towns (out of six) leaving the deforestation control priority list (GIZ, BNDES, 2016a).

The main problem with government agencies is the low capacity for project implementation, which may be related to the relative rigidity in the use of resources (Law No. 8.666 / 1993), a context of restricted fiscal space and /or the relatively reduced capacities, especially regarding qualified permanent staff. The low execution rate has led, as mentioned, to the cancellation of some projects. At a federal level, the recent context of fiscal constraint has led to difficulties to enforce policies, risking a loss of additionality. At the state level, the frequent political changes (electoral cycle) and the reduced number of permanent staff lead to priorities and teams being discontinued, risking activity cancellations, losing memory/ institutional learning and a low sustainability potential. Something similar happens in municipal governments, whose environmental competencies are even more recent.

4.5.1. RECOMMENDATIONS

- New working modalities (e.g. joint ventures, foundations, social organizations) need to be explored to enable public agencies to run projects directly, with greater agility and flexibility, without losing transparency and good compliance practices.
- Considering the positive experiences in project implementation, continue to strengthen arrangements between government agencies with the Third Sector.
- The breach of additionality to finance IBAMA activities in the region should be reviewed and eliminated as soon as possible. Although circumstantial, extending this exceptionally over time makes it a return to normal less pressing and sets a precedent for financing other areas of government.

4.6. THIRD SECTOR CAPACITY

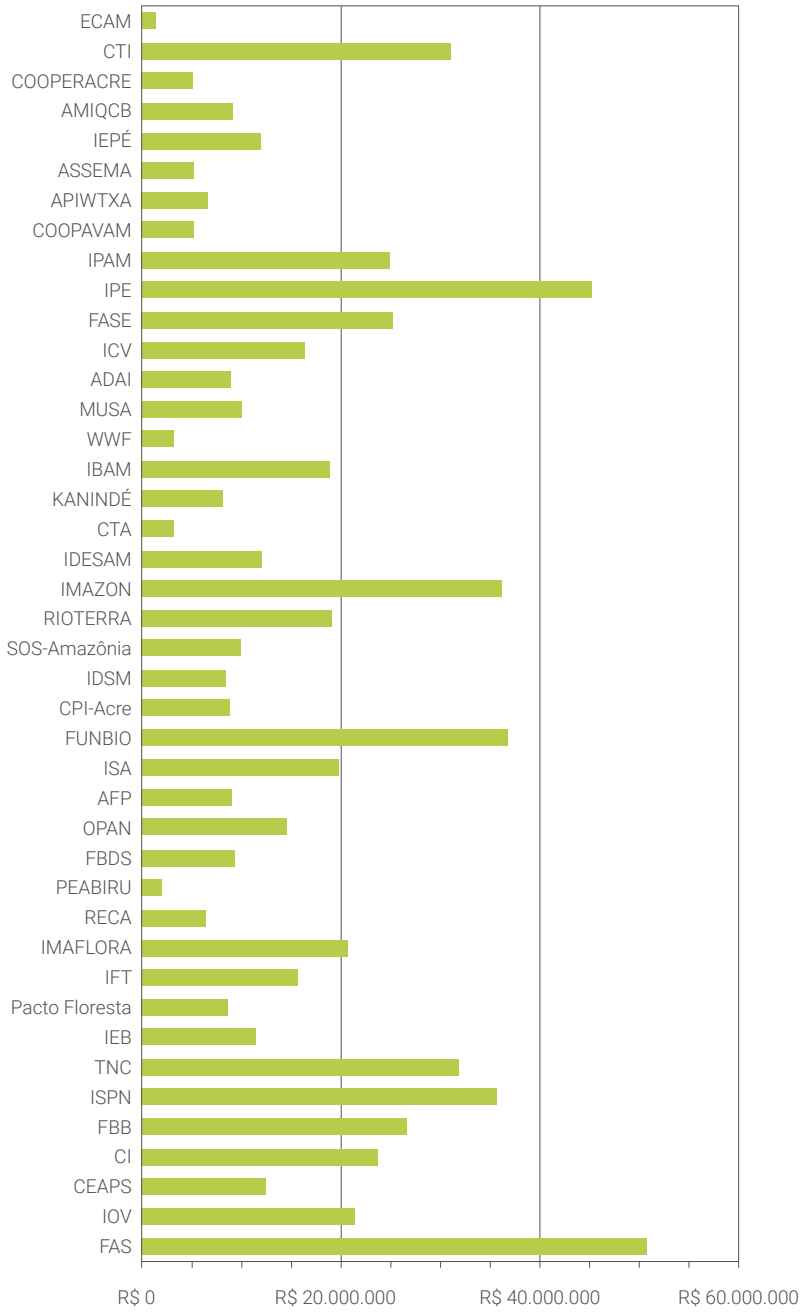
One of the reasons that motivated donors to support the Amazon Fund was confidence in Brazil's ability to implement it alongside civil society institutions, the existence of a well-developed and capable third sector, with overall dispersion in the various social segments and regions of the country, particularly in the more remote areas where the state does not reach. These institutions had also already integrated public policy monitoring and result verification processes. These experiences, anchored in the Brazilian Constitution of 1988, were developed in sectoral, advisory and / or deliberative councils, made up of representatives of various stakeholders. The Brazilian development of environmental

38 According to the RET of the 13th Meeting, support for municipal environmental agencies will be provided exclusively through operations with states, which will have the responsibility to unite these demands, and should endeavour to cover all municipalities of territory through a participatory process of project construction. (COFA, 2013b).

public policies had the intense participation of different organizations in federal, state and municipal institutional channels, especially after the United Nations Conference on Environment and Development, in 1992. The creation of COFA, which also has civil society representations, mirrored this experience.

Civil society played an active role in the Amazon Fund's implementation, both as COFA members and as project executing entities. In these first ten years, the Amazon Fund has been a very important partner for the Third Sector in the region. 42 institutions were supported through 58 projects for a total value of R$ 706,352,997.71, which is equivalent to 38% of the Fund's resources (GIZ, 2019a). The supported entities acted locally or nationally, and some are international NGOs with offices registered in the country, but with teams composed of Brazilian professionals. Graph 11 shows the list of civil society institutions that received funds from the Amazon Fund.

Graph 11 - Third sector organizations and allocated resources



Source: GIZ (2019a) based on BNDES databank (n.d. a.)

Some respected and recognized NGOs had up to two projects supported in the period 2009-2018, namely: Amazonas Sustainable Foundation (FAS); Banco do Brasil Foundation (FBB), Ouro Verde Institute (IOV); The Nature Conservancy of Brazil (TNC); Tropical Forest Institute (IFT); Institute of Forest and Agricultural Management and Certification (IMAFLORA); Society, Population and Nature Institute (ISPN); Operation Native Amazon (OPAN); Socio-Environmental Institute (ISA); Brazilian Fund for Biodiversity (FUNBIO); Acre Pro-Indian Commission (CPI-Acre); Amazonian Culture and Environmental Studies Center - Rioterra; Federation of Organs for Social and Educational Assistance (FASE); and Indigenous Work Center (CTI). The Amazon Institute of Man and Environment (IMAZON) has had three projects approved.

Among these NGOs, five assumed the role of larger merged entities (FUNBIO, FAS, FBB, ISPN, FASE) in different modalities, contributing to the Amazon Fund's strategy of supporting subprojects through them, which was a success in the Fund's partnership with civil society. BNDES would not be able to process, analyze, approve and monitor many smaller projects and, with the smaller institutions, the overall dispersion of the Amazon Fund increased enormously and reached a significant scope. Kadri's study (2018) reinforces their importance in the growth of the Fund's project portfolio: "The numbers' evolution shows that the adoption of the larger institution representation partnership model, as a way to decrease transaction costs to increase overall dispersion, resulted in greater access of small projects to Amazon Fund resources." According to the 2018 RAFA (BNDES, 2019a), 2,659 small projects and 91 medium-sized projects were supported[39].

The benefit distribution study characterized the following profiles / types of civil society organizations:

a) Organizations with scientific orientation, such as the Mamirauá Sustainable Development Institute (IDSM); the Amazon Institute of Man and Environment (Imazon); and the Brazilian Foundation for Sustainable Development (FBDS);

b) Operationally oriented organizations created to support the implementation of public policies: the Amazonas Sustainable Foundation (FAS); the Brazilian Biodiversity Fund (FUNBIO) and the Banco do Brasil Foundation (FBB);

c) Training-focused organizations, such as the Tropical Forest Institute (IFT); the International Brazilian Institute of Education (IIEB) and the Brazilian Institute of Municipal Administration (IBAM);

d) Organizations that focus on grassroots social organization, such as the Coco Babaçu Breakers Interstate Movement Association (AMIQCB); Ashaninka Association of the Rio Amônia - Alto Juruá (APIWTXA) and the Association in Settlement Areas in the State of Maranhão (ASSEMA);

e) Organizations focused on productive organization, such as the Vale do Amanhecer Cooperative (COOPAVAM); Central Cooperative of Extractive Commercialization of the State of Acre (COOPERACRE);

f) Organizations focusing on the environment, such as The Nature Conservancy (TNC), Conservation International (CI), and the World Wildlife Fund (WWF), all represented by their Brazilian subsidiaries;

39 The Kadri study (2018) identified 604 subprojects instead of the 2750 reported by the Amazon Fund in the 2018 RAFA.

g) Organizations focused on advocacy and social empowerment, such as the Socio-Environmental Institute (ISA) and the Indigenous Work Center (CTI).

