



# FOREST-BASED VALUE CHAINS

A New Bioeconomy for the Amazon Forest



## ACKNOWLEDGEMENTS

This work is translated from its original Portuguese and adapted from forest value chain research and technical manuals created for indigenous and local peoples of Brazil by the Forest Trends Communities and Territorial Governance Initiative (CTGI) in 2021 in partnership with the US Agency for International Development (USAID), Parceiros pela Amazônia (PPA), and the International Center for Tropical Agriculture (CIAT). We would like to thank and acknowledge the team for the original work that made this product in English possible:

**VALUE CHAIN BOOK LEAD:** Marcio Halla, Coordinator of the *Our Forest, Our Home* Project and Director of the Territorial Governance Facility at Forest Trends

**EDITOR:** Beatriz Vianna de Araujo Cintra

**PROOFREADING BY THE CTGI TEAM IN BRAZIL:** Cairã Andrade, Carlos Silva, Fabio Melo, Jonas Gebara, Luan Neves, Marcio Halla, Maria Barcellos, Muyara Ruiz, Nícia Coutinho, Pedro Póvoa, Suellen Manguiera, Tatiana Tintino

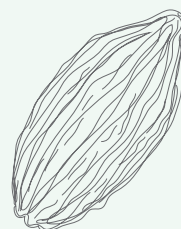
**GRAPHIC DESIGN, ILLUSTRATIONS, AND LAYOUT:** Lica Donaire - Ecotoré Serviços Socioambientais

**CTGI TEAM IN USA:** Beto Borges, Director, and Carla Cardenas, Senior Manager of the Peoples Forests Partnership and Climate Policy Advisor

**PARTNERS:** Indigenous Peoples and Organizations of the Tupi Mosaic

**STRATEGIC PARTNERS:** USAID, CIAT, and PPA





# FOREST-BASED VALUE CHAINS

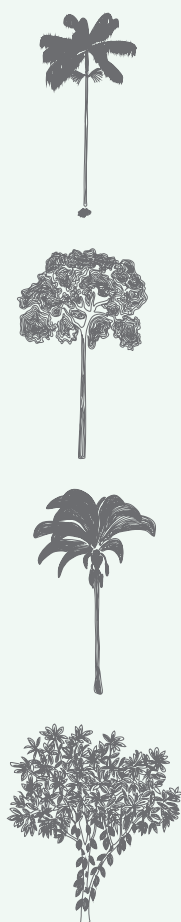
A New Bioeconomy for the Amazon Forest

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## BIOECONOMY:

A sustainable, regenerative, forest-based economy built on multiple supply chains from the biodiversity of the forest, rather than single-product supply chains, such as beef or soy. This economic model supports sustainable livelihoods and strong communities for indigenous and local peoples as they care for forests.



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# FOREWORD

As deforestation rates soar in the Amazon, national and regional governments are under pressure from the international community to control forest loss. The problem is that the current economic growth model relies on forest conversion for agriculture and livestock production, putting immense pressure on the forest and the indigenous communities living in it.

As the frontline against forest loss, indigenous peoples and local communities are critical contributors to global goals for biodiversity protection and climate action. One-third of the Amazon's total carbon stocks are located in indigenous territories. So far they have been well protected: indigenous territories experienced just 0.1% net carbon loss from 2003 to 2016, the lowest rate anywhere in the Amazon. However, under a recent onslaught of illegal logging and burning, the forests will fall unless the incentive structure changes.

Today's economic development paradigm in the Amazon is based on single-product economies, such as beef, soy, and palm oil. But alternative development trajectories are possible. As a prominent economic force and the world's largest forest country, Brazil is strategically positioned to be a global leader in shaping and modeling a new way of doing business.

Traditional Amazon systems have been based on diversity, not monoculture. Local and indigenous communities have been taking advantage of a multitude of crops and wild-harvested foods for generations, drawing carefully on different forest types and cultivated areas, and keeping the overall landscape intact. The conversations, planning, and management involved in sustainably producing a product like açai, for example, also serve as a foundation for bringing deeper benefits to a community, such as food security, sustainable land management, protection of territories and biodiversity, autonomy and empowerment of women, and cultural and community wellbeing.



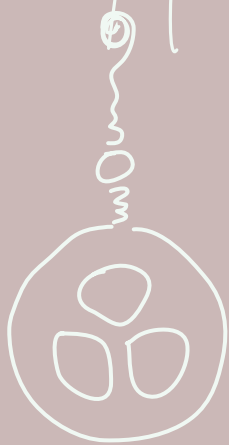
Our approach is based on a unique “network of networks” that includes over 50 indigenous and local communities, enterprises, and associations in Brazil, Colombia, Ecuador, Peru, and Mesoamerica. Long-term relationships built on trust have enabled us to work across an area of indigenous territories that totals around 25 million hectares. Our partners have helped us demonstrate how non-timber forest products produced using methods such as agroforestry can support biodiversity, livelihoods, and climate action.

Importantly, these efforts are not small, one-off projects, but rather a systemic approach that can be replicated and scaled across the region, helping to meet global climate goals and build a safe, equitable future for all.

We invite you to join us in this important work.

