Projects Effectiveness Evaluation Supported by Amazon Fund

Value Chains in Indigenous Land in Acre 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 Value Chains in Indigenous Land in Acre 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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Summary

Acronym list

ACJ	Association of Community Workers who work with the Development of the Municipality of Jutaí
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 Jutaí
CPI	Pro-Indigenous Commission
CTI	Center for Indigenous Work

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

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

Value Chains in Indigenous Land in Acre

Project title:	**Value Chains in Indigenous Lands in Acre**
Entidade responsável:	Pro-Indigenous Commission of Acre
Project duration:	December 2015 - June 2019 - 29 months
Territorial scope:	Indigenous Land (IL) Kaxinawá do Rio Humaitá and IL Rio Gregório (Municipality of Tarauacá), IL Alto Rio Purus (Municipalities of Santa Rosa do Purus and Manoel Urbano) and IL Arara do Igarapé Humaitá (Municipality of Porto Walter), in the state of Acre
Beneficiaries:	Indigenous populations that inhabit the four ILs supported by the project.
Objective:	Support sustainable production, culture, and way of life in the Indigenous Lands (ILs) of the Kaxinawá do Rio Humaitá, Arara do Igarapé Humaitá, Rio Gregório and Alto Rio Purus, in the state of Acre, through the organization and promotion of the value chain of agroforestry products and indigenous technical assistance.
Total project amount:	BRL 3,091,111.21
Amount of support from the Amazon Fund:	BRL 3,091,111.21

Source: Prepared from the adaptation of information from the Amazon Fund website. (http://www.fundoamazonia.gov.br/pt/projeto/Cadeias-de-Valor-em-Terras-Indigenas-no-Acre/)

1. Project Summary

The *Value Chains in Indigenous Lands in Acre* project was implemented by the Acre Pro-Indigenous Commission based on the 2012 Public Call for Proposals for support to sustainable production projects, together with the Yawanawa Sociocultural Association (ASCY), the Shawadawa People's Association of the Igarapé Humaitá (APSIH), the Humaitá River Indigenous People's Association (ASPIRH) and the Huni Kuï do Alto Rio Purus Indigenous People's Organization (OPIHARP), with an estimated budget of BRL 3,187,698.00.[1] According to interviews with project coordinators, the *Value Chains in Indigenous Lands in Acre* project meets a demand from several associations in Acre[2]. Thus, according to the interviews carried out, the Amazon Fund allowed the continuity of activities that were threatened.[3] The project is located in the state of Acre in Indigenous Lands from Rio Humaitá, Rio Gregório, Alto Rio Purus, and Arara do Igarapé Humaitá.

The objective of the 2012 Public Call for Proposals was to promote the sustainability of economic activities practiced in that region and provide a concrete alternative to deforestation. According to the Amazon Fund website, the objectives of the Public Call for Proposals were to develop economic activities for the sustainable use of the forest and biodiversity, "promoting direct benefits to traditional peoples and communities, indigenous peoples, agrarian reform settlers, artisanal fishermen, family aquafarmers, and family farmers located in the Amazon Biome".[4]

According to the project evaluation documents[5], the specific objectives of the *Value Chains in Indigenous Lands in Acre* project were to: I) Promote economic activities for the sustainable use of the forest, agroforestry and biodiversity; II) Improve upon agroforestry and biodiversity product chains with increased added value; III) Train Indigenous Agroforestry Agents to provide technical assistance and rural extension

1. Amazon Fund. How to Submit Projects. Sustainable Production Projects. Selected Projects. Available at: http://www.fundoamazonia.gov.br/pt/como-apresentar-projetos/chamadas-publicas/projetos-produtivos-sustentaveis/
2. Interviews with BNDES technical staff and coordinators of the CPI institution in Acre.
3. Interviews with BNDES technical staff and coordinators of the CPI institution in Acre.
4. Available on the Amazon Fund website (Public Calls): http://www.fundoamazonia.gov.br
5. Made available by GIZ to evaluators.

in economic activities for the sustainable use of the forest, agroforestry and biodiversity[6].

In general, the project's main objectives were achieved, and the proposed targets were met and even exceeded. The results can be divided by area, according to the proposed objectives[7]. Thus, in Indirect Effect 1 – Promoting economic activities for the sustainable use of the forest – the following results were achieved:

- Implementation and enrichment of 186.31 hectares of agroforestry systems, 9.69% above the project target of 170ha;
- Implementation of turtles and fish production through the construction of 04 (four) dams;
- Stingless bee keeping through the construction and installation of 200 bee boxes;

In relation to indirect effect 2, Agroforestry Production Chains and biodiversity with increased added value, the following results were obtained:

- Implementation of 20 flour mills and 1 sugar cane mill; and;
- Workshops focused on improving indigenous handicrafts.

In relation to Indirect Effect 3 – *Indigenous Agroforestry Agents* supported and trained, the main result was the training of 88 indigenous agroforestry agents.

