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Universidade Estadual de Santa Cruz

CONSERVATION INTERNATIONAL Brazil

EXECUTIVE SUMMARY

STATE OF THE ART ON COCOA PRODUCTION IN BRAZIL

BRAZIL'S SUSTAINABLE COCOA: A GLOBAL MODEL

Agroforestry Systems (AFSs)

Productive systems where plants with different characteristics, both agricultural and forestry, are managed, interacting with each other in a temporal process of directed succession, according to the farmer's objectives

As a native species from Brazil, the country holds a 270-year legacy of technology and tradition in the production and management of *Theobroma cacao L* (cocoa). Cocoa can be produced under diverse **agroforestry system (AFS)** arrangements, ranging from complex **"cabrucas"** in Southern Bahia – where cocoa in planted under native tree canopy – to simpler intercropping models, in which cocoa is cultivated on degraded lands in consortium with commercially valuable native and exotic tree species. Although cocoa AFS predominate, highly mechanized, intensive input use, and unshaded ("full-sun") monocultures are expanding rapidly.

Brazilian production is almost entirely carried out by small farmers, predominantly within biodiverse, climate resilient cocoa AFS. A distinguishing factor is that Brazilian cocoa has not been associated with deforestation, with the vast areas of agroforests having even contributed to the maintenance of multifunctional, healthy landscapes.

From the world's second-largest cocoa producer in the 1980s, Brazil has dropped to sixth place following the outbreak of witches' broom disease in 1989 and now accounts for 4.43% of global cocoa production. However, it is the only major global producer that holds an infrastructure for the entire value chain - from seedling production, planting and harvesting to processing and manufacturing. Even though the current production of chocolate does not match the existing demand of a mature and robust domestic market, the cocoa sector in Brazil is well-positioned to overcome its barriers and become again a top global producer.

In Brazil, cocoa is grown under a variety of arrangements

Full-sun cocoa

Cocoa-agroforestry

Cabruca system

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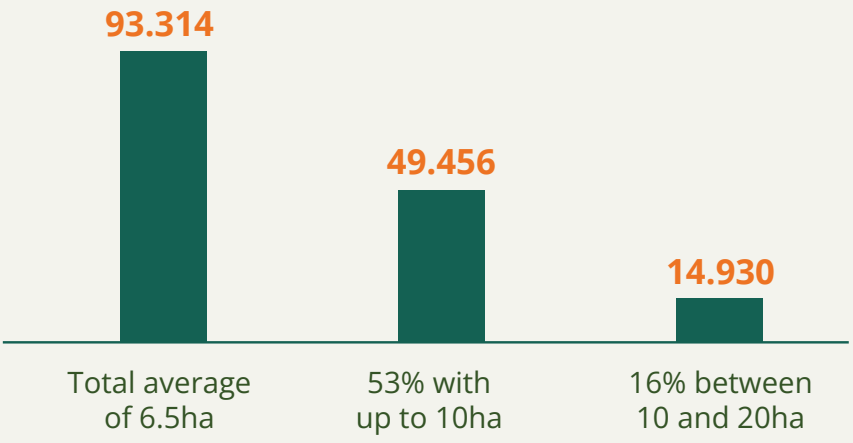
Number of cocoa producers



Source: https://bioeconomia.fea.usp.br/wp-content/uploads/2021/07/Sag-cacau.pdf

The Brazilian cocoa as a cultural, climate-smart, and biodiversity-friendly asset

Cocoa production is concentrated in two highly biodiverse biomes on the planet, the Amazon and Atlantic Forest. In both biomes, cocoa has been deeply associated with local culture, reflecting distinct production arrangements, social contexts, and producers' profiles. Altogether, these regional peculiarities have shaped landscapes, cultural identities and traditions that ultimately recognize cocoa as a vital component of regional heritage. In 2021, **Brazil officially recognized the traditional cabruca system as part of its Intangible Cultural Heritage**, through IPHAN (National Institute of Historic and Artistic Heritage).

Biodiversity, ecosystem services and productivity in cabrucas

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By maintaining forest-like structure, cocoa AFS provide refuges for a diverse array of species, protect and improve soil health, and maintain microclimatic conditions that increase resilience to climate change and reduce risks to farmers and investors. For example, studies showed that **traditional "cabrucas" host a high level of species diversity and ecosystem services**. They serve as important carbon sinks and minimize losses due to extreme and increasingly frequent events in most cocoa producing regions. .

