BARU

RISK AND OPPORTUNITY ANALYSIS FOR THE DEVELOPMENT OF THE BARU SEED CHAIN

2021

This study was carried out by WWF-Brasil and Conexsus, and co-financed by the Humanize Institute and the European Union (through the Integrated Landscape Management in the Cerrado Biome Project in Brazil and Paraguay). Its content is the exclusive responsibility of the authors and does not necessarily reflect the opinions of the European Union or the Humanize Institute.

EDITING TEAM

Ana Carolina Bauer
Kolbe Wombral Soares Santos
Pedro Frizo

ESTÚDIO BARBATANA

Amanda Talhari e Ana Cossermelli
Editing and adaptation, design, illustration and desktop publishing

ARANHDU

Rosana Rezende
Researcher responsible for publication coordination and structure

Carolyn Hoggarth
Translator

Cover picture:
Terra Mar Filmes (@TerraMarFilmes) /
Sementes do Amanhã (@sementesdoamanhadoc)

WWF-BRASIL

Maurício Voivodic
CEO

Alexandre Prado
GREEN ECONOMY DIRECTOR

Carolina Siqueira
PROJECT COORDINATOR

Ana Carolina Bauer
CONSERVATION PROJECTS COORDINATOR

Kolbe Wombral Soares Santos
CONSERVATION ANALYST

CONEXSUS

Carina Pimenta
CEO

Monika Röper
LEADER OF COMMUNITY-BUSINESS DEVELOPMENT

Pedro Frizo
BUSINESS ADVISORY COORDINATOR

CONTENT CREATORS

WWF

CONEXSUS
CONEXÕES SUSTENTÁVEIS

SUPPORTING ORGANISATIONS

humanize

SUMMARY

INTRODUCTION

The use and commercialisation of baru (Dipteryx alata Vog.) has provided improvements in the income of agro-extractivists in the Cerrado, in addition to the valorisation of their ways of life and territories in which baru is cultivated, contributing to the conservation of native areas used sustainably for the harvest of baru. Baru is native to the Cerrado biome and has a multitude of uses, mainly for its nuts (seeds), such as food and medicine.

Despite its importance and relevance, the use and commercialisation of baru still need to be improved. This publication intends to delve into some important factors, such as fair trade, transparency and equity in existing relationships along the chain.

Thus, the objective of this analysis was to list and analyse the main potential risk elements associated with the baru value chain, with a focus on highlighting some development opportunities.

Photo by Terra Mar Filmes (@TerraMarFilmes) / Sementes do Amanhã (@sementesdoamanhadoc)

CONTEXT

THE CERRADO

The Cerrado is one of the world's richest regions of tropical savanna, containing 5% of the planet's and 30% of Brazil's biodiversity.

X-RAY OF THE CERRADO

THE CERRADO'S RIVERS

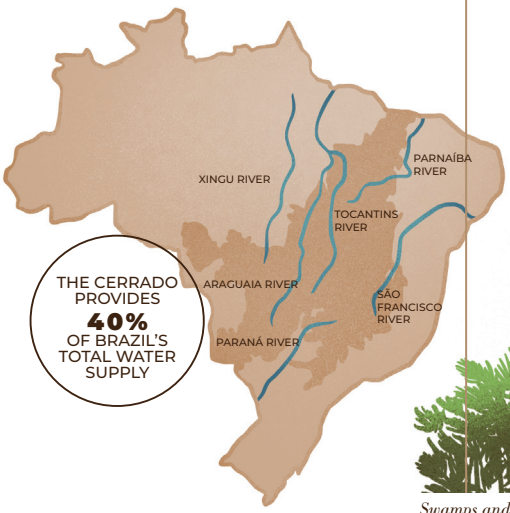
It is in the Cerrado that the headwaters of most Brazilian rivers are found, such as the Xingu, São Francisco, Tocantins, Araguaia, Paraíba, Tapajós basin, the right bank tributaries of the Paraná River and all the rivers that form the Pantanal. It also supplies water to three important aquifers: Bambuí, Urucuia and Guarani. Of the twelve main hydrographic basins in the country, eight receive water from the Cerrado six of which are within the biome.