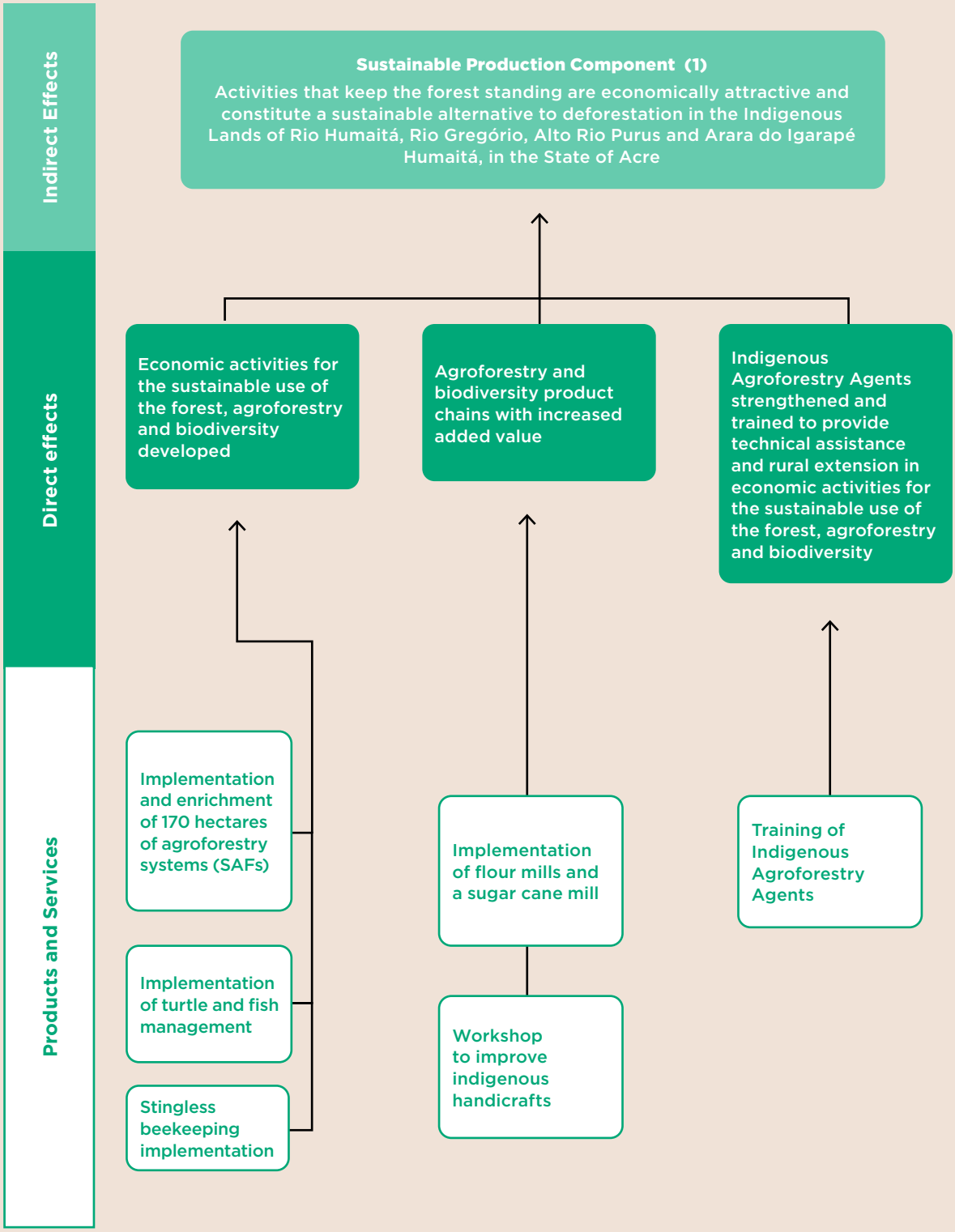
In short, the Value Chains in Indigenous Lands in Acre project can be summarized as follows below, in the Intervention Logic chart.

2. Intervention Logic

In the Logical Framework of the Amazon Fund, the project is included in Component 1. (Figure 1).

6. Made available by GIZ to evaluators.
7. Information based on project evaluation reports.

Figure 1: Tree of Objectives of the Logical Framework of Project *Value Chains in Indigenous Lands in Acre*



Source: Prepared by authors

3. Methodology

- The criteria and methodology used in the effectiveness evaluation of the *Value Chains in Indigenous Lands in Acre* project are the same as in 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 the technical team of the CPI in Acre, which was directly involved in the implementation of the project.
- Another input used in this effectiveness evaluation were secondary and documentary data from the *Value Chain in Indigenous Lands of Acre* project, which can be found in the information base of the Amazon Fund/BNDES.
- A limitation identified in this evaluation is that it was not possible to carry out interviews with the beneficiaries at the project site.

4. Evaluation of Results

4.1. Indirect Effects

Some of the indirect effects of the project were reduced deforestation, improved water balance, improved biological activity, and sustainability of the production system.

Regarding indirect effects on deforestation, generally, ILs have lower deforestation than in the Legal Amazon as a whole (outside the ILs). The author's search in *Busca Terra: Análise da Evolução do Desmatamento em Áreas de Projetos de Apoio a Terras Indígenas no Fundo Amazônia* concluded that the observed indigenous lands have a low deforestation rate.[8] In relation to the baseline, it fell by 38.91% during the project execution period, but rose again to 126.97% after the project was completed. Data are available in Table 1.

8. BUSCA TERRA. Análise da evolução do desmatamento em áreas de projetos de apoio a terras indígenas no Fundo Amazônia. Brasília: GIZ, 2021. p. 07

Table 1: Result of the deforestation survey in the projects' areas of operation. Data are shown in km²

Projects	Projects' total areas	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alto Juruá	1,184.8	0.00	0.29	0.47	0.07	0.00	0.08	0.00	0.15	0.07	0.00	0.07	0.38
Sustainable Indigenous Amazon	4,053.9	4.27	0.44	0.54	1.53	9.95	0.42	0.27	1.48	0.69	1.33	2.24	1.98
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
Value Chains in Indigenous Lands in Acre	5,709.4	0.58	0.75	0.75	0.77	0.26	0.93	0.00	0.44	0.15	0.38	0.63	2.20
Streng-thening Territorial and Envi-ronmental Manage-ment of Indigenous Lands	35,498.8	35.15	19.61	7.54	3.41	6.51	8.11	7.62	6.75	8.74	32.57	124.88	87.09
Grand total	**107,536.1**	**40.48**	**24.29**	**10.81**	**6.44**	**17.55**	**11.28**	**8.77**	**9.86**	**10.92**	**35.65**	**129.44**	**94.38**

Source: BUSCA TERRA, 2021.[9]

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

The *Value Chain in Indigenous Lands in Acre* project had one of the lowest deforestation rates compared to the other projects reviewed. In fact, when compared to other projects, it is evident that the impact of the project on deforestation was quite significant during its execution, as Table 2 shows.

Table 2: Deforestation in the projects' areas of operation, considering the baseline, execution period and post project. 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.[10]

Regarding the evolution of the baseline values and the execution and post-project period, the following results were obtained, presented in Table 3.

10. Ibid.

Table 3: Deforestation rate in relation to baseline. In red are the increased deforestation rates compared to baseline.

