THE WORLD'S MOST BIOLOGICALLY DIVERSE SAVANNAH IS UNDER THREAT

THE CERRADO

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Stretching across the central region of Brazil, the Cerrado is present in **11 Brazilian states** and connected to other important biomes: the Amazon, to the north; Caatinga to the northeast; Pantanal, to the southwest; and Atlantic Forest, to the southeast. Due to its location and ecological characteristics, **the Cerrado plays a key role** in society and in protecting biodiversity and natural resources, particularly water resources, and is essential for the country's agricultural production.

TOTAL ORIGINAL AREA OVER 2 MILLION KM²

An area equivalent to the size of Spain, France, Germany, Italy, and the United Kingdom put together.

19%

of Brazil's native vegetation is in the Cerrado

LAND USE

Source: Mapbiomas

58% forest and grassland

40% agriculture

31% cropland

69% pastures

1% water bodies

1% without vegetation cover

170 THOUSAND KM² OF PROTECTED AREAS

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

3,5% Strictly protected

- **28** Ecological Stations
- **13** Natural Monuments
- **77** Parks
- **5** Wildlife Refuges
- **5** Biological Reserves

5,5% Sustainable use of natural resources

- **11** National Forests
- **7** Extractive Reserves
- **2** Sustainable Development Reserves
- **73** Environmental Protection Areas
- **18** Areas of Relevant Ecological Interest
- **164** Private Natural Heritage Reserves

DO

25 MILLION
PEOPLE LIVE IN THE CERRADO

12% of the national population, including around 80 ethnic groups and roughly 1,700 Quilombola communities.

Source: ISPN

INTERACTION

The Cerrado shares species such as the jaguar with Brazil's other major biomes (the Amazon, Caatinga, and Atlantic Forest).

WHY IS THE CERRADO SO IMPORTANT?

Most of the biomass in the Cerrado is underground. The trees' root systems are typically deep, acting like a giant sponge that absorbs and stores rainwater, which is distributed throughout the entire year to millions of springs. The Cerrado supplies water to eight* of Brazil's 12 major river basins, including the Amazon Basin, and to three key aquifer systems: the Bambuí, Urucuia, and Guarani aquifers.

**River basins: the Amazon, Paraguay, Araguaia-Tocantins, Paraná, São Francisco Eastern Atlantic, Parnaíba, and Northern and Western Atlantic basins.*

The Pantanal, for example, is totally dependent on water from this region and a large part of the electricity consumed by Brazil is generated by the waters of the Cerrado.

The Cerrado is also a **vitally important carbon stock**, storing around 13.7 billion tonnes of carbon*, two-thirds of which underground.

The crucial role it plays in mitigating the effects of climate change is largely ignored.

**Above and belowground biomass – equivalent to 30% of global carbon emissions in 2017 – which, if released, would significantly accelerate climate change.*

IT IS A HUGE "WATER TANK" SUPPLYING 40% OF BRAZIL'S FRESHWATER

BIODIVERSITY

Harboring 5% of the world's species (32% of its species are unique to the biome), the Cerrado is the most biodiverse savannah in the world. According to the "Profile of the Cerrado Biodiversity Hotspot"*, the Cerrado is home to over 12,000 species of plants, one-third of which are found exclusively in the biome.

"The region also shelters at least 2,373 species of vertebrates, one-fifth of which are endemic. A recent survey showed that, between 1998 and 2008, a total of 1,300 new vertebrate species were described in Brazil. Of these, 347 vertebrate species were found in the Cerrado, including 222 new fishes, 40 amphibians, 57 reptiles, 27 mammals and one bird. These numbers indicate the **colossal biological importance of the region**", in accordance with the Profile.