Over these ten years, Third Sector entities have learned to work within BNDES requirements, although for many preparing, negotiating and implementing project within these standards has been difficult. Larger interactions and a larger number of projects submissions took time. In the end, these organizations proved to have a capacity to run projects which were far above that of governments. Work brought mutual learning to BNDES and the Third Sector, recognized as positive by both parties (see section 1.2.2).

The BNDES project selection and analysis criteria helped Third Sector entities to become more professional in terms of financial administration and project management, which has helped them access other more demanding resource sources, like other international funds. Some respondents mentioned that accessing resources from the Amazon Fund served as a good governance "stamp". On the other hand, the long wait to get approval for the project submission and review process has created problems for some organizations. Local communities had expectations after preparing projects, and the delay eroded relationships with the proposing organization. During the second phase of the negotiations, some entities had to resort to resources from other sources to maintain the project's conditions.

Many NGOs operate or are present in remote territories that public agencies cannot reach, enabling community access to public policies. On the other hand, knowledge production and / or in-depth coexistence with the culture and the ways of life of these communities have also brought important contributions when it came to make public policies are aware of the needs and specificities of different realities. Third Sector organization also participate in Fund supported projects' implementation, contributing substantially to the Amazon Fund's recognition as an initiative by all of Brazilian society, and not just the State.

4.6.1. INDIGENOUS ORGANIZATIONS AND PROJECTS ON INDIGENOUS LANDS

During the ten years of the Amazon Fund's existence, only two indigenous entities were directly funded.

- Protected Forest Association (AFP), with the Kayapó Territory, Culture and Autonomy project, focused on PGTA implementation in 3 Kayapó ethnic groups.
- Ashaninka Association of the Ammonia River - Alto Juruá (Apiwtxa), the first indigenous organization to be directly supported by the Amazon Fund on the Ammonia Kampa TI, located on the border with Peru and neighboring the Alto Juruá extractive reserve. The project is focused on sustainable development, through agroforestry production expansion, territory preservation, and support for territorial and environmental management in indigenous communities. The project also affects the neighboring riverside communities living in the Alto Juruá UC, in Acre.

All other projects with the supported indigenous populations were implemented through NGOs that already had a long history of working with indigenous peoples and communities. This data indicates that there is still important work ahead in training indigenous organizations so they can submit projects directly to the Amazon Fund. As

already mentioned, a total of 49,318 indigenous people and 101 TIs were supported by the Fund's project portfolio (BNDES, 2019).

Initially, BNDES had no experience in the indigenous areas and, for this reason, it sought specialists closer to the specific technical issues of this segment within the Bank itself to analyze and monitor project implementation.

At COFA, indigenous peoples are represented by the Coordination of Indigenous Organizations of the Brazilian Amazon (COIAB). FUNAI only became a full COFA member in 2016.

The Amazon Fund played an important role in the design and implementation of PGTAs in the Amazon, and 65% of TIs in the Amazon were supported by it, using the Public Bid launched in 2014 in collaboration with FUNAI and MMA. The PGTA is an PNGATI instrument (Section III - Introduction), which was established in 2012 aiming to

> ensure and promote the protection, restoration, conservation and sustainable use of natural resources in indigenous lands and territories, ensuring the integrity of indigenous heritage, quality of life improvement and the full conditions of physical and cultural reproduction of present and future indigenous peoples, respecting their socio-cultural autonomy, in accordance with current legislation. (BRAZIL, 2012)

Preparing and implementing projects with indigenous peoples has additional management and logistics complications. First, during the preparation, distances often make it difficult to mobilize the community, which is critical to successful implementation. The expectations created and the delay in the selection process by BNDES until approval make the relationship with the proposing organizations difficult to manage. NGOs often had to pre-fund certain activities in order not to lose the trust in the communities, and other resource sources had to be used. There are reports of respondents who would not have been able to implement projects without these other funding sources. In other words, there must be careful consideration of the difficulties to reach the social agreement necessary to carry out inspection and sustainable use projects in indigenous territories. Much of the land is multicultural, housing peoples, clans and families with some autonomy, but sharing the same territory. Any project involving all of these territories assumes untrivial social arrangements. Secondly, in the implementation phase of indigenous projects, cultural particularities in how these peoples interpret the use of time and work can lead the established implementation deadlines to be relaxed, as discussed in COFA (COFA, 2013a).

On the other hand, one of the great highlights of the Amazon Fund was the openness to understand the specificity of indigenous projects: meetings were held with groups and budget adjustments were made to include the particularities of local realities. After all, the projects helped strengthen the project management, protection, surveillance, agroforestry, productive activities and environmental management abilities of the supported indigenous groups.

BOX 7: GENDER EQUALITY IN AMAZON FUND SUPPORTED PROJECTS

Promoting equality between men and women is fundamental for the protection of human rights and is an essential condition for sustainable and inclusive development. However, overcoming gender inequality has been a challenge at all levels, whether in urban or rural

environments. The Amazon Fund includes poverty and gender inequality reduction as cross-cutting criteria. The Benefit Distribution Study (GIZ, 2019a) analyzed quantitatively and qualitatively all projects funded by the Amazon Fund.

Although the Amazon Fund adopts a gender mainstreaming strategy and encourages the inclusion and empowerment of women, the strategy is still incipient. The Fund's analysis of its effective contributions to reducing gender inequality in projects is compromised, as the information available on the Amazon Fund's website specifically regarding gender targets and outcomes is insufficient.

The 5.8% (6) of projects that aimed to affect women specifically also reported impacts on their lives. That is, its final actions match what was proposed, especially regarding income generation. All of these gender-focused projects have actions related to financial empowerment in their activities. Thus, we note that there is a direct relationship between support for economic development and female emancipation.

In addition to that, 22.3% (23) of projects supported by the Amazon Fund affected the lives of women living in the targeted community, even without having this set as a goal. It is estimated that 37.8% (39) of the Fund's projects portfolio have the potential to affect the lives of those residing in the project's surroundings because of activities carried out locally, and 33.9% (35) do not involve the gender category because of its nature. Table B7.1 shows the distribution of projects among the mentioned categories.

Table B7.1 - Distribution of projects among classification categories

	Intended focus includes gender	No Focus, with impact[40]	No Focus, with impact potential[41]	Nature not applicable
Number of Projects	6	23	39	35
Matching Percent	5.8%	22,3%	37,8%	33,9%

Source: Author elaboration

Despite the limitations mentioned, the gender mainstreaming strategy adopted by the Amazon Fund has been an important step towards gender equality. An example of this were the seven events held in 2018 that gave more visibility to gender issues. Another relevant point is that 100% (6) of the gender-focused projects also mention a financial factor: whether it is an investment in the production chain, empowering women or supporting the marketing of their products.

The study presented a set of conclusions and recommendations on support for targeted actions, data availability, action monitoring, and institutional training for organizations.

40 No focus intended, but with impact on gender

41 No intended focus, but with potential gender impact

a) Support for actions with specific focus, data availability and monitoring

- Inclusion of gender-specific actions: Encourage all projects to present at least one way to promote women's empowerment. As gender equality is a cross-cutting criterion for support from the Amazon Fund, it should be addressed in most or all projects.
- Presentation of disaggregated data: Including the number of women attending the training courses, along with the presentation of disaggregated data from the rest of the project, may facilitate further analysis, which would ideally be available in the Amazon Fund website. Therefore, it is recommended to include a category on the site that focuses on displaying gender-related results.
- Material Availability: Encourage the dissemination of media and documents in the site's materials to expand the availability of project data.
- Accounting for women in management: number of women researchers, agents or technicians involved in the process of project management, implementation and execution.
- Indicators' Inclusion: Measuring the impact of women's participation in all projects still in the design phase enables them to capture these results and to be properly reported and accounted for, including the short, medium and long-term project goals making it easier to evaluate development

b) Institutional strengthening

- Support for specific women's organizations: Support the institutional strengthening of organizations that work specifically on gender issues or promote the inclusion of women, such as women's associations and cooperatives that promote women's economic empowerment.
- Establishing of Gender Committees: Promote the creation of specific programs and / or committees to address gender equality policies and actions, both within the Amazon Fund team and within supported projects in all sectors.
- Making public calls: Focus specifically on gender equality actions along with support for sustainable production activities. These calls would allow organizations that a priori would not be expected beneficiaries from the Amazon Fund.
- Institutionalization of the Gender Technical Council: subject matter experts could assist in making public calls, developing specific support criteria and indicators, as well as being an advisory forum for the Fund / BNDES. This is a common practice in mutual funds that support technical projects beyond the expertise of the fund manager.

In addition to those specifically cited in this study, the recommendations listed by GIZ in the gender study carried out with three Amazon Fund supported projects should be considered[42]:

42 PONS, Ester Gomila; MELLO, Denyse; BUDI, Janina. *Igualdade entre Homens e Mulheres em Projetos de Atividades Produtivas Sustentáveis Apoiadas pelo Fundo Amazônia/BNDES.* Rio de Janeiro: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH; Banco Nacional de Desenvolvimento Econômico e Social (BNDES). 2019. 30 p.

- Develop an action plan for gender mainstreaming that will ensure the theme's institutionalization in the Amazon Fund / BNDES and give it greater credibility to current and eventually new donors;
- Designate a focal point for the theme, which will oversee the implementation of the action plan and train staff in making gender issues mainstream to projects;
- Give visibility to the gender issue, disseminating good practices and results on the website, at events or through awards etc.;
- Request the inclusion of a gender equality analysis in project proposals;
- Identify attractive opportunities that enhance women's role, especially in non-timber value chains.
- Introduce a checklist at the technical review phase of project proposals to help ensure that the theme is observed at a later planning stage (logical matrix / indicators, work plan, budget for specific resources or activities)
- Finally, based on this set of recommendations, Amazon Fund can make its commitment to reducing inequalities more explicit so as to emphasize the need to address gender as a cross-cutting criterion and, above all, the need to account for the effective contribution to society to project proponents.

