



Projects Effectiveness
Evaluation Supported
by Amazon Fund

**Arapaima:
Productive
Networks
Project**

March 2022

Ex-Post Effectiveness Evaluation Report on Indigenous Projects within the scope of the Amazon Fund

This report presents the results of the evaluation of the effectiveness of the Arapaima: Productive Networks project, which is part of the Ex-Post Effectiveness Evaluation on Indigenous Projects within the scope of the Amazon Fund. The evaluation was carried out by a team formed by independent consultants under the coordination of the German Cooperation for Sustainable Development, through the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) within the scope of the Amazon Fund technical cooperation with BNDES. All opinions expressed here in are the sole responsibility of the authors, not necessarily reflecting the position of GIZ or BNDES.

The document with the full ex-post effectiveness Evaluation of projects on the topic of Indigenous can be found on the Amazon Fund's website, in the External Assessments section.



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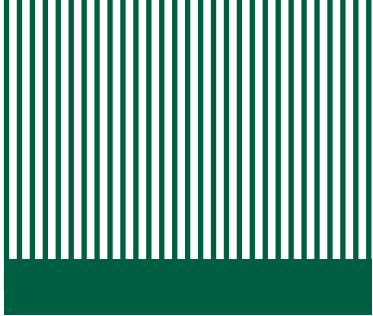
Por meio da:



MINISTÉRIO DA
ECONOMIA

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MEIO AMBIENTE





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Acronym list

ACJ	Association of Community Workers who work with the Development of the Municipality of Jutai
ADERR	Agricultural Defense Agency of Roraima
AF	Amazon Fund
AIS	Sustainable Indigenous Amazon (Project)
AERDSC	Association of Extractive Workers of the Cujubim Sustainable Development Reserve
AMARU	Association of Agroextractive Residents of the Uacari RDS
AMIN	Association of Indigenous Women
APIB	Articulation of Indigenous Peoples of Brazil
APS	Sustainable Productive Activities
APPs	Permanent Protection Areas
ASPODEX	Association of the Deni People of the Xeruã River
ASPROC	Association of Rural Producers of Carauari
ATAI	Territorial and Environmental Agents
BNDES	National Bank for Economic and Social Development
CAFOD	Catholic Agency for Overseas Development
CIFCRSS	Raposa Serra do Sol Indigenous Training and Culture Center
CIR	Indigenous Council of Roraima
COIAB	Coordination of Indigenous Organizations of the Brazilian Amazon
CONAB	National Supply Company
COPIJU	Council of Indigenous Peoples of Jutai
CPI	Pro-Indigenous Commission
CTI	Center for Indigenous Work

Acronym list

CAR	Rural Environmental Registry
DAP	Declaration of Aptitude (of the producer) for Pronaf
DGTA/CIR	Department of Territorial and Environmental Management of the Indigenous Council of Roraima
ECLAC	Economic Commission for Latin America
FOIRN	Federation of Indigenous Organizations of Rio Negro
FUNAI	National Indigenous Foundation
GIZ	German Cooperation for Sustainable Development (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH)
GPVIT	Territorial Protection and Surveillance Group
IGATI	Implementing Environmental Management in Indigenous Lands (TNC Project)
ILs	Indigenous Lands
INPE	National Institute for Space Research
IPAM	Amazon Environmental Research Institute
IIEB	International Institute of Education of Brazil - Brasília
ISA	Socio-environmental Institute
LEAF	Lowering Emissions by Accelerating Forest finance
LF	Logical Framework
MCTI	Ministry of Science, Technology and Innovation
MMA	Ministry of Environment
MPF	Federal Prosecution Service
NTFP	Non-Timber Forest Products
OECD	Organization for Economic Co-operation and Development
OEMAS	State Environmental Organizations
OPAN	Native Amazon Operation
PAA	Food Acquisition Program
PAS	Sustainable Amazon Plan

Acronym list

PEMC/PA	State Policy on Climate Change
PSA	Payment for Environmental Services
PGPM	Minimum Price Guarantee Policy
PGPM-Bio	Minimum Price Guarantee Policy for Sociobiodiversity Products
PGTA	Plans for Territorial and Environmental Management in Indigenous Lands
PNAE	National School Feeding Program
PNGATI	National Policy for Territorial and Environmental Management in Indigenous Lands
PPCDAm	Action Plan for Deforestation Prevention and Control in the Legal Amazon
PRODES	Brazilian Amazon Rainforest Monitoring Project by Satellite
PRONAF	National Program for Strengthening Family Farming
RDS	Sustainable Development Reserve
REDD+	Reduction of greenhouse gas emissions from deforestation and forest degradation (+ conservation of forest carbon stocks, sustainable forest management and increased forest carbon stocks)
RESEX	Extractive Reserve
SOMAI	Observation and Monitoring System for the Indigenous Amazon
SAFs	Agroforestry Systems
TNC	The Nature Conservancy
ToR	Terms of Reference
UCs	Conservation Units
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
WWF	World Wildlife Fund

PROJECT

Arapaima: Productive Networks

Project title:	Arapaima: Productive Networks
Entity in charge:	Operation Native Amazon - OPAN
Project duration:	October 2014 - August 2020 - 47 months
Territorial scope:	ILs of Rio Biá, Espírito Santo, Acapuri de Cima, Estação, Macarrão and Deni; Sustainable Development Reserves (RDS) Uacari and Cujubim; and Médio Juruá Extractive Reserve (Resex), located in the Médio Juruá and Médio Solimões basins, in the state of Amazonas
Beneficiaries:	Indigenous peoples and extractive communities.
Objective:	To support activities aimed at managing fishery and non-timber forest resources in indigenous lands (ILs) and conservation units (UCs) and strengthening indigenous associations and associations of extractive producers.
Total project amount:	BRL 6,364,730.00
Amount of support from the Amazon Fund:	100% of the total

Source: Prepared from the adaptation of information from the Amazon Fund/BNDES website. (<http://www.fundoamazonia.gov.br/pt/projeto/ARAPAIMA-Redes-Produtivas>)