Projects	Baseline (km²)	Project execution period (%)	Post-Project (%)
Alto Juruá	0.166555068	-64.63	33.40
Sustainable Indigenous Amazon	3.343512385	-74.93	-36.89
Productive Networks	1.335469284	-5.62	63.33
Value Chains in Indigenous Lands in Acre	0.622696639	-38.91	126.97
Strengthening Territorial and Environmental Management of Indigenous Lands	14.44487521	-11.68	633.72
Grand total	**19.91310859**	**-23.19**	**462.00**

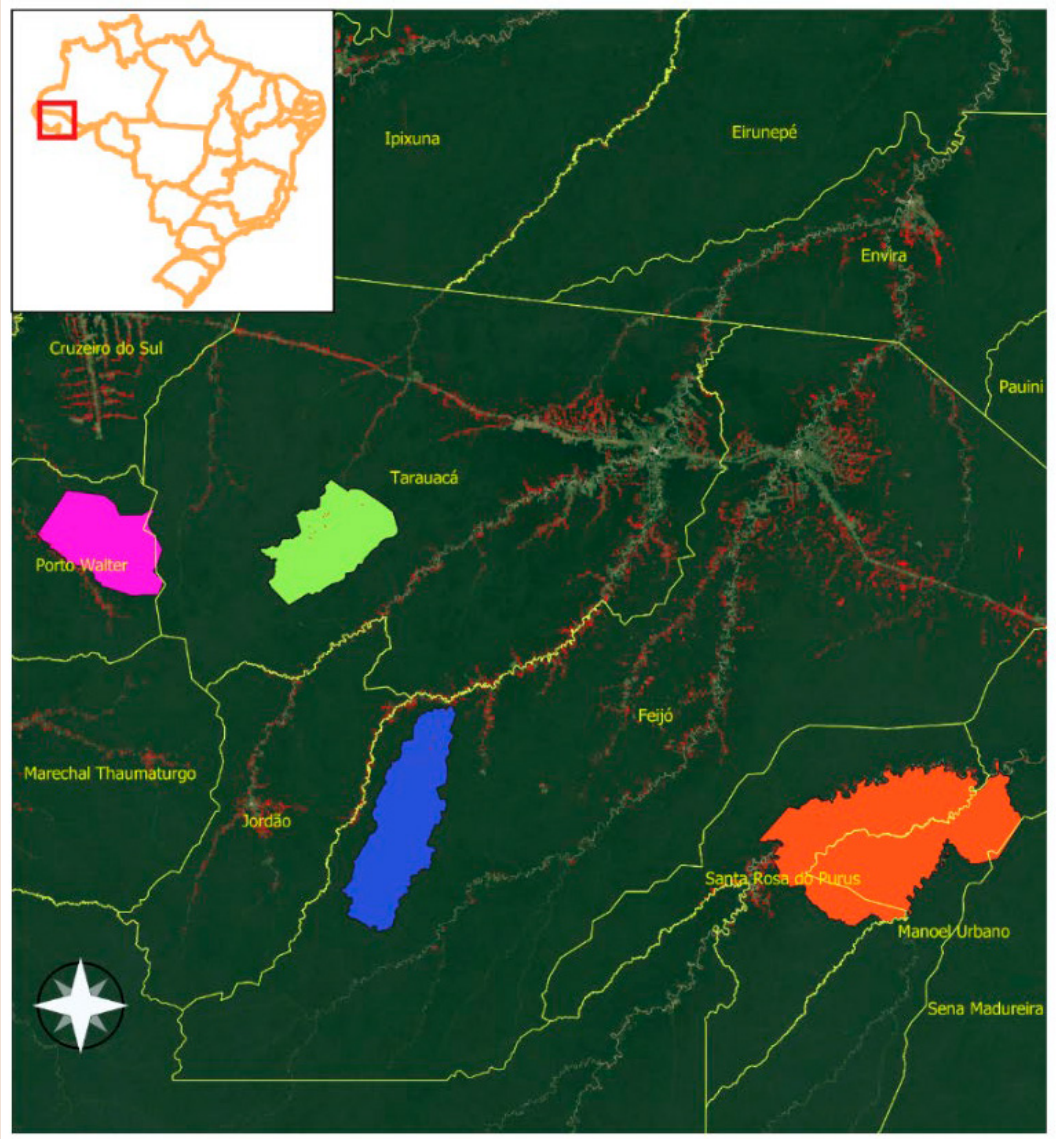
Source: BUSCA TERRA, 2021.[11]

The *Value Chains in Indigenous Lands in Acre* project managed to reduce deforestation in ILs by 38.91%, although deforestation has risen again after the project was completed by 633.72%. .

The map in Figure 2 details the area of operation of Project *Value Chains in Indigenous Lands in Acre*.

11. Ibidem.

Figure 2: Coverage map of the *Value Chains in Indigenous Lands in Acre* project



CAPTION

Municipalities
PRODES

Projects Supporting Indigenous Peoples

Value Chains

Alto Rio Purus
Kaxinawá do Rio Humaitá
Arara do Igarapé Humaita
Rio Gregório

0 20 40 60 80 100 km

SIRGAS 2000

Sources:
FUNAI, PRODES e IBGE

Production:
Busca Terra
02/10/2021

Source: BUSCA TERRA, 2021.[12]

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

4.1.1. Sustainable Production Component: *Activities that keep the forest standing are economically attractive and constitute a sustainable alternative to deforestation in the Indigenous Lands of Rio Humaitá, Rio Gregório, Alto Rio Purus and Arara do Igarapé Humaitá, in the state of Acre*

This component, as seen before, is divided into three central components: economic activities with sustainable use of the forest, improved agroforestry; agroforestry and biodiversity product chains with increased value; and training of indigenous agroforestry agents. All three are based on the same logic: the strengthening of forest extraction production chains, such as wood and extractive products, such as nuts, and non-forest products, such as fish and turtle, honey, sugar cane and cassava.

As an indirect effect, the workshop and training activities promoted by this project for the sustainable use of the forest, created a virtuous circle. In fact, trained people can share the new techniques for farming and extracting plant products that they have learned with other people who have not participated in the courses and workshops, generating a multiplying effect, encouraging (and teaching) those who could not or did not have the opportunity to participate in the activities promoted, who replicate them by working side by side with people who attended the courses and workshops.

In this way, interest is generated for the maintenance and expansion of new sustainable practices, increasing quality of life, since production is now more efficient and less destructive towards nature, capable of competing in the market, while generating concrete and growing benefits such as income and quality of life for those who engage in them.