** organized by the Critical Ecosystem Partnership Fund (CEPF).*

5% of the world's species

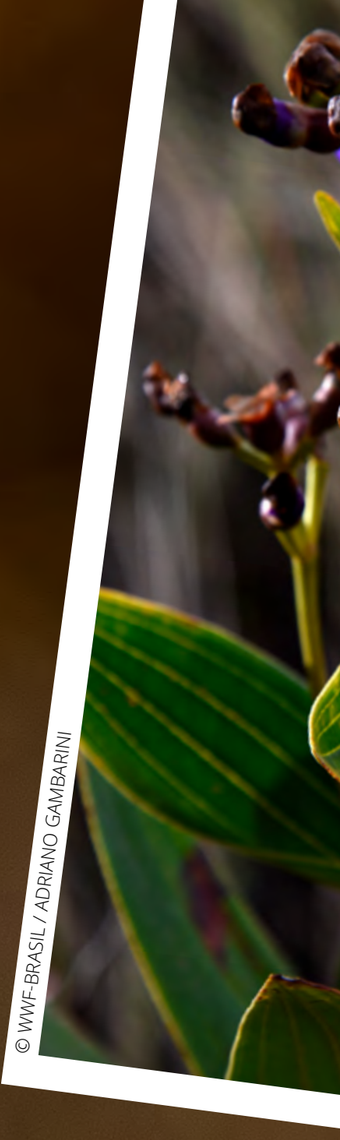
32% are unique to the biome

OVER 12000 species of plants

OVER ONE THIRD are exclusive from the Cerrado

AT LEAST 2373 vertebrate species

AROUND ONE FIFTH are endemic



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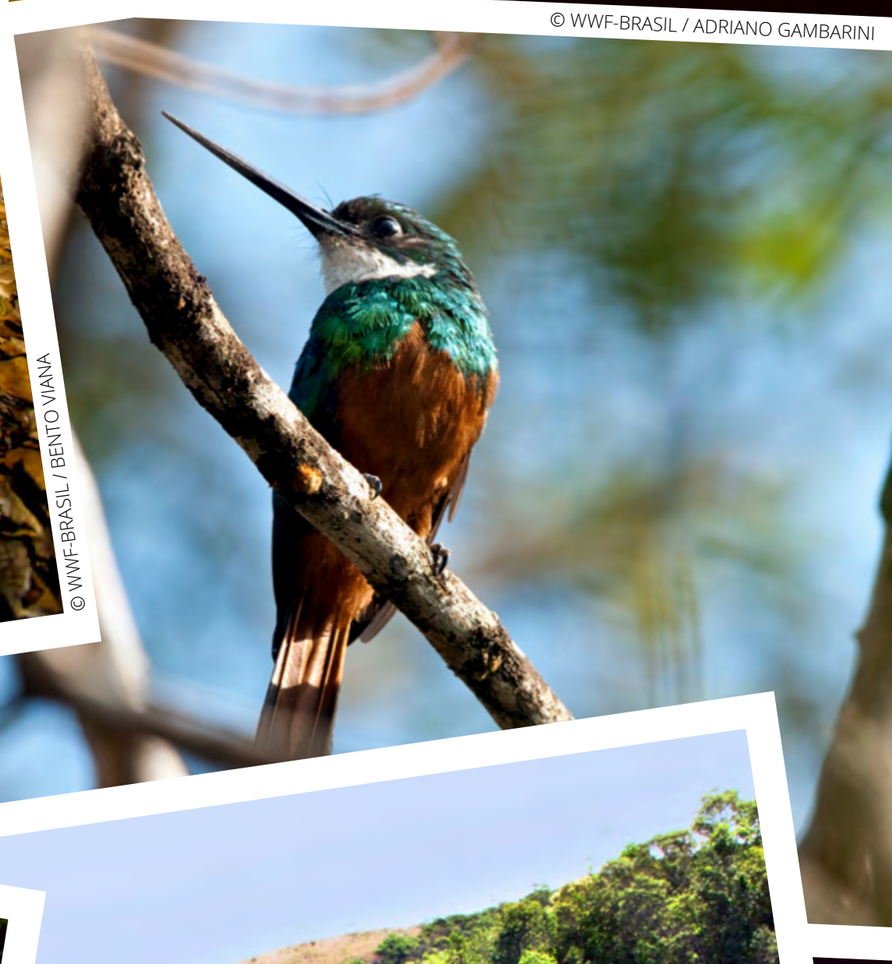

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MAMMALS OF THE CERRADO

The Cerrado shelters a vast range of mammal species, most of which are threatened with extinction.