1. Project Summary

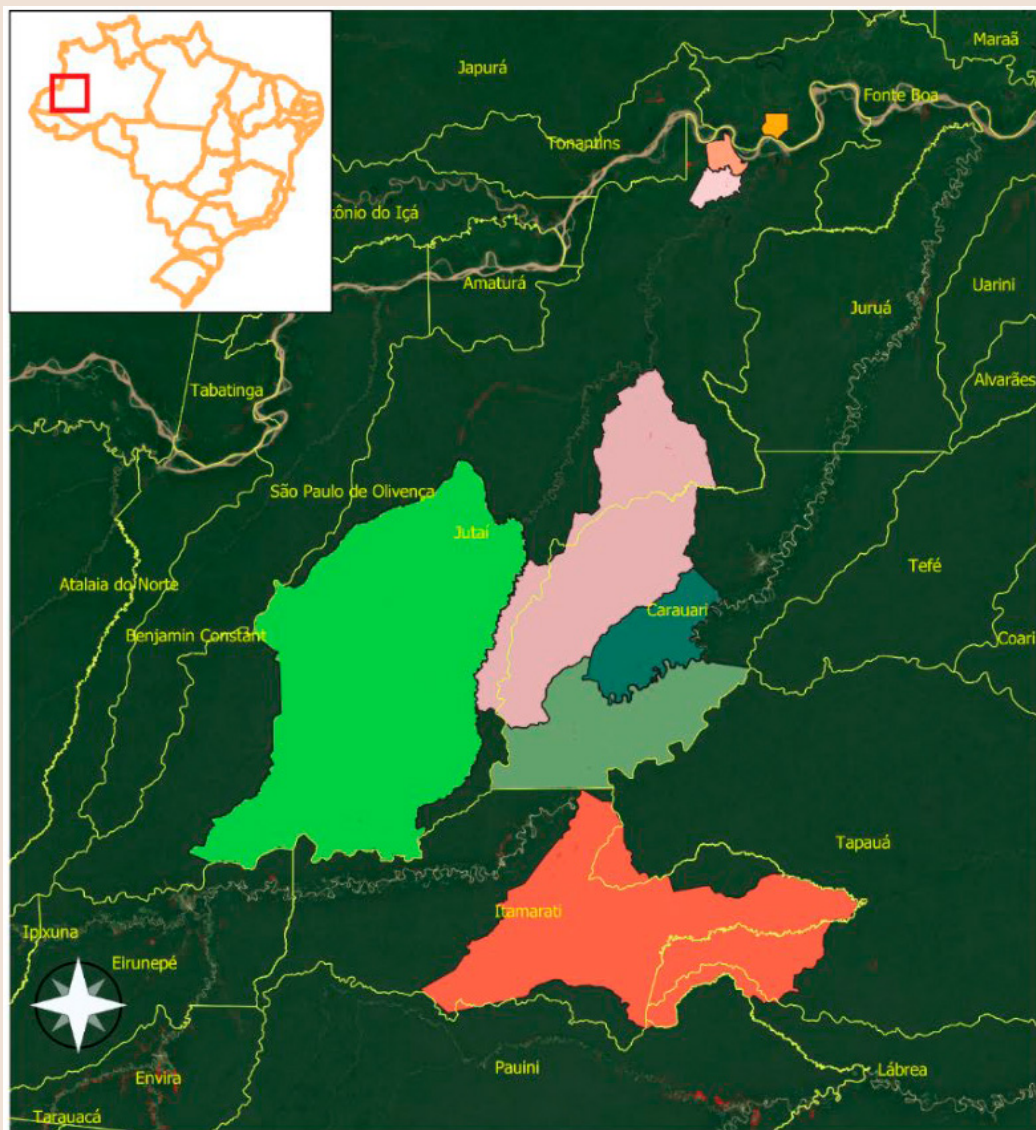
The *Arapaima: Productive Networks* project was conducted in the Indigenous Lands (ILs) of Rio Biá, Espírito Santo, Acapuri de Cima, Estação, Macarrão and Deni; in the Uacari and Cujubim Sustainable Development Reserves (RDS) and in the Médio Juruá Extractive Reserve (Resex), located in the Médio Juruá and Médio Solimões basins.

It benefited a total of 6,188 people, including indigenous, riverside, and extractive populations. Of this total, 74.75% are indigenous. The region in which the project was carried out (as shown in Figure 1) comprises an area of 6,293,660 hectares and affects the following municipalities in the state of Amazonas: Jutaí, Tonantins, Carauari, Fonte Boa, Itamarati, Lábrea, Piauini and Tapauá.

The endeavor is part of the strategy of a public call by the Amazon Fund to support and implement projects aimed at meeting the principles and guidelines of the National Policy for Territorial and Environmental Management in Indigenous Lands (PNGATI).

In the PNGATI construction process, the aim was to guarantee and promote the protection, recovery, conservation, and sustainable use of natural resources in indigenous territories, safeguarding the integrity of indigenous heritage, improving the quality of life and full conditions for physical and cultural reproduction of current and future generations.

Figure 1: Territorial scope of the Project



CAPTION

Municipalities
 PRODES

0 30 60 90 120 150 km

Projects Supporting Indigenous Peoples

Arapaima - Productive Networks

Acapuri de Cima
 Deni
 Espírito Santo

Macarrão
 Rio Bá

SIRGAS 2000

Sources:
FUNAI, PRODES e IBGE

Production:
Busca Terra
02/10/2021

Conservation Units

RDS Cujubim
 RDS Uacari
 Médio Juruá RESEX

Source: BUSCA TERRA, 2021¹

1. BUSCA TERRA. *Análise da evolução do desmatamento em áreas de projetos de apoio a terras indígenas no Fundo Amazônia*. Brasília: GIZ, 2021.

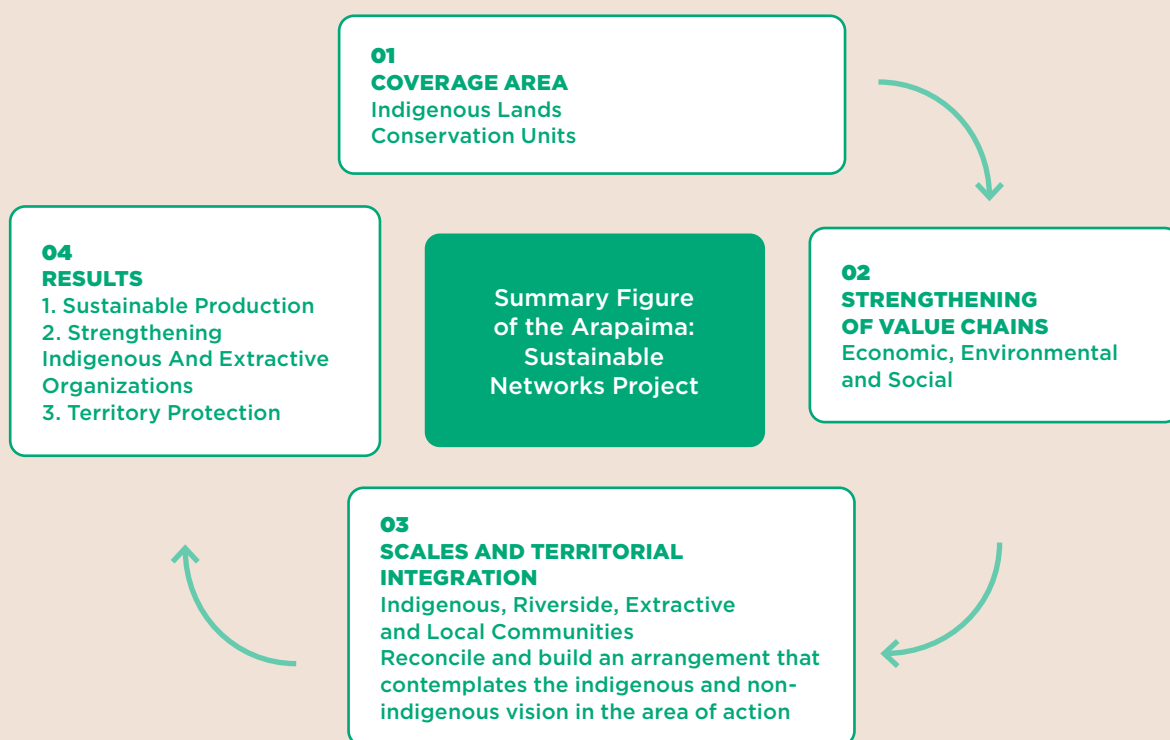
INDIVIDUAL PROJECT EVALUATIONS
ARAPAIMA: PRODUCTIVE NETWORKS PROJECT

The project, which is coordinated by the indigenous organization Native Amazon Operation (OPAN), is part of a project agglutinating model. In this type of arrangement, the agglutinating institution (main executing entity) acts as coordinator and executor of the subprojects of other smaller organizations, called agglutinated entities, which, in turn, contribute to the common objectives of the project (KADRI et al., 2020)².

The project's goal was to support activities aimed at managing fishery and non-timber forest resources in indigenous lands (ILs) and conservation units (UCs), while strengthening indigenous associations and extractive producer associations³.

Figure 2 shows a systematization of the goals, area of coverage, and results of the project within the territory covered.

Figure 2: Arapaima: Productive Networks project summary



Source: Prepared by consultancy.