Michael Jenkins  
CEO & Founding President, Forest Trends

Beto Borges  
Director, Communities and Territorial Governance Initiative, Forest Trends



## INTRODUCTION

The “Amazon Bioeconomy” we are proposing mimics traditional Amazon management systems, creating a diversity of supply chains based on the incredible natural wealth of the region. More than two decades of partnering with indigenous peoples in the region has taught us that long-term collaboration with indigenous communities on self-directed development models is the best way to stabilize the forest frontier. Doing so both helps them defend their forests from illegal activities and strengthens sustainable forest economies of their choosing.



Collecting açai, Nova Kwazá village.  
Photo: Fabiana Aikanã

## FOREST PRODUCTS

We partner with indigenous communities in Brazil’s Tupi Mosaic to develop economic enterprises that promote forest conservation. We’re building sustainable value chains for four products: açai, artisan products, Brazil nuts, and cacao. We are also demonstrating the business model for growing native seeds and seedlings to support forest replanting efforts in the Amazon.



# TUPI MOSAIC



## TUPI MOSAIC

We work with partners in the Tupi Mosaic from 21 Peoples across 1.5 million hectares in 8 indigenous territories: Iguarapé Lourdes, Zoró, Sete de Setembro, Roosevelt, Rio Branco, Rio Mequéns, Kwazá do Rio São Pedro, and Tubarão Latundê.



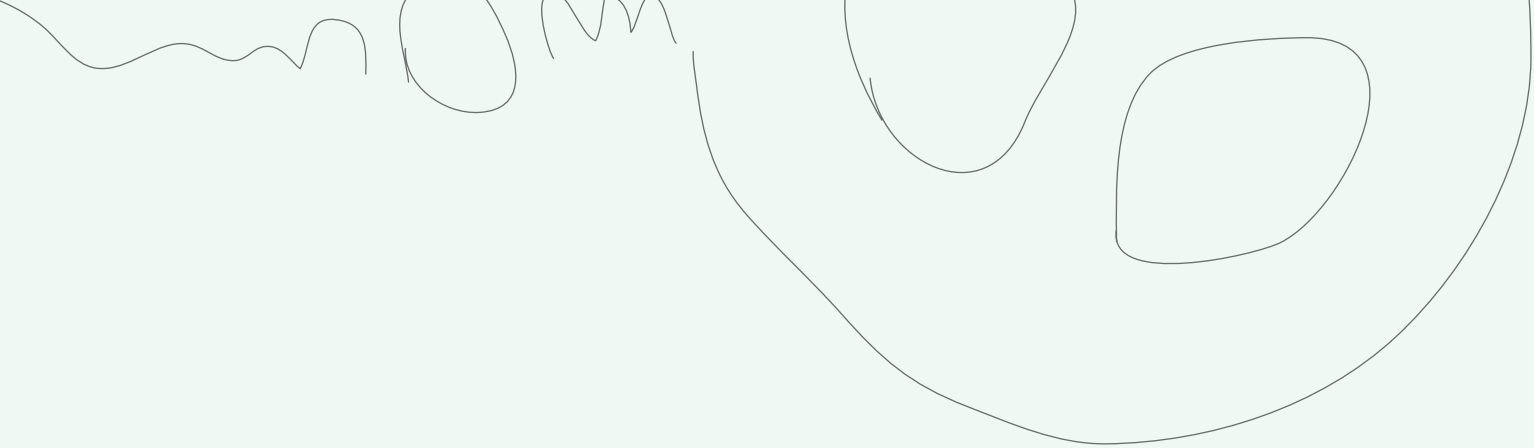
# FOREST TRENDS PROVIDES INCUBATION SUPPORT TO BRING SUSTAINABLE ENTERPRISES TO MARKET SCALE, THROUGH:

- Technical assistance and support for the adoption of “best practices” for forest management
- Connecting producers to seed funding or access to credit to start, grow, and/or improve business operations
- Market assessment and engagement advice
- Direct technical support in product development, marketing, business planning, technology, risk management, and certification/licensing
- Connecting producers directly with buyers and product distribution channels, eliminating the common problem of middlemen who cut indigenous producers out of profits, or in some cases, facilitating the restructuring of agreements to become equal partnerships
- Promoting opportunities for all community members, especially women and youth
- Resourcing local collaborative networks and organizing site visits to encourage cross-pollination of successful value chain models
- Strengthening territorial governance strategies, often by building upon existing territorial protocols and economic agreements



## A FEW BENEFITS THAT COME FROM FOREST-BASED VALUE CHAINS:

- More stable, sustainable livelihoods for community members
  - Increased community food security
  - Long-term sustainable land management planning
  - Increased autonomy and empowerment of women generating their own income and participating in livelihoods of their choosing
  - Increased detection and deterrence of illegal activities on their land, such as mining, logging, and fishing, among other threats
  - Increased traditional knowledge sharing, especially between older and younger generations, as all work together to collect and manage forest products
- 





# VALUE CHAINS IN THE TUPI MOSAIC



Açaí management area in the Kwazá Indigenous Land of the São Pedro River.  
Photo: Anderson Kwazá



## AÇAÍ

Indigenous açai is a key product in the Amazon bioeconomy. In the Tupi Mosaic, açai is mostly managed by informal family cooperatives. Through our work, we place emphasis on opportunities for women and youth to produce the açai pulp that fetches higher market prices than unprocessed fruit.