4.6.2. RECOMMENDATIONS

- Supporting civil society institutions with few resources in preparing and participating in the project design process, especially those involving many indigenous communities from various TI sites. Mobilization can be costly and time-consuming. The Amazon Fund could open a preparatory financing line for projects such as the Global Environment Facility (GEF).
- Support project preparation and presentation by indigenous associations directly to the Fund, providing grants and training through workshops and support materials.
- Create more opportunities for sharing experiences and learning between projects to improve implementation and results.

5. LESSONS LEARNED, CHALLENGES AND RECOMMENDATIONS

5. LESSONS LEARNED, CHALLENGES AND RECOMMENDATIONS

There is a large literature of scientific research and evidence showing that the Legal Amazon and its biomes are of great importance to ecosystem services on a local, national, regional and global scale. One of the important and often unrecognized contributions of the Amazon biome is the rainfall cycle in Brazil and South America. This cycle ensures the provision of water to the Brazilian cities and towns from north to south of Brazil, to the large basins for dams and to Brazilian agriculture. That is, rain is of great importance for the electricity production and water for the country's large urban centers, and for agriculture competitiveness in the Midwest, Southeast and South in the global market.

Illegal and predatory deforestation of the Amazon rainforest is a clear threat to the region's development and its ability to maintain the ecosystem services and climate conditions that Brazil and other regions of the South American continent need, with implications for other parts of the world, as several studies have shown. Therefore, it is necessary to create an alternative economic model that reconciles Amazonian socioeconomic development with conservation and sustainable use of the standing forest.

The Amazon Fund has supported projects by creating viable alternatives in this regard, including by generating knowledge about the Amazon biome, the management and diffusion of both modern new technologies and recognized traditional techniques, and the creation of businesses compatible with the sustainability of the forest and its inhabitants. It should seek to include the private sector in building productive chains of socio-biodiversity products with support and regulation from the public sector and the many Third Sector initiatives that work together with local communities. These supply chains add value to the region's natural capital wealth, including species, inputs and products native to the Amazon, using bioeconomics, biotechnology, innovative information and the innovative communication technology tools, as well as agriculture digitization and socio-biodiversity, manufacturing and transport logistics chains.

Many Amazon Fund activities point to this model but do not yet have the scale required. In the future, the Amazon Fund could be an active agent in the face of these opportunities, supporting actions that contribute to building a more sustainable development style in the economic, social and environmental spheres in the region. The Fund, through its project portfolio, has helped to create multiple examples of how this is possible.

Amazonian development should result in the creation of new employment and income opportunities and an improved quality of life for all its residents. In particular, the demands and rights of the various local, indigenous and traditional populations of the region regarding their culture, their modes of production and their sustainable livelihood SDG must be respected and considered.

Looking back, Brazilian history has gone through several cycles of use and destruction of its natural resources. The deforestation process begun in the mid-1950s, with the displacement of the capital to the center of the country and the opening of the Amazon with various road construction and land occupation projects. At the same time, efforts

were made to learn about and protect the region and its inhabitants, first with the contributions of Marshal Rondon, the creation of the National Indian Foundation (FUNAI), and later with federal environmental institutions. Then there was a period of planned and unplanned overexploitation of Amazonian resources due to the high economic, social and environmental costs. However, in the last ten to fifteen years, both in the region and in Brazil as a whole, the decrease in deforestation shows that there is a growing awareness of the need to develop the Amazon in a sustainable way, which has contributed to the Amazon Fund.

In 2004, Brazil implemented the Legal Amazon Deforestation Prevention and Control Plan (PPCDAm), and by 2010 this policy resulted in a 75% decrease in the annual deforestation rate in the region compared to 2004 (INPE / PRODES, 2019). It is also possible to note that in this period, contrary to the arguments often used, agro-industry grew, proving that economic growth in the sector without deforestation is possible. The PPCDAm favorable outcomes came using an accountable and integrated development vision. The use of improved remote sensor satellite technologies, which today allow the detection of deforested areas in real time for analysis by environmental authorities; prioritizing government action to support the demarcation and legal registration of land in the Amazon, whether in private, public, indigenous or traditional community areas, or areas under some type of conservation protection established by the National System of Conservation Units (SNUC[43]); and, mainly, the use of policies and instruments to promote sustainable territorial development in the Amazon region were the pillars of PPCDAM activities.

In 2008, the Amazon Fund made use of PPCDAm's experience and Brazil's political commitment to legal and international standards to ensure proper use of the forest in its constitution, enabling it to contribute to the reduction of gas emissions in international negotiations on climate change under the United Nations Framework Convention on Climate Change (UNFCCC). Countries with similar concerns to Brazil, such as Norway and Germany, joined in to provide resources in order to promote sustainable development in the region and reduce the damage caused by illegal and unplanned activities, such as predatory deforestation. This increased transparency in the Fund's information and management, with positive repercussions for the National Bank for Economic and Social Development (BNDES) as a whole.

The Amazon Fund's implementation across ten years was, therefore, a learning experience, building trust among different actors and adapting and continually improving strategies. The solid management built enabled operating practices so that investments were sent to activities that directly or indirectly contributed to the Fund's main objective: reducing deforestation with sustainable development. At the same time, the Amazon Fund has also served as an example of a mechanism for reducing greenhouse gas emissions from deforestation and forest degradation, conserving forest carbon stocks, sustainable forest management and increased forest carbon stocks (REDD+), and other countries might follow its lead.

43 Law No. 9,985 of 2000.

5.1. LESSONS LEARNED

The Amazon Fund has demonstrated the ability to bring different actors to the common goal of promoting sustainable development and reducing deforestation in the Amazon region. To this end, it was important to build a broad and democratic governance with all stakeholders participating, and with compliance to operational and transparency requirements which inform and analyze the use of resources.

Governance of the Amazon Fund is one of the most notable points, particularly through the Amazon Fund Steering Committee (COFA), which brings together actors from federal and state governments, the business sector, the Third Sector and academia. The COFA enabled broad participation in discussions about the Fund's strategies and built relationships of trust between the many actors, who were previously distant. Under COFA's governance, the Fund has been refining strategies, criteria, guidelines, resource mobilization, project appraisal systems, and investment focus.

Having a development finance institution such as BNDES doing the management is one of the key lessons learned in setting up and implementing the Amazon Fund. Despite BNDES initially limited experience in managing a fund such as the Amazon Fund, there was a strong professional capacity to meet such challenges. The Bank's high qualifications, solid operating practices and transparency in the use of resources have consolidated, over the last ten years, a management model that can be replicated in other countries and has positively influenced BNDES transparency in other areas.

Likewise, the Amazon Fund has enabled BNDES to better understand and expand its operations in sustainable business by addressing the Amazonian investment complexity, leading its operations being decentralized through the region, as to effectively identify opportunities for sustainable development. Another point identified was that the Amazon Fund brought BNDES closer to the reality of the region and, consequently, to the challenges of building working relationships with the various actors in the Amazon, including civil society organizations, which until then were not their natural partners.

At the same time, with the creation of a new relationship between BNDES and the supported institutions, BNDES was recognized for its administrative / financial and management capacity. Although the resources invested by the Fund are still very small compared to other BNDES investments in the Amazon - or the region's total GDP -the communities that receive support through the institutions are proud to be part of the Amazon Fund, as seen by the frequency its logo appears on signs across the region. Further synergies with other investments are recommended, boosting sustainable development of the region, which would be viable through new types of blended finance, including other national and international public and private financiers.

The implementation of the Amazon Fund is based on a meticulously developed Logical Framework, based on four components with indirect and direct effects. Monitoring and evaluation systems help BNDES technicians track project implementation. It was noted that to strengthen monitoring, a percentage of the Fund's or each project's budget could be used to increase the frequency of on-site monitoring, especially for collecting data related to effectiveness indicators. This could be done by BNDES employees or in partnership with other specialized institutions.

The good transparency practices implemented by the Amazon Fund, notably the disclosure of annual activity reports, and a website with detailed information on the Fund's activities became a milestone for other BNDES operations. The Lessons Learned could be strengthened alongside with the previously mentioned monitoring strengthening, by creating a knowledge management function within the Amazon Fund or in partnership with other institutions

The Amazon Fund Monitoring and Control Component played a decisive role in the implementation of the Rural Environmental Registry (CAR), as predicted in the new Forest Code, as well as in the training of environmental institutions from states and some towns on how to register property on CAR. Without support from the Amazon Fund, CAR would not have had such a great adhesion momentum throughout the country. In implementing CAR, along with other training activities, the Fund supported the decentralization of environmental management and strengthened states and municipalities monitoring and enforcement capacities. The Fund has helped to combat deforestation by preventing and combating fires, and in its support for the enforcement capacity of the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), including joint operations with other federal entities such as the Chico Mendes Conservation Institute of Biodiversity (ICMBio), FUNAI and state entities.

In their implementation, the Amazon Fund's merged projects were a major step forward in providing investment overall dispersion, allowing for faster payments and generating greater recognition of the Fund as a relevant player in the Amazon's various areas and sectors. At the same time, it has benefited many communities and local organizations, fostering new relationships between Third Sector organizations and state government institutions, in partnerships and collaborations. This also happened even in the private sector, for the commercialization of sustainable production.

Working with Third Sector organizations has increased the state's presence in remote areas. In general terms, in those areas where Amazon Fund projects are present, along with the involvement of populations and local governments, there is a decrease in deforestation, which underlines the effectiveness of the Fund. Information on the economic impacts on these populations is lacking, but the evidence provided does show improved quality of life, increased income (albeit sometimes of low magnitude), and a stronger social perspective in issues such as gender.