2. ADRI, N. M.; SKAF, A. A.; FREITAS, M. B. de; SOEIRO, D. R.; ANACHE, B.; BUDI, J. (2020). Fundo Amazônia: financiamento climático em prol da conservação e do desenvolvimento sustentável da Amazônia. ECLAC. <https://biblioguias.cepal.org/bigpushparaasustentabilidade>.

3. Amazon Fund: <http://www.fundoamazonia.gov.br/pt/projeto/ARAPAIMA-Redes-Produtivas/> - accessed on September 20, 2021.

The project obtained the following results from these interventions:

- Fostered and structured the production chain for pirarucu management, generating a revenue of BRL 1.56 million;
- Fostered and structured the management of the production chain of non-timber forest products (NTFP);
- Implemented two plant oil pre-processing units;
- Trained in management of fishery and non-timber forest products;
- Institutionally strengthened two indigenous associations and two associations of extractive producers;
- Held workshops on collaboration, community organization, administrative and project management; and
- Executed the territorial surveillance plan in the project's target territories.

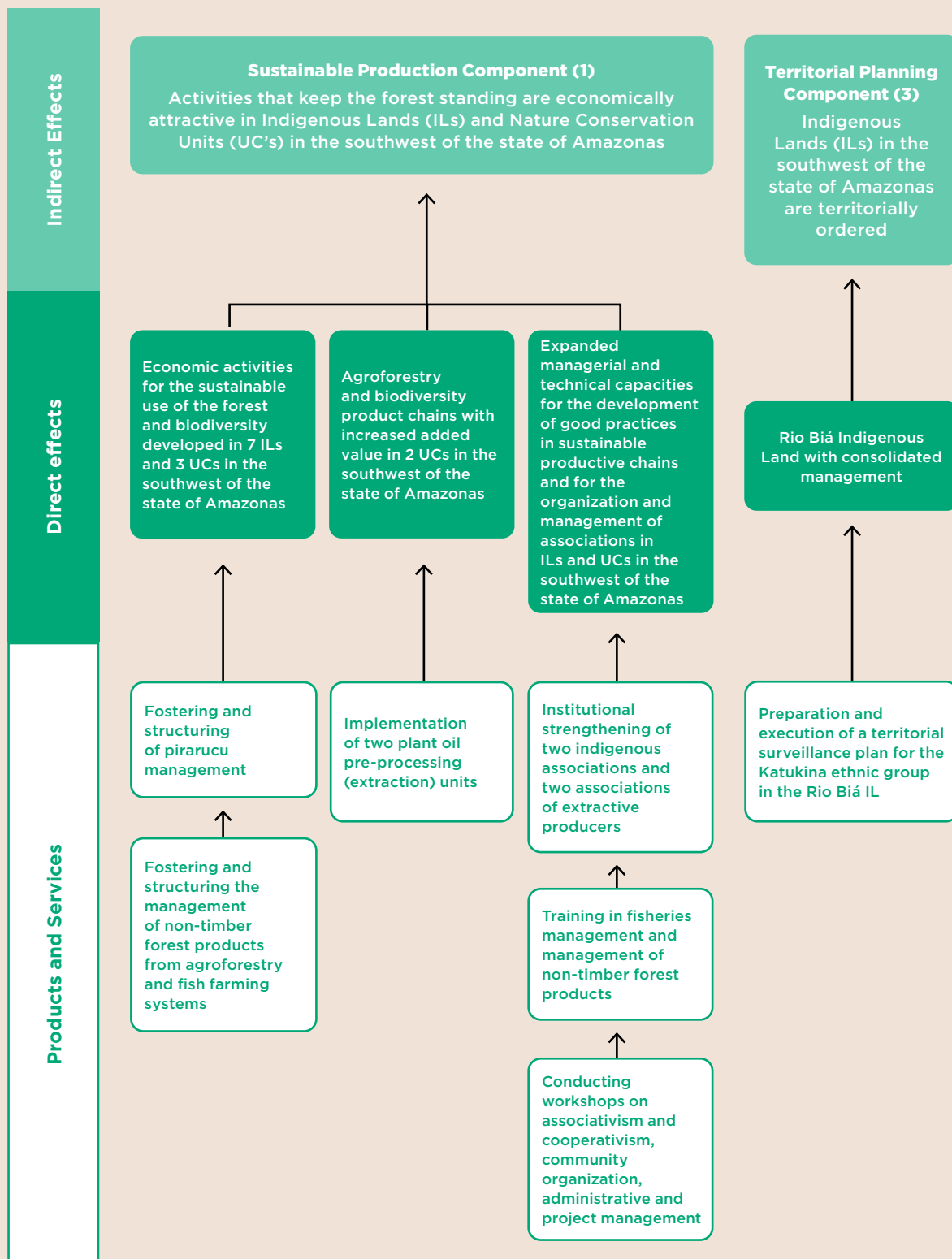
2. Intervention Logic

In the Logical Framework of the Amazon Fund (Figure 3), the *Arapaima: Productive Networks* project is included in the following components: Sustainable Production; and Land-use Planning.



Figure 3: Tree of Objectives of the Logical Framework of the Arapaima: Productive Networks Project

Project: Arapaima: Productive Networks - OPAN



Source: Prepared by authors

3. Methodology

- The criteria and methodology used in the effectiveness evaluation of the *Arapaima: Productive Networks* project were the same as those of the methodological course already presented in the thematic evaluation report, based on the OECD criteria.
- As in the other projects, interviews were carried out by videoconference with nearly all OPAN's technical team members who were directly involved in the project's execution.
- Another important input used in this effectiveness evaluation was the use of secondary and documentary data from the *Arapaima: Sustainable Networks* project, which can be found in the Amazon Fund/BNDES's database.
- A limitation identified in this evaluation is that it was not possible to carry out interviews with the beneficiaries at the project's site.

4. Evaluation of Results

4.1. Indirect Effects

4.1.1. Sustainable Production Component: Activities that keep the forest standing are economically attractive in Indigenous Lands (ILs) and nature conservation units (UCs) in the southwest of the state of Amazonas

The project developed a set of activities and economic interventions with the goal of increasing the attractiveness of the standing forest. To this end, two important production chains were strengthened: pirarucu and plant oils.

In these territories, fishing and extraction of non-timber forest products are widely practiced and, undoubtedly, constitute an important source of income for indigenous, riverside, and extractive populations.

By supporting and implementing a project of this size, it was possible to contribute to indigenous, riverside, and extractive populations in a different way, compared to economic activities focused on logging, characterized as extremely income-concentrating activities for the business sector.

Interventions and projects focused on extraction of products that keep the forest standing represent a set of activities with lower levels of income concentration, although they have key economic, social, and environmental importance for indigenous and extractive populations.

With the project, it was possible to improve non-timber forest product chains through a strategy of adding value to these products, as well as supporting the conservation of biodiversity and the forest.

In general, deforestation has increased in the Amazon over the last two decades, as shown in Table 1.

Table 1: Total deforested area on indigenous lands in the Amazon (in km²)

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total deforested area	331.19	293.75	225.69	159.04	167.74	96	73.03	105.09	198.04	260.57	497.37	427.94

Source: BUSCA TERRA, 2021.⁴

However, according to a consultancy commissioned by the GIZ,⁵ the impact of reducing deforestation in the area concerning the *Arapaima: Sustainable Networks* project was much lower, as shown in Table 2, which shows the deforestation situation in the project's target areas.