By adopting known agricultural practices, these systems are economically viable and profitable when compared with monocultures. For small holders, the use of high diversification of species and low levels of chemical inputs offered by cocoa agroforestry can enhance economic resilience in the face of price volatility that characterizes traditional commodities. Although intensified and highly mechanized **monoculture systems** offer

attractive profitability, this comes at the cost of increased risks. Moreover, these arrangements are inherently less resilient, making them highly vulnerable to adverse climate events, production fluctuations, and volatile market cycles.

Beyond production, cocoa in Brazil has forged regional cultures in the North and Northeast regions. It developed a portfolio of production models, built a network of institutions with technical and academic excellence, and consolidated governance models that are committed to long-term sustainable development that can serve as a model to other cocoa-production regions in the world.

Standing for Sustainable Growth and Production

Public and private sectors are currently focused on boosting production through enhanced productivity by developing and implementing practices tailored for specific arrangements and regional context. Successful experiences in this direction abound, and comprise different profiles of producers, from small to large. It is also noteworthy that an increasing number of Brazilian cocoa farmers are expanding their production towards high-quality beans, a trend driven by the growing global demand for premium chocolate. Despite the current small participation in this niche market, this trend enables access to a market that pays significantly higher value.

In addition to increasing productivity in existing plantations, the expansion of cocoa production can be free of deforestation by recovering unproductive and degraded lands using cocoa agroforestry systems. This approach can generate multiple benefits to different stakeholders and scales:

Box 1. Sussessful examples of cocoa SAF in boosting production and income

CIAPRA

Under the program *Cacau+*, a consortium (CIAPRA) of 15 municipalities, supported by the state government and other stakeholders, provided technical assistance to 2,400 families of smallholder cocoa agroforesters in Southern Bahia, positively impacting 6,224 people. Over three years, the program invested R$14.7 million — an average of R$2,400 per family — resulting in an 85.7% increase in average production, from 336 kg/ha in 2021 to 624 kg/ha in 2024. This growth led to an additional R$84 milion in production.

Cantagalo Group: Fine Cocoa Production

The Cantagalo Group owns 14 cocoa farms in southern Bahia, totaling 1,800 hectares of cocoa production. Of this total, 900 hectares are cultivated using the traditional AFS system and the remainder using the cabruca system. Currently, the average productivity of these farms is around 675kg/ha. However, in some cabruca areas, productivity reaches 1,500kg/ha, with the potential to double productivity in the short term by investing in management and technology.

Of the total cocoa produced by the Cantagalo Group, 10% is used for special cocoa markets that are sold to small and large bean-to-bar chocolate brands. The price paid for this cocoa is up to three times higher than the price of bulk cocoa, sold in large volumes to large-scale processing facilities. The support, research, and knowledge generated by **CEPLAC** over the last decades have been essential to identify varieties with desired characteristics for special cocoa production. Another important aspect of the Group's history was the participation of a new generation to manage the business as of 2018. It's important to highlight that this generational shift is revolutionizing the whole cocoa production region in southern Bahia, with increased investments in high-quality and sustainable cocoa production.

- to farmers, by increasing their income;
- to the country, by reducing its environmental liability;
- to investors, by reducing their risks;
- to companies, by supporting their decarbonization goals while gaining access to quality and sustainable demanding markets.

Beyond their potential to restore soil health, conserve and improve water resources, and increase carbon stocks and sequestration, the planting of cocoa AFS on degraded lands enhances connectivity of entire landscapes and provides corridors for the local and regional fauna and flora.

Multifunctional landscapes in which cocoa-agroforestry systems can contribute as biodiversity refuges and as ecological corridors, increasing landscape connectivity

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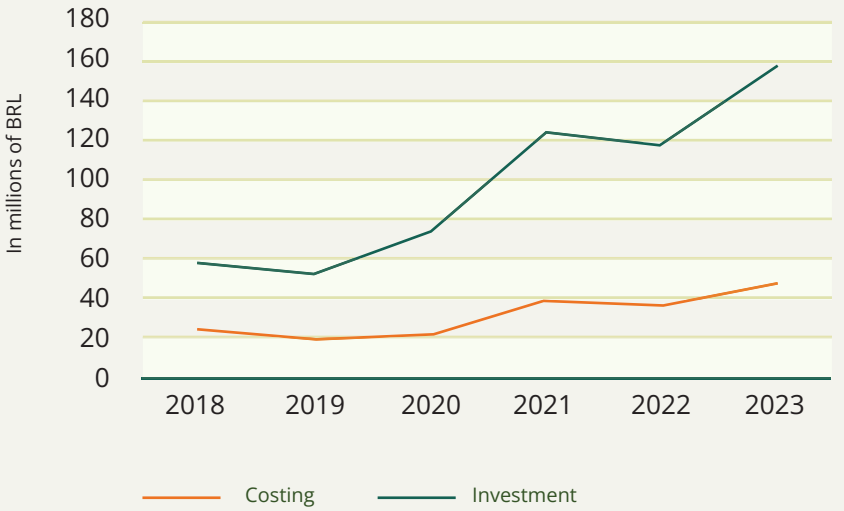
Credit lines for a sustainable production