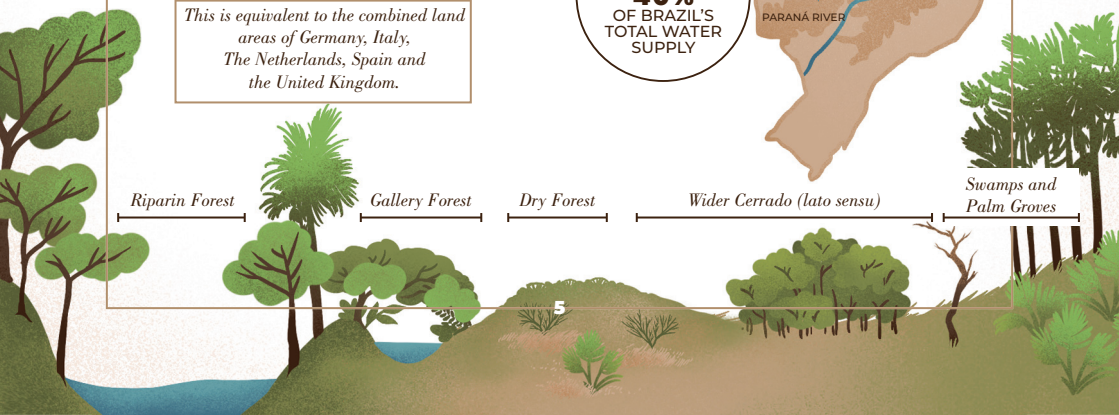
EQUIVALENCE
Mais de 2 milhões de km²
This is equivalent to the combined land areas of Germany, Italy, The Netherlands, Spain and the United Kingdom.

TERRAIN AND VEGETATION

The region covers a range of terrains, including plateaus and tablelands that vary from altitudes of 300 to 1,660 metres, separated by peripheral troughs. This explains the region's variation in plant coverage and biodiversity.

Source: CEPF, 2017.





AN IMMENSE WATER SOURCE

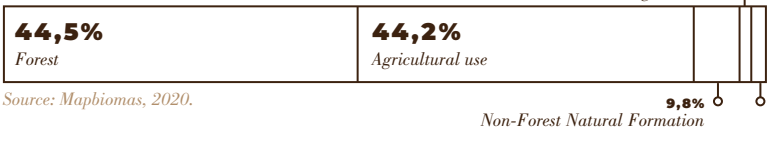
Its deep soil and vegetation act as a giant sponge, absorbing and filtering enough water during the rainy season to supply millions of springs, aquifers and rivers throughout the year, even at the peak of the dry season.

INVERTED FOREST

Its trees and bushes have large leaves and very deep root systems, which are up to five times the size of the visible parts of the plant. Seventy percent of the Cerrado's carbon stocks are contained under the soil, while the rest is stored in the upper parts of the plant.

Source: CEPF, 2017.

SOIL COVERAGE



Source: Mapbiomas, 2020.

MAMMALS OF THE CERRADO

The Cerrado is home to a wide variety of mammals of varying size. Most of these are currently threatened with extinction. *Source: IUCN, 2019.*

THE GIANT ANTEATER (TAMANDUÁ-BANDEIRA)

The largest animal that feeds on ants. Vulnerable to extinction.

THE GIANT ARMADILLO(ANTA)

The largest armadillo species in the world. Vulnerable to extinction.

THE JAGUAR (ONÇA PINTADA)

The biggest cat in the Americas. Vulnerable to extinction.

THE MANED WOLF (LOBO-GUARÁ)

The largest canine species in South America. Vulnerable to extinction.

DEKEYSER'S NECTAR BAT (MORCEGUINHO DO CERRADO)

An endemic species. Threatened with extinction.

THE SOUTH AMERICAN TAPIR (TATU CANASTRA)

Brazil's largest land mammal. Threatened with extinction.

BIODIVERSITY

The Cerrado is one of the world's richest and ancient regions of tropical savanna, containing 5% of the planet's species and 30% of Brazil's biodiversity.

Source: https://www.wwf.org.br/natureza_brasileira/areas_prioritarias/cerrado biodiversidade/

DIVERSITY AMONG THE PEOPLE OF THE CERRADO

Approximately 25 million people live in the Cerrado, corresponding to 12% of Brazil's population. The biome is home to over 80 indigenous ethnicities, as well as the Quilombola, Geraizeiro, Vazanteiro, Barranqueiro and backcountry Sertanejo communities, extractive agricultural workers, coconut breakers, riverine and livestock-rearing communities, including many more.

Source: ISPN, 2019.

PLANTS AND EDIBLE FRUITS

The biome contains over 200 species of medicinal plants and more than 400 other species that can be used sustainably in the recovery of degraded soil and as food. Roots, bark, resin, oil, leaves, clay, water and a range of other natural resources are carefully managed by the local population for use in their folk medicine.