High demand for açai has generated pressure to open forested areas for its cultivation across the Amazon, which could harm conservation efforts if not done sustainably. However, this same pressure creates local opportunities to reforest degraded areas by cultivating it in agroforestry systems rather than monocultures. The production of açai in Brazil is growing, but it is still lower than demand, causing price increases that can lead to changes in local habits and food culture.

The export of açai puree has increased in recent years because it is easily transformed into other products in international markets, adding value that could have been generated by and for local producers who have the capacity to process fruit before export. In addition, cultivating açai generates more value than simply extracting it (Figure 1, next page), creating more livelihood opportunities for community producers.

We help communities build the business relationships and technical capacity to capture that additional value in their own production chains where possible.

The açai market has been growing, which has led us to seek several strategic commercial partnerships, including one with Agroindústria Dallan Açai, which made its first purchase of indigenous açai in September 2021 and agreed to purchase larger volumes in the future. The agreement included differentiated, higher values for fruit grown in the region, removing a longstanding barrier for indigenous producers, who have often had to rely on middlemen buyers who mark up prices in regional markets, cutting them out of profits.

## BRAZILIAN PRODUCTION OF EXTRACTED AÇAÍ BETWEEN 2000 AND 2014 AND EXTRACTED AND CULTIVATED AÇAÍ AS OF 2015, IN TONS

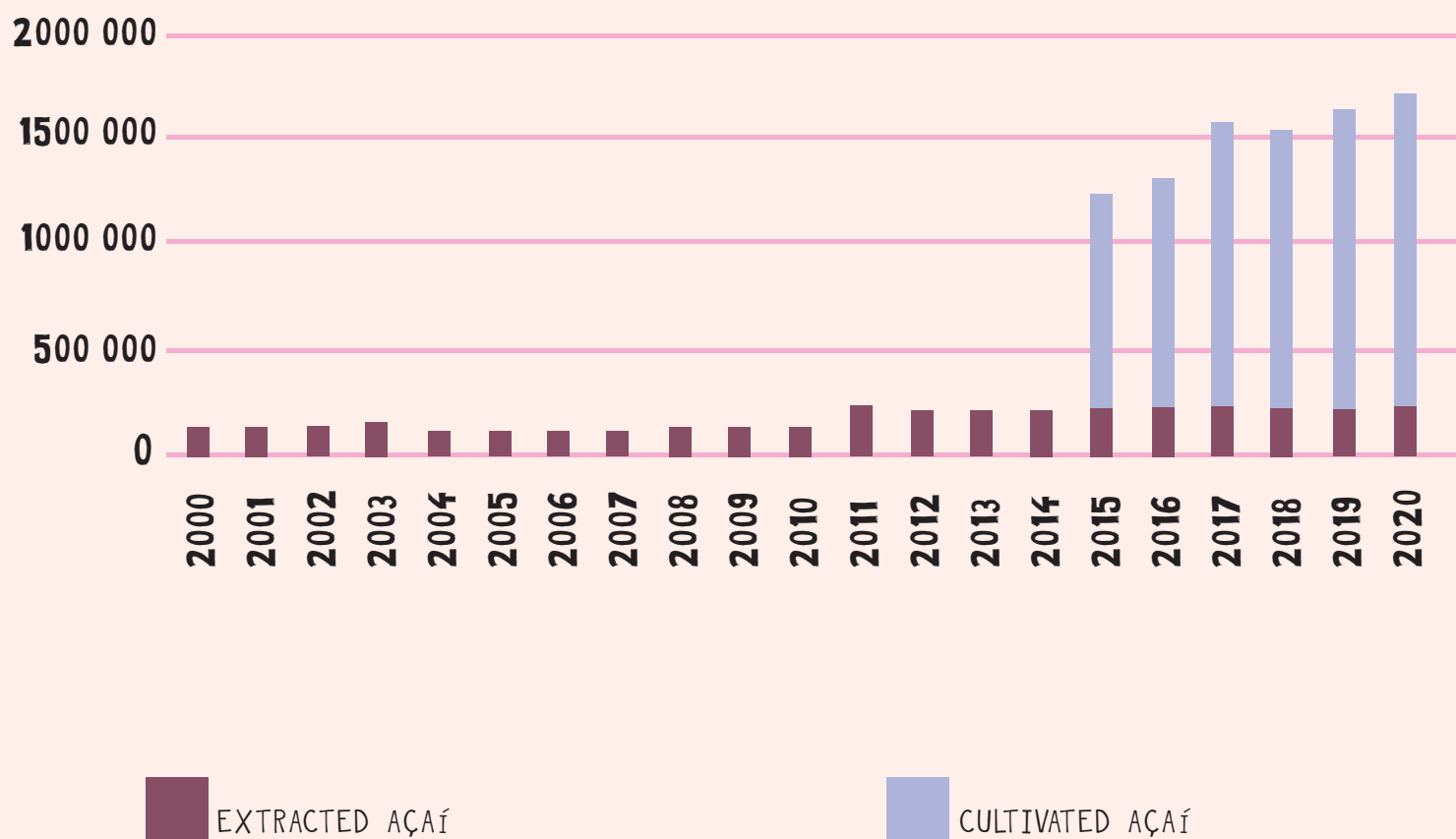


Figure 1- Note: The production of cultivated açaí in the country only began to be disclosed in 2015, which led to a great leap in total quantity recorded. Source: IBGE, 2020a, 2020b. Adapted by Forest Trends.



