



Flavor or Bulk Cacao: Options for the Amazon

NOVEMBER 2021
Nº 18

Introduction

Despite being native to the Amazon, the origin of cacao (*Theobroma cacao*) is still unknown in global consumer markets and even in national ones. Cacao conquered Europe in the mid-16th century, from varieties planted in Central America and the Caribbean. More recently, cacao has been associated with African countries, which are responsible for approximately two-thirds of its production.¹ In Brazil, the product only gained momentum in the second half of the 18th century, with plantations in Bahia.²

Cacao production in the Brazilian Amazon was not very expressive until the beginning of this century. In the 1990s, Pará participated with only 10% of the national cacao production.³ This situation changed strongly and, in 2019, Pará became the largest producer of the fruit, accounting for approximately half of the national cacao.

The cacao boom in the Brazilian Amazon is a result not only of the increase in production, but also of the good quality of the fruit. In 2019, cacao produced in the Amazon contributed to Brazil being recognized by the International Cocoa Organization (ICCO) as a producer of flavor cacao, which brings opportunities and challenges.

Despite the impressive collection of living genetic material on cacao varieties present in the Brazilian Amazon – maintained by the Commission for Cocoa Cultivation (*Comissão Executiva do Plano da Lavoura Cacaueira* - CEPLAC), an autarchy tied to the Ministry of Agriculture – studies

¹ Zuaib, Antônio Cesar, and Ricardo Barreto. *Mercado Internacional de Cacao: Previsão Da Demanda, Oferta E Preços*. 2014. bit.ly/3GQBvz6.

² Santos, Elisa S. L., Carlos Bernard M. Cerqueira-Silva, Gustavo M. Mori, Dário Ahnert, Durval L. N. Mello, José Luis Pires, Ronan X. Corrêa, and Anete P. de Souza. "Genetic Structure and Molecular Diversity of Cacao Plants Established as Local Varieties for More than Two Centuries: The Genetic History of Cacao Plantations in Bahia, Brazil". *PLOS ONE* 10, nº12 (2015): e0145276. bit.ly/3GUBZUW.

³ Landau, Elena Charlotte, Gilma Silva e Larissa Moura. "Evolução Da Produção de Cacao." In *Dinâmica Da Produção Agropecuária E Da Paisagem Natural No Brasil Nas Últimas Décadas*. Brasília: EMBRAPA, 2020. bit.ly/3CNXsfw.

and knowledge about the enormous diversity of this species are incipient. The industrial world knows less than a dozen cacao varieties, among the thousands that researchers estimate exist.

According to the Ministry of Foreign Affairs of the Netherlands – the main cacao importer and processor in the world – it is possible to identify nine strategic trends in the cacao market for the current decade:⁴

1. Growing focus on the origin of cacao and chocolate;
2. Storytelling increasingly important;
3. Growing demand for bean-to-bar chocolate (with unified cultivation and processing);
4. Shortening of the chain due to direct trade;
5. Increased concern with health and well-being;
6. Controls due to European regulation on the presence of cadmium;
7. Increased influence of multinationals that also join the special cocoa segment;
8. Production sustainability at the top of the international agenda;
9. Sustainability programs increasingly common in the private sector.

For cacao, the main knowledge gaps encompass the genetic diversity of wild cacao as well as the adaptation of clones to different environments, considering the challenges of climate change. In addition, there are knowledge gaps in issues related to cropping systems, sensory diversity, and use.

The purpose of this document is to summarize the strategic vision of some cacao protagonists in the Brazilian Amazon, at a time when the product – even if late – becomes a priority and a great opportunity in its land of origin. In addition, the article identifies the main challenges that these protagonists point to so that the cacao chain can prosper and contribute to the development of the Brazilian Amazon.