MAIN FRUITS

Babassu (Babaçu) *Baru* *Moriche Palm (Buriti)* *Pequi* *Brazil plum (Umbu)*

SOME MEDICINAL PLANTS

Moriche Palm (Buriti) *Pacari* *Fava D'Anta* *Mangaba*

MANY AREAS THAT ARE FUNDAMENTAL IN MAINTAINING THE CONNECTIVITY OF THE BIODIVERSITY AND THE PROTECTION OF RIVERS HAVE BEEN CONVERTED.

170,000 KM² INSIDE PROTECTED AREAS

(8,7% of the biome) *Source: CNUC/MMA.*

3,2% *Fully Protected*	**5,5%** *Sustainable Use*
28 Ecological Stations	*11 National Forests*
13 Natural Monuments	*7 Extractivist Reserves*
77 Parks	*2 Reserves for Sustainable Development*
5 Wildlife Refuges	*73 Environmental Protection Areas*
5 Biological Reserves	*18 Areas of Important Ecological Interest*
	164 Private Natural Heritage Reserves (RPPNs)

Half of the Cerrado has already been devastated through agricultural expansion and the rest is under immediate threat. Just 8% of the Cerrado is protected in Conservation Sites, and only 3% of this is contained in fully-protected areas. Furthermore, the protection required by the Brazilian Forest Code can range from 20% to 35% of natural vegetation preserved on private properties.

The sustainable use of the Cerrado's natural resources provides improved quality of life and drives the regional economy, as well as contributing to conservation efforts, making it a viable alternative to unsustainable exploration activities, deforestation, and the intense threats that impact the biome. The economic viability of chains linked to socio-biodiversity depends on opportunities for commercialisation, structuring and organising production in a sustainable manner.

BARU SEEDS

Baru, or cumbaru, is the fruit of the baru tree (*Dipteryx alata*), which is native to the Cerrado. It is known for its resistant and high quality wood, and also has fungicidal properties. Its canopies grow to be very dense, and each tree can reach as much as 20 metres in height with trucks ranging up to 70 centimetres in diameter. A hard husk protects the fruit, and inside there is a nut whose flavour is similar to that of peanuts, with high nutritional value.

According to data provided by Brazil's National Forestry Database (SNIF), baru is most commonly found in the states of Minas Gerais, Goiás, Mato Grosso, Mato Grosso do Sul and the Federal District, which all have a well-established tradition of harvest and trade. It can also be found on a smaller scale in the states of Bahia, Maranhão, Pará, Piauí, Rondônia, Tocantins, and in the north of São Paulo.

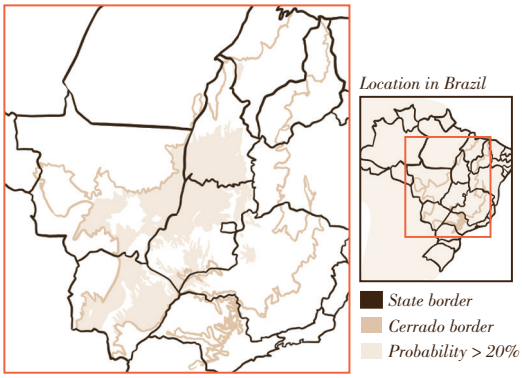


Figure 1: Occurrence of baru in the Cerrado
Source: IBGE, 2019.

The harvest of the fruits produced by the baru trees takes place from July to October, although it can vary depending on the region and weather conditions.

Extraction of baru seeds requires special care, and begins with the selection of the fruit. The husk is hard, so the seeds are removed in one piece either by cutting the fruit horizontally or using mechanical pressure.

The seeds are considered to be a super food and can be eaten raw or toasted. From raw nuts, it is possible to produce oils, flour, butter, pies and even generate energy by burning its husk. On the other hand, roasted nuts can be used in the production of typical Brazilians sweets, such as paçoca, pé-de-moleque, rapadura and a whole variety of recipes.

HOW THE ANALYSIS WAS CARRIED OUT

A series of events were held between May 2019 and the date of the analysis. The aim of these initiatives was to foment dialogue and debate themes relating to the baru chain. The image below shows the flow of all the activities that took place prior to the publication of this analysis.

TIMELINE

MAY/2019

Workshop on the production and commercialisation of agro-extractivist products from the Cerrado.