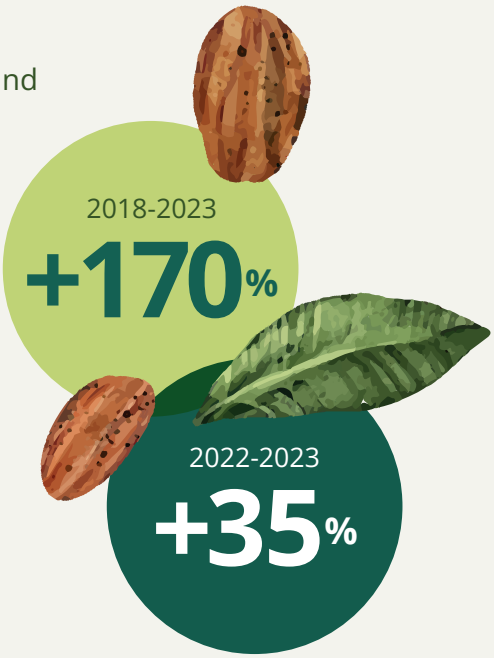
From 2018 to 2023, rural credit loans from the public sector to cocoa farmers experienced an increase of 170%, with a 400% increase to small and family farmers through the **PRONAF** - a federal program offering low-interest credit lines to small family farmers. Moreover, most of the credit was used for investment rather than costs associated with production.

However, the amount financed is still far below what is needed. In 2023, cocoa ranked 40th in terms of PRONAF funding, with a 0.07% share. Soybeans, corn, wheat, and coffee occupied the top four positions, totaling 83% of the total.

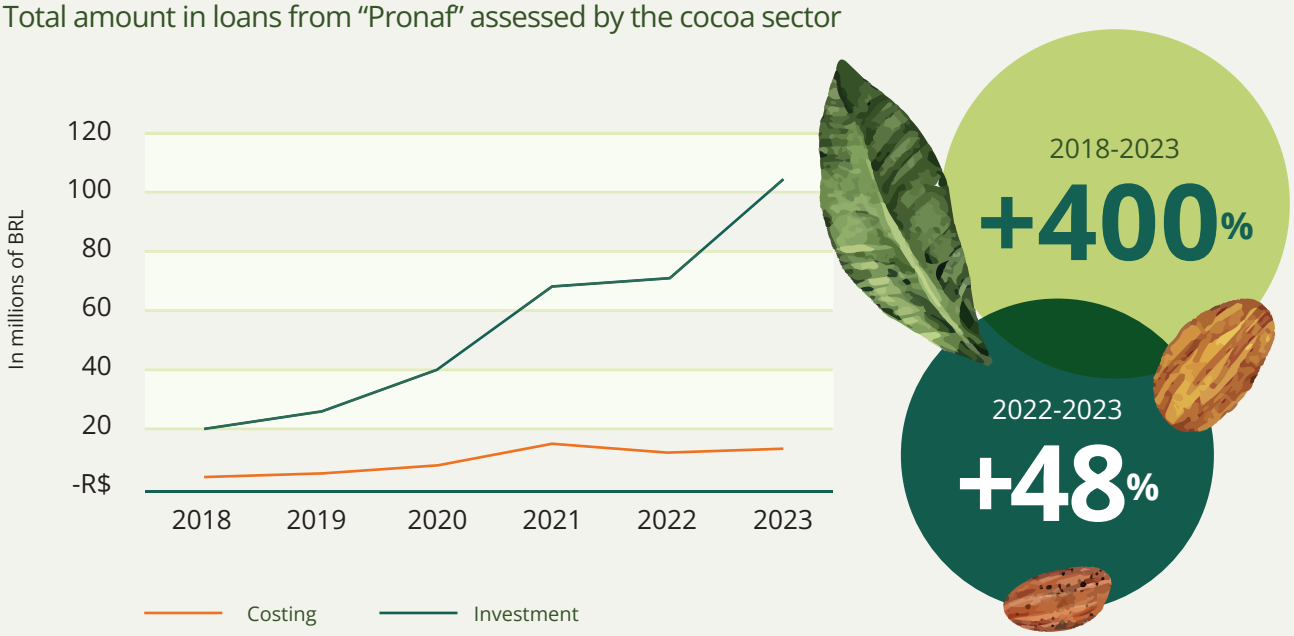
Public credit for cocoa sector

Total credit available for cocoa, including both operating and investment financing, from all accessible credit lines for cocoa