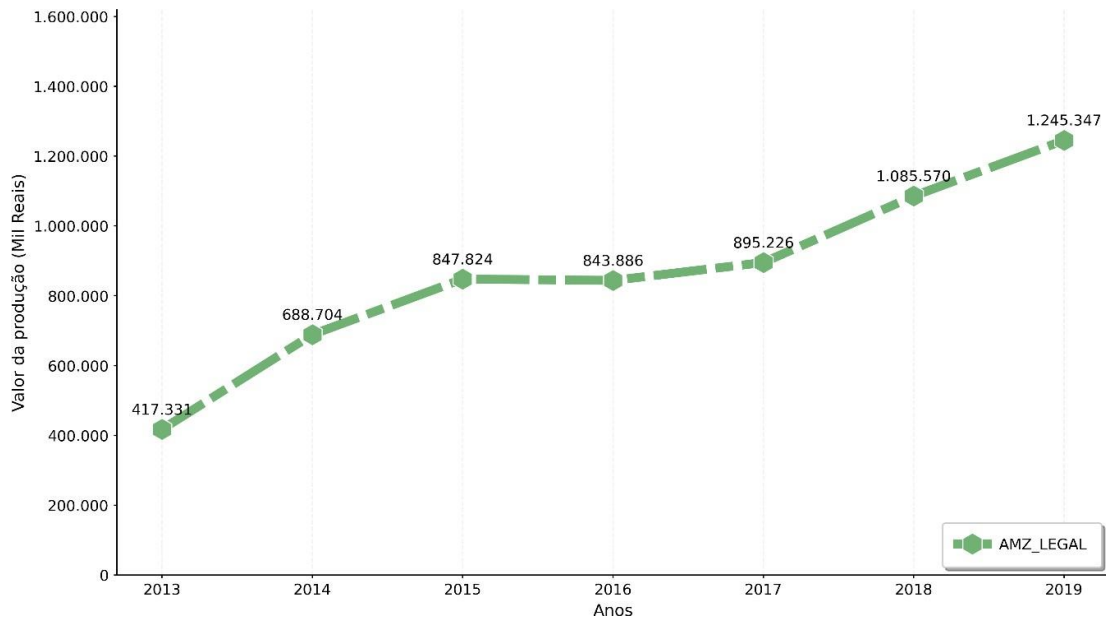
Results

A paradox has occurred over the past decade. The market for cacao, a native Amazonian species, has significantly expanded its cultivation in the region, as a commodity, with varieties developed elsewhere, i.e., the cacao most produced in the Amazon today is not native cacao. Until the beginning of this century, the Amazonian cacao production was not very expressive, even though the region is the cradle of the species and, therefore, harbors a great genetic diversity of this plant. Recently there has been a productive explosion, tripling the value of production in just six years (Figure 1). Some favorable conditions that can justify this productive

⁴ CBI. *What Is the Demand for Cocoa on the European Market?*. November 11, 2020. bit.ly/2ZRDTFa.

explosion are the conditions of climate and soil, and the diversity of Amazonian species, in addition to development initiatives such as FUNCACAU, CEPLAC and the pioneering work of cooperatives such as the *Cooperativa Agroindustrial da Transamazônica – COOPATRANS/* Cacaaway.

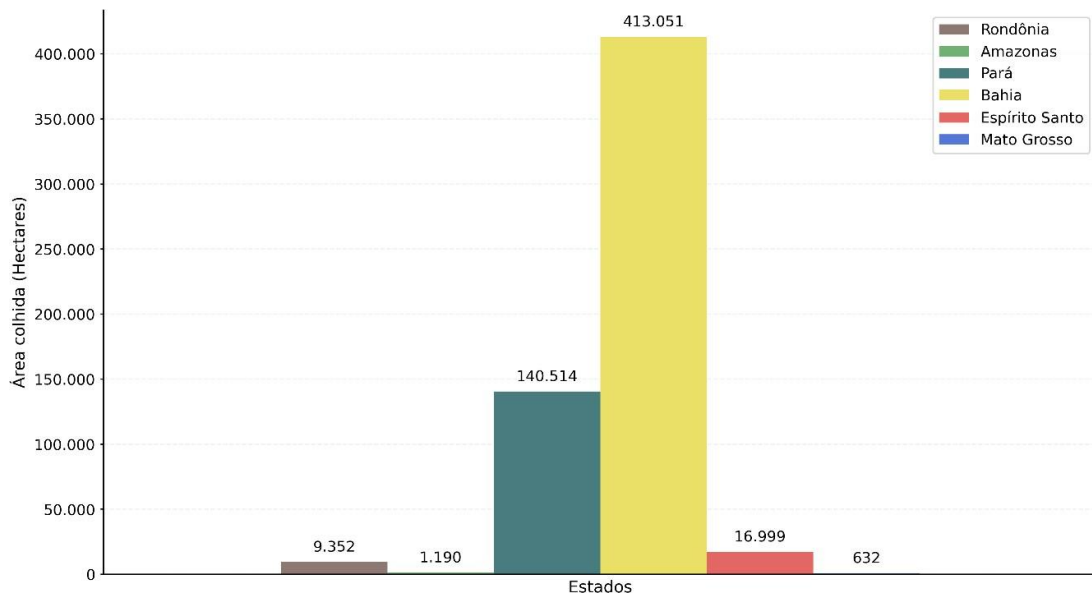
Figure 1. Value of cacao production in the Legal Amazon between 2013 and 2019