Dallan Açaí production area, Buritis (RO).  
Photo: Tatiana Tintino



Young Suruí apprentice from Gaggir village.  
Photo: Samorano Suruí, photo courtesy of A Soe Paiter  
Museum and Gap ey Association

# ARTISAN PRODUCTS

The artisan sector, often dismissed as “women’s work,” is the second-largest employer in low-income countries, a major informal economic sector in Latin America, and an incredibly important source of income for women. Thanks to long-standing support from several donors, we have focused on indigenous women’s artisan enterprises in the Brazilian Amazon as a cornerstone of our work.

In the Tupi Mosaic, indigenous handicraft production has enabled women to become more financially stable, independent, and empowered through the experience of developing their crafts into livelihoods. We have found that increased leadership and autonomy in their own homes has also translated to increased entrepreneurship and authority of women in other areas of the community, such as participating more in decision-making on territorial issues.

## CRAFTSMANSHIP AND SKILL

Skill, dexterity, and creativity leads to unique products.

## AFFINITY FOR COLLECTIVES

Traditions or agreed-upon advantages within the wider organization allows production and commercialization to benefit the whole community (or network of communities).

## TIMING

The supply of raw materials, such as plant fibers and seeds, often depends on the time of year and the knowledge of at which stage in its life cycle a plant should be harvested.

## ARTISTIC AND CULTURAL SENSITIVITY

Artisan work can represent nuances of daily life, tradition, and memory that express belonging or amplify important cultural symbols.

## ENVIRONMENTALLY SUSTAINABLE PRODUCTION

A harmonious relationship with nature and sustainable sourcing of product materials promotes ecological awareness.

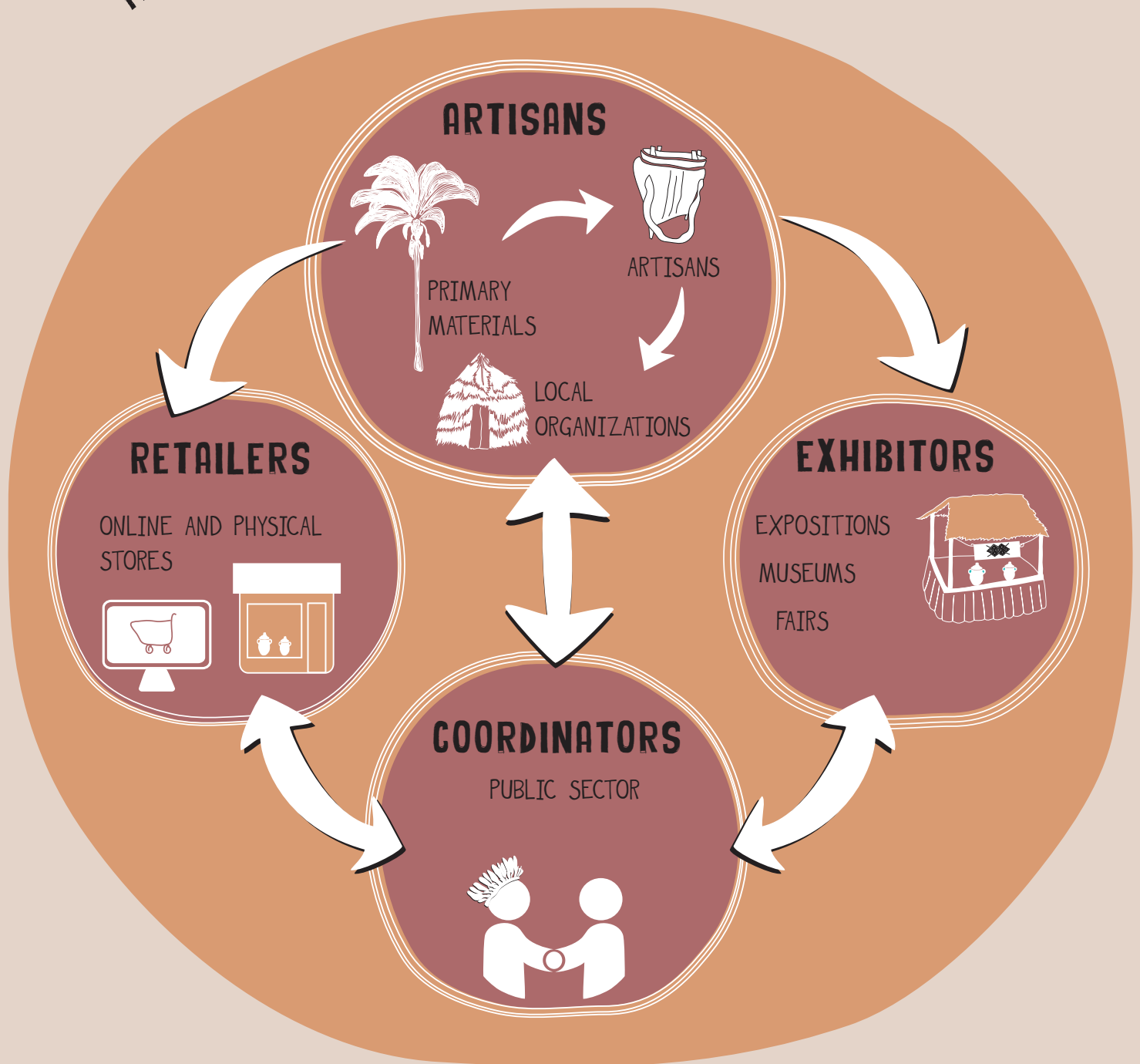




Neuza Suruí, Paiter Suruí artisan from the Sete de Setembro Indigenous Territory. Photo: Sobitxem Suruí, provided by COOPSUR

Supporting artisan enterprises is a celebration of the cultural, ecological, and economic worth of indigenous art. What's more, it is meaningful work for artisans that has a low environmental impact and draws from a diversity of foraged materials – from clay and plant fibers to recycled materials, such as tin and plastic, all of which align strongly with increasing global consumer demand for ethical and sustainable products.