Event held by WWF-Brasil, ISPN and Central do Cerrado. On this occasion, 21 organisations participated. It was in this event that baru was identified as a priority chain.

SEPTEMBER/2019

1st Workshop for the fair and supportive commerce of the baru chain.

Workshop held by Copabase with support from the Fundo CEPF-Cerrado.

MAY–JUNE/2020

Identification and adequacy of the analysis methodology.

Actions carried out by Conexsus and WWF teams.

JULY–SEPTEMBER/2020

Data collection: surveys, interviews and analysis systematisation.

NOVEMBER/2020

Discussion of the main points raised in the analysis.

There were 27 participants, including representatives from cooperatives, a university, associations, nongovernmental organisations and companies.

2021

Building of partnerships, implementation of actions and promotion of events to strengthen the chain.

Figura 2: Timeline

METHODOLOGY

The methodology used for this study was based on that developed by the WWF Network, known as Supply Risk Analysis (SRA). Conventional risk analysis models evaluate the risk to supply from a purely financial perspective. This means they are incomplete, as most of the time risks to business lie in social, environmental and institutional elements.

Thus, to adapt the methodology, some indicators that would be not very applicable to the context of the baru were removed, as an agro-extractivist production presents a different organisation from that of the agricultural production chain.

This analysis is structured into four broad themes, as shown in the illustration below: 1) Environmental, 2) Economic, 3) Governance, 4) Social . These themes are divided into 23 criteria represented by one or more indicators.

The themes of the analysis used in the methodology

ENVIRONMENTAL
Issues of environmental conformity and productive sustainability

ECONOMIC
Productive dimensions, prices and commercialisation.

GOVERNANCE
Articulation and collective involvement in problem solving.

SOCIAL
Quality of work, demographic characteristics and the involvement of local communities

Figura 3: Themes of the analysis

The aim of this analysis was to answer the following questions:

- What are the greatest socio-environmental risks?
- Where should efforts be focused in order to develop the chain?
- How should the necessary efforts towards the socio-environmental and economic sustainability of the chain be prioritised?

The risk is evaluated based on two measurements:

PPROBABILITY OF OCCURRENCE VS. SERIOUSNESS OF IMPACT

PROBABILITY OF OCCURRENCE

Common ← → *Improbable*

SERIOUSNESS OF IMPACT

Severe ↑ ↓ *Insignificant*

	A	B	C	D	E
1	25	24	22	19	15
2	23	21	18	14	10
3	20	17	13	9	6
4	16	12	8	5	3
5	11	7	4	2	1

Figure 4: Probability matrix for occurrence vs. seriousness of impact

The risk score increases as the probability of occurrence and severity of impact increase, since a higher score implies a greater probability of occurrence and severity of impact.

The team evaluated each of the indicators in order to identify those that would be relevant to this profile. As a result of the process, 10 criteria were established (5 probabilities and 5 severities) and they were represented by 23 indicators used in the analyses.

THE 10 CRITERIA

Probability of Occurrence

A. Common Occurrence
B. Known Occurrence
C. May Occur
D. Unexpected Occurrence
E. Improbable Impact

Severity of Impact

1. Severe Threat
2. High Impact
3. Moderate Impact
4. Light Impact
5. Insignificant Impact

Figure 5: Criteria according to probability and severity of impact

THE 23 INDICATORS

No.	Indicator	Social and environmental analysis		
		P	S	Risk
1. GOVERNANCE & MANAGEMENT				
1.1. Concentration of Production				
1.1.1	Concentration of Production according to Geographical Region	C	2	18
1.2. Market				
1.2.1	Stability of Supply	D	3	9
1.2.2	Changes in Demand	D	3	9
1.3. Environmental Threats				
1.3.1	Pests and Disease	B	4	12
1.3.2	Severity of the Climate	C	1	22
1.4. Transport				
1.4.1	Infrastructure and Transport	C	2	18
1.5. Traceability				
1.5.1	Level of Produce Traceability	C	2	18
1.6. Reputation				
1.6.1	Negative Coverage in the Media	E	3	6
2. ENVIRONMENTAL				
2.1. Impact on Biodiversity				
2.1.1	Impact on High or Unique Biodiversity	E	5	1
2.1.2	Ecosystem Health	E	5	1
2.2. Emissions				
2.2.1	Emissions of Greenhouse Gases (GHGs) Associated with Production (relative to fertilizer use, land conversion, deforestation and agricultural practices adopted)	E	4	3
2.3. Soil				
2.3.1	Degradation of the Soil	C	5	4
3. SOCIAL				
3.1. Labour				
3.1.1	Use of Slave and Child Labour	E	3	6
3.1.2	Presence of Occupational or Safety Risks	A	3	20
3.1.3	Remuneration and Incomes	D	3	9
3.2. Land Ownership				
3.2.1	Land Ownership Insecurity	A	3	20
3.2.2	Land Grabbing and Appropriation	D	3	9
3.2.3	Impact on Traditional Communities (quilombolas and settlements) / Displacement of Communities	E	3	6
3.2.4	Impact on Indigenous Populations	E	3	6
3.3. Social and Community Well-Being				
3.3.1	Access to High Quality Water	C	2	18
3.3.2	Poverty	C	2	18
4. ECONOMIC AND FINANCIAL				
4.1. Price Volatility				
4.1.1	Price Volatility	B	3	17
4.1.2	Sustainability Agreements	A	2	23