Source: *Amazônia 2030* based on IBGE – PAM data

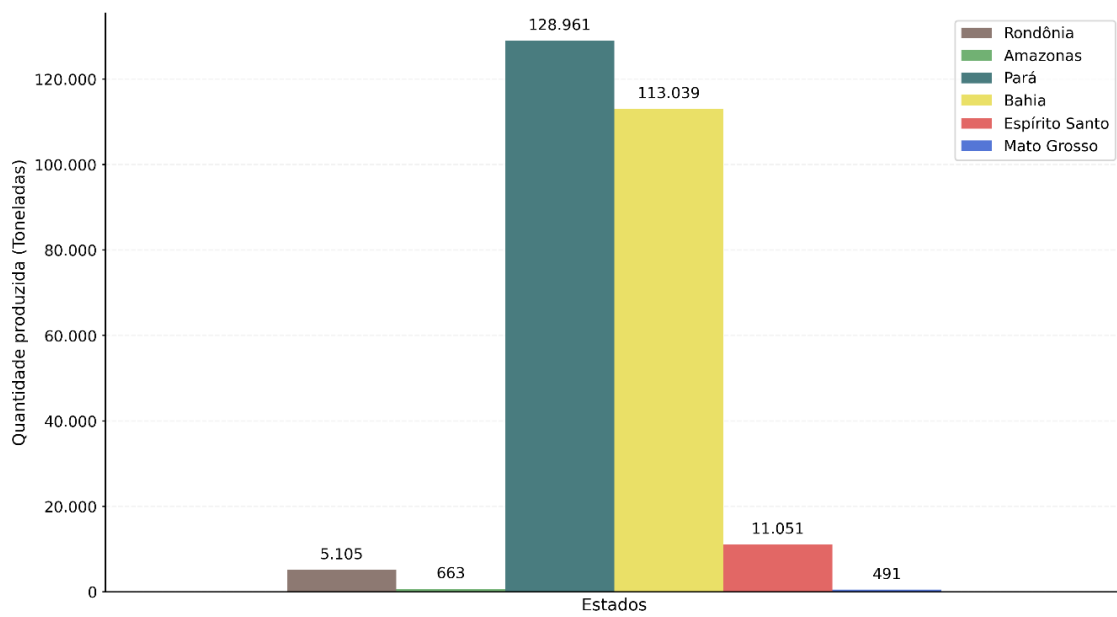
Pará is today the largest cacao producer in Brazil and has reached approximately half of the national production. This occurs despite the fact that its planted area is still much smaller than that of Bahia, a state that concentrated cacao production in Brazil over the last three centuries. Currently, Pará has an average productivity significantly higher than that of Bahia (Figures 2, 3 and 4).