# ARTISAN PRODUCT VALUE CHAIN



Source: TUCUM, 2019.



Variety of Aikanã Kwazá handicrafts, Kwazá do Rio São Pedro Indigenous Territory. Photo: Tatiana Tintino

With our support, artisans have access to expanded marketing opportunities and sales channels through Tecê-AGIR, a store created by the Association of Indigenous Women Warriors of Rondônia (AGIR), whose mission is to curate and sell artisan work from all over the state. Our team also provides direct support to village-based artisan groups: for instance, we've helped Tecê-AGIR offer training on online commerce, giving artisans access to foreign markets, and helping them weather better during the COVID-19 pandemic.

*In 2015, we had the idea to create a store for the women of Rondônia, a dream that only came true in 2018 with the support of Forest Trends' Communities and Territorial Governance Initiative.*

*We've been participating in a lot of capacity building workshops to learn more about how to manage our business and empower indigenous women's work. The store's goal isn't only to generate income, but to incentivize these women to produce and sell the handicrafts that they already create – the ones that come from a forest that is still standing and are made using traditional methods.*

*We are generating autonomy for women. We are seeing women on the front line of decision-making and preservation of their territories. We really want to serve other women in other communities.*

Marciely Ayap Tupari, Manager of Tecê-AGIR



The women of AGIR (Association of Indigenous Women Warriors of Rondônia). Photo: Neto Ramos, photos courtesy of Kanidé

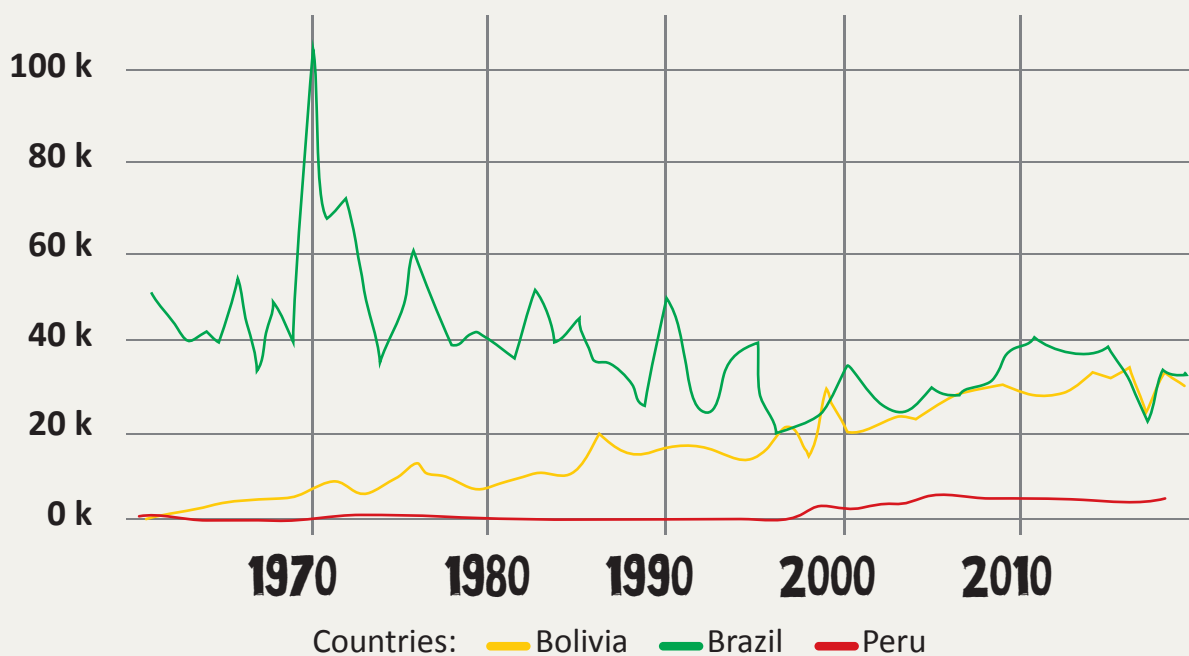


The fruit of the Brazil nut tree (*Bertholletia excelsa*) is opened to remove the Brazil nuts, the seeds of the tree.  
Photo: Aloyana Lemos, photo courtesy of Origens Brasil®

# BRAZIL NUTS

Brazil is the world's largest producer of Brazil nuts, despite having several unexplored nut groves. Because Brazil nuts are associated with forest conservation and are considered a health food, demand for them is growing, both in national and international markets. This has a direct impact on market prices and increases pressure on forests and the communities living in them. Bolivia has historically dominated the export market, but their production is lower than Brazil's and has been decreasing in recent years (figure below). This highlights the emerging importance of Brazil in the Brazil nut value chain; it is essential for it to continue to grow in a way that is both environmentally sustainable and in equitable partnership with forest communities.