BOX 8: AMAZON FUND CONTRIBUTIONS TO DEFORESTATION PREVENTION

Although there is clear evidence that the Amazon Fund contributes to reducing deforestation in the Amazon, estimating this contribution quantitatively is a major challenge. Deforestation is the result of many interacting factors and the Amazon Fund is just one of them, and its resources are very limited, so variations in Amazon deforestation rates can be hard to be attributed to its performance. The Amazon Fund has not changed deforestation trends in recent years, but without its implementation deforestation could have been higher. The graphic explanation of this idea can be seen in Graph B8.1.

Graph B8.1 – Graphic explanation of the Amazon Fund's contribution to deforestation reduction

Source: Made by the authors. Note: Verified data source at INPE/PRODES (2019).

On the Amazon Fund's contribution to the prevention of deforestation, it can be highlighted:

- Most of the projects evaluated in the sustainable production axis, including the recovery of degraded areas, show deforestation reductions in the implementation areas.
- The Amazon Fund has made major investments to support policies aimed at environmental regularization, especially the Rural Environmental Registry (CAR). The complementary study of Amazon Fund support for CAR (GIZ, 2019b) shows that while deforestation continues to increase in absolute terms, it is lower in CAR areas than in non-registered areas. Supporting CAR seems to have helped to prevent deforestation in the Amazon and Cerrado biomes, where deforestation within CAR is lower than on unregistered properties.
- Other notable actions of the Amazon Fund were project support in 65% of the Indigenous Lands (TI) and in 190 Conservation Units (UCs) in the Amazon, strengthening those territorial categories that constitute the main barrier against deforestation. It is reasonable to think that these projects have contributed to the reduction of deforestation in the Amazon.
- Finally, projects aimed at strengthening the fire brigades of various states and the direct financing of monitoring and control actions by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) also point to have contributed to deforestation reduction.

5.2. CHALLENGES

To meet its aims, the Amazon Fund faces several challenges. Although it is one of the most important funds for sustainable development in the world, due to the volume of non-repayable resources involved, the proportion of its resources in the BNDES Legal

Amazon contract portfolio, including those related to energy and infrastructure projects, only amounted to 4.7% in 2018. This percentage was even lower when considering the total economic / productive investments in the Amazon or the region's total economy.

The multiplicity of investments in the region creates coordination challenges that may limit the scope of the intended impacts. The Amazon Fund, as a PPCDAm implementation mechanism, can only be effective if PPCDAm's deforestation and sustainable development policies are effectively implemented at both the federal and state levels, strengthening synergies between PPCDAm and the Fund.

The Amazon Fund was created with the feature of additionality to Brazilian public resources, which should not be used to replace institutional budgets, and its results depend to a large extent on the effectiveness of the federal government's environmental and economic policies and programs and actions, as well as those of the Amazon states and municipalities. This applies specifically to the prevention and control of deforestation, as well as other exogenous factors, such as commodities prices.

In this sense, since 2014, the Brazilian economic crisis has led to budgetary constraints on the resources of programs of federal and state institutions, affecting the ability to combat deforestation, synergistic to the Amazon Fund. This crisis situation in Brazilian public finances required flexibility on the distribution of resources among the Fund's different components and actors. Government financial difficulties impacted the evolution of projects, especially the structuring ones, and lead to breaching the additionality rule in the project with IBAMA.

The logic of these structuring projects is linked to the implementation of public policies of scale in the territory. These types of projects, such as CAR support, can have a significant impact on reducing deforestation and their results depend on the whole and the implementation of public policies external to the Amazon Fund. Without resources and with planning difficulties, as well as other issues related on how to coordinate, implement, monitor and even punish, the public sector contribution becomes limited. Stricter public sector operating rules have also added a bottleneck in project execution, spawned by the public finance crisis.

Under these conditions, Third Sector organizations have had greater capacity and flexibility in project execution. In order to meet the demand of these organizations, the Amazon Fund, through the BNDES, had to make additional efforts to promote, analyze and monitor joint projects. The first was to match the operational capacities of Third Sector organizations to the requirements in terms of project design, implementation and, especially, in the assembly, monitoring and reporting of project implementation and impact indicators. Both BNDES and Third Sector organizations have learned with the analysis and management of Amazon Fund projects. BNDES faced the need to analyze projects of lower value and with a larger number of borrowers and had to structure its ability to monitor project execution. Third Sector organizations were required to comply with the Fund's requirements, to build management capacity and, above all, to set up a monitoring, transparency and accountability framework.

Governmental and non-governmental implementing entities, including BNDES, underlined the importance of GIZ in training and in supporting institutions to expedite project implementation, specifically through Collaborative Actions. Based on many years of work experience with training in Brazil, specifically in the environmental area, GIZ's support has been very effective. For the next steps of the Amazon Fund, a transition process could be

considered to include investment in training as a permanent activity, which would mean increasing operational costs with specific resources. This could be achieved through the creation of a training unit within BNDES or through contracts with Brazilian institutions that can implement it.

The Amazon Fund has accumulated successful experiences with technological innovations and strengthened technical capacity in forest management and other productive areas, with greater knowledge of the markets and with greater technical and managerial capacity. The big challenge is the scalability of these actions for sustainable and long-term effects in the region.

A second effort, which has been continuously and not yet fully satisfactory, to promote, analyze and monitor projects with Third Sector organizations, is data generation and the construction of impact indicators on projects supported by the Amazon Fund. It would be up to the Fund to support organizations by providing experts and researchers to review methodologies, routines and performance reports that may provide an indication of the results achieved, particularly socio-economic impacts and direct and indirect impacts on final beneficiaries.

5.3. RECOMMENDATIONS AND CONCLUSIONS

Throughout the report, the bottlenecks and problems that the Amazon Fund faced in its ten years of existence are presented. Some have been overcome, but others still exist and must be reviewed to support changes that will allow the Fund to perform better in the future and meet its aims to reduce and control deforestation in the Amazon with sustainable development. Most of the proposals correspond to the management of the Amazon Fund, but others are the responsibility of other actors. The following is a set of general recommendations.

- The Amazon Fund's work team at BNDES should be expanded to respond more quickly to project proposals and to follow-up on approved projects. The time from approval to disbursement of resources can be shortened. To begin with, the pipeline of over $ 1 billion for projects under review and consultation could be approved quickly, thereby increasing the Fund's impact.
- About project management, consistency between project type and implementation time should be improved. Science, technology, and innovation component projects, for example, typically require more time, and the same can be true for projects with traditional and / or very remote populations.
- More emphasis is also needed on strategies to support projects from the perspective of post-project sustainability and project exit strategy. Efforts to improve reporting on the economic impact of projects on benefited populations should continue.
- We recommend an analysis of actual operating costs and readjustment of the percentage of resources from the 3% management fee, in collaboration between BNDES and donors, to the international fund implementation operating cost

standards of around 10%. This will allow BNDES to allocate more resources to the Amazon Fund team, so they can expedite work, approval time, focus on impact analysis and reporting results.

  - Current resources come only from three sources: Norway, Germany and Petrobras. The Amazon Fund should broaden efforts to mobilize resources and diversify the range of donors (not only resources from other countries, but also from foundations and other national and international organizations). A Brazilian performance of continued reduction in deforestation, as occurred in the period up to 2015, could attract new donors.

- COFA has played a crucial role in the governance of the Amazon Fund and should continue to be the main channel for consensus-building dialogue on resource allocation, the relationship between the Fund and public policies, and guidance and support for the development of the Amazon Fund itself. It is recommended that this body is strengthened by maintaining a balanced and enhanced representation of all stakeholders and the continuous improvement of its operation, especially regarding greater follow-up and interaction with the BNDES Fund Operations Department.

- The shift from the Amazonian productive model to a sustainable use and development model, in addition to active public policies, also requires the active participation of the private sector, such as sustainable production industries, legal logging, food production and agribusiness, in order to intensify in already deforested and / or mixed areas production systems based in conservation and extraction.

  - Although participation and partnerships with the private sector have increased in recent years, there is still significant scope for expansion, as approved by COFA. To this end, the possibility of the private sector receiving funds should be explored. Changing the production model demands infrastructure investments to address logistical bottlenecks - in storage and flow - of energy, transportation, etc. Extending internet access infrastructure is a priority, as it is a basic requirement for new business ventures and can facilitate the exchange of information on forest product markets and is a key factor in securing young people in rural areas. These investments are outside the scope of the Amazon Fund, although they would improve both the implementation of federal and state public policies and the Fund's investments.

  - Enhance the adoption of gender equality as a cross-cutting criterion for project support by encouraging actions that promote women's participation and support for equality. The Amazon Fund has advanced over the last few years by demanding specific indicators and criteria on the theme in public calls, but much can still be done. For example, when possible, highlighting in public calls projects that present initiatives to develop training, such as workshops specifically aimed at women, promote actions developed by women's groups or make explicit the contribution from women's participation to the project. Results related to women's participation in all projects, if any, need to be reported.

  - The Amazon Fund's knowledge management and communication strategy should be evaluated. Good results from projects and from the Fund itself are not widespread, which undermines their image and reduces the potential for resource mobilization (donor diversification). Project learning is not systematized enough to be shared,

reducing the potential for exchange of experiences and mutual learning between projects and missing opportunities for spillovers, scaling up and/or replicability of projects with good results and synergies. COFA could be used as a space for greater synergy and exchange of experiences between actors and projects.