Table 2: Result of the deforestation survey in the project's target areas. Data is presented in km²

Projects	Total area of projects	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Arapaima: Productive Networks	61,089.2	0.48	3.19	1.52	0.65	0.84	1.74	0.88	1.04	1.27	1.37	1.63	2.74

Source: BUSCA TERRA, 2021.⁶

4. BUSCA TERRA. *Análise da evolução do desmatamento em áreas de projetos de apoio a terras indígenas no Fundo Amazônia*. Brasília: GIZ, 2021.

5. Ibid., for.5-6.

6. Ibid.

INDIVIDUAL PROJECT EVALUATIONS
ARAPAIMA: PRODUCTIVE NETWORKS PROJECT

During the beginning of the project in 2014, 1.74 km² of forest area was destroyed. In the following year, deforestation had a significant drop, and in the following years, there was an increase in the deforestation rate.

Chart 1 compares pre-implementation, execution, and post-project periods. The chart shows that before the project, deforestation reached its highest rate, despite an increase in the post-project period.

Chart 1: Deforestation in the projects' target areas, considering baseline, execution and post-project periods. Data are presented in Km²

Projects	Baseline (2009 - 2013)	Project execution period (2014 - 2018)	Post-project (2019 -2020)	Trend (baseline, during and post)
Alto Juruá	0.17	0.06	0.22	
Sustainable Indigenous Amazon	3.34	0.84	2.11	
Productive Networks	1.34	1.26	2.18	
Value Chains in Indigenous Lands in Acre	0.62	0.38	1.41	
Strengthening territorial and environmental management of Indigenous Lands	14.44	12.76	105.99	
Grand total	19.91	15.30	111.91	

Source: BUSCA TERRA, 2021.⁷

This same study reveals an important finding, i.e., the project's target area includes IL Acapuri de Cima, where there was no deforestation during the entire period.

⁷ BUSCA TERRA. *Análise da evolução do desmatamento em áreas de projetos de apoio a terras indígenas no Fundo Amazônia*. Brasília: GIZ, 2021.

4.1.2. Land-use Planning Component: Indigenous lands (ILs) in the southwest of the state of Amazonas are territorially ordered

One of the elements that mobilized the Amazon Fund to issue a call focused on indigenous peoples was the problem of threats due to the unsustainable and disorderly exploitation of timber and other illegally exploited resources⁸.

With that in mind, the Fund's support was intended to improve the quality of life of these populations, based on sustainable and profitable activities that do not entail deforestation and/or illegal activities.

Seven years after the beginning of the project, there is an even more challenging reality, which is the worrying impact on the entire area comprising the Legal Amazon, where gold mining can directly affect indigenous lands, federal conservation units, federal lands, and public forests, generating impacts on communities and forests. Adding to all this pressure that the indigenous territories are going through, there are challenges such as the increase in deforestation, river pollution and human rights violations.

In this context, the effectiveness evaluation identified that the protection of indigenous territories, as well as the protection of nature, were the main impacts of the intervention supported by the Amazon Fund.

In the view of the managers and coordinators of the *Arapaima: Sustainable Networks* project, the intervention was essential to prevent deforestation and to reduce the pressure from miners and loggers in these territories, ensuring the appreciation of indigenous knowledge and of practices and traditional communities, in addition to strengthening the agglutinated organizations, thus aiming to improve the management of the territory and its resources.

4.2. Direct Effects

The pirarucu (*Arapaima gigas*) is an Amazonian product of enormous cultural, social, economic, and environmental importance for those who live in that region of the country. It is a fish that, despite its relevance, has already been at risk of extinction, therefore its fishing was prohibited

8. Amazon Fund. <http://www.fundoamazonia.gov.br/pt/projeto/ARAPAIMA-Redes-Produtivas/> - accessed on September 20, 2021.

in the state of Amazonas, the largest producer in the country.

Now, only managed pirarucu fishing is allowed, which has become an important economic and environmental activity for indigenous and riverside populations. Thus, promoting and structuring managed pirarucu fishing was one of the direct effects of this project. (Table 3)

Table 3: Summary of Indicators and Goals achieved by Pirarucu managing

Indicator	Baseline	Goal	2015	2016	2018	2020	Variation in % between last year x base year
Revenue from managed pirarucu fishing supported by the project	BRL 200,000.00 (50 Tons per year / BRL 4.00 kg)	Increase the revenue obtained from sale of managed fishery by at least 10%/ year	BRL 385,000	BRL 1,623,145	BRL 3,129,010	BRL 1,132,908	194%
Volume of pirarucu marketed from managed fishing	50 tons	Increase the volume of managed fishery by at least 10%/ year	170,000	441,000	797,000	213	25%

Source: Adapted from the monitoring reports of the Amazon Fund/BNDES

For this set of three indicators, those related to the revenue obtained and the volume of pirarucu sold far exceeded the targets.

The revenue indicator obtained from the managed pirarucu fishing, with a target of BRL 292 thousand, achieved far greater results than planned. Having reached BRL 1.56 million, this is an important indicator of the project's effectiveness.

The monitoring reports revealed a target of 73 tons for volume of marketed managed pirarucu, while the volume achieved in 2020 was 213 tons. Thus, the result exceeded what was planned. However, it is important to note that the highest production was in 2019, corresponding to 1088 tons.

Regarding the indicator of revenue from government sales and purchases or subsidies, it was not possible to make significant progress. One of the main factors that hindered government sales in some years is that the price charged by the programs is not attractive. In addition, another challenge for the inclusion of fish in the National School Feeding Program (PNAE) was the fact that many municipalities do not

have nutritionists in their Municipal Education Departments, making it difficult to include fish in school menus and meal recipes.

The project advised organizations to register and issue a Declaration of Aptitude to Pronaf (DAP) in the legal entity modality. However, there are still problems regarding the bureaucratic processes of issuing this document for individuals, as well as for small indigenous associations.

Regarding the promotion, structuring and consolidation of the pirarucu management chain, the project managed to enable five fishing agreements, collectively approved with the Deni people, from RDS Uacari, Resex Médio Juruá, IL Médio Solimões and RDS Cujubim. All these agreements are regulated by competent bodies. It is important to note that, once again, the project targets were exceeded: the plan was to maintain four agreements annually. The project not only maintained this average, in 2018, it started to hold five approved and regulated agreements.

Regarding the sustainability of the project, focused on the productive chain of managed pirarucu, the structuring of this chain undoubtedly has enormous potential for the benefits of the intervention to be sustained after it is completed.

Today, the state of Amazonas, through its Institute of Agricultural and Sustainable Forestry Development of Amazonas (Idam), has “approved incentives for the growth of the pirarucu production chain by the State Government, based on economic subsidies, in addition to valuing the production of pirarucu. The value will be passed on by the Sustainable Development Agency to the pirarucu producers of Amazonas”⁹. In addition, the territories where the project was executed are a priority for these incentives in the state, as they are areas with greater production potential. For Idam, “considered to be highly sustainable, pirarucu management guarantees the protection and monitoring of the species, given that the producers themselves monitor the lakes to preserve stocks and inhibit illegal fishing. According to the latest Idam survey in 2019, pirarucu production reached more than 2,800 tons. Of this total, the municipalities of the Jutai/Solimões/Juruá sub-region together produced 1,700 tons, represent-

9. AMAZONAS. IDAM. Cadeias produtivas do pirarucu manejado e farinha de mandioca terão incentivos do Governo do Amazonas. Jul 22, 2021. <http://www.idam.am.gov.br/cadeias-produtivas-do-pirarucu-manejado-e-farinha-de-mandioca-terao-incentivos-do-governo-do-amazonas/>. Access on Sept. 28, 2021.