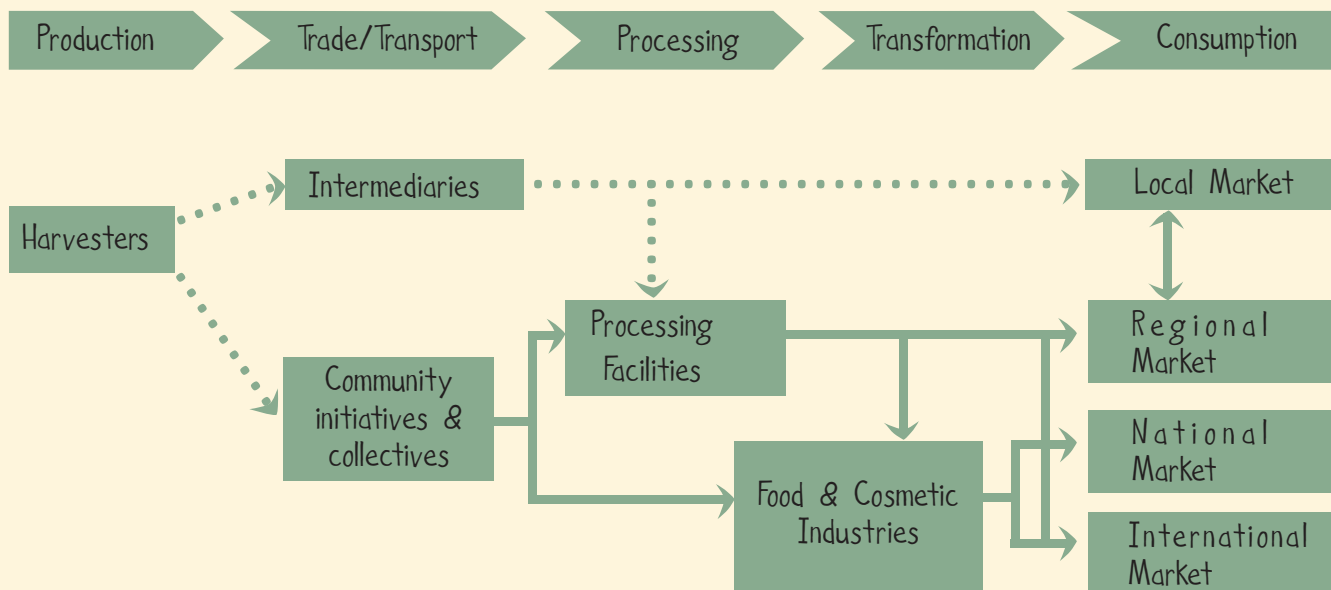
## GLOBAL PRODUCTION OF BRAZIL NUTS (TONS/YEAR)



Source: Prepared by Forest Trends based on data provided by FAOSTAT platform, 2021.

Brazil nut groves managed by collectives or communities have great potential to support sustainable livelihoods and good forest management. Harvesting and management require producers to frequently travel around their large territories, which increases the likelihood that communities will detect and deter threats from illegal activities. In some cases, collectives may also have more power to negotiate equitable business deals, attract investors, and access credit.

We provide technical assistance to design, implement, and scale economic plans for Brazil nut production, including the adoption of best practices for forest management. A recent season produced approximately 300 tons of natural Brazil nuts from the Tis Sete de Setembro and Zoró peoples and their partners. Another venture directly supported by us is COOPAITER, an indigenous economic initiative that has secured backing from NESsT, a prominent social investment company, and Conexsus, which provides management assistance and a working capital grant. We also work with COOPAVAM, a cooperative that purchases Brazil nuts from indigenous and local communities, on forming equitable business partnerships.



Brazil nut value chain that captures more value for community initiatives and collectives.



Paiter Suruí nut gatherers.  
Photo: COOPAITER collection



Brazil nuts can be sold shelled or unshelled and fresh (raw nuts) and/or roasted, as they are commonly sold in markets. Photo: COOPAITER collection

*Through a partnership between Forest Trends and others, such as IBAMA\*, we improved the [COOPAVAM] cooperative's relationship with our indigenous partners and a new governance structure is being developed for the Brazil nut value chain to include indigenous cooperatives in decision making.*

*We also count on Forest Trends' support to help implement partnerships with indigenous peoples that are beneficial to all parties. Together, our product's quality and access to differentiated markets allow us to pay a fair price to indigenous Brazil nut collectors.*