Chart 1 – Indicator list

LOW RISK **INTERMEDIATE RISK** **HIGH RISKS**

DATA SURVEY AND INTERVIEWS WITH KEY ACTORS

The data collection stage was carried out through secondary data research with publicly available information, including public databases, government reports, scientific articles, among others.

In order to collect and validate the information obtained from secondary data, interviews were carried out with some actors in the chain.

In total, 13 institutions were interviewed, and conversations were held with 3 companies, 5 cooperatives, 2 commercialisation centres and 3 supporting institutions.

The discussion and data collection took place between July and September 2020. This work also contributed to bringing institutions from the different links in the production chain closer together.

Photo by: Terra Mar Filmes (@TerraMarFilmes) / Sementes do Amanhã (@sementesdoamanhadoc)

SUMMARY OF THE MAIN RESULTS

This analysis of risks and opportunities was developed on the basis of available information. Thus, it does not aim to exhaust the discussions on the subject. Rather, it is an initial exercise of debate that needs to be deepened and continuously updated, as there are large gaps in information about the baru chain. It is important to emphasise that this analysis must be understood and observed in a general way and not by the isolated evaluation of the indicators, as the conclusions observed are based on the interrelationship between all the elements of the analysis.

Of the 23 indicators analysed in the study, 13 were classified as low risk, 9 as intermediate risk and 1 as high risk. Discussions with chain actors were focused on intermediate and high risk outcomes, as they initially require greater attention.

LOW RISK **INTERMEDIATE RISK** **HIGH RISKS**

LOW RISKS IDENTIFIED USING THE METHODOLOGY

Items whose results are seen as low risk to the chain:

1.2.1	Stability of supply	2.1.1	Emission of greenhouse gases
1.2.2	Changes in demand	2.3.1	Soil degradation
1.3.1	Pests and disease	3.1.1	Use of slave and child labour
1.6.1	Negative coverage in the media	3.1.3	Remuneration and incomes
2.1.1	Negative impact on biodiversity	3.2.2	Land grabbing and appropriation
2.1.2	Ecosystem health	3.2.3	Negative impact on traditional communities
		3.2.4	Negative impact on indigenous communities

INTERMEDIATE RISKS IDENTIFIED USING THE METHODOLOGY

CONCENTRATION OF PRODUCTION

- Production is highly concentrated across a few states, especially Goiás and Minas Gerais.
- Minas Gerais stands out in the overall average of the indicators assessed by the IBGE. However, despite such importance, the work related to this chain in the state of Minas Gerais still needs further development.

SEVERITY OF THE CLIMATE

- Climatic events in the past have had a significant impact on the level of production and, as a result, on price too.
- It is a seasonal product, with wide variation of crops between the years, which demands from productive organisations to structure themselves in production and distribution networks.

INFRASTRUCTURE AND TRANSPORT

- Rural roads are in poor conditions to access the harvest areas, as well as to transport production to the headquarters of the community enterprise or to the city.
- The distribution of products takes place mainly by land, and many of the highways are in precarious situations.
- Such situations entail high logistical costs with a direct impact on final prices.

LEVEL OF PRODUCE TRACEABILITY

- Traceability can guarantee the origin of the product and provide social and environmental information on how it was produced.
- It allows the identification of the producing region. Fruits from different regions have different characteristics and require different processing methods.
- Some actors reported that they have identified data on the collector and on the origin with identification of batches in the chain. When the purchase is not made directly with the agro-extractivist or cooperatives, this traceability is compromised.
- Several actors mentioned their interest in improving traceability controls.