The general result of all these indirect effects ends up being, naturally, the preservation of the forest and the reduction of deforestation in the areas (indigenous territories) where the projects took place, since the techniques of production and fish farming that were taught go hand in hand with the maintenance of the forest and its biodiversity.

To mention a final indirect effect of the project, there is now the possibility of greater dedication of indigenous communities to their rites and cultural habits due to the increase in free hours and income obtained thanks to the project. The subject of increased quality of life was highlighted in the interviews, as was the increase in food security.[13]

13. Interviews with coordinators of the *Value Chains in Indigenous Lands in Acre* project..

4.2. Summary of Direct Effects

To have a global view of the results achieved, action indicators of the activities carried out in the *Value Chains in Indigenous Lands in Acre* project are available below. General indicators can be seen in Table 4.

Table 4: Goals and Results of General Indicators

#	Indicator	Goal	Baseline	Result	Variation Increase (%)
I	Revenue obtained from unprocessed production	-	BRL 20,000.00	BRL 99,875.00	399.37
II	Unprocessed product volume sales	-	11 tons	89 tons	709.09
III	Revenue obtained from handicrafts and commercialization of processed products (per product)	-	BRL 84,500.00	BRL 520,996.00	516.56
IV	Total volume of cassava flour production	-	56.5 tons	435.5 tons	667.25
V	Commercialized volume of cassava flour production	-	24.5 tons	296 tons	1108.16
VI	Total production volume of sugarcane derivatives	-	1.2 tons	0	
VII	Commercialized volume of the production of sugarcane derivatives	-	800 kg	0	
VIII	Number of indigenous people directly benefited by the activities promoted by the project	-	676	974	44.08
IX	Number of women directly benefited by activities promoted by the project	-	219	362	65.30
X	Area in process of reforestation through SAFs	-	170ha	186.31	9.59
XI	Number of indigenous agroforestry agents (AAFIs) effectively trained using the knowledge acquired	-	60	88	46.67

As shown in Table 4, the benefits of the *Value Chain in Indigenous Lands in Acre* project were quite significant. Indeed, the revenue obtained with the proposed activities were significant for the indigenous communities, in particular the revenue obtained from unprocessed production and revenue from handicrafts and sale of processed products, which rose by 399.37% and 516.56%, corresponding

to BRL 99,875.00 and BRL 520,996.00, respectively.

Likewise, regarding production (in tons), there was an increase of 709.09% in the volume of sales of unprocessed products, 667.25% in the total volume of cassava flour production (depending on the distribution of flour mill kits), and 1108.16% in the commercialized volume of cassava flour production.

Regarding training, the results were similar. There were 974 indigenous people directly benefited by the project activities (contrasting an initial estimate of 676) and 362 indigenous women received support in their activities, notably, but not only in the area of handicrafts, as opposed to an initial estimate of 219.

The physical data per product (and project goals) are shown in Table 5, although the positive results are repeated.

Table 5: Products for specific purposes

Products	Indicators	Goal (estimated)	Achieved
Product 1.1: Installment and enrichment of 170 hectares of agroforestry systems (SAFs)	(I) Area corresponding to the implemented agroforestry systems (hectares)	40	42.28
	(II) Area corresponding to enriched agroforestry systems (hectares)	170	186.31
Product 1.2: Implementation of chelonian and fish management	(III) Number of dams built	4	4
	(IV) Number of dams with continuous management	13	10
Product 1.3: Stingless bee keeping implementation	(V) No. of stingless bee boxes installed	200	201
	(VI) Number of boxes of stingless bees in production	200	130
Product 2.1: Installment of flour mills and a sugar cane mill	(VII) Number of mills installed by the project	1	1
	(VIII) Number of mills in production	2	1
	(IX) Number of flour mills installed by the project	20	118
	(X) Number of flour mills in production	29	138
Product 2.2: Workshops to improve indigenous handicrafts	(XI) Number of indigenous participants in the workshop	30	42
Product 3.1: Training of Indigenous Agroforestry Agents	(XII) No. of AAFI's trained	60	88

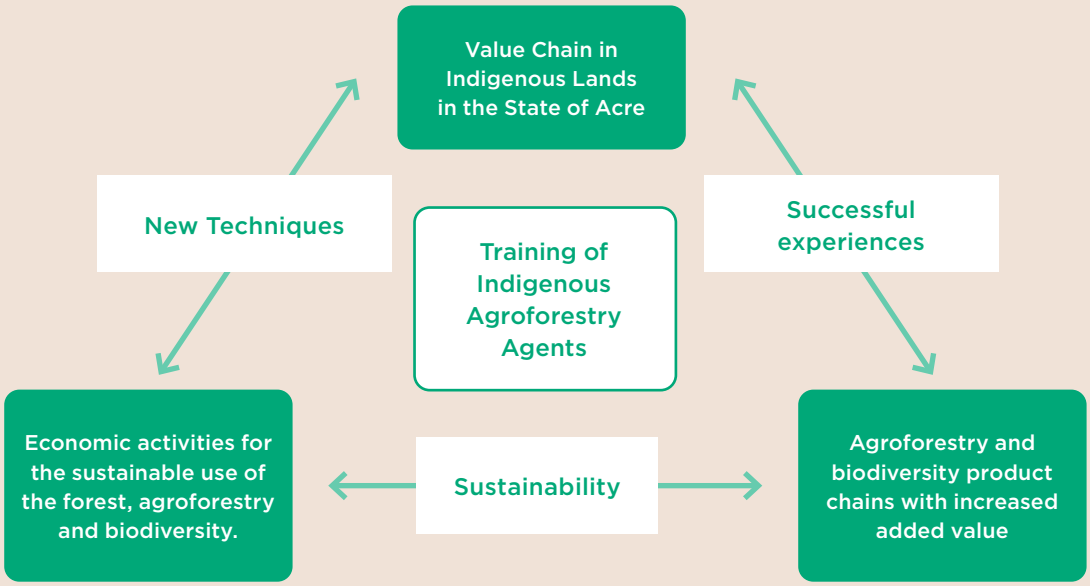
The most significant data were the areas referring to agroforestry systems in operation (186.31 ha), the number of bee boxes installed, and the number of flour mill kits distributed under the *Value Chains in Indigenous Lands in Acre* project (201).