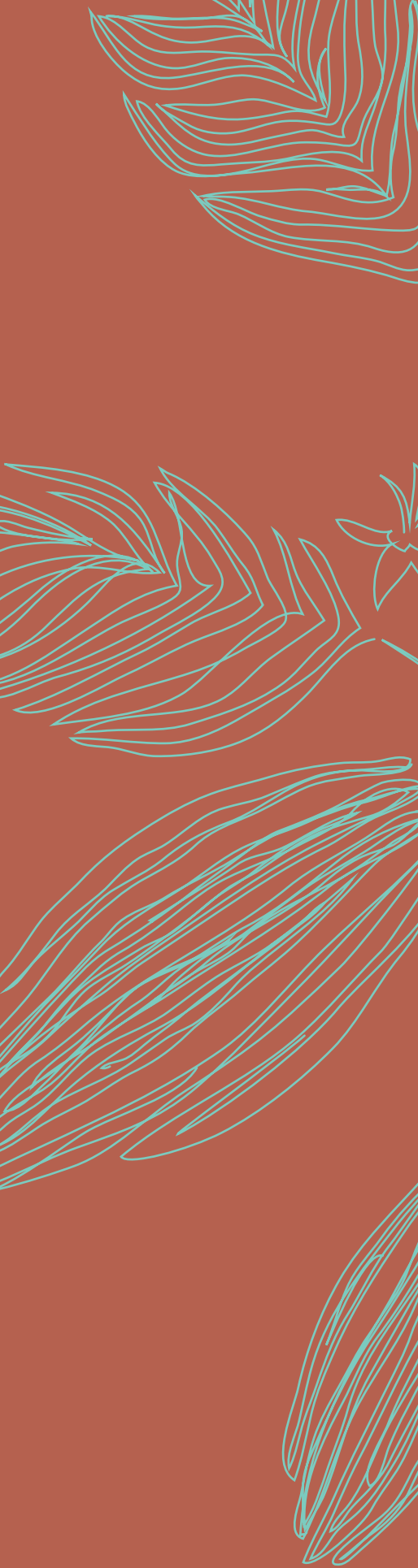
Luzirene Coelho Lustosa,  
President of COOPAVAM & Johann Schneider,  
Counselor of COOPAVAM

\* Brazilian Institute of the Environment and Renewable Natural Resources



COOPAITER Brazil nuts ready for sale. Photo: Elizangela Suruí





Cacao collection. Photo: César de Mendes

# CACAO

The demand for wild cacao production is booming among nationally renowned chocolate companies and fine and specialty chocolate brands. Brazil is not a leading producer of cacao globally by quantity, but its wild grown cacao is increasingly important due to its quality. Qualities specific to cacao grown in the Brazilian Amazon vary depending on where and how they were grown and results in cacao with aromas and flavors specific to the land it was grown on. This diversity can generate high market value for producers.

Together with our partners, we help communities build the technical knowledge and skills to be able to capitalize on the importance of their one-of-a-kind cacao and capture more market value before selling to specialty chocolate brands. There is great potential for organic and fair trade certification to further add value and allow communities to establish long-term, differentiated market partnerships with more access to some of the best niche markets in Brazil and the world.

Chocolatiers and other artisanal chocolate companies with an emphasis on fair trade and sustainable production find much reputational and market value in partnerships with community cacao producers. Companies get direct access to high quality beans, and communities get direct access to a premium buyer who is willing to pay for the knowledge and labor involved in such quality.