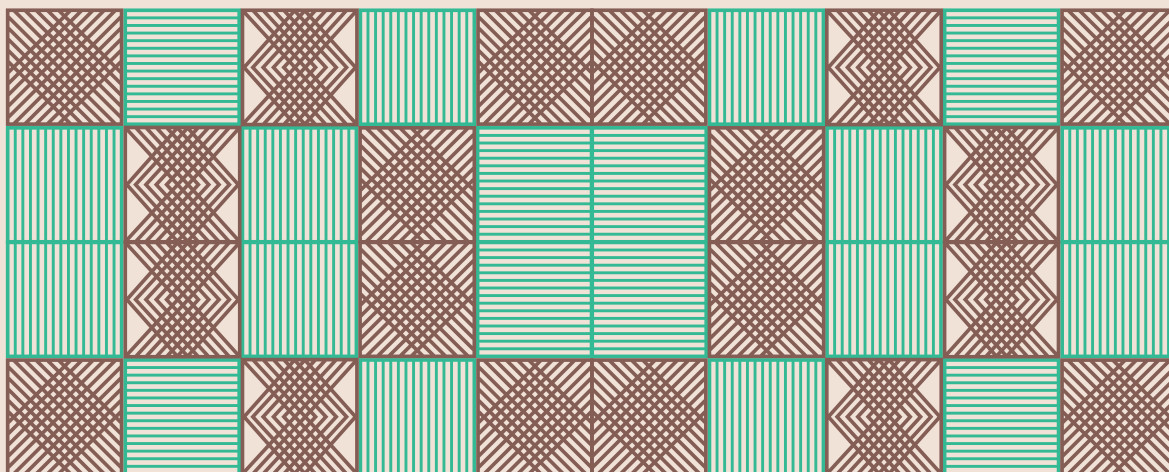
ing 63% of the total production.”¹⁰

One aspect that calls for attention regarding sustainability is the implementation of the study on the use of pirarucu leather and the implementation of a leather business plan. Some negotiations were initiated with the business sector and the fashion industry, such as the clothing brand Osklen, but the proposed commercial arrangement did not come to fruition, as the project ended. There is also the need to execute a business plan focused on better qualification for the management of pirarucu among the indigenous people of the Deni ethnic group.

Resuming negotiations with the gastronomy production chain, for greater insertion and added value of pirarucu management in restaurant and chefs' chains, is also important for the associations that were trained in this project.

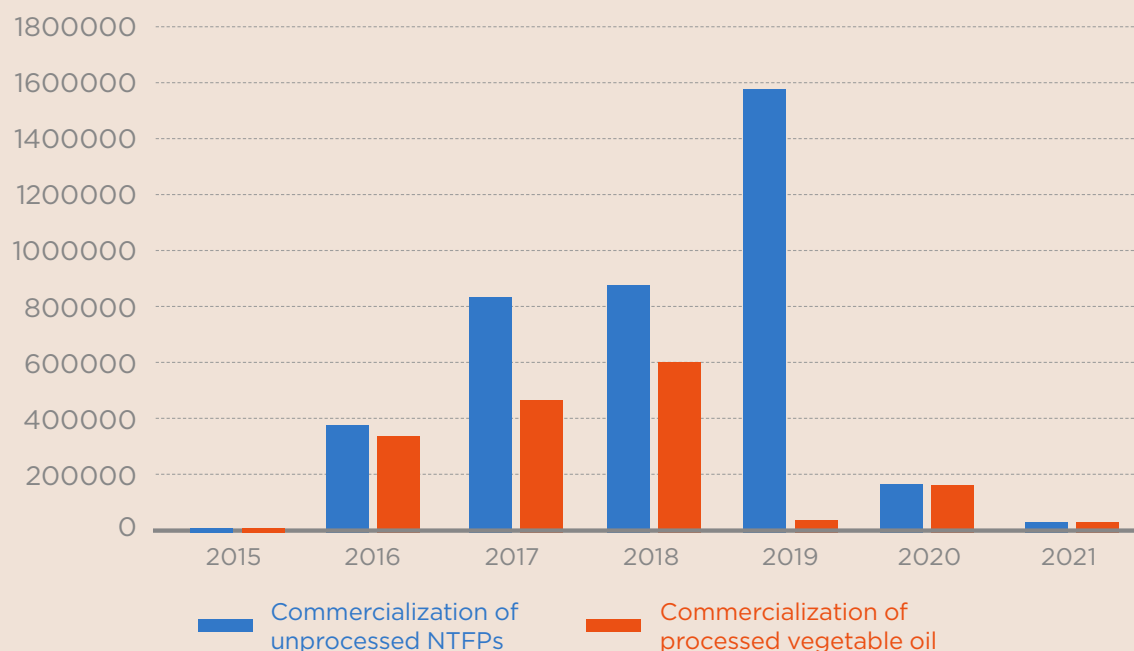
In relation to promotion and structuring of the management of the NTFP production chain, one of the indicators was related to the revenue obtained from the sale of these products.

From the graph in Figure 4, it can be observed, throughout the course of the project's implementation, that the revenues generated through commercialization increased steadily. In the end, it was possible to generate a total of BRL 3,812,388.60 for NTFPs and BRL 1,604,234.30 for plant oils. The volume of revenue generated only began to decline after the project was completed.



¹⁰. AMAZONAS. Assistência técnica do Idam fortalece pesca manejada do pirarucu no Amazonas. Nov 23, 2020. <http://www.amazonas.am.gov.br/2020/11/assistencia-tecnica-do-idam-fortalece-pesca-manejada-do-pirarucu-no-amazonas/>. Access on Sept. 28, 2021.

Figure 4: Revenue obtained by the project from marketing of NTFPs and processing of plant oil



Source: Prepared by the consultancy based on the monitoring reports of the Amazon Fund/BNDES

Among the plant oils produced, the highlight is murumuru and andiroba. These two products had an increase in production during the project. When the project started, the production of these oils was 19 tons. After the end of the project in 2020, production reached a total of 57 tons, i.e., a 185% increase from the initial production. This is due to the implementation of a strategy for design and implementation of a Management Plan for these products, which was supported by the Amazon Fund.

Therefore, the efficiency indicator for this project is positive, as it was possible to establish key partnerships with the business sector in relation to the oilseed chain. These partnerships include the experience of pre-processed products marketed directly to Natura Cosméticos. It was also possible to provide indigenous associations with access to the Minimum Price Guarantee Policy for Sociobiodiversity Products (PGPM-Bio), managed by Conab.

In the structuring of activities focused on these two production chains, a key enabling element was the training of beneficiaries. This is of utmost importance to ensure full implementation of this list of actions, and to address these two Sustainable Productive Activities in the

ILs and UCs.

Regarding the training of beneficiaries for the development of good practices in Sustainable Productive Activities, and applying the techniques learned, a total of 2,481 were trained. The initial target was 573 people, or 10% of the target public, and, in the end, the project managed to train 43.3% of the total number of people targeted. After the end of the project, no other beneficiary was trained.

A set of training sessions on fishery management and the management of non-timber forest products were also delivered, with 53 actions, totaling 2,760 people trained and able to carry out productive activities related to sustainable production.

Initially, the project meant to strengthen two indigenous associations and two extractive associations. At the end of the project, it was possible to support two indigenous associations and four extractive associations.

One impact identified in the evaluation interviews is that support for the two indigenous organizations (Council of Indigenous Peoples of Jutaí - COPIJU and Association of the Deni People of the Xeruã River - ASPODEX) and four extractive organizations (Association of Agro-Extractive Residents of Uacari RDS - AMARU, Extractive Association of the Cujubim Sustainable Development Reserve - AERDSC, Association of Rural Producers of Carauari - Asproc, and Association of Community Members Working with Development in the Municipality of Jutaí - ACJ) did not focus solely on aspects related to improvement of the organizations' operation and management capacity. Effective support was provided, allowing these organizations to improve with the renovation of their headquarters. Today, they are even connected to the internet.

