BABAÇU (*Attalea speciosa* Mart. ex Spreng)

Babassu, one of the leading products of Amazon socio-biodiversity, is a palm tree of the family Aracaceae. It is found predominantly in floodplain areas and, valley bottoms and depressions. It occurs in several regions of Brazil, mainly in the states of Pará, Maranhão, Tocantins, and Piauí, in transitional areas between the Cerrado, Caatinga, and Amazon forest biomes. It is also called the coconut palm, coconut de-macaco, coco-pindoba, baguaçu, and uauaçu, among other names. The collection and processing of babassu coconuts is practically the only source of support for a large part of the landless interior population of the regions where babassu occurs, especially in the State of Maranhão. The extraction of babassu almonds involves more than 300 thousand families, primarily women accompanied by their children: the "breakers" (quebradeiras), as they are called (MOREIRA, 2013).



Babassu Fruit



Babassu Tree



Coconut Babaçu

PRODUCT

The fruit or coconut has several uses in food, fuel, and pharmaceutical industries. The shell, known as epicarp, is used to make xaxim, an organic fertilizer and fuel used in homemade ovens. The edible mesocarp has excellent nutritional value and is a crucial element of the local diet.

BY-PRODUCT

Seed or almond: Almonds (3 to 6 in each fruit) are extracted manually and sold to local crushing industries and producers of crude babassu oil.

Natural vegetable oil: The oil extracted from almonds, which constitutes 65% of the weight of almonds, has excellent market and industrial value. It is produced for two purposes:

- Edible oil: Used in cooking (similar to coconut oil, with the potential to compete with other vegetable oils)
- Industrial oil (lauric oil): Used to manufacture soap, detergents, cosmetics, lubricants, biodiesel, and herbal medicines.

Refined and solidified oil: produced at low temperatures known as "azeite babaçu," made with roasted almonds, adding water for future evaporation. In the refining process, the oil needs to undergo a calculation after the separation of the "azeite babaçu" from the Ddough (BARBOSA, 2022; DOMINGUES, ARAÙJO, SILVA, 2017).

CURRENT MARKET SIZE

The global market value of babassu oil was between USD 185 million and USD219.2 million in 2021 and increased to USD 227.7 million in 2022 (3.9% growth rate). Paradoxically, the national production of babassu oil declined from 48,706 tons in 2019 to 47.641t in 2020 and 32,074t in 2021. The trend may be related to the COVID-19 epidemic. The main destinations in 2024 were Argentina, Mexico, the United States, Bolivia, and Germany. The Brazilian lauric oil market is currently one of the leading markets for babassu oil. The hygiene, cleaning, and cosmetics industries absorb 35 thousand tons of raw babassu oil annually (EMBRAPA, 2021; CONAB, 2022).

PROJECTED FUTURE MARKET SIZE

Despite recent trends in national production of babassu oil, the value of the global babassu market is expected to increase to USD 238.37 million by 2026 and to reach USD 347.0 million by 2032, by a CAGR between 4.3% and 5.2%.

VOLUMES SOLD/CONSUMED

As noted, the production of babassu oil ranged from 48,706 tons in 2019 to 47.641 tons in 2020 and 32,074 tons in 2021, most of which were exported. The fastest-growing export markets for babassu oil in Brazil between 2021 and 2022 were Argentina ($670k), Mexico ($305k), and the United States ($57.6k). In February 2024, the main destinations were Argentina ($113k), Mexico ($29.9k), the United States ($1.55k), Bolivia ($381), and Germany ($184).

PRICE TREND

The average price on the national babassu almond market is R$ 2.67 / kg (Ranging from R$1.88 to R$3.50). In Maranhão, Ceará, and Piauí, the trend observed in the high prices in the annual variation (2019/2020). In 2020, the price indices of babassu almonds had considerable variation between markets, with the most significant increase occurring in Tocantins, 29%, followed by Ceará and Piauí. The pressure of demand on supply was the main reason for the price increase (CONAB, 2021). In Piauí, the data reached an all-time high of R$ 5.21 in July 2022. The price in March and April 2024 is R$3.63.