PRESENCE OF OCCUPATIONAL OR SAFETY RISK

- Standards of Health and Safety in the Workplace applied to extractive agricultural activities have still not been explored in detail in the literature.
- The harvesting step can present risk of accident (poisonous animals), physical risk (exposure to the sun) and ergonomic risks (transport of harvested fruit).
- The processing step involves ergonomic risks (posture for breaking fruit, repetitive movements) and safety risks (accidents with equipment and machinery). Issues related to the lack of machinery, specifically that used in processing, have been identified.

INTERMEDIATE RISKS IDENTIFIED USING THE METHODOLOGY

LAND OWNERSHIP INSECURITY

- The actors consulted reported not being aware of the existence of conflicts between extractivists and landowners, but the mentioned situations of prohibition of entry in some areas for the harvesting of fruits.
- Part of the harvest takes place in third-party properties, and there may be exchange of services or collection fees.
- The prospect of an increase in demand may imply a tendency for large properties to become involved in the commercialisation of the product and it may create difficulties for extractivists to access baru trees in these areas.

ACCESS TO HIGH QUALITY WATER

- Of the total 17 municipalities relevant to the baru chain, 11 have parameters between excellent, good and reasonable on the water balance and 6 of them have parameters between bad and very bad according to information from the SNIRH. The water balance can be understood as the accounting of the inflows and outflows of water in these municipalities.
- Areas rated as having excellent water quality are found in the municipalities of Arinos (Minas Gerais), Nioaque (Mato Grosso do Sul), Riachinho (Minas Gerais), Santa Fé de Minas (Minas Gerais), and Urucuia (Minas Gerais). Areas rated as having good water quality are found in Arraias (Tocantins), São Francisco (Minas Gerais), São Romão (Minas Gerais), and Várzea Grande (Mato Grosso). Water quality is rated as reasonable in Araguaçu (Tocantins) and Padre Bernardo (Goías), bad in Goiânia (Goías), Icaraí de Minas (Minas Gerais), and Taguatinga (Tocantins), and very bad in Paracatu (Minas Gerais), Poconé (Mato Grosso), and Várzea da Palma (Minas Gerais).

POVERTY

- Poverty can be measured by the HDIM, which comprises three dimensions of human development: longevity, education and income.
- Indexes of key municipalities were evaluated, being these cities producers that sell baru.
- About 70% of the municipalities are classified as having an average HDI-M. Such data does not allow us to verify what the contribution of extractivism is. However, this activity, as an income generator, can contribute positively to the HDI-M of these municipalities.

PRICE VOLATILITY

- The definition of the purchase and sale price directly affects the relationships between buyers and extractivists.
- Price is affected by baru supply, and supply is directly dependent on natural cycles and access to regions where raw material is produced.
- A relevant factor to the price is the informal relationship between the links in the chain, as they generate insecurity and room for intermediaries to act, which burden the production, being punctual buyers, who arise when the product market is high.

HIGH RISKS IDENTIFIED USING THE METHODOLOGY

SUSTAINABILITY AGREEMENTS

- There is no regulatory framework at a federal level for this product that would standardise parameters of quality and guide transactions between buyers and producers.
- There are few cases of collective action focusing on the sustainable development of the chain, especially in marketing, protection of the environment, harvesting areas and local communities, baru forest regeneration, and fair trade, among others.

OTHER ITEMS OF RISK

During the interviews to carry out this analysis, other risk elements, in addition to the indicators initially identified, were identified by the chain's operators as risk items for the chain's economic and socio-environmental sustainability. They are:

- *Access to financial resources.* Productive organisations reported difficulties in accessing official lines of rural credit for funding and investment. Among the main reasons are the requirement for a large amount of documents, the need for a business plan for the chain, the absence of guarantees and little dialogue with financial agents.
- *Absence of data and public information.* All operators stated that it is difficult to obtain public and quality data and information about the baru's production and market, which makes decision-making difficult for economic agents. The Agricultural Census brings this more specific information on the chain, but only every 10 years.
- *External vs. internal demand.* The growth rate of the international demand for baru appears to be greater than the national demand, which makes it difficult for smaller organisations to adapt to find good export channels.

LAUNCH EVENT

The online discussion event for this analysis took place in November 2020 and 27 participants were present, including representatives from cooperatives, a university, associations, non-governmental organisations and companies.