One challenge during the project's execution was achieving certain targets, particularly related to the maintenance of the stingless bee boxes in production, the mills in operation and assessing the number of dams where managed turtle and/or fish farming is taking place. In other words, the CPI institution in Acre reached all its goals regarding the installation of bee boxes, dams, and flour mills, but it had difficulties in its assessments.

4.3. Direct Effects

As mentioned earlier, the Value Chains in Indigenous Lands in Acre project was based on the sustainability triad of value improvement, and empowerment, as shown in Figure 3.

Figure 3: Sustainability triad in Project *Value Chains in Indigenous Lands*



Source: Prepared by authors

Training, within the *Value Chains in Indigenous Lands in Acre* project, is perceived as the essence of the project and of its success. To highlight its direct results for the project, they will be divided by the triad presented above and their respective products and services, starting with item 01 (Economic activities envisioned with sustainable use of the forest, agroforestry, and biodiversity). In this item 01, we have as one of its initial products (Product 1.1): Installment and enrichment of 170 hectares of agroforestry systems (SAFs).

Despite the expectation of implementing and enriching 170 hectares of agroforestry systems (SAFs) – Product 1.1. –, in fact, the mark of 186.31ha implemented and enriched was reached with 9.59% higher results compared to the initial target. As to the area of implemented agroforestry systems (hectares), the planned area had 40 ha, and 42.28 ha were implemented, surpassing the target by 5.7%. Regarding the area of enriched agroforestry systems (hectares), the target was 130 ha, but the result was 186.31 ha, that is, an overshoot of 43.1% above the goal.

Product 1.1., in addition to its explicit importance of implementing (and enriching) 186.31 ha of agroforestry systems, has clear effects that span other products. As an example, agroforestry systems may play an important role in climate change adaptation, but with better use of energy and, consequently, greater productivity. As they are more efficient and diversified, SAFs can also contribute to increased food security.[14]

Susan Stein, from the United States Agroforestry Agency (USAD), has a study with 30,000 agroforestry farmers in the US in which she concluded that SAFs promote important environmental benefits, such as: water quality, carbon capture, increased biodiversity, and soil conservation.[15] Other benefits of agroforestry systems include flora and soil recovery, in addition to the obvious economic benefits of increasing and diversifying production beyond unprocessed non-timber products that forests naturally offer.[16]

Regarding turtle and fish management (Product 1.2), there were different results. In the item 'construction of ponds and dams', the target of building 4 ponds/dams was fully achieved. As for the item measuring of ponds for fish farming (existing ones)', the target was not achieved, as the

14. IPCC apud WRI Brasil. A ciência mostra as vantagens da agrofloresta e dos plantios mistos para a restauração. at: 8 Oct. 2021.

15. Ibid.

16. In particular, fruits and nuts. Ibid.

target was 13 ponds measured and 10 were measured, i.e., 76.9% of the original target.

Apparently, the pond management activity was not properly planned, which prevented the project from reaching its target number of ponds with continuous management. There were finished ponds, but they were not working properly. Perhaps hiring more advisors on ongoing management would have allowed the project to achieve more substantial results on this subject. This is a lesson about the need to further diversify technical assistance for future projects.[17]

The report also cites the need to legalize the ponds through IBAMA, which took a long time, delaying the target achievement for this item. In the interviews, it was mentioned several times that the project period was considered short (only 2 years and 8 months) and that the project contract procedures also required a lot of time.[18]

Nevertheless, it was certainly a learning experience for the CPI of Acre and for the local indigenous communities, in this case the IL Alto Rio Purus, regarding the difficulties and challenges of managing ponds for the purpose of raising fish and turtles. Therefore, due to the difficulties encountered, nothing prevents the Acre CPI organization from preparing and organizing a specific project for this purpose: pond management. Nonetheless, the interviews showed that the CPI institution as a whole grew thanks to this project.[19]

In addition, the fact that the project has trained 91 indigenous people to manage the 10 dams in full use with continuous management (4 built and 6 existing dams with continuous management), prepared the communities benefited by the project to move forward and increase the number of dams with continuous management for fish and turtle farming.

It is worth noting that fish and turtle farming can be stimulated both as a supplement to the income of other agroforestry activities, but also as an important activity for the income of the community. Fish such as arapaima, tambaqui and tilapia can be an important source of income. EMBRAPA, for example, estimates the price of fingerlings at around BRL 330.00 per thousand. In addition, fish can generate high value-added

17. The project's evaluation reports do not go into detail about what were these problems that required regularization.

18. Interviews with BNDES technicians and coordinators of the CPI institution in Acre.

19. Interviews with BNDES technicians and coordinators of the CPI institution in Acre.

products if they reach adulthood, such as fish fillet and fish leather, which is sought for wallet manufacturing.

Honey consumption is quite low in Brazil, around 60 kg/person/year, compared to a consumption of 910 kg/person/year in the USA.[20] This indicates a high demand potential for honey producers under the *Value Chains in Indigenous Lands in Acre* project.

Stingless bee keeping represents an important economic activity, with high added value. It is estimated that it generates more than 350 thousand direct and indirect jobs in Brazil.[21] The average price obtained by the beekeeper is BRL 12.0 per kilo. A box of honey yields, on average, 14.5 kg. In addition, around 50% of the honey produced in Brazil is exported, which adds to the potential of the market.

In this project's case, the goal was to install 200 boxes of stingless bees. However, 201 boxes were built, i.e., 0.5% above the established target. On the other hand, there was a goal of measuring 200 boxes, but only 130 boxes of bees were in production and measured, 65% of the total target.

Within the scope of the project, the activity took place in three of the four ILs in the project's last stage. Thus, the target of bee boxes in production has not yet been reached, but it was not feasible to capture swarms in proportion to the number of boxes so that they could be colonized in a timely manner for multiplication.