Total amount in loans from "Pronaf" assessed by the cocoa sector



Source: "Pronaf" is a federal government initiative that has been in effect for 30 years, offering low-interest credit lines to small family farmers

Regenerative Agriculture (RA)

Regenerative Agriculture is defined as a production system based on a set of agricultural practices aimed at reversing the depletion of natural resources caused by farming models that rely on external chemical inputs, which are harmful to soil life and not adapted to local environments.

In addition to loans (rural credit) and investments from traditional channels, several innovative financial mechanisms are currently in place to pave the way to boost production and productivity sustainably. Such instruments are aligned with a set of public policies designed to promote sustainability of the cocoa sector, particularly for cocoa AFS. Examples include incentives for Regenerative Agriculture (RA), such as the **Eco Invest Program** and the **Fundo Kawá**, the latter being designed exclusively for small holders.

Cocoa AFS are also eligible for other emergent markets such as **Payments for Ecosystem Services (PES)**, or payment **for carbon and/or biodiversity credits**. Credits from carbon markets can reduce the upfront costs of implementing AFS schemes through carbon sequestration (2.6 to 4.4 MgC/ha/year, depending on the species used in the production arrangement). Moreover, studies showed that cabrucas assure gains for protecting carbon stocks (around 80-120 MgC/ha in areas over 30 years old). Even though biodiversity credits are still in their infancy, the biodiversity-friendly nature of some AFS positions them to receive these additional investments.

Box 2. Examples of innovative financial mechanisms

Eco Invest

Eco Invest is a blended finance initiative coordinated by Brazil's Ministries of Finance and Environment and Climate Change, with support from the Ministry of Agriculture, Livestock, and Food Supply (MAPA), and the Inter-American Development Bank (IDB), uses auctions as its main mechanism to promote the restoration of degraded lands. The program aims to mobilize resources to recover 1.4 million hectares of degraded pastures under the Green Path Brazil Program. Through two auctions, it has attracted private and foreign investment via local financial institutions to fund projects that convert degraded lands into sustainable production systems, following strict environmental and soil recovery standards. The Eco Invest Brazil Auction No. 2/2025 generated demand for R$17.3 billion in catalytic funds, enabling a total of R$31.4 billion in public and private investments—R$30.2 billion of which will support the restoration of 1.4 million hectares, an area equivalent to half the size of the state of Alagoas.

The Kawá Fund

The Brazilian Cacao Financing Fund, known as the **Kawá Fund**, is a Fiagro (Investment Fund for Agroindustrial Production Chains) designed to strengthen family-based and regenerative agriculture, focusing primarily on small producers in Bahia and Pará. The fund provides accessible credit and specialized technical assistance to cover costs such as fertilization, irrigation, equipment, and seedlings, promoting sustainable development and the conservation of cocoa AFS. Created by the Instituto Arapyaú in partnership with Violet, Mov Investimentos, and Tabôa Fortalecimento Comunitário, the Kawá Fund is Brazil's largest cacao financing initiative for family farming, with an initial capital of R$30 million and the potential to reach R$1 billion in credit by 2030. In its first phase, it aims to benefit around 1,200 farmers in Bahia and Pará, expanding to 5,000 within five years.

The Dengo Credits for Life

In southern Bahia, the chocolate company **Dengo** launched the Dengo Credits for Life project to mitigate deforestation and channel carbon credit revenues to smallholders managing

cabruca agroforests, using the **Social Carbon Protocol for Family Farming (PCSAF)**. Supported by performance-based bonds financed by the World Bank, the project spans four years (2023–2027) and includes producer mobilization, data collection, validation, monitoring, reporting, verification, and audits, leading to certification and payments. Importantly, 80% of the proceeds are directed to farmers through compensation payments and technical assistance, while the remainder repays the initial financing, ensuring financial sustainability and scalability without requiring upfront investment from producers. By 2025, the project had engaged 99 families across 104 farms, covering 1,566.88 ha of cabruca and 939.60 ha of native forest, conserving over 1 million tons of CO_2 and distributing R$2.2 million to producers through payments and technical support.