The aims of this event were as follows:

- *Present the results of the risk and opportunity analysis* carried out by Conexsus/WWF-Brasil, in order to deepen the existing knowledge about the chain;
- Expand the *strategic discussion* process around the baru chain, its *challenges and development opportunities;* and

Facilitate the *collective proposition of mitigating actions for the risks identified* in the analysis based on qualified data and shared perceptions.

In order to expand the exchange of experiences, participants were organised in virtual rooms in two rounds.

In the first round, they were invited to discuss the main results of the analysis. In the second round, they reflected on actions that could be collectively addressed in order to minimise or eliminate the potential risks identified in the analysis. The main points raised in this dialogue for the structuring and strengthening of the baru chain are:

THESE ARE THE CONSIDERATIONS RAISED BY THE PARTICIPANTS ON THE CREATION OF A COMMON FORUM

- The need to be clear about what can be built together, that is, who can participate, what is the purpose, and that the benefits for the chain as a whole are visible, especially for the traditional peoples and communities of the Cerrado and their respective community enterprises.
- The need to understand the different rhythms and ability to make new commitments to collaboration. Considering, for example, how to balance the work schedule and various day-to-day demands.
- The need for a leader/focal point or guide in the process who can bring a more concrete vision to give directions to those who participate (bringing balance and facilitating the process).

REGARDING WHICH ACTIONS PARTICIPANTS WOULD LIKE TO JOIN FORCES ON

a. *Creation of a database* (or similar) from which information on the chain would be accessible to everyone.

b. *Management or incidence by means of the creation of new protected areas* for sustainable use, where the baru can be protected and used, involving a sustainability agreement that encourages extractivism in a broader way and that can unite all actors to mobilise in favour of the chain. In general, the group considered thinking about actions within a broader sustainability strategy that also includes the protection and promotion of extractivism and protection of the peoples and communities that are in these areas.

c. *Establishment of sustainability agreements.* Elaborate a thematic work agenda for stakeholder involvement in building such agreements, not only because it is the highest risk item identified in the analysis, but because of the urgency for everyone to be involved in building such agreements. It is important that several links in the chain are involved.

d. *The ability to identify or promote new technologies* for storage, breaking, filling and pest control. These factors affect both production cost and quality.

e. *Improvement of communication on baru* promoting actions that better demonstrate the benefits, impacts and advantages of this type of chain for the protection and conservation of the Cerrado, in addition to generating income for the biome's traditional peoples and communities.

FINAL CONSIDERATIONS AND RECOMMENDATIONS FOR AN AGENDA TO STRENGTHEN THE BARU CHAIN

The following list summarises the key risk elements and development opportunities identified in the risk analysis as well as in the virtual event held to present its results.

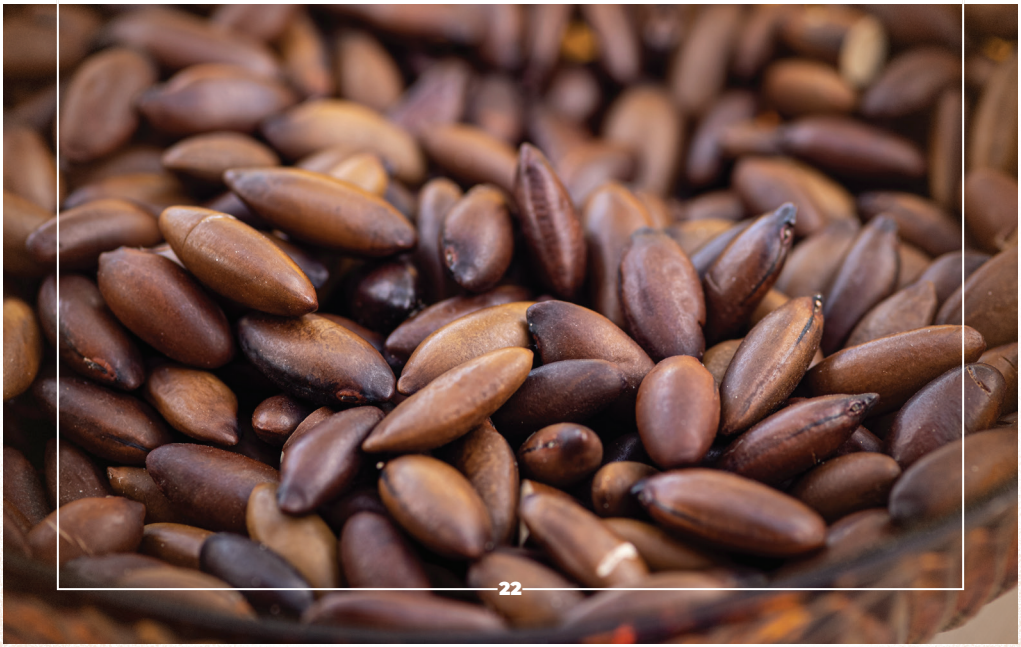
The identification of these points and the proposition of recommendations seek to implement a positive agenda for the baru and for the development of activities within this chain. The points highlighted here refer to those that are more structuring and whose collaboratively organised actions, if carried out, can generate greater benefit to all parties involved.