An interesting aspect of this project is that the indigenous communities not only received donations of bee boxes and support to buy them, but the beneficiaries learned how to manufacture the boxes with local resources.[22] This increases the sustainability of the project because, as stated in the evaluation reports: "But it's only a matter of time before all the installed boxes have their own swarm and are producing". This was, therefore, a great gain for the communities of the indigenous territories of Acre: the expansion of the stingless beekeeping activity with the support of specialized advisors and consultants and the mastery of all steps of production, from the construction of boxes to the marketing of honey. According to information provided in the various

20. Idem. for. 10.

21. MINAS GERAIS. EMATER. Produção de mel gera empregos e movimenta a economia do norte de Minas. Emater website. Available in: https://www.emater.mg.gov.br/portal.cgi?flagweb=novosite_pagina_interna

22. Evaluation documents made available to evaluators.

evaluation reports, the project trained 133 people to handle honey boxes, 58 in 2017 and 74 in 2018.[23]

The project's initial target was to distribute only 20 flour mill kits. At the end of the project, 118 flour mill kits were distributed. This represents a 490% increase from the initial goal.

Regarding the number of flour mills in production at the end of the *Value Chains in Indigenous Lands in Acre* project, the total number of kits was 138.[24] This total is 375.86% greater than the number of flour mills in operation demanded at the beginning of the project, which was 29 flour mills in operation.

In addition, the project also provided for the installation of a sugarcane mill, which, added to the existing mill, would allow production to double. This, however, did not happen. A (new) mill was installed according to the project. However, by the end of it, only one mill was in operation.

Both the products from the flour mill (manioc/tapioca flour) and the byproducts of sugarcane (sugar, molasses and brown sugar) are products that are easily sold and have high market demand.

Thus, distributing flour mill kits and building a sugarcane mill accomplishes the goal of the *Value Chains in Indigenous Lands in Acre* project of "Agroforestry and biodiversity product chains with increased value". Although cassava and sugarcane byproducts do not have a very high unit value, they can receive the quality seal of organic products and/or certificate of origin, which adds value to their retail price.

One cannot dissociate handicrafts from its culture. By holding workshops that improve indigenous handicrafts, the *Value Chains in Indigenous Lands in Acre* project contributes not only to prevent deforestation, but also to appreciation of indigenous culture.

The workshops held were expected to reach 30 people, but 42 people were trained. That is, the attendance was 40% higher than the established target.

The Handicraft and Seed Processing Workshop, held at IL Rio Gregório in March 2018, was attended by 42 indigenous people, surpassing the initial target of 30 attendees.[25] The interesting fact is that the in-

23. Evaluation documents made available to evaluators.

24. Acre's CPI. Evaluation report.
20 flour mills were already in operation when the project began its activities.

25. Acre's CPI. Evaluation reports.

digenous people requested not only training courses in handicraft techniques, but also in tools. It was possible to meet this demand by supplying seed processing tools and machines[26], thus ensuring the applicability of the lessons learned in the workshops and the sustainability of the project's methodology.

This activity also achieved the targets initially proposed with the advantage of appreciating the culture and tradition of indigenous communities. In addition, it allowed for an increase in their income, as shown at the end of this section on Direct Effects (Results).

The role of agroforestry agents ranges from territorial management (security) of indigenous territories, dealing with issues that concern food security and the quality of life of indigenous peoples, to economic activities for the sustainable use of the forest and biodiversity.

Thus, by offering training to agroforestry agents, the *Value Chains in Indigenous Lands in Acre* project facilitated the process of absorbing new teachings and techniques, presented in the activities mentioned above. This is because the agents play a 'messenger' role between traditional indigenous leaders and other people who bring new practices to the ILs in the form of courses, training, and workshops.[27]

26. Acre's CPI. Evaluation reports.

27. BIANCHINI, Fabricio; BIANCHINI, Paola Cortez. Os agentes agroflorestais indígenas do Acre. Revista V4N2. Available in: http://aspta.org.br/article/os-agentes-agroflorestais-indigenas-do-acre/

Table 6: Considerations for the *Value Chains in Indigenous Lands in Acre* project according to OECD criteria

Criterion	Result
Relevance	The *Value Chains in Indigenous Lands in Acre* project converges with the goals of the Amazon Fund, as it deals with the preservation of the forest through the sustainable economic use of its products.
Efficiency	The project proved to be efficient in the management of constructions, implementation of dams, bee boxes and construction of flour mills. However, there were difficulties regarding maintenance of such services. It was hard to achieve the targets. Both the management of the dams and the bee boxes did not reach the proposed targets.
Efficacy	The physical objectives of the intervention were fully achieved and even exceeded. Some activities could not be measured in terms of efficacy due to the lack of an initial target, which makes evaluation difficult.
Effectiveness/ Impact	The project had positive impacts on the lives of the indigenous peoples of the four ILs covered by the *Value Chains in Indigenous Lands in Acre* project. Interviews with coordinators confirmed the improvement in the quality of life of indigenous peoples benefiting from the project. There were several training courses in the field of agroforestry (SAFs), in which new operating techniques were presented. These new agroforestry techniques promote the conservation of natural forests and biological diversity. Thus, the impact of the project was positive and can be considered an effective project.
Sustainability	The debate about the continuity of the project permeates all projects supported by the Amazon Fund and it is no different with the *Value Chains in Indigenous Lands in Acre* project. What makes this project more manageable is that, unlike the others, it has only one Component, which allows focusing on the adoption of activities and products aimed at its sustainability. **a) Regarding benefits, actions and activities carried out,** in general, it was concluded that the Value Chains in Indigenous Lands in Acre project allows continuity through training and activities undertaken through the attained knowledge, which can be replicated even if the project has not been renewed. These experiences will allow the executing institution (the Acre CPI) to develop and seek new partnerships in the area covered by the indigenous peoples of the ILs benefitted by this project. **b) Regarding the Sustainable Production Component, the project offered activities with great potential to be maintained over time:** such as the promotion of economic activities for the sustainable use of the forest, agroforestry and biodiversity; strengthening agroforestry product chains and biodiversity with increased added value and training indigenous agroforestry agents to provide technical assistance and rural extension in economic activities for the sustainable use of the forest, agroforestry and biodiversity. These activities allowed them to implement turtle and fish farming through the construction of 4 (four) dams; the implementation of stingless beekeeping by building and installing 200 bee boxes, and the implementation of 20 flour mills and 1 sugarcane mill. These activities allow the executing association (the Acre CPI) to use the structure created by the project to maintain agricultural production and generate income for its beneficiaries in a sustainable way over time, after the conclusion of the FA/BNDES project.

5. Management and Monitoring: Advances and Challenges

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

This project had a team made up of 11 people, divided into a general coordinator, two administrative and financial advisors, four advisors and technical assistants, one being an indigenous person.