- The governance of the Amazon Fund stands out for its breadth and transparency. Still, there is a way to improve procedures to make decisions faster and more effective.
- Although there is extensive communication from the Amazon Fund through the website, other media and events, it would be important to disseminate the objectives, results and the Amazon reality to Brazilian society. There are many ways to use new media and social media to reach a wider audience.

The Amazon Fund was conceived as a globally innovative pay for results instrument in the context of REDD + and UNFCCC and has shown significant results on how to implement a fund of this size and importance. It would be important to keep its characteristic innovation in promoting sustainable development and combating illegal deforestation. In this sense, the Amazon Fund can also be an instrument for exploring various types of innovation to achieve these goals.

- Financial Innovation - Expanding by bringing other actors to different types of blended finance, pooling non-repayable (donated) and repayable (financing) resources. It would also be recommended to increase fundraising to implement more robust monitoring and evaluation systems that ensure their sustainability. It would also be important to think about new co-financing arrangements involving public and private resource partnerships.
- Fundraising Innovation - the commitment to implementing PPCDAm and an ongoing effort to reduce deforestation could attract new donors, including within the global context of available REDD + resources and avoided emissions payments. In addition to contributions from other governments, BNDES can be used to create financial mechanisms which attract institutions and Brazilian and international private companies, or even a kind of solidarity bond that could be of interest for investors.
- Partnerships Innovation - In order to support states and municipalities with project implementation, especially due to its many issues - planning, lack of trained human resources, and instability in governance, among others - it would be interesting to explore arrangements such as joint ventures that allow states and municipalities to implement projects in fast and flexible manner. Another important point would be finding new partners at the local level, following the experiences of public procurement of sustainable production products.
- Technological Innovation - There are already several examples of technological innovations supported by the Amazon Fund, both in the area of science and technology and in the area of sustainable production. A specific funding line could be opened to foster innovation in the creation of new products, modes of production, processing, storage, logistics, marketing, etc. This could help develop value chains and add more value within the Amazon. One could work with entities recognized for innovation, not only universities, but also those from the private sector and the Third Sector. Amazon-specific innovation campaigns and contests can help by giving visibility to the Amazon Fund and attracting young innovators.

- Commercial Innovation - Create new producer networks to improve stability in production, processing, storage and marketing. Create partnerships with the private sector interested in sustainable products and sustainable tourism in national and international markets. Develop chain logistics and innovate with new products for organic and fair-trade markets, as well as low carbon trade and deforestation free markets. Tracking products such as *"Origens Brasil"*, a project supported by the Amazon Fund, which recently won an international award, linking producers in the Amazon with consumers around the world.
- Management Innovation - New project management and result and impact monitoring mechanisms, such as the newly introduced digital financial management system for projects.

It should be noted that the innovation process is not linear. Innovative organizations understand that to be successful, there must be opportunities to brainstorm, develop and implement ideas, take risks and recognize the possibility of failure. With so many successful projects in the Amazon, there is already a range of experiences behind these innovations that can help the Amazon Fund make the most impact. Some failures within the innovation process should be accepted in the Fund management. One could think of creating a specific innovation project or funding line that operates under specific rules and is managed by an entity with recognized knowledge and experience in the innovation area

In conclusion, it is necessary to create favorable conditions for private investments and community initiatives to have an alternative model of sustainable development for the Amazon. This will help face the logistical bottlenecks that come from working in the Amazon, as well as regulatory problems and bureaucratic obstacles. This requires collaboration and synergistic work between the private sector, the public sector and the Third Sector, working with local communities, and academia's participation in generating knowledge and applying research. To strengthen this process of shifting the Amazonian production model to sustainable use and development, the Amazon Fund should try to support public policies while integrating the private sector's active participation with producers and traditional partners.

5.4. RECOMMENDATIONS BY CHAPTER

5.4.1. RECOMMENDATIONS: BNDES

- Negotiate with donors to increase the Amazon Fund operating cost rate to 10%.
- Reduce the physical distance between Amazonian organizations and the BNDES team in Rio de Janeiro with the presence of Amazon Fund representation through an office in the region.
- Improve interaction with federal entities with the Amazon Fund presence in Brasilia.

- Seek out new opportunities for synergy, collaboration and co-investment between the Amazon Fund projects and other types of BNDES financing, or with other NGO funds or blended finance.
- Improve communication and visibility of the Amazon Fund in general within Brazil, communicating results, success, innovations and economic viability of sustainable development in the Amazon. To reach new audiences, use current communication methods such as social media.
- Improve communication and visibility of the Amazon Fund internationally to attract new donors and partnerships from the private sector.
- Communicate and transfer knowledge about new "green businesses" and sustainable production to the commercial finance sector in the Amazon and Brazil.

5.4.2. RECOMMENDATIONS: COFA

- Strengthen COFA's crucial role in the Amazon Fund's governance, while maintaining a balanced representation of all stakeholders. COFA should be a space for dialogue and consensus building, as well as for ever-improving guidance and support of the Amazon Fund.
- Evaluate the inclusion of a private sector representative from the Amazon Region in the COFA. There is an agribusiness sector that has supported initiatives to reduce deforestation (eg. the soy moratorium) and plays an important role in the regional economy.
- Evaluate the inclusion of an institution representative of other segments[44] of traditional populations, other than the indigenous already represented, such as rubber tappers, extractivists and riverside communities.
- Create mechanisms that contribute to making COFA members' participation in the discussions and decision-making increasingly better (preparatory subsidies for meetings, prior agenda sharing, among others) enhancing their contributions to the Amazon Fund
- Increase the frequency of COFA meetings. Meetings held quarterly are suggested.
- Create specific working committees within the COFA to monitor and collaborate more closely with the BNDES, considering the Fund's demands for quality increases, such as stronger articulation and synergy between partners; knowledge management from lessons learned from project experiences, among others.
- Involve COFA in the project selection process, along with BNDES, appointing members to the Selection and Classification Committees, in the case of public calls, or, in the process for project selection "over the counter" (Section 3.1).

44 According to Decree No. 6.040 of 2007, Traditional Peoples and Communities (PCTs) are: "culturally differentiated groups that recognize themselves as such, that have their own forms of social organization, that occupy and use territories and natural resources as a condition for their cultural reproduction. , social, religious, ancestral and economic, using knowledge, innovations and practices generated and transmitted by tradition ". According to the MMA, there is a great socio-diversity among the PCTs in Brazil, among them are Indigenous Peoples, Quilombolas, Rubber Tappers, Chestnut trees, the most present in the Legal Amazon.

- Establish new rules to avoid high turnover in the COFA's governmental members, which may hinder discussion dynamics and lead to discontinuity and unevenness of information among committee members. One possibility to improve these continuity issues is to provide permanent monitoring of the government's political representatives at COFA by technical representatives.
- Harnessing the COFA's potential as a space for exchanging experiences, debating and collaborating to identify new action strategies, best practices and how to overcome hurdles (often common between different projects). Explore possibilities for upscaling and increasing synergy between Fund project implementers, public policy implementers and other relevant actors.
- Create web platforms specifically for COFA members and project executors to exchange information and experience by BNDES.
- Organize rotative COFA meetings in the various states of the Amazon for greater rapprochement with partners, dissemination and recognition of the work of the Amazon Fund.
- Explore the possibility of creating state or regional committees to foster greater interaction between social organizations, the business sector and government managers, as well as greater integration throughout the Fund's lines of action.

5.4.3. RECOMMENDATIONS: CTFA

- Strengthen the CTFA as a means of verifying the calculations of results in reducing emissions associated with deforestation not only in the Amazon biome.
- Generate the required conditions so new studies and researches seeking to improve the methodology of the calculation of emissions reduction can be done by the CTFA
- Create the necessary conditions for other relevant technical and scientific analysis can be done by the CTFA, including interaction with other funding agencies, such as the Financier of Studies and Projects (FINEP), CNPq (National Council for Scientific and Technological Development), Research Support Foundations (FAPs), and CONFAP (National Council of State Supported Research Foundation).
- Develop strategies to take advantage of potential scientific contributions and innovations from CTFA members, which will not put their authority nor credibility at risk as they validate reductions in the rate of emissions.

5.4.4. RECOMMENDATIONS: AMAZON FUND FINANCING

- Operating costs must be fully estimated and analyzed so that BNDES and donors can secure enough funding to provide a technical team of adequate size to manage the Amazon Fund.
- The long-term sustainability of the Fund requires donor diversification – in addition to other countries, nonprofit organizations or foundations – as well as exploring arrangements with the private sector (Brazilian or international) and mixed funding possibilities.

- In order to increase the technical capacity of Amazon Fund projects implementation, in addition to analyzing the operational costs, it is essential to have a diversification strategy for technical support beyond GIZ, which may include BNDES internalization and /or partnerships with an institution network of Brazilian technical support. GIZ could work with BNDES on a strategy to transfer technical support to the BNDES and other national actors in the mid / long-term.
- Donors can play an important role in communicating project results and in the Amazon Fund's governance model so that it can serve as a replicable model in other countries. Better results reporting could also leverage resources from other bilateral and private donors (foundations and corporations).

5.4.5. RECOMMENDATIONS: SUSTAINABLE PRODUCTION COMPONENT

Recently, there have been some changes in the Fund's approach to sustainable supply chains of socio-biodiversity and forest products. Project proposals should all be considerate of the production chains' links, including private sector involvement in the relevant links, particularly as trading partners generating demand for Sustainable Productive Activities (APS) products. The technical aspects of sustainable production have been strengthened in this axis (more efficient forest management, more family agriculture, storage and processing and recovery of degraded areas), and so were the communities' management, production, marketing, administrative and financial capacities. This learning and capacity building is fundamental to these new chains' long term development.