Figure 2. Cultivated cacao area in the main producing states in 2019



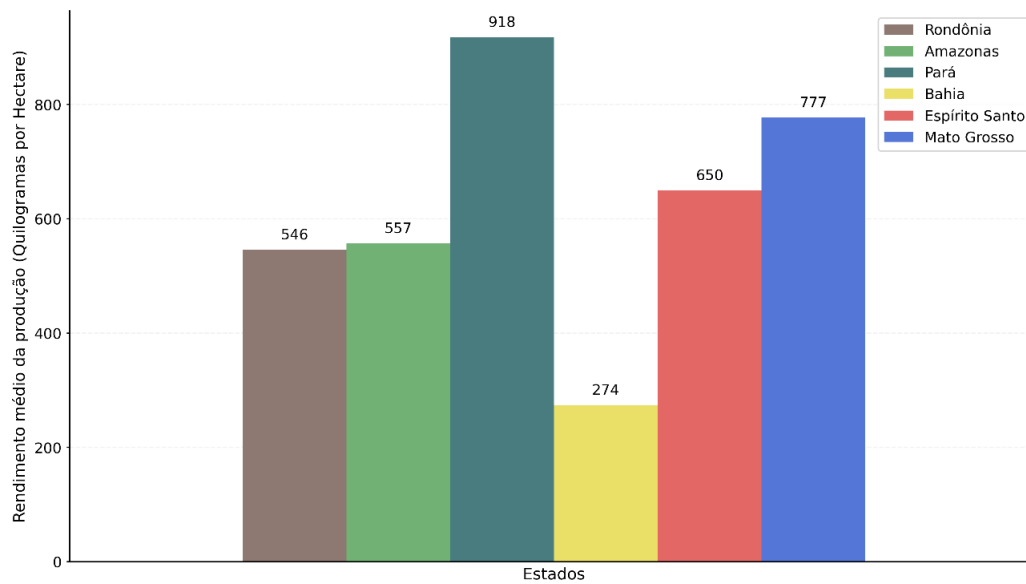
Source: Amazônia 2030 based on IBGE – PAM data

Figure 3. Main cacao producing states in 2019



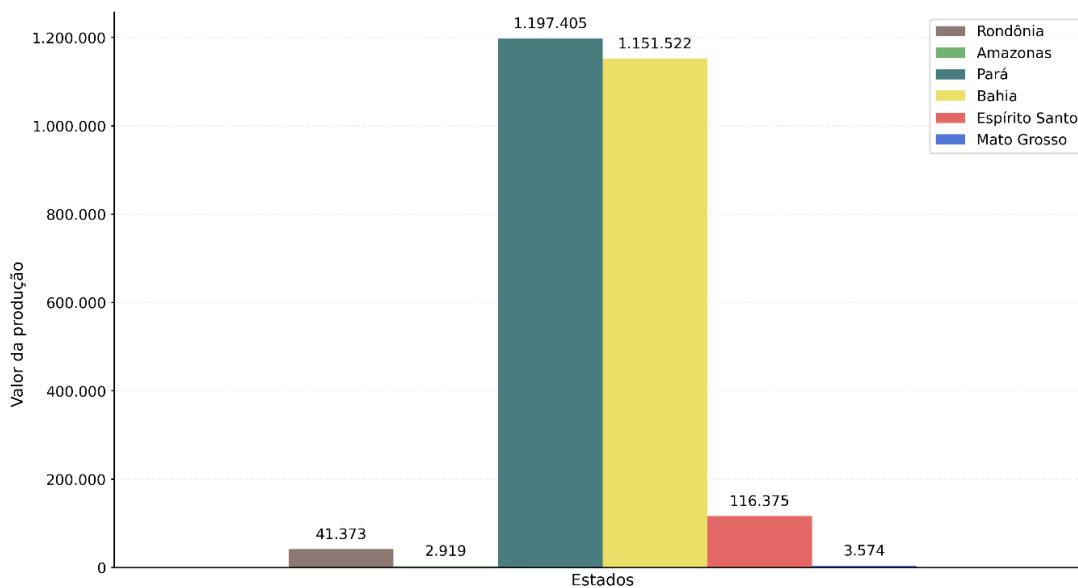
Source: Amazônia 2030 based on IBGE – PAM data

Figure 4. Cacao productivity in the main producing states in 2019



Source: *Amazônia 2030 based on IBGE – PAM data*

Figure 5. Value of cacao production in the main producing states in 2019



Source: *Amazônia 2030 based on IBGE – PAM data*

In the state of Pará, the main producing region is the area of influence of the Transamazon highway, between Altamira and Uruará. The main focus in this region is the planting of bulk cacao. In addition, in almost all of the Brazilian Amazon, there have been small initiatives of flavor cacao, in some cases associated with the manufacture of special chocolates.