Workshops on associativism, cooperativism, community organization, administrative management and project management were also held. Initially, the Arapaima: Sustainable Networks project had the goal of holding a set of 24 thematic workshops with this focus. In the end, it was possible to hold 40 workshops with the participation of 666 beneficiaries.

Evaluating the cohesion of the project and its relationship with the strengthening of the supported organizations, it appears that, today, even after the end of the project, these entities have a greater degree of maturity and understanding of their role, both in representing their territories, as well as in being able to present projects that can support and promote their productive and sustainable activities, as well as having a better operational structure and financial management. These are

organizations that today have the ability to influence and negotiate the implementation of public policies by different federal and subnational governments in their territories, in addition to having access and conditions to directly manage resources in future projects.

Undoubtedly, this set of skills was crucial to consolidate a productive arrangement between the different organizations, both for the management of pirarucu and the oilseed chain (murumuru and andiroba).

Another indicator was related to the strategy of increasingly involving women in activities supported by the project. At the time of planning, the target was to reach a percentage of 5%. At the end of the project, the planning indicator was exceeded, achieving a total of 22% of women participating in the activities, including coordinating the organizations. Thus, the participation of women took place not only with the beneficiary associations, but also with the organization implementing the project – OPAN.

For the OPAN managers, an important factor in reaching this percentage, in addition to what was planned, was to have an anthropologist who specializes in gender on the project execution team. Several training processes were conducted by this expert, seeking to encourage the participation and involvement of indigenous and extractive women throughout the project implementation process. There is an account of one of the mobilization and sensitization strategies used by this expert: “the project anthropologist, at the beginning of the activities, seeking to sensitize women to participate, would accompany them in the daily activities they carried out on the riverbank or in the fields and, from there, she would show the importance of the involvement of women in the project”.¹¹

Regarding the direct effect of providing the consolidation of the territorial management of the Rio Biá IL, there were two indicators, one related to the extension of the IL area and increasing control of its territory, which aimed to cover an area of 400 km², and the result was as planned. As for the total area of preserved forest, the target was to keep it above 99% and, at the end of the project, the target was fully met. Table 4 contains the data obtained from the monitoring of the project by the Amazon Fund team.

11. Testimony of the project coordinator in the online evaluation workshop

Table 4: Indicators of the Rio Biá Indigenous Land with consolidated management

Indicators	Targets	Baseline	Results achieved
Extent of the Rio Biá IL area with increased control of its territory (km ²)	250 km ² , including the middle and lower Rio Biá, 130 km ² on the Mutum River (medium and low) and 20 km ² on the Rio Pataua (medium and low) - with a total of 400 km ² .	250 km ² , considering the Médio and Baixo Rio Biá	400 km ²
Deforested area in the Rio Biá Indigenous Land	118,579.01 km ² , of which 28.5 km ² (0.24%) are data from INPE.	118,579.01 km ² , of which 28.5 km ² (0.24%) are data from INPE.	0,01%
Extent of preserved forests (km ²) of protected areas with consolidated management (IL Rio Bia, IL Deni, IL Espírito Santo, IL, Macarrão, IL Acapuri de Cima, IL São Domingos de Jacapari and Estação, RDS Uacari and RDS Cujubim)	Keep the total preserved forest area above 99%.	58,833.85 km ² of forest (which is equivalent to 99.27% of the total area of preserved forest).	More than 99% of the preserved area.
Extent of deforested area in the protected areas IL Bia River, IL Deni, IL Espírito Santo, IL, Macarrão, IL Acapuri de Cima, IL São Domingos de Jacapari and Estação, RDS Uacari and RDS Cujubim.	Keep the deforested area index below 0.3%.	186.20 km ² of deforested forest (which is equivalent to 0.3% of the total deforested area).	0.31% deforested area

Source: Adapted from the monitoring reports of the Amazon Fund/BNDES

From this set of indicators that were included in the project, the following scenario was designed in relation to the evolution of deforestation in the period of execution of the intervention supported by the Amazon Fund: “the preservation of the forest’s integrity in those territories was noted, as a result of the permanent action of communities and local representative entities and of projects aimed at protecting and promoting sustainable use of the forest.”¹²

12. Available on the Amazon Fund website. <http://www.fundoamazonia.gov.br/pt/projeto/ARAPAIMA-Redes-Produtivas/>. Access at: 10 sep. 2021.

The other indicator of the direct effect of consolidating the territorial management of the Rio Biá IL was related to the execution of a territorial surveillance plan and protection of the natural resources of the IL. There were plans to carry out surveillance missions, totaling 100, and to purchase equipment for this purpose.

The project purchased equipment and 103 surveillance missions were carried out, as well as community and inter-community agreements for territorial surveillance actions in the area covered by the project in the municipalities of Carauari and Jutaí in the State of Amazonas.

One of the successful strategies, which improved the surveillance system to protect the IL, was the creation of a whistleblowing system to identify, for example, illegal ferries circulating through the territories. These reports were crucial for the consolidation of IL protection.

5. Management and Monitoring

This section aims to point out the strengths and challenges in the context of project management and monitoring. Here, issues related to structure, human resources, workflows, implementation time and communication for management and execution were addressed.

The *Arapaima: Sustainable Networks* project had an exclusive team, with a general coordinator, two administrative staff, two logistical staff, a field coordinator, four field specialists and a communicator.

5.1. Strengths

With a team of 11 people, there was a division between strategic guidance, execution, monitoring, and field activities in Carauari and Jutaí. While the coordination carried out the planning and developed work and communication methodologies, the field teams ensured the execution and coordination at their end, including reports on the project's progress. The administrative staff focused on budgeting, procurement, and monitoring.

Prior to the project, OPAN agreed and sought consent for its actions with the target communities. Indigenous leaders were partners through the

agglutinated initiatives (subprojects)¹³. Participaram de atividades para detalhamento do orçamento e planejamenThey participated in activities to detail the budget and plan activities. The project aimed at the training and bolstering of the social capital of the players and grassroots organizations involved in the project. In this context, more than 140 events were held, including workshops, training, and meetings, in which more than 6,000 people were directly involved, including 73% indigenous people and 24% women.

The project's technical team had expertise and was process oriented. For acquisitions or contracts, the project carried out price evaluations by means of an invitation letter with a term of reference. The administrative staff was responsible for controlling the receipt of invoices and payments.

OPAN used its website to increase the transparency of project actions and audits. In it, information on budget and local actions was made available to partners. Assemblies and meetings were also held whenever necessary in local forums.

The dialogue with the BNDES was efficient, with the Bank's technical team willing to provide support and guidance for project activity improvements and updates and budget revisions.

5.2. Challenges

The project had a six-month extension for its completion. This adjustment was necessary due to the alignment of activities with the seasonal cycles of the production chains (for example, the pirarucu chain, whose main activities take place annually in the second semester).

Between the time of approval and execution of the project, part of what was designed in the municipalities (Carauari and Jutaí) had to be updated, since some of the key players of the agglutinated organizations were replaced. The same occurred for partner organizations. In addition, there were changes in the demands on sociobiodiversity products and updating of budgeted items/services at the time of the proposal.

In this context, it was necessary to invest time in renegotiating the project's partnerships and actions. Here, the dialogue with the BNDES was fundamental for the necessary adjustments.

13. The organizations were: Council of Indigenous Peoples of Jutaí (Copiju) and Association of the Deni People of the Xerua River (Aspodex); and two extractive associations: Extractive Association of the Sustainable Development Reserve (RDS) Cujubim (AERDSC) and Association of Residents of RDS Uacari (Amaru).