HISTORY

There may be two trends in motion today. Historically, the expansion of the babassu market was dependent on the growth of the cleaning industry, such as soap; this expansion may be compromised by competition with palm kernel oil, which is similar to babassu oil but has higher productivity and a much lower production cost than babassu. Expanding palm production and palm oil import could outcompete babassu oil in a large segment of the cleaning industry. This point in the commercial scenario of babassu should be observed when discussing the decrease in production and yield of coconut breakers (EMBRAPA, 2021; OLIVEIRA et al., 2022; CONAB, 2021). The lauric oils market has become the primary market for babassu almonds, but it suffers from competition with palm oil kernel and coconut oils (CONAB, 2022).

There is growing interest in organic and natural cosmetics. Babassu oil is rich in fatty acids, a key ingredient in soaps, creams, and shampoos. It has antimicrobial and anti-inflammatory properties and antioxidants that can prevent skin damage. There is a growing interest in the Babassu value chain due to international demand for products from fair trade relations. One example of this trend may be Natura Cosméticos, one of the largest buyers of babassu coconut crude oil, which purchased 24 tons of babassu oil in 2020 and is expected to increase purchases to around 130 tons in coming years (FUNDO AMAZÔNIA, 2023; NATURA, 2020; ASSEMA, 2021).

The Babassu value chain seems to be moving from the traditional market to one that specifically values Babassu's social and environmental aspects, providing ecosystem services to local populations and supporting the continued development of organizational capacity. This includes support for the culture of babassu producers and the inclusive modernization of their value chain so they become fully integrated into the evolving bio-economy.

PRODUCTION SYSTEMS AND ENVIRONMENT: AGROFORESTRY, WILD HARVESTING, PLANTATION

The babassu palm is closely integrated into regional agroforestry systems. The cultivation of annual crops and animal grazing occurs under the palm trees that self-propagate. Despite its abundance, it is not uncommon to see the planting and management of babassu in agricultural areas, which take place during the rainy season. The consortium of babassu trees with annual crops such as rice, corn, beans, cassava, and animal pastures constitute an efficient and sustainable management system for the babassu biome. At the same time, the adaptive capacity of babassu palms can be effective in reforesting arid and nutrient-poor lands (FUNDO AMAZÔNIA, 2019; ABIERO et al., 2017). It is one of the most abundant palms in the Amazon and the Brazilian Cerrado biomes. The species is adapted for colonizing areas following deforestation. The diversity of economically valuable products and relative production contribute to the importance of the babassu palm in relation to other wild species.

MATURITY TIME

Babassu palms have an average life span of 35 years. They begin producing fruit when they reach 8 to 10 years of age and attain total production by the 15th - 20th year. They grow 3 to 6 bunches of fruit over the year, and each bunch has between 150 and 300 coconuts, each of which contains an average of 3 to 6 almonds (it can reach up to 8). Trees usually produce between three and five bunches of yellowish flowers. The peak flowering occurs between January and April, and the fruits ripen between August and December. As they ripen, the fruits fall to the ground and are collected by the “coconut breakers,” women from traditional agroextractive communities. In addition to collecting and processing the nuts, the coconut breakers have had to organize to fight for recognition of their territorial right to manage babassu trees on public and private lands (PAES-DE-SOUZA et al., 2011; The Glo Haus, 2024).

PRODUCER PROFILE AND SOCIAL IMPACTS

Babassu almonds are obtained primarily through the work of the so-called "coconut breakers," including traditional peoples, communities, and indigenous groups that also maintain a relationship with this palm tree. The *Babassu coconut* breakers, or *breakers (Quebradeiras)*, and their relationship with the *Babaçu* are part of the highly biodiverse ecosystem located in the eastern transition zone between the Amazon Forest and Cerrado biomes.

Now that the bioeconomy is elevated to a national priority in the research, development, and innovation agenda, the babassu and the management system these communities have developed have much to offer and to gain from involvement in programs that promote the sustainable use of Brazilian biodiversity's products. For hundreds of rural communities and tens of thousands of vulnerable families, the babassu almond is still an essential source of monetary income (PORRO, 2019).