The economic and financial viability of cocoa-agroforestry systems

The existing cocoa AFS in Brazil vary in productivity and yield. Low managed, highly shaded “cabrucas” may not be economically viable, but once they are properly managed (decreasing shade levels, higher inputs and labor at the beginning of production) the productivity can reach 1,125-1,200 kg/ha and become economically viable. For a full-sun cocoa, economic viability is only achieved when productivity reaches a level above 1,500 kg/ ha. Since the operational cost of inputs in this system is higher than shade-grown systems, the risks of full-sun cocoa can be higher. In Bahia and Pará states, cocoa AFS with less crop diversification require less investment and labor but provide lower income to the producer. On the other hand, a system with greater diversification (ex. cocoa and açai) requires more investment in implementation and maintenance but greater income due to the additional revenue from açaí.

Recommendations for promotion and adoption

The cocoa chain in Brazil is undergoing a period of transformation and restructuring, marked by historic challenges and new opportunities. After facing a severe crisis (disease, market price) in the 1990´s, national production has sought sustainable paths to expand cocoa production by improving product quality, productivity, and incentives and technical support to farmers. Key highlights of this transformation include the revitalization of "cabrucas" and increased investments in full-sun systems in Bahia, which remains Brazil's leading cocoa-producing state with 106,481 tons and responsible for 60% of national production in 2024[1]. Additionally, there has been significant expansion of cocoa production in Pará, currently the country's second-largest producer and contributing to 36% of the national production. The emergence of regenerative and climate-smart agricultural frontiers further underscores the sector's resilience and strong growth potential. The focus on premium-high quality cocoa, geared towards the fine chocolate market, has also been prominent by creating opportunities for small and medium producers and fostering regional development.

Brazil has not yet achieved self-sufficiency in cocoa production and to change this scenario it is essential to promote greater integration of the actors of the supply chain, strengthen cooperatives and farmers´ associations, guarantee fair prices to farmers, and invest in research and innovation. Specific challenges remain:

- Low productivity in many regions associated with low investments to provide technical assistance and technology for small holders
- Limited access to technology and financial resources

[1]2024 data from the Brazilian Association of Cocoa Processing Industries (AIPC - www.aipc.com.br), an association representing major processing companies accounting for up to 95% of the cocoa purchasing and processing in the country.

- Informality in part of the supply chain
- Insufficient public policies and incentives to address social-environmental issues

A coalition of organizations representing the cocoa value chain dedicated to promoting the sector

Cocoa AFS emerge as a central strategy for the sustainable development of the cocoa and chocolate industry in the Brazil and the world. Cultivating cocoa in association with native tree species represents an efficient way to reconcile production, environmental conservation, and investment opportunities. This approach allows the maintenance of forest cover, protection of biodiversity, improvement of soil quality, reduction of carbon emissions, promotion of carbon sequestration, and increased climatic resilience while simultaneously providing economic gains to the producers, communities, and investors.

In addition to the ecological benefits, cocoa AFS play an important role in social inclusion, as it is accessible to small farmers and traditional communities, such as riverside communities and indigenous peoples. The increasing interest in locally grown cocoa and the demand for products with a lower environmental impact point to a future where high-quality, sustainability, and inclusion go hand in hand.

Recognizing this transformative momentum, the sector launched the “Brazilian Cocoa” initiative to strengthen the global presence of this sustainable product, which is uniquely enriched by its association with people, forests, and culture.

Biodiverse Cocoa Project

Developed by the Parque Científico e Tecnológico do Sul da Bahia (PCTSul), Instituto Arapyaú, and Tabôa Community Strengthening, the Biodiverse Cocoa Project aims to enhance biodiversity conservation by improving and promoting the sustainable management of cocoa agroforestry systems, alongside the conservation of native forests. Utilizing **Verra's Nature Framework** methodology, the project strengthens the integration between agroforestry production and conservation. It seeks to reduce, and even reverse, trends of biodiversity loss and ecosystem degradation within the project areas located in the Atlantic Forest.

In this context, improving support for producers through technical, financial, and social mechanisms is essential to ensuring sustainable cocoa production and scaling environmental outcomes. These are precisely the main challenges: reconciling conservation and production, offering adequate support to farmers, and ensuring practices that maintain biodiversity.

To address these challenges and conserve biodiversity, the project aims to strengthen cabruca producers through activities focused on: 1. sustainable production and income generation; 2. payment for environmental services; and 3. maintenance of the cabruca system, forest protection, and environmental monitoring. By implementing agroecological practices and increasing the income of smallholder farmers, the project recognizes and values those who produce and conserve, reinforcing that agroforestry systems are a powerful tool for conserving local biodiversity. ■

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