6. Conclusion

The *Arapaima: Sustainable Networks* project was important for improving the territory's value chain. The agglutinating strategy, in the view of the executing entities, enabled linking the value chain with territorial management and, undoubtedly, this proved to be effective in strengthening collective organizations, generating income, and protecting the environment. The project also managed to link management and social organization and, from there, provide beneficiaries with the ability to negotiate collective agreements and combine together agendas and bridge internal differences.

A project with this scope has symbolic importance for strengthening the associative culture in the territory, and based on its results, giving beneficiaries a set of capacities to increase their productive activities in sustainable chains.

Assessing the impacts and effectiveness of the project, using the indirect and direct effects as a reference, some results were identified in this evaluation:

- After the end of the project, indigenous and extractive organizations created, based on the production chains, a fund for direct sharing and management for the chains;
- Partnerships with the business sector, as mentioned above, with Natura Cosméticos (oilseeds chain) and with the Network of Cantinas Solidárias da Amazônia;
- Creation and certification, by the Ministry of Agriculture and Livestock, of the regional pirarucu seal: "Flavors of the Amazon";
- With the project, it was possible to access the Minimum Price Guarantee Policy for Sociobiodiversity Products (PGPM-Bio);
- It was possible to carry out several advocacy activities¹⁴ on behalf of the marketing potential of managed pirarucu:
- Marketing of pirarucu by an organization linked to the government procurement program, for the acquisition of fish for the Armed Forces.

14. Advocacy is the set of actions, strategically defined and oriented, that seek to promote changes in local, regional, national or international public policies, aiming to achieve the mission, vision and strategic objectives of an organization or coalition of organizations. (In: GOZETTO, Andrea C.; MORGADO, Renato P. Guia para a Construção de Estratégias de Advocacy: como influenciar políticas públicas. Piracicaba, SP: Imaflora, 2019. 68 p)

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Table 5: Considerations for the Arapaima: Sustainable Networks project according to OECD criteria

Criterion	Result
Relevance	The <i>Arapaima: Sustainable Networks</i> project is highly relevant as it deals with the preservation of forests and indigenous lands in the Amazon. The project connects with the Amazon Fund's objectives, as it contributed to the reduction of deforestation and the increase in the preservation of the standing forest in the region covered by the project after its inception. Training in the sustainable economic use of forest and non-forest products also helped to preserve forests in the state of Amazonas in the areas covered by the project. The reasons for supporting this project remain valid today.
Efficiency	The project has good efficiency indicators, as it not only performed an adequate project management, but also made important partnerships with the business sector in relation to some production chains supported by this project. In addition, the project assured the access of indigenous associations to the Minimum Price Guarantee Policy for Sociobiodiversity Products (PGPM-Bio).
Efficacy	The project demonstrated its efficacy in strengthening the territory's value chain. By combining the value chain with territorial management, the project achieved efficacy in strengthening collective organizations, partnerships, income generation and environmental protection. Partnerships were important for managing and leveraging project resources effectively.
Effectiveness/ Impact	The project had an impact in several areas. After the end of the project, indigenous and extractive organizations created a fund for sharing and direct management for the chains, which creates the possibility of replicating activities. There were partnerships with the business sector, which generated structure and increased production scale. There was the creation and certification, by MAPA, of the regional pirarucu seal: "Flavors of the Amazon". With the project, it was possible to access the Minimum Price Guarantee Policy for Sociobiodiversity Products (PGPM-Bio). Territorial management was increased, with a reduction in invasions. Therefore, it can be said that the <i>Arapaima: Sustainable Networks</i> project was an effective project.
Sustainability	<p>The sustainability of the <i>Arapaima: Sustainable Networks</i> project can be analyzed from more than one perspective:</p> <p>a) From the perspective of the benefits, actions and activities performed, in general, it was observed that the various activities carried out and the products planned - and delivered - made its actions sustainable, with emphasis on fish farming, among others. The workshops on associativism, community organization and administrative and project management ensure that the actions will be sustainable after the end of the project, with the possibility of raising funds from other sources.</p> <p>b) From the perspective of the Land-use Planning Component, this project institutionally strengthened two indigenous associations and four associations of extractive producers through associativism and community organization workshops. This strengthening made it possible for the territorial surveillance plan in the protected areas covered by the project to be successfully executed and allows new surveillance plans to be carried out in the future. The planned territorial management targets were achieved, as the area coverage and preservation indicators demonstrated, confirming the sustainability potential of these actions.¹⁵</p> <p>c) From the perspective of the Sustainable Production Component, the project generated the following results, with high potential for maintenance over time: The structuring of the production chain for pirarucu management, generating a revenue of BRL 1.56 million; structuring the management of the Non-Timber Forest Products (NTFP) production chain; implementation of two plant oil pre-processing units; training in fishery management and management of non-timber forest products. All these activities, combined with the institutional strengthening of two indigenous associations and two associations of extractive producers through workshops on associativism, community organization, administrative and project management certainly contribute to making the actions last for a long time. Appropriate emphasis on the structuring of a particular production chain, the managed pirarucu, which has great potential to be maintained and, in this way, to ensure that the benefits of the intervention are maintained after its end. An example of this is the application of a study on the use of pirarucu leather and the implementation of a leather business plan. This means that this project has one of the greatest potentials for financial sustainability among the projects evaluated, once the pirarucu chain becomes mature and consolidated.</p>

¹⁵ The consolidation of the territorial management of the Rio Biá IL had two indicators: I) Extension of the IL area with better control of its territory (400 km²) and II) total area of preserved forest (99%). Both targets were achieved.

7. Lessons Learned and Recommendations

	Recommendation	Executing entities	States	Amazon Fund	Federal Government	Business Sector	Donors
Direct effects	Apoiar projetos que possibilitem colocar em prática os Support projects that make it possible to put into practice the various diagnostic instruments developed for the territory's production chains – pirarucu and oils	X	X	X	X	X	X
	Support associations in reviewing pirarucu fishing permits	X	X				
	Reduce bureaucratic mechanisms for issuing DAPs for access to government procurement programs such as the PAA and PNAE		X		X		
	Propose commercial arrangements that enable the marketing of pirarucu and its by-products with production chains, such as gastronomy and fashion					X	
Indirect Effects	Support projects that are able to integrate value chains with territorial management	X	X	X	X		X
	Support public calls for projects in the agglutinating modality			X			
	Seek greater support and involvement from Funai, the federal agency responsible for indigenous policy, to organize actions and programs with projects supported by the Amazon Fund				X		
	Support interventions that manage to integrate Sustainable Productive Activities in indigenous lands and conservation units		X	X	X		X
	Consider protected areas that are at risk from intense deforestation and illegal mining, to prioritize initiatives that support enforcement bodies at the federal and state levels, in addition to strengthening traditional peoples and communities to consolidate the occupation of their territories		X	X	X		
	Reinforce the bills or proposals that aim to punish illegal deforesters and mining companies, barring of access to credit provided by government agencies, and the possibility of economic exploitation of illegally deforested and areas exploited with clandestine mining		X			X	
General	Have greater involvement of technical assistance and rural extension bodies and agencies in the projects, collaborating to train indigenous people and extractive workers	X	X		X		
	Seek non-reimbursable external resources, such as those made available by the Amazon Fund	X					