5.1. Strengths

The project created a team focused on monitoring and evaluation. It was made up of two indigenous leaders from the beneficiary ILs.

In this context, the CPI team held meetings at the Center for Training of Forest Peoples roughly every eight months, to present the project's activities and resources to the team. In the field, technical advisors provided information on the progress of physical and financial execution.

With the Amazon Fund project, CPI-AC can strengthen its institutional capacity for management and execution of resources.

5.2. Challenges

There was a need for eight additional months to bring the activities to a close and carry out an audit. It was necessary to adjust activities to carry out the last planned disbursement, and obstacles in the dialogue with IBAMA for the waiver of licenses was an external factor that hindered and delayed the construction of dams and fish farming.

There is still a need to expand the participation and dialogue of the communities supported in the follow-up of their interventions. In the case of the project, the communities were initially consulted about prioritizing activities, inputs, and equipment to be acquired for the interventions.

The relationship with the BNDES team was improved throughout the project. While in the beginning there was trouble in understanding

activities, over time it was possible to understand specific operational demands and needs for the region.

6. Conclusions

The *Value Chains in Indigenous Lands in Acre* project reached, and even exceeded, most of its physical targets, notably those related to the installation or construction of buildings and equipment, such as dams, bee boxes, mills, and flour houses. This was one of the strengths of the project and the CPI institution in Acre.

In addition, through activities supported by the CPI organization of Acre, a significant increase in the income of the indigenous communities supported by the project was also obtained, which went from approximately BRL 100,000.00 (BRL 104,500.00) to more than BRL 600,000.0 (BRL 620,871.00).

Furthermore, the organization achieved all the objectives and targets in relation to the training of the project's target audience, with almost a thousand indigenous people (974) benefiting from workshops, courses, or training. Attention should be drawn to the training of indigenous agroforestry agents (AAFIs), which reached 88 people, due to the strategic importance of introducing new techniques to indigenous communities, in addition to its importance in food security and in indigenous autonomy.

In that sense, the Acre CPI demonstrated resourcefulness and proactivity in reaching out to the indigenous lands of Acre and performing as it did, with dedication and commitment, as the interviews indicated.

The interviews also suggested that there was a high receptivity and interactivity between teachers and students, which allowed an increase in fruit production, handicrafts, and fish farming.

Regarding agroforestry systems, the objectives and targets were fully achieved, with about 186.31 ha adapted for the agroforestry system. Likewise, they were also met through the construction and implementation of dams, bee boxes, and the construction of flour mills. The same cannot be said for the management of the dams and bee boxes, which fell short of targets.

The main weakness of the organization (CPI) is that it had difficulty in meeting its maintenance targets for equipment already installed, falling short of the target number of dams with continuous management

(10 out of 13), the number of boxes of stingless bees in production (130 out of a target of 200 boxes in production) and the number of sugarcane mills in operation (one out of the two planned).

It is therefore necessary for the CPI institution in Acre to improve its monitoring, measurement, and technical assistance systems in future projects.

7. Lessons Learned and Recommendations

7.1. Lessons Learned

According to the interviews carried out, the main Lessons Learned were[28]:

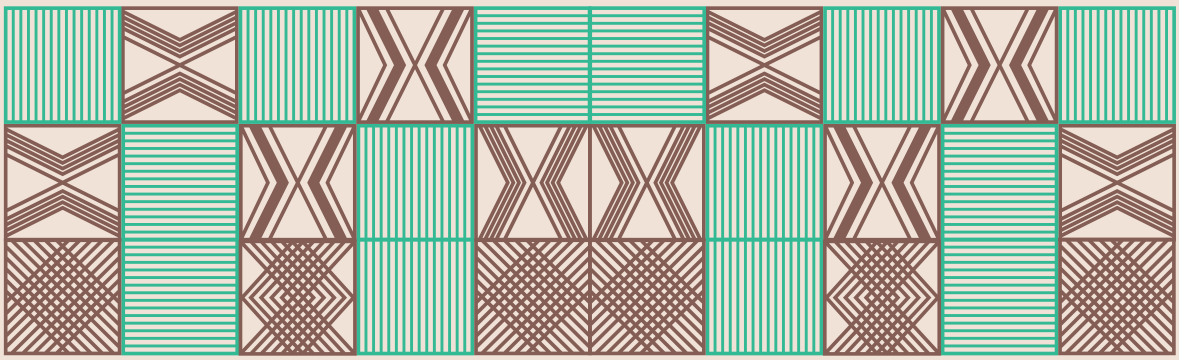
- Women were encouraged to participate in the courses, but they were not the majority. However, they have become more proactive. Many did not take the course but saw other women who did. The project contributed to this empowerment.
- It is necessary to further support the institutions that will manage project resources. In this sense, the interviews indicate that the BNDES' role was essential in training the institutions' managers. During the interviews, it was mentioned that it is necessary to better align the technical staff to avoid losses such in the issue of ponds/dams that were not adequately managed. When a dam breaks, all the fish is lost.

The main recommendations collected from the interviews were: Align technical staff at all times and pay more attention to public policies, as time is short. In any case, there was coordination with the PNAE and the PAA.