Due to the peculiar characteristics of this fruit, genetic diversity is a decisive condition for the quality of its product. The Amazon offers this uniqueness, whether for wild cacao or for cultivated cacao.

It is necessary to understand the importance of genetics for a good product. According to industry experts, this variable has a weight of approximately 70% in the quality of the final product. For Brazilian scientist Fernando Mendes, from CEPLAC, the impact of genetics on quality occurs due to two interconnected factors: diversity and origin. There is more diversity as there is closer proximity to the plant's centers of origin. And all the centers of origin of cacao identified by science are in the Amazon, whether in its Brazilian portion, or whether in Ecuador, Venezuela or Peru. The cacao flower is hermaphrodite – i.e., it has male and female organs – but in 99% of cases it is self-incompatible, i.e., fertilization does not occur without cross-pollination.

In the case of Ecuador, a prominent country in the production of flavor cacao, it is illustrative to observe the genetic importance for the quality of the product. This country, which until 2018 had the status of exporter of 100% 'fine aroma' cocoa under the ICCO, was downgraded to 75%. Evaluators found that Ecuadorian cacao was contaminated by CCN51, a vigorous clone, which has large almonds but is considered problematic in terms of quality for chocolate manufacture. The narrowing of the genetic base of cacao in Ecuador has brought economic losses to the country and damage to its commercial reputation.

In 2019, Brazil was recognized by ICCO as a producer of flavor cacao, which provides it with a great opportunity. In the cacao market, bulk cacao prevails, while approximately 10% of current trade corresponds to the special cacao category and another 6% to the flavor cacao category.⁵ On the other hand, the market for flavor cacao is growing in the world and the forecast is that, at least until 2024, this will happen at the rate of 8.7% per year.⁶ Prices for flavor cacao can be double or even four times higher than those obtained for bulk cacao.

The choice of flavor cacao could also prove profitable for supplier communities in the Brazilian Amazon. However, the current dilemma is whether the region will be able to take advantage of this moment to establish itself in the world as a great reference in this type of cacao. According to Arthur Coimbra, from Nakau, which operates in the Amazon, the price of bulk cacao ranges between BRL 7 per kilo (kg) to BRL 11/kg for dry almonds. While for flavor cacao the price paid is much higher (BRL 16/kg to BRL 18/kg). In addition, the company offers flavor cacao producers technical assistance, advance payment, and organic certification.

⁵ Special cacao refers to another category of cacao, with sensory and organoleptic specifications.

⁶ CBI. 2020.

For César de Mendes, specialist and *chocolatier* from Pará, when the bulk product is sold for BRL 12/kg, the middleman pays communities in the forest something like BRL 5/kg to BRL 7/kg. This contrasts with the price paid for it in 34 communities that supply quality cacao, which reaches BRL 48/kg. This is the case in the communities of Rio Jari (border between Pará and Amapá), where the price paid for quality wild cacao per harvest generates an average gross income of BRL 6,000 per family, which is considered a high value in the context of extractivism and family farming in the region.

As Fernando Mendes, from CEPLAC, observes, Pará should produce around 140 thousand tons of cacao in 2021. A smaller part of this production tends to be sold at the prices of flavor cacao. According to him, a sensory analysis carried out by a Dutch company resulted in an appreciation of the product from Pará, for which the company offers three times more in relation to the stock market price. However, this company's demand is only 24 tons of cacao per harvest, in other words, a relatively modest volume.

According to the experts interviewed, one of the biggest challenges of this decade is to value the different varieties of cacao that the Amazon hosts (possibly 20 thousand varieties according to approximate estimates). On the one hand, they can lead to a network of geographical and origin indications and, on the other, they can serve to give sustainability and resilience to cacao cultivation worldwide, in the face of climate change threats and the proliferation of pests and diseases.

The experiment carried out by CEPLAC to compile a sensory map of cacao beans in the state of Pará, focusing on twelve municipalities, is an attempt to gain momentum. For this, CEPLAC defines sensory attributes such as floral aroma, wood, among others in five agroclimatically different regions. Although of the same genetic origin, the 22 hybrid combinations delivered to the producer in these regions seek to maintain diversity. In addition, they also end up being influenced by different weather and processing methods.