8. Cancun Safeguards (REDD+)

Safeguard	Meets criterion	Observation
1. Actions complement or are consistent with the objectives of national forest programs and relevant international conventions and agreements	YES	The project is fully aligned with the strengthening of national and state forestry programs.
Have the projects shown to be in line with the PPCDAm and state plans to prevent and control deforestation?	YES	It is in line with the State Program for the Prevention and Control of Deforestation (PPCD-AM).
What other federal public policies or international agreements did the projects show alignment with? In which aspects?	PARTIALLY	The Project is fully aligned with the following policies: From the national government: PNGATI, at the time of its implementation; National Plan for Sociobiodiversity Products; and, today, the Brazil Bioeconomy Program – Sociobiodiversity. From subnational governments: State Climate Change Program. However, a challenge found was that there could have been greater coordination between the project and the policies of national and subnational governments.
Did the project contribute, or could it contribute directly or indirectly to the reduction of emissions from deforestation or forest degradation? How?	YES	One of the project's indicators was related to the control and prevention of deforestation in indigenous lands and conservation units.
2. Transparent and effective national forest governance structures, taking into account national legislation and sovereignty	YES	
To what extent did the projects promote coordination between different players (public, private, third sector or local communities)? Were there shared governance instances? Which ones?	YES	As it is a project implemented in the agglutinating modality, there was close coordination with several organizations in the territory.
To what extent have the projects contributed to strengthening public instruments and forest and territorial management processes?	YES	The project supported the creation of a territorial surveillance system.
3. Respect for the knowledge and rights of indigenous peoples and members of local communities, by considering relevant international obligations, national circumstances and laws, and noting that the UN General Assembly has adopted the UN Declaration on the Rights of Indigenous Peoples	YES	The project supported the enhancement and bolstering of sociocultural systems and traditional knowledge.
To what extent have the projects influenced the constitutional rights associated with formal land tenure and destination in their area of operation?	YES	Completely.
To what extent have the projects influenced the sustainable use of natural resources in their area of operation?	YES	Completely. The project supported the use of biodiversity in a sustainable way in both the management of arapaima and the NTFPs.



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Safeguard	Meets criterion	Observation
If the projects directly benefited indigenous peoples, traditional communities, or family farmers: Have their sociocultural systems and traditional knowledge been considered and respected throughout the projects?	YES	Completely.
Are there effects that interfere with the traditional way of life of these groups? What kind of effects: in the social, economic organization or the use of available spaces and resources? How do they interfere: positively, negatively, or both?	YES	Positive interference, especially regarding training for sustainable use of the forest.
4. Full and effective participation of stakeholders, in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70 and 72 of Decision 1/CP 16	YES	Total involvement of the public: indigenous and extractive workers.
How did the projects guarantee prior consent and the local/traditional way of choosing representatives of their beneficiaries (especially indigenous peoples and traditional communities)?	YES	Completely.
What participatory planning and management tools did the projects apply during planning and decision making?	YES	Several workshops were developed, all of them based on the use of methodologies of ethno-development and collective construction of the beneficiaries.
In the case of projects with economic purposes: Were any benefits arising from the projects accessed in a fair, transparent and equitable manner by the beneficiaries, avoiding a concentration of resources?	YES	Interventions and projects focused on the extraction of products that keep the forest standing represent a set of activities with lower levels of income concentration, but which have huge economic, social, and environmental importance for indigenous and extractive populations.
To what extent did the projects provide the general public and their beneficiaries with free access and easy understanding of information related to project actions?	YES	By offering a series of trainings.
Have the projects been able to set up a good monitoring system for results and impacts? Have the projects systematically monitored and disseminated the results achieved and their effects?	YES	The project had a set of indicators that should be monitored systematically.
5. Actions are consistent with the conservation of natural forests and biological diversity, ensuring that the actions referred to in paragraph 70 Decision 1/CP 16¹⁶ are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits		
How did the projects contribute to the expansion or consolidation of protected areas?	YES	From the territorial surveillance project.



¹⁶. Decision 1/CP 16: Reduction of emissions from deforestation; reduction of emissions from forest degradation; conservation of forest carbon reserves; sustainable forest management and increased carbon stocks.

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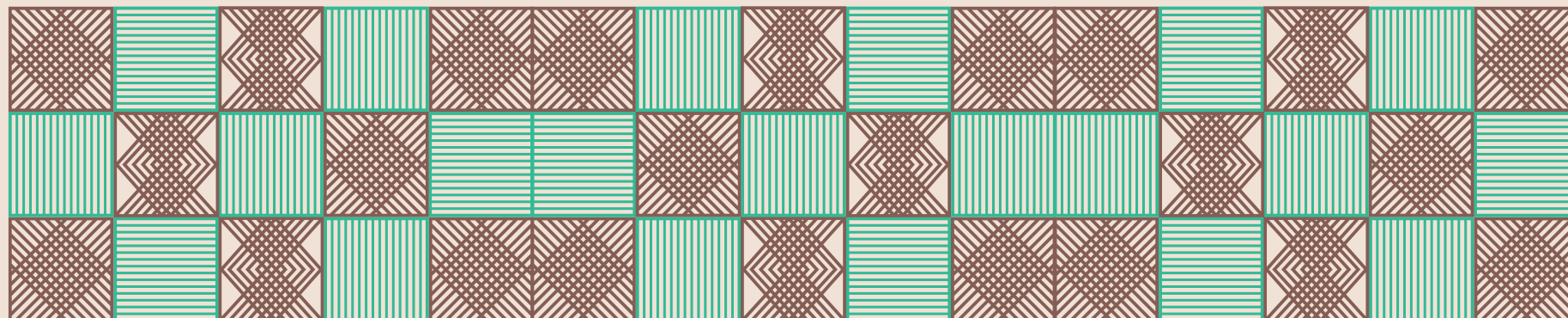
Safeguard	Meets criterion	Observation
How did they contribute to the recovery of deforested or degraded areas?	NOT APPLICABLE	
In the case of area restoration and reforestation activities, did the methodologies employed prioritize native species?	NOT APPLICABLE	
To what extent have the projects contributed to establishing recovery models with an emphasis on economic use?	Sim	It occurred indirectly through sociobiodiversity production chains.

6. Actions to address the risks of reversals in REDD+ results

What factors constitute risks to the permanence of REDD+ results? How did the projects approach them?	YES	One issue is fishing licenses. Without them, pirarucu production will be compromised.
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7. Actions to reduce the displacement of carbon emissions to other areas

Has there been a displacement of the emissions avoided by the actions of the projects to other areas?	YES	
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9. Crosscutting Criteria

Cross-cutting criteria		Meets criterion	Observation
Poverty reduction	To what extent have the projects effectively contributed to economic alternatives that value the standing forest and the sustainable use of natural resources?	YES	All actions implemented were focused on sustainable production, improving production chains and territorial management and surveillance.
	To what extent have the projects positively influenced poverty reduction, social inclusion and improved living conditions for beneficiaries living in their area of operation?	PARTIALLY	The project conducted several negotiations to secure access to services in the territory. There are still some weaknesses regarding the improvement of health services.
	Have the projects been able to promote and increase production in value chains of timber and non-timber forest products based on sustainable management?	YES	These were the direct effects of the project, and all targets and indicators related to this item were achieved.
Gender equity	The project aggregated some results and impacts on gender issues	YES	One of the project's indicators was to include women in coordination positions, both in the executive entity and in the agglutinated associations.
	How did the projects contribute to gender equity?	YES	As for gender equity, the project presented direct actions with a direct impact on this item.
Coordination of Public Policies	Was it possible for the project to cooperate with public policies at territorial and state level?	PARTIALLY	With the project, there was a timid insertion of construction of interventions and arrangements into health and education policies.
Food and nutrition security	Did the project contribute to the food and nutrition security of the beneficiaries?	YES	The project worked on production chains in connection with food and nutrition security.
	Has the project managed to include beneficiaries in food and nutrition security policies and programs?	PARTIALLY	The project was able to access the Food Acquisition Program but had great difficulty in including the marketing of fish to the National School Feeding Program.

**Effectiveness Evaluation Of Indigenous
Projects Supported By The Amazon Fund/BNDES**
Arapaima: Productive Networks Project

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