28. Interviews with BNDES technical staff and with Coordinators of the CPI institution in Acre.

7.2. Recommendations

	Recommendation	Executing entities	States	Amazon Fund	Federal government	Business Sector	Donors
Direct effect	Establish private partnerships for the commercialization of products that come from the project in Brazil	X	X	X	X	X	X
	Establish partnerships for the export of products resulting from the project's activities	X	X	X	X	X	X
	Greater coordination with states and municipalities to make it possible for IL products to be included in school meals and in public Food Acquisition Program	X	X	X	X		
Indirect effect	Support new public calls for projects that allow the continuity of this and other Amazon Fund's projects		X	X	X	X	X
	Seek greater support and involvement from Funai, the federal agency responsible for indigenous policy, to promote actions and programs with projects supported by the Amazon Fund		X		X		
	Support new projects and partnerships that are aligned with current ones and integrate Sustainable Productive Activities in indigenous lands and conservation units	X	X	X	X	X	X
	Create a registry of companies that destroy the environment, similar to the registry of companies that practice child labor or slave labor and prevent them from receiving public resources through loans, exemptions or income tax deductions		X	X	X	X	
General	Partnering with national institutions (Ex.: EMATER, EMBRAPA) and international (IICA) technical assistance and rural extension	X	X		X		
	Present access channels to other funding sources, national and international	X	X	X	X	X	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 agroforestry systems proposed in the *Value Chains in Indigenous Lands in Acre* project contribute to the preservation of forests and are related to 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	The project helps the State Program for the Prevention and Control of Deforestation (PPCD-AM) achieve its objectives.
What other federal public policies or international agreements did the projects show alignment with? In which aspects?	YES	• Climate Agreement (Paris): agroforestry systems contribute to the preservation of the environment and diminish the effect of global warming in the benefited territories. • PNGATI: National Policy for Territorial and Environmental Management in Indigenous Lands insofar as it supports the occupation of IL with sustainable economic activities. • Cultural programs to preserve indigenous memory: in terms of support for handicrafts. • Innovative Practices Project: many practices adopted in the project are innovative (dams). • Monitor Program (ICMBio-MMA): allows monitoring the status of biodiversity in the areas benefited by the project. • Brazil Bioeconomy Program: the project supported activities that supported the local production chains of the ILs with activities for the sustainable use of natural resources. • State Climate Change Programs: justified above.
Did the project contribute, or could it contribute directly or indirectly to the reduction of emissions from deforestation or forest degradation? How?	YES	The agroforestry system contributes to CO2 emission reduction.
2. Transparent and effective national forest governance structures, taking into account national legislation and sovereignty	YES	The project supported by the Amazon Fund is the result of an international cooperation (donors and Brazil) that complies with national legislation and is consistent with international agreements to which Brazil is a party in matters of forestry.
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?	PARTIALLY	The project presented few examples of communication with subnational authorities and some national ones, such as FUNAI. The cooperative action with these authorities was insufficient and delayed the project, as evidenced by the case of the authorization of the dams.

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Safeguard	Meets criterion	Observation
To what extent have the projects contributed to strengthening public instruments and forest and territorial management processes?	YES	The project adopted agroforestry systems, which intensifies the relationship of indigenous communities with the forests around them.
3. Respect for the knowledge and rights of indigenous peoples and members of local communities, 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 had activities related to the preservation of indigenous culture, such as handicrafts, which value 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	With the economic use of the ILs in a sustainable way, the project reinforced the rights of indigenous communities over their lands.
To what extent have the projects influenced the sustainable use of natural resources in their area of operation?	YES	The economic use of forests in the agroforestry system in the ILs influenced the use of natural resources in a sustainable way.
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	Yes. An example of this was, among others, the workshops to support indigenous handicrafts.
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	There was a positive interference both in matters of culture (support for indigenous handicrafts) and in the exploitation of resources in a sustainable way, as the agroforestry system illustrates well.
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	There were high participation rates, with activities promoted by the project, both by indigenous people and other beneficiaries of the project.
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	Indigenous leaders were consulted prior to the execution of each project activity, having their consent.
What participatory planning and management tools did the projects apply during planning and decision making?	YES	Workshops and meetings with indigenous leaders. It was a partnership project: federal government – indigenist NGOs – indigenous leaders.
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 concentration of resources?	YES	Yes. Indigenous communities will retain the financial resources obtained from the sale of their products (from the activities developed) and will control their use in the future.
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	From the beginning of the project, a system of public notices was used that guaranteed transparency to all actions developed by the projects. In relation to the beneficiary public, the projects held workshops, courses, and training, in which new performance techniques were shown.

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Safeguard	Meets criterion	Observation
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 were to be systematically monitored.
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 16[29] 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		Yes. The agroforestry system guarantees the conservation of natural forests and biological diversity.
How did the projects contribute to the expansion or consolidation of protected areas?	YES	Through the sustainable use of natural resources and the training of indigenous agroforestry agents.
How did they contribute to the recovery of deforested or degraded areas?		This information is not in the project reports, but they surely did.
In the case of area restoration and reforestation activities, did the methodologies employed prioritize native species?	YES	Yes, certainly.
To what extent have the projects contributed to establishing recovery models with an emphasis on economic use?		Through the sustainable use of natural resources and the agroforestry system, which guarantees the conservation of natural forests and biological diversity. The training of Indigenous agroforestry agents also prioritized sustainable economic use of Indigenous Lands.
6. Actions to address the risks of reversals in REDD+ results		
What factors constitute risks to the maintenance of REDD+ results? How did the projects address them?		The information available is that the financial compensation mechanism (REDD) was not used in this project, although it is considered completely compatible with the preservation of the forests that the *Value Chains in Indigenous Lands in Acre* project promotes.
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	The very nature of agroforestry systems contributes to carbon capture and emission reduction.

29. 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.

9. Crosscutting Criteria

Crosscutting criteria		Meets criterion	Comments
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	The project's activities were focused on sustainable production, to add value to production chains and to preserve biodiversity.
	To what extent have the projects positively influenced poverty reduction, social inclusion and improved living conditions for beneficiaries living in their area of operation?	YES	The project generated additional income for the communities and activity increased, allowing the entire community to participate in the planned actions.
	Have the projects been able to promote and increase the production in value chains of timber and non-timber forest products based on sustainable management?	YES	Yes. Most of the targets were achieved and some even exceeded. They have been described in detail in the 'Results - Direct Effects' section'.
Gender equity	The project aggregated some results and impacts on gender issues	YES	Indigenous women actively participated in the training provided, being the majority in some of them.
	How did the projects contribute to gender equity?	YES	Project activities empowered women and promoted gender equity as they allowed women to feel more secure in their market-oriented productive activities.
Coordination of Public Policies	Was it possible for the project to cooperate with public policies at territorial and state level?	PARTIALLY	There were some important initiatives, but the project presented few concrete results from partnerships with states and municipalities.
Food and nutrition security	Did the project contribute to the food and nutrition security of the beneficiaries?	YES	Yes, through the improvement of local production chains and Sustainable Productive Activities.
	Has the project managed to include beneficiaries in food and nutrition security policies and programs?	PARTIALLY	Not in the official programs, but it allowed for an increase in production and income, generating an important agricultural surplus thanks to the agroforestry system.

Effectiveness Evaluation Of Indigenous Projects Supported By The Amazon Fund/BNDES

Value Chains in Indigenous Land in Acre Project

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