One of these lessons refers to a better understanding of the importance of commercialization and the need for a private sector partnership. Structuring sustainable supply chains without involving the private sector is seen as impossible, though the safeguards of the Amazon Fund and the roles of different actors must be respected. The efforts to give chains a deeper look, from the first link of supply chains to the last link of the final demand, should continue, as it contributes to their long-term sustainability.The following are recommendations to overcome the identified bottlenecks, but some are outside the scope of the Amazon Fund, either because it depends on other actors (federal government and states) or because they demand much bigger investments. In this sense, interaction between the Amazon Fund and other existing BNDES financing lines could increase sustainable production and connect the Fund with private sector actors. One example would be through an integrated sustainable territorial action strategy by the Bank.

- Other aspects that limit the development of APS are related to bureaucracy and state capacities in aspects such as environmental licensing, approval of Forest Management Plans and health standards applications.
- Collaboration between producer entities and states, or state agencies, is needed in public procurement and other state policies, which can streamline markets by promoting local legal productions.
- It is essential for the Amazon Fund to advance its engagement with the private sector in order to structure a sustainable forest-based economy (timber and non-timber) and to define the sector's participation strategy in furthering the Fund's aims. The number of private sector companies (Brazilian and otherwise) concerned with sustainability and interested in "green business" that could partner with Amazon Fund projects is increasing, contributing to additional resources.

- Monitoring of the Fund's projects economic impacts should be improved, especially those linked to APS. The Amazon Fund can play the important role of generating, recording, and disseminating knowledge of the lessons learned to overcome regulatory and economic bottlenecks for APS development, and show examples of more promising activities for each local circumstance, and more effective ways and mechanisms for structuring APS chains. It can also, in general, lead the way for the effective construction of a sustainable model of socioeconomic development in the Legal Amazon.
- Consideration should be given to possible Fund support for forest concessions. These are strategic investments that, with the support of the Fund at the beginning of operations, could attract more private investments, cover more land and occupy concession land where the deforestation rate is higher.
- There are important results in the Science, Innovation and Economic Instruments Component that can support the Sustainable Production Component to generate value and greater economic returns for innovation in the Amazon. There is an interesting space for interaction between these two components.
- Finally, the Amazon Fund has accumulated successful experiences, such as technological innovations in forest management and other productive areas, as well as greater technical and managerial capacities. The biggest challenge is scaling these actions up to size for a long-term sustainable effect in the region.

5.4.6. RECOMMENDATIONS: MONITORING AND CONTROL COMPONENT

In summary, the Monitoring and Control Component played a decisive role in CAR's implementation in the Legal Amazon, as well as contributing to the Forest Code. It also aided state and occasional municipal organizations with training in how to properly register properties on CAR. The Amazon Fund supported the decentralization of environmental management and strengthened monitoring and enforcement of illegal deforestation on a state and municipal level. It also helped combat deforestation, and the prevention and combat of forest fires. It also supported IBAMA's enforcement capacities, including operations along with other federal entities such as ICMBio, FUNAI and state entities. The following are a few recommendations:

- In view of the National Policy on Climate Change (PNMC) commitment to achieve an 80% reduction in the deforestation rate in the Legal Amazon by 2020, compared to a historical average (meaning, in practice, to reach a maximum of 3,925 km^2 of deforestation), monitoring and control efforts should be increased, with IBAMA strengthened and collaboration with state and municipal entities improved.
- Reaffirming recommendations from OECD and ECLAC (2016), CAR implementation should be strengthened through economic incentives to stimulate registration, promote compliance and support sustainable management and restoration of Legal Reserves (RL); expand CAR's information system to improve compliance monitoring, land use planning and policy setting; and support state environmental regularization programs, expanding their implementation by states and municipalities.

- Although the breach of additionality was fundamental to IBAMA's inspection and control operations, in principle these costs should be part of the Union Budget. Increasing IBAMA resources in the Union Budget, so that Amazon Fund resources are indeed additional, is recommended.

5.4.7. RECOMMENDATIONS: LAND-USE PLANNING COMPONENT (SNUC, PNGATI, ZEE)

- Expand support to environmental and territorial management of UCs to implement their already prepared management plans.
- Invest in supporting state-level UCs, as they are responsible for the growth of deforested land in protected areas. To meet this challenge, one of the paths should be supporting
- state public agencies, as they care and monitor these protected areas.
- Expand support for the environmental and territorial management of a larger number of Legal Amazon TIs through new public calls.
- Promote increased participation of indigenous peoples and traditional communities in PAs as direct proponents of Amazon Fund projects, with wide-reaching public calls and workshops and support materials to subsidize project creation.
- Start presenting projects to produce subsidies and instruments that contribute to a faster land regularization process in the states.
- Detail more comprehensive guideline criteria, focusing on land regularization to stimulate project presentation.

5.4.8. RECOMMENDATIONS: SCIENCE, INNOVATION AND ECONOMIC INSTRUMENTS

Successful actions at projects have revealed the strategic importance of the Amazon Fund's Science, Innovation and Economic Instruments Component, especially in a biome where research still faces enormous difficulties in terms of infrastructure, equipment and qualified human resources.

Some of the recommendations have already been implemented by the Amazon Fund through the identification of support focus. The main guideline is to focus on applied research rather than basic research. Although this falls outside the scope of the Amazon Fund, it is necessary to revise the legislation on biodiversity and bioprospecting. This would have a major impact on this Component, given bureaucracy when dealing with biodiversity research in the region, possibly inhibiting initiatives from both academia and the private sector.

- Encourage research that responds to the demands of communities and the private sector. This can be done through specific public calls for representatives in project design and defining strategies.
- Expand and strengthen University / business partnerships (for example, by developing model partnership protocols) to build cooperation between academia and business and facilitate private fundraising.

- Developing a strategy for exhibiting results that reaches different new potential audiences and stimulates the production of new knowledge.
- Demand that evidence of integration between scientists, government, the private sector, traditional communities and local residents must be presented when submitting proposals.
- Improve integration with other components. Encourage partnership models in which non-research projects can aggregate relevant applied research components, aligned with project objectives, producing evidence that can underpin decisions and elevate project and policy outcomes.
- Adequate this component's project execution time, especially if there are investments in infrastructure and equipment involved.
- Given the cross-cutting character of this Component, Logical Framework indicators should show, in a clear manner, that publications, patents, and other findings from the Science, Innovation, and Economic Instruments Component support other specific projects or work areas prioritized by the Amazon Fund.

5.4.9. RECOMMENDATIONS: ENVIRONMENTAL INSTITUTIONS CAPACITY (FEDERAL/STATE/MUNICIPAL)

- New work modalities (e.g. joint ventures, foundations, social organizations) need to be explored to enable public agencies to put projects in practice directly, with greater agility and flexibility, without losing transparency and good compliance practices.
- Considering the positive experiences in project implementation, continue to strengthen the working relationships between government agencies with the Third Sector.
- The breach of additionality to finance IBAMA activities in the region should be reviewed and eliminated as soon as possible. Although caused by a circumstantial situation, extending the exception over time reduces the urgency to return to normalcy, and sets a precedent for financing other areas of government.

5.4.10. RECOMMENDATIONS: THIRD SECTOR INSTITUTIONS CAPACITY

- Supporting civil society entities with few resources to participate in preparing and designing projects, especially those involving many different indigenous communities. Mobilizing can be costly and time consuming. The Amazon Fund could open a preparatory financing line like the ones in at Global Environment Facility (GEF).
- Supporting indigenous associations in creating and developing projects directly with the Fund, providing grants and training through workshops and support materials.
- Creating more opportunities for experience sharing and learning between projects, improving implementation and results.

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APPENDIX A — LIST OF INTERVIEWED

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In the period between January to August 2019, a total of 96 people were interviewed, representing: 16 people from BNDES, 13 Ministries and Federal government agencies, 14 representatives of environmental agencies (and others), 34 NGO working with the Amazon Fund, 11 representatives of donors' institutions, 3 academics, and 5 others. There were also 27 people as participants of two FOFA workshops (strengths, opportunities, weaknesses and threats) in Belem and Manaus, with some of the participants also having been interviewed separately and therefore showing up in both lists. The evaluators and GI representatives were also participants, beyond facilitators. A consultation in Brasilia for discussion and comments about the preliminary version of this report was organized in August 7, 2019, with 61 participants.

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APPENDIX B – GENDER EQUALITY: BENEFIT DISTRIBUTION STUDY

APPENDIX B – GENDER EQUALITY: BENEFIT DISTRIBUTION STUDY

Promoting equality between men and women is fundamental for the protection of human rights and is an essential condition for sustainable and inclusive development. Building a sustainable and fair society goes through the governance relations between the various social actors in public, private and third sector segments. However, overcoming gender inequality has been a challenge at all levels of action, whether urban or rural.

The need to support actions related to women's economic and social empowerment emerges from the historical recognition that women have always been and still are disadvantaged compared to men. Men and women are assigned different roles, responsibilities, and activities according to what society deems appropriate. According to IBGE (2012)[45], women work harder, study more and earn 20% less than men.

The Amazon Fund listed reducing poverty and gender inequality as crosscutting criteria for support, in addition to its main aim of reducing deforestation and fostering sustainable development. This means that the Fund must consider these two criteria throughout its portfolio and that it has mainstreamed these policies, committing to incorporating gender and social perspectives into all its actions and funding components.

Given this approach, this study consists of a quantitative and qualitative analysis of all its funded projects, to evaluate how gender is treated in these projects, considering the data available on the official website of the Amazon Fund. We will also seek to supplement this data through project reports and interviews (Appendix A - List of Respondents in this report).