Ademir Venturini, from COOPATRANS/Cacauway, a cacao cooperative that operates successfully in the Transamazon region, understands that in two or three years the members will have several varieties to test varietal chocolate. They currently do not have the capacity to diversify but foresee that the path is to have modified varieties and blends based on each industry or each public. For him, in the world of chocolate consumption, there are preferences for different products and the region must be prepared to serve such audiences.

In 2019, CAMTA, a centenary cooperative founded by Japanese immigrants in Tomé Açu, Pará, managed to obtain, from the National Institute for Industrial Property (*Instituto Nacional da Propriedade Industrial* - INPI), the Geographical Indication for cacao of local origin. But it is still trying to put into practice the use of the seal and product traceability. For the president of the cooperative, Mário Oppata, the process allows control of cacao at all stages, such as

production, harvesting, transport, drying and classification, so that the product is exported with this information.

These trends must also be understood in light of technology. Cacao is a product for which harvest automation technologies do not exist until today, as pruning does not allow for standardizing the treatment of each tree. It is necessary to treat each branch individually, especially in the Amazon, where the harvest covers practically the entire year. This is true for both flavor and bulk cacao, and thus the entire process – from pruning to sorting, breaking, fermentation and drying – tends to be labor intensive and require a relatively advanced level of training.

In Fernando Mendes’ point of view, cacao producers in the Amazon still lack preparation and professional training to act as entrepreneurs in the cacao business. CEPLAC warns of some risks that lie in the future of cacao in the Amazon and require prevention. This is the case of a health threat, the disease of moniliasis, an illness caused by a fungus that attacks cacao pods. CEPLAC admits that there is no technical capacity to assist the thousands of cacao producers should this fungus reach cacao plantations in the Brazilian Amazon. So far it has only been possible to train 25 technicians who have been taken to Peru to learn how to identify and control this disease.

Appendix

List of interviewees

| Organization | Name | Description |
|------------------------------|---------------------------------|---|
| Cooperativa CAMTA deTomé-Açu | Alberto Oppata and Márcio Moura | Cooperative of Japanese immigrants founded in 1929 in Tomé-Açu/PA. Today, it is a large producer of assorted fruit pulps from the Amazon and has had a successful trajectory. |
| Chocolates De Mendes | Cesar De Mendes | Riverine dweller from Amapá/Pará, specialized in cacao and <i>chocolatier</i> activity. In addition to having his own chocolate brand in Santa Barbára/Pará, he advises and collaborates with local and indigenous communities in the domestication of wild varieties, with national and international success. |
| Na Floresta | Arthur Coimbra,founder | A small Amazonian company, with processing in Manaus and linked to eight riverside families on the Madeira and Amazon rivers, produces quality chocolates from wild and cultivated cacao and sells it in Brazil and abroad. |
| COOPATRANS/Cacauway | Ademir Venturini, co-founder | Cooperative of farmers from the Transamazon, cacao producers, headquartered in Medicilândia/PA, which has a small industry that processes the raw material and transforms it into chocolate and derivatives. |

CEPLAC/FUNCACAU

Fernando Mendes

He is head of research at CEPLAC and is also regarded as an expert on the cacao market in general, internationally. FUNCACAU is a fund with the objective of investing in research and cacao production in the region.

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This work is funded by Instituto Clima e Sociedade (iCS).

We are grateful for the excellent research assistance from Salo Coslovsky, Luís Eduardo Henriques, and Daniel Santos. The work benefited from comments and suggestions from Beto Veríssimo, Juliano Assunção, and other participants in the virtual meetings of the Amazon 2030 project, whom we also thank. The data and opinions expressed in this work are the authors' responsibility and do not necessarily reflect the opinion of the sponsors of this study.

Suggested citation

Smeraldi, Roberto, and Manuele Santos. *Flavor ou Bulk Cacao: Options for the Amazon*. Amazônia 2030, 2021.

About Amazônia 2030

The **Amazônia 2030** project is an initiative by Brazilian researchers to develop a sustainable development plan for the Brazilian Amazon. Our objective is for the region to be able to reach a higher level of economic and human development and achieve the sustainable use of natural resources in 2030.

Press Assistance

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