PRODUCTION PROBLEMS

One of the technical bottlenecks of babassu production is the primitive technology and low productivity of babassu harvesting, extraction, and processing to produce babassu oil so that a large part of the value of the supply chain is captured higher up the chain.

SUPPLY CHAIN PROBLEMS

Babassu almonds are channeled to a relatively small number of processing industries. The expansion of the babassu market depends on the growth of the cleaning industry, and this expansion may be compromised by competition with oil palm kernel oil, which has higher productivity and much lower costs than babassu. Competition from imported palm oil could cause a decline in demand for babassu.

RECOMMENDATIONS FOR PROCESSING AND SIZING

Seeking to achieve legally binding biodiversity targets will influence the GVCs of companies that rely on natural resources in regions inhabited by protected communities within specific socio-cultural and economic contexts.

Investment in processing equipment (such as the vegetable oil extraction press) could replace the far less efficient manual extraction.

Studies of the implementation of processing plants for some by-products; characterization of the technical-economic feasibility of derivatives processing; study of the production quality of natural vegetable oil and refined and solidified oil.

Development of more productive commercial techniques for the exploitation of Babassu products and conservation of the Babaçu Forest (OLIVEIRA et al., 2022)

These opportunities for investment to address bottlenecks could contribute to developing a more inclusive and equitable Babassu bio-economy.

CARBON CREDIT/SEQUESTRATION POTENTIAL

The babassu is an important element of their transitional landscape, and they play an important direct and indirect role in carbon sequestration (OLIVEIRA, 2022).

CERTIFICATION PROGRAMS

CERTIFICATION	BY-PRODUCTS	COMPANY	TYPE
ORGANIC BRAZIL	Drinkeo de babaçu	ECOCERT FSC QIMAIBD	Allows organic commercialization within Brazil;
Fair Trade Certified (2000)			Fair trade. Establish direct contact between the producer and the buyer, reducing trade bureaucracy and sparing them from dependence on middlemen and the instabilities of the global commodity market.
USDA-ORGANIC – Agricultura orgânica nos EUA -USDA NOP			Allows marketing of organic products in the United States;
IBD ORGÂNICO			Guarantees the quality and origin of organic products
Agriculture Orgânic Europe			Permit that its organic products be marketed in the European Union.

RELEVANT SECTORS

Retailers

retailer	Site
Central do Cerrado – (cooperative of a group of producers)	https://www.centraldocerrado.org.br/
Cooperativa dos Pequenos Produtores Agroextrativistas de Lago do Junco LTDA (COPPALJ)	https://www.coppalj.com.br/
Association of Rural Women Workers of Lago do Junco and Lago dos Rodrigues (AMTR)	Phone: +55 99 9172-4139 | 99 3642-2152

Interstate Cooperative of Women Breakers of Coconut Babaçu (CIMQCB)	https://www.miqcb.org/
Cooperativa dos Pequenos Produtores Agroextrativistas de Esperantinopolis LTDA (COPAESP)	Email – coopaesp1@ig.com.gbr

IMPORT/EXPORT TARIFFS AND COMPLIANCE

For export/import, the traded value of babassu as a non-chemically modified vegetable oil is UR$ 3.9/kg (COMTRADE, 2021).

BIOCULTURAL PROTECTIONS OF COMMUNITIES OF ORIGIN (NAGOYA/CGEN PROTOCOL/ETC.)

The Nagoya Protocol "strengthens opportunities for fair and equitable sharing of the benefits deriving from: a) the use of genetic resources derived from native species and b) the traditional knowledge and practices associated with the use of native species by local communities." One of these native species is the babassu palm, ranked third among the top 8 non-timber forest products (NMFP).

REGULATORY INFORMATION

INCI Name: *Attalea speciosa* Mart. ex Spreng

Harmonized System Code: 15.13 - Oils of coconut (copra), palm kernels (palm kernels) (coconote), or babassu, and their fractions, whether or not refined, but not chemically modified.

NCM: 1513.21.20