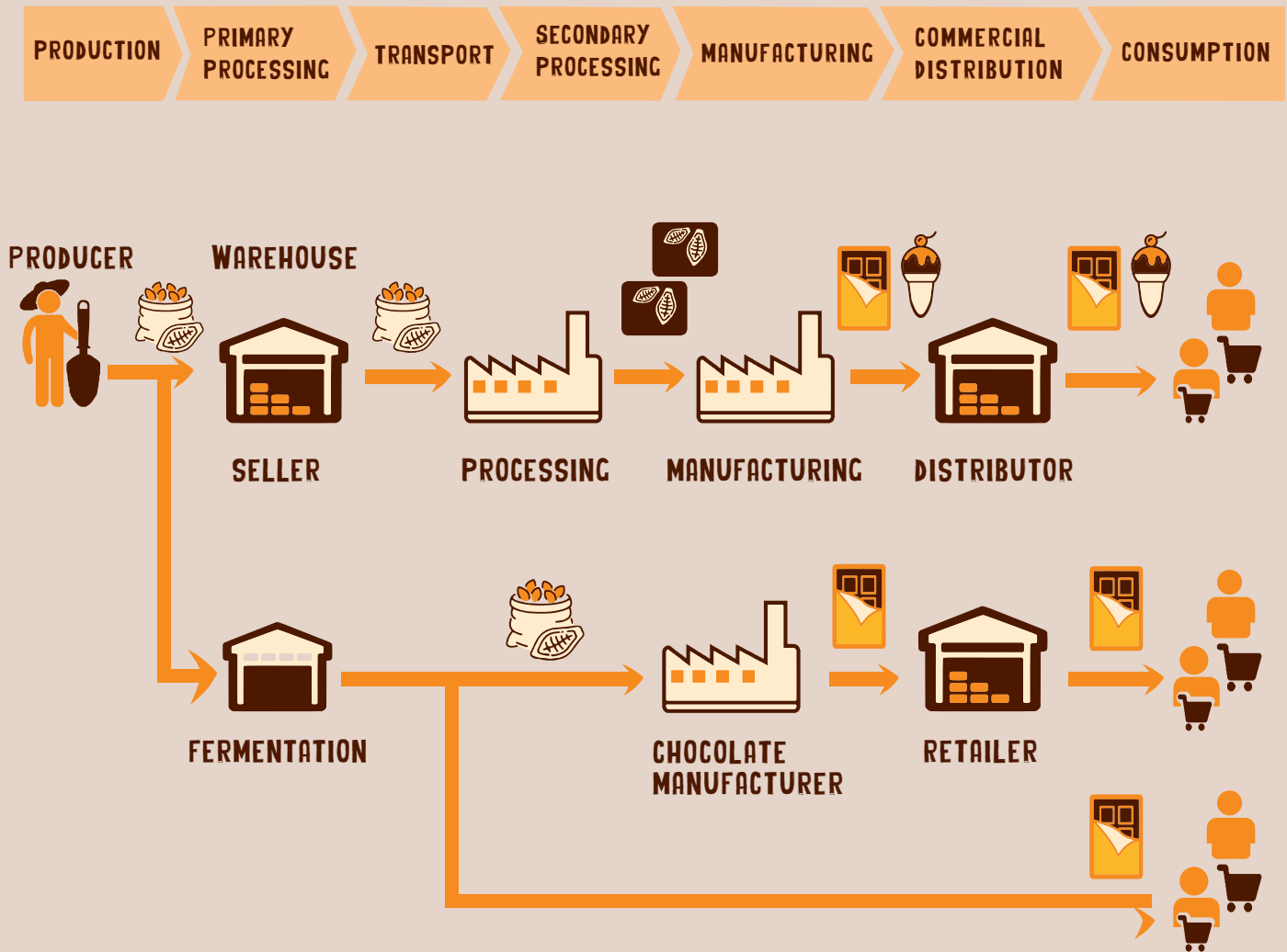


Cacao fruit and fermented cacao beans for chocolate production. Photo: Tatiana Tintino



Indigenous cacao farmer, Roberto Suruí. Photo: Liliana Suruí

# CACAO VALUE CHAIN



The top pathway shows a typical, commercial cacao value chain where producers sell to wholesalers. The second shows the cacao value chain we are supporting, where community producers harvest and ferment their cacao before selling directly to chocolate companies.

We've helped negotiate a partnership between the chocolatier César De Mendes and indigenous Paiter Suruí cacao farmers, forming a commercial relationship that respects indigenous cultures and ways of life. César De Mendes launched its new line of 70% dark chocolate made from Paiter-produced cacao in late 2021.

We also provide training for indigenous entrepreneurs and producers on forest-friendly cacao cultivation and post-harvest processing techniques, including cacao fermentation, drying, and storage.

*I am very pleased that I don't have to deforest to farm anymore, and I see this as a way to improve the health of the environment, my home.*

Roberto Penin, Paiter Suruí cacao grower

*In Brazil, Original Beans' long-term goal is to be able to buy native cacao from the biodiverse agroforestry systems of the Suruí community, which are currently being established with wild cacao sourced from areas near the rivers in their territory. This cacao is unique because of the cultural identity of the Suruí, its flavor profile, and the positive impact we can achieve together.*

Jan Marcel Schubert, Original Beans,  
LATAM

*Fine cacao is a social technology that depends on the culture of its producers – the way it is grown and handled, the material that is used, the environment, and the processes. This set of actions provides a unique identity to the flavor of the final product.*

Chocolatier César De Mendes



César De Mendes chocolate bar made from Paiter Suruí grown cacao. We helped the community plant those same cacao trees in 2015 and 2016.  
Photo: Lica Donaire

# NATIVE PLANT SEEDS & SEEDLINGS

Using agroforestry methods, we're planting one million trees in eight indigenous territories of Brazil's Tupi Mosaic, together with the Arbor Day Foundation, Ecoporé, and the Xingu Seeds Network Association. We work with indigenous peoples, such as the Zoró and Paiter Suruí, to map potential planting sites, cultivate or source native seedlings, and train participants in planting methods and seedling care. We are also exploring ways to connect interested communities to carbon markets, another way to acknowledge and compensate indigenous stewards for their contributions to landscape conservation, carbon sequestration, and global climate goals.

Agroforestry is an ancient planting technique that combines native trees and shrubs with crops and/or pastures. A diverse mix of plants generates more income and food security for families caring for the land, but also supports biodiversity, soil health, water security, and carbon storage – sometimes even community health, if medicinal plants are incorporated.

One agroforestry planting method we demonstrate is called *muvuca*, which involves creating native seed mixes tailored to specific locations. A mix might include seeds for trees, shrubs, and other plants that have different roles in an ecosystem. For example, once planted, seeds for grasses and other fast-growing plants will begin sprouting first, and other plants with longer life cycles, like trees, will take longer to appear. This highly efficient and effective technique is more affordable and could be an important solution for reforestation of the Amazon at a large scale.



Seedling delivery to Capitão Cardoso village, Roosevelt Territory.  
Photo: Ecoporé Collection



Mixing native seeds for the *muva* planting method. Photo: Ecoporé Collection



Seedling delivery to Guwa Puxures village. Photo: Ecoporé Collection

## MAIN IMPACTS AND OUTCOMES

- 334 hectares of agroforestry systems have been planted with over one million individual seedlings from 50 native species
- Stronger forest restoration processes and implementation overall, including monitoring production areas and best practices using satellite data
- Sharing forest production data among communities to inform each others' work
- Increased food security due to overall improvement in planting practices during forest restoration and agroforestry training



We expect demand for native seeds and seedlings to keep growing in Brazil, driven by the need to replant the large swathes of the Amazon that have been deforested. There are exciting opportunities for new indigenous enterprises that specialize in meeting this demand.





Communities and  
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