Although the Fund adopts a gender mainstreaming strategy and encourages women's inclusion and empowerment, the strategy's implementation is still incipient. Furthermore, analysis of the Amazon Fund's actual contribution to gender equality is compromised by a lack of information available on the Fund's website, specifically regarding gender focused objectives and outcomes.

On the other hand, we verified, through interviews, that results impacting women can be verified in most of the initiatives supported, even if the project did not explicitly focus on them during planning. Thus, the adoption of gender indicators should be prioritized in the project early phase, as well as the monitoring of these indicators throughout the project execution.

The systematization of sex-disaggregated data, as well as their public availability, are also important measures to ensure a fair assessment of the Amazon Fund's role in reducing inequality. The processing and disclosure of such data should be prominent on the Fund's website, as this is the official source of information for these results. This is even more important when it comes to reducing gender inequality as a privileged aim, as it has been chosen as a cross-cutting support criteria.

45 PERET, Eduardo. Mulher estuda mais, trabalha mais e ganha menos do que o homem. *Agência IBGE Notícias.* 07 mar. 2018 (Atualizado em 28 mar. 2019). Disponível em: https://agenciadenoticias.Ibge.gov.br/agencia-noticias/2012-agencia-de-noticias/noticias/20234-mulher-estuda-mais-trabalha-mais-e-ganha-menos-do-que-o-homem.

Despite these limitations, we acknowledge that relevant data on women's empowerment can be found in the 2018 Amazon Fund Annual Report (RAFA). However, we recommend as a measure making this data available on the site, ensuring that the real impact on gender equality is captured and widely known to society.

ANALYSIS

Benefit distribution analysis with relation to the gender crosscutting criteria has as a goal to evaluate to which degree women have been directly or indirectly benefited by the Amazon Fund and if the benefits had an impact on gender equality. Gender equality as a crosscutting criterion contemplates to which measure the project considered the different interests from men and women and integrated aspects of the search for gender equality in its interventions. According with the methodology presented as follows and the approach established by the Conceptual Framework for Evaluating the Effectiveness of Projects Supported by the Amazon Fund, three guiding questions are applied:

1) Has the project managed to integrate gender issues in its strategies and interventions, or did it treat in subject in isolation? How so?

2) Was there a gender segregation in data collection for project planning and monitoring?

3) How did the project contribute to gender equality?

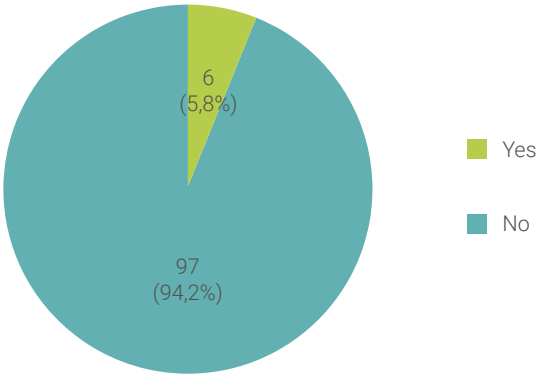
The step by step process to answer the first guiding question consisted of three steps. Firstly, we respond "yes" or "no" as to the integration of gender issues in these projects, considering the possibility of a project not having fulfilled this requirement. Next, we qualify the information, mentioning if the approach was done in an integrated basis or if the gender component was treated in the project in an isolated manner. Finally, in the case of projects that gender in its scope, we analyze how this introduction was done.

We have made a present content evaluation in the website, which means that the financed 103 projects were divided and classed in four categories, according to the verified gender approach: a) Intended focus includes gender; b) Intended focus did not include gender but impact is observed in women; c) Intended focus did not include gender but impact in women was observed; and d) Without intended focus and project nature is irrelevant. Up next, we will describe every one of these categories. Next, every one of these focuses will be detailed.

a) Intended focus includes gender

The first category refers to direct mentions, either in the presentation or description, that the project aim (or one of its aims) is to encourage female participation in at least one of the project's activities. In this way, it was expected that the projects have shown gender strategies in an integrated manner with general strategies about the acting components in the Amazon Fund.

Graph I - Projects presenting intended focus on gender



Source: Amazon Fund/BNDES

We can see that only 5,8% (6) of the projects clearly mention women support as one of its intended goals. One of these projects is the Non-Timber Forest Products Value Chains, of the Associação SOS Amazônia which describes their beneficiaries as "family agriculture populations and traditional communities, such as extractivists, riverside communities and indigenous, from nine merged smaller institutions, among them, an indigenous cooperative and **a women's association**". Beyond that, the project reports the value paid to encourage the functioning of each of the associations.

b) Intended focus does not include gender, but there is an observed impact on women.

This category refers to the projects which, even without presenting an intended focus on women's empowerment, report the impact on women in the activities done or results. In this case, we find projects which show activities and results affecting women, even if this was not the primary motivation.

We can observe that 22,3% (23) of the projects affect women even if this was not their guiding principle. The project Experiências Indígenas de Gestão Territorial e Ambiental in the state Acre, of the Comissão Pró-Índio do Acre (CPI-Acre),fits into this example of the category, because, although it did not clearly present the objective to impact women, the activities done presents a workshop of Territorial and Environmental in Indigenous Lands (TI) (TI) Kaxinawá/Ashaninka of Rio Breu, in the indigenous land of Vida Nova, with the presence of 63 participants of many local organizations, with 18 being women and 15 being people who live around the TI.

c) Intended focus does not include gender but has impact potential.

The third category presents projects that do not have an intended focus in gender and does not show results in women's lives. However, it would be viable to expect some connection to the foreseen activities with a gender component. We analyze that 37,8% of the projects do not affect women, but present potential for such. These projects are usually those which promote training, classes, workshops or activities which will improve skills in the targeted audience, but there was no reported number of benefited women. he Ppp-Ecos project in Amazônia Fase 2, from Instituto Sociedade, População e Natureza is a

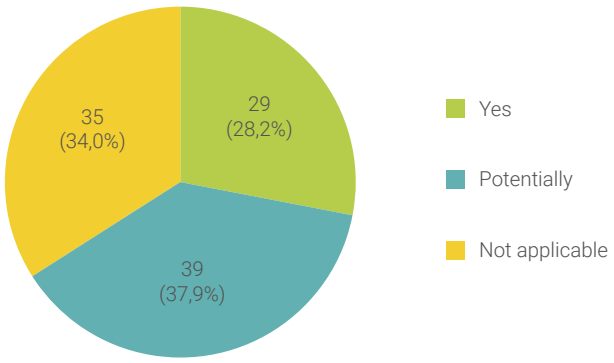
good example that has a clear aim to finance other small projects which could strengthen the community institution and disseminate information, but does not show if the financed projects will have gender involvement, nor does it present information about the target audience which will receive the instructions within the community.

d) No intended focus and the nature of the project is wholly irrelevant

The last category involves the projects which are not expected to focus or impact women due to their nature. These projects total 33,9% (35) of those who are financed by the Amazon Fund. In their majority, these refer to infrastructure work, purchase of goSDG/ services or monitoring and control of deforestation. In this way, it is not possible to see in these projects a potential to impact the reduction of gender inequality. We recognize that it would be possible to establish a connection between the activities predicted with a gender component, but this relation would be, at least, improbable.

For example, the Proteção Florestal Tocantins project, coordinated by the Tocantins State Government, seeks to support actions to monitor, prevent and combat deforestation due to forest fires by training, structuring integrated management mechanisms and acquiring materials and services. equipment for the instrumentalization of the Environmental Protection Battalion, located in the town of Araguaína. In this case, a quota of women to be trained to fight forest fires could be established. However, considering the project as a whole, we consider that there is little room for a gender approach, which is why we consider this not applicable in this particular case and in other projects of the same nature.

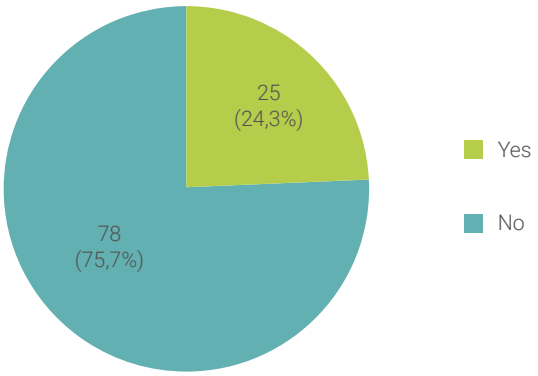
Graph II - Gender impact category



Source: Author elaboration

On the second guiding question **"Was there gender separation in data collection for project planning and monitoring?"**, We find that, following the data provided by the RAFA 2018 team, out of 103 projects, 23.4% (24) of them presented data disaggregated by gender between 2017 and 2018. Among these 24 projects, 82% (19) present data for 2017 and 2018, in which 57% (8) indicate an increase in the number of women benefited between the years. Moreover, 24 projects that provide data disaggregated by sex, we have a total of approximately 209.3 thousand beneficiaries, of which 15% are women (approximately 37 thousand).

Graph III - Projects which presented desegregated data on gender.



Source: Amazon Fund

Still following RAFA 2018 and following to reply the third guiding question **"How did the project contribute to gender equality?"**, we see that 878 women were trained for the practice of sustainable economic activities in 2018, representing 0,41% of total of benefited people by the projects. Although it is a very low amount, it is possible that women have been trained during the highlighted year, but more particular data of all projects were not made available. Only 4 projects, of 103, presented desegregated data by training.

When dealing with analysis about the women who were trained and are effectively using their acquired knowledge, which directly includes valuing female work, the amount increases to 1.490, which is to say, 0,71% of the total of benefited people. It is right to suppose that women, before applying a new technique, go through a training process. In this way, this confirms the argument that more women were trained than the presented data.