- There is a lack of data for the chain with regard to production, prices and volume of local/regional sales, in addition to other relevant information to support decision-making by economic agents. Therefore, it is recommended that regulatory agencies, supportting institutions, productive and commercial organisations can *collaborate in the collection and systematisation of data* associated with baru. The participation of research and teaching institutions in the collection and systematisation of data about the product is also of fundamental importance.
- The lack of data also makes evident the lack of qualified training to prepare the different actors in carrying out their work. Thus, it is worth seeking to strengthen the production bases through *education, training and qualified technical assistance* to meet the demands of this chain.
- Associations and cooperatives have difficulties in accessing financial resources to meet their working capital and productive investment needs. For this reason, it is recommended that *solutions that facilitate access to financing and microcredit for productive purposes* are promoted, in order to guarantee the supply of baru by community organisations, as well as supplying them with the necessary resources for investments. Actions for credit recovery, guarantees for contracting rural credit or the creation of small funds are among the possible solutions.The crop purchases in advance by buyer companies can also

be a practice to be adopted in order to guarantee the offer coming from cooperatives and associations.

- The absence of normative instructions and specific sanitary regulation brings uncertainty and difficulty in defining the basic criteria of product quality. Therefore, it is recommended that *norms and rules be discussed and implemented to standardise the product's quality parameters,* such as moisture content, mold, smoke and germination, in addition to the treatment necessary for international commercialisation. Legislation from other productive chains of the Cerrado's socio-biodiversity can serve as an example, as long as it always pays special attention to specific points that only occur in the baru chain.
- With the entry of new buyers in the chain, especially companies and industries, the level of demand in terms of basic purchase criteria and parameters tends to increase. Thus, it is recommended that companies and industries get involved in ongoing partnerships for the development of the *commercial management of associations and cooperatives,* since these processes allow the structuring of solid and adequate suppliers to meet the companies' requirements.
- With the growing demand for the product, large producers and

Photo by: Terra Mar Filmes (@TerraMarFilmes) / Sementes do Amanhã (@sementesdoamanhadoc)



landowners can restrict access to their areas, which are used by extractivists to carry out the harvest, or even impose more onerous conditions on the extractivist for the harvestting of baru. The reduced number and size of conservation units for sustainable use in the Cerrado, especially Extractive Reserves (RESEX) and Sustainable Development Reserves (RDS), in addition to the lack of recognition of areas of traditional use by peoples and communities, contribute to intensifying access to land as an element of risk. Therefore, it is recommended *the creation or expansion of strategic areas for extractivism and baru collection*, in addition to other bioextractive chains, as well as an advance in the policies of recognition of traditional territories of the peoples and communities of the Cerrado. It is also worth considering the possibility that government agencies, companies and productive organisations support the recovery of degraded areas and the restoration of the forest using the baru, for example, in consortium via Agroforestry Systems, in order to expand the potential for collection and production in the medium and long run.

- Building an environment that is favourable to fair trade, where small producers have access to the market under fair and equitable conditions is paramount. Thus, a type of commerce that respects social and environmental sustainability over time is created, dignifying work, respecting nature and promoting responsible management of natural resources. In agroextractivist chains, as they are directly related to biodiversity, practises and knowledge related to the culture and tradition of communities, this business model is even more relevant. Thus, *discussion environments are recommended where all actors in the chain can share their realities, aiming at a constant search for balanced actions to carry out more inclusive business.*

- The absence of collective spaces for governance and dialogue in the chain can hamper the chain's economic and socio-environmental sustainability. Therefore, it is recommended *the creation and functioning of working groups/forums or other collective multisectorial instances to promote dialogue, circulation of information, establishment of partnerships and fair agreements, and facilitation of joint actions* to strengthen the chain.