RESULTS AND LIMITATIONS

Of the 5.8% of projects (6) that had as an aim to affect women, they also related impacts in their lives. This is to say, their final actions are according to what was predicted, mainly in the income investment. As previously mentioned, all these projects with intended gender focus have brought its action activities related to financial empowerment. This means that we can see a direct relation between economic development support and women emancipation.

Beyond that, 22,3% (23) of the projects affect the lives of those who live in the targeted community, even without pre-defined this action as a target. Furthermore, we evaluate 37,8% (39) of the projects in the Fund's portfolio has the potential to affect the lives of those who reside in the spaces around the project, because of the activities done locally and 33,9% (35) do not involve the category of gender due to its nature. Table I, up next, shows the distribution of the projects between the mentioned categories.

Table I - Project distribution between classification categories

	Intended focus on gender	No focus, impactful[46]	No focus, potential impact[47]	Not applicable
Number of projects	6	23	39	35
Corresponding percentage	5.8%	22,3%	37,8%	33,9%

Source: Self-made based on data provided by RAFA 2018 (Amazon Fund).

Considering the potential for impact, 78% (29) of the projects include actions that involve training for techniques and services improvement. Thus, the potential contribution of these projects to the objective of reducing gender inequality is significant, if we consider that the inclusion of women in such training is an easily implemented measure. Nevertheless, only 4 projects that include training activities report the inclusion of women, considering the data we had access to.

As examples of projects that might contribute to gender equality, we can mention the project Território, Cultura e Autonomia Kayapó (Associação Floresta Protegida, AFP) which mentions implementing training actions for indigenous environmental agents and the introduction of the community based tourism project. In these cases, there is a contribution to gender equality because it offers women a function in the community beyond domestic activities which they usually undertake. With better qualifications, women can be protagonists in other areas and be introduced to an environment that could previously be majority male.

The project Pequenos Projetos Ecossociais na Amazônia, of the Instituto Sociedade, População e Natureza (Ispn), in turn, financed other small projects and women's associations. Lectures were done about women's empowerment, meaning to create awareness of their role in society and local economy, and also offered workshops about sustainable economy and extraction techniques of fruits or agriculture enhancement. The benefited women are capable to obtain income increase, which favors their financial autonomy, encourages their independence and contributes to the local economy.

In addition to that, when Amazon Fund resources are used to support other projects which involve women, there is a contribution to gender equality in the economical factor, because women are strengthened and inserted in local commerce. An interesting case to be detailed is the case of Fund Dema, coordinated by Fase. This is a relevant example, as it constitutes the biggest aggregating project in the Amazon Fund and it exemplifies the many possibilities for contribution in reducing gender inequality, that span from supporting specific women associations, including women project management and leadership positions in the associations.

From the 112 associations supported through a partnership with the Amazon Fund, only seven are women specific, but 27 of them had women in its presidency and were registered

46 Intended focus does not include gender, but there is an observed impact on women.

47 No intended focus, but with potential gender impact

as legally responsible for the organizations. In addition to that, 32 initiatives had women as coordinators. Women are in the forefront of the main projects supported in the innovation field and diversification in food, oil and medicinal herb production, as well as in valuing their native products, in its processing or commercialization, in the densification of their backyards with fruit trees and native forest species.

In addition to that, the role of women has been essential in energizing the community and formal access to the national and regional organization networks, such as the National Articulation of Amazonian Agroecology, and environmental justice networks. Women also lead exchange initiatives between projects, which have shown paths to improve production, labour conditions, life with the forest through use plans and fishery accords and consultation protocols and the defense of territories and its way of life.[48]

An important aspect to be highlighted in the analysis regards the projects development. About 78% of projects are still ongoing, which is to say that not all possible results are evident. In this way, some of them might have an impact in the search for equality when the full reports of their activities are presented.

CONCLUSIONS AND RECOMMENDATIONS

Despite the mentioned limitations, the crosscut gender strategy adopted by the Amazon Fund has guided important steps to contribute to equality between men and women. An example of that were the seven events held in 2018 which contributed to give more visibility to gender issues. Another relevant point is that 100% (6) of the projects that have as gender as an intended focus also mentions the financial factor. Either in investing in production chains or giving women qualifications or supporting the commercialization of their products.

When questioned in the interviews, the representatives of the projects' proponents confirmed that they possess data on female participation and inclusion in the projects. Some of this data was sent shortly after the interview. The interviewed were unanimous in saying that the Amazon Fund's intervention was instrumental to increase women's social participation in decision making in the community. The increase in financial autonomy and female protagonism in community decision taking was cited as expressive, as well as the growing introduction of women in project management.

Improvements and Challenges of the Amazon Fund on Gender Issues

Despite the challenges of available public data and disaggregated project information systematization on a gender, the Fund has made remarkable progress in addressing gender issues. According to RAFA 2018, the number of women trained in sustainable economic activities grew by 11%, and the number of women being directly benefited from the supported activities increased to 69%. These percentages present us with a reality that is not visibly perceived in the website, since, according to our evaluation, only 5% of the projects have include promoting gender equality as a stated goal. In addition, the

48 Data obtained through interview.

report mentions that 75% of women were included as skilled female workers in the project implementation and execution phases. That is, not only did the women of the communities benefit from their achievement, but there was also a concern from the Amazon Fund to include them in technical management activities.

Another relevant factor is that, from 2012, the Amazon Fund began to demand in public calls for projects that they indicate its strategy to (a) incorporate women and youth in activities directly related to chains of value and (b) promote participation of women in leadership positions. Another example of progress on this issue is the incorporation in the results framework, to be presented by the supported projects, of indicators related to the number of women involved in each process. However, both data related to public calls' prerequisites as well as gender indicators did not make this information available to the public. The final evaluation of completed projects, for instance, does not always report the impact on promoting gender equality.

At last, we highlight that 66% of the projects (5,8% with an intentional gender focus, 22,3% without a gender focus but with gendered impact, and 37,8% with no intended focus, but with a potential gendered impact), in lesser or larger degree, have the relevant potential to contribute to reducing gender inequality. However, the conclusions in this report are based in the availability of public data, available in the Amazon Fund's website, which is the main source of information and transparency in regards to the Fund.

Based on the evidence exposed, we now rank recommendations to the Amazon Fund to maximize its contribution to gender equity, as well as ensuring that the current contribution can be duly counted. Such recommendations refer basically to (a) supporting action with a specific focus, data availability and action monitoring and (b) institutional strengthening of organizations.

a) Specific support to focus based actions, data availability and action monitoring.

- **Inclusion of gender-specific actions:** Encourage all projects to present at least one way to promote women's empowerment. As gender equality is a cross-cutting criterion for support from the Amazon Fund, this should be expected from most or all projects.
- **Submission of Disaggregated Data:** As mentioned in the limitations, the inclusion of the number of women attending training courses, along with the submission of disaggregated data may favor further analysis, which would ideally be done from the Amazon Fund website. Therefore, we recommend including a category on the site that allows a focus on demonstrating gender-related results.
- **Collection Availability:** To encourage the media and document release of the website's collection to expand the material availability over the projects.
- **Accounting for women in management:** accounting for the number of women researchers, agents or technicians involved in the process of project management, implementation and execution.
- **Including indicators:** Introducing indicators to measure the impact over women of all projects still in early planning allows these results to be captured and that they are duly reported and accounted for, and allows for the inclusion of short, medium and long term targets for the projects, making it easy to evaluate its development.

b) Institutional Strengthening

- **Supporting women focused organizations:** supporting the institutional strengthening of organizations which work specifically with gender themes or promote women's inclusions, such as women's associations and cooperatives which promote women's economic empowerment.
- **Creation of Gender Committees:** Promote the creation of specific programs and / or committees to address gender equality policies and actions, both within the Amazon Fund team and within projects supported in all sectors.
- **Making public calls:** Making public calls with a specific focus on actions aimed at gender equality, as done previously with support for sustainable production activities. These calls would bring the possibility of access to the Amazon Fund by organizations that would not necessarily think of themselves as beneficiaries otherwise.
- **Institutionalization of the Gender Technical Council:** In which experts could assist in making public calls, developing specific support criteria and indicators, and would serve as an advisory forum for the Amazon Fund. This is a common practice in mutual funds that focus on supporting technical projects beyond the expertise of the fund manager.

Beyond the specifically cited recommendations in this study, we corroborate with all the ones made GIZ in the gender studies made with three projects supported by the Amazon Fund.[49] The recommendations were as follows:

- To elaborate an action plan for the introduction of gender issues which will ensure the institutionalization of the theme in the Amazon Fund/BNDES and gives larger credibility for the current and, eventually, new donors;
- To design a focal point for the theme, which will supervise the implementation of the action plan and enhance the team's capacity in introducing gender issues;
- To make gender issues visible, displaying good practices and results in the website, in events or through awards, etc;
- To request the inclusion of a gender equality analysis in project proposals;
- Identifying attractive opportunities that find the potential for women's roles, especially in the non-logging chains of value;
- To introduce, in the technical analysis phase of the project proposal, a checklist which ensures that the theme will be observed at a planning stage (logical matrix/indicators, work plans, resource budget or specific activities).

Finally, based on this set of recommendations, we understand that the Amazon Fun can become more explicit with its commitment to reducing inequality, as to emphasize, to its projects' proponents, the need to treat gender issues as a crosscutting criterion, and above all, be accountable of its effective contributions to society.

49 PONS, Ester Gomila; MELLO, Denyse; BUDI, Janina. *Igualdade entre Homens e Mulheres em Projetos de Atividades Produtivas Sustentáveis Apoiadas pelo Fundo Amazônia/BNDES*. Rio de Janeiro: GIZ; BNDES. 2019.30p.

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