Source: IUCN


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TAPIR

The largest terrestrial mammal in Brazil

Endangered


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GIANT ARMADILLO

The largest living species of armadillo

Vulnerable


© WWF-BRASIL / ADRIANO GAMBARINI

MANED WOLF

The largest canid in South America

Vulnerable


© WWF-BRASIL / ADRIANO GAMBARINI

GIANT ANTEATER

The largest species of anteater in the world

Vulnerable


© SHUTTERSTOCK

JAGUAR

The biggest wild cat in the Americas

Vulnerable


© WWF-BRASIL / ADRIANO GAMBARINI

DEKEYSER'S NECTAR BAT

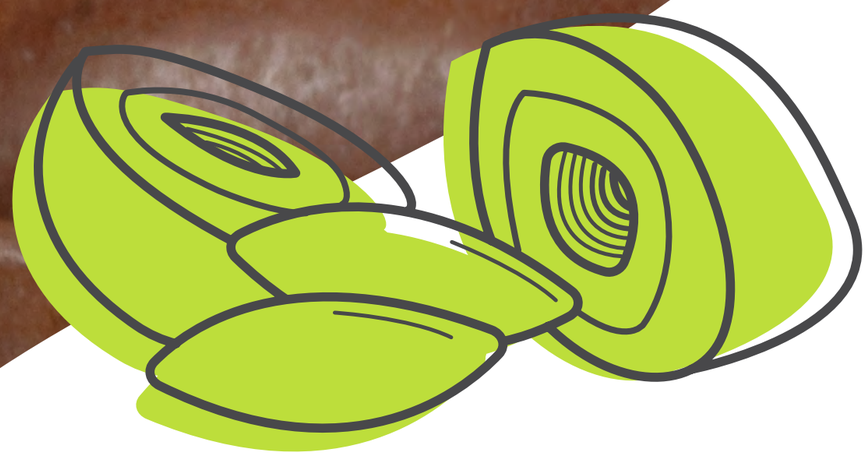
Endemic species

Endangered

VEGETATION AND EDIBLE FRUITS

SOUARI NUT

Pequi or the souari nut is the most popular of the fruits that are native to the Cerrado. Its pulp is high in calories due to its high lipid content. It is also a good source of fibre and pro-vitamin A and **has twice as much vitamin C as an orange**. Since it is rich in phenolic compounds and carotenoids, the souari nut also has a high antioxidant capacity, making it a functional food. The most commonly used parts of the fruit are the pulp and kernel. The oil extracted from the pulp is used in the cosmetics industry, and for soap manufacturing, medicinal purposes, and cooking.



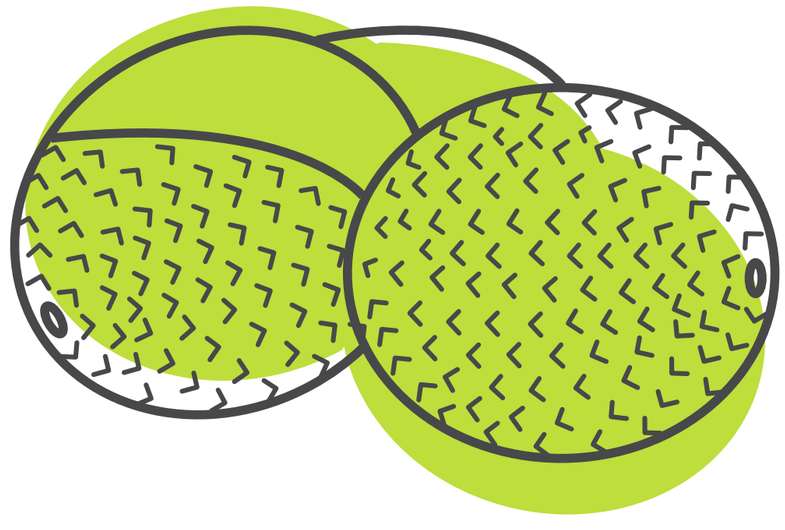
BARU

Also called cumaru, castanha de burro, coco barata, and coco feijão, baru is a fruit tree that grows up to 25 metres tall and 70 cm in diameter and has a useful life of around 60 years. Each fruit contains a single seed. **The parts of the plant that are used are the pulp, endocarp, and nut**, the latter being toasted and eaten as an aperitif or used as an ingredient in various recipes as a **substitute for cashew nuts, groundnuts, Brazil nuts, or walnuts**.

BABASSU PALM

Practically all parts of the Babassu palm are useable. Its leaves are used for thatching and as animal feed in the dry season. The leaf fibre is used to make baskets, sifters, mats, and other handicrafts. Palm heart is also extracted from the core of the trunk of the palm and the sap from the stem of young palms can be used to make wine. The Babassu nut is used mainly for the production of oil, which is widely used in the cosmetics and food industries and in soap manufacturing, and is a source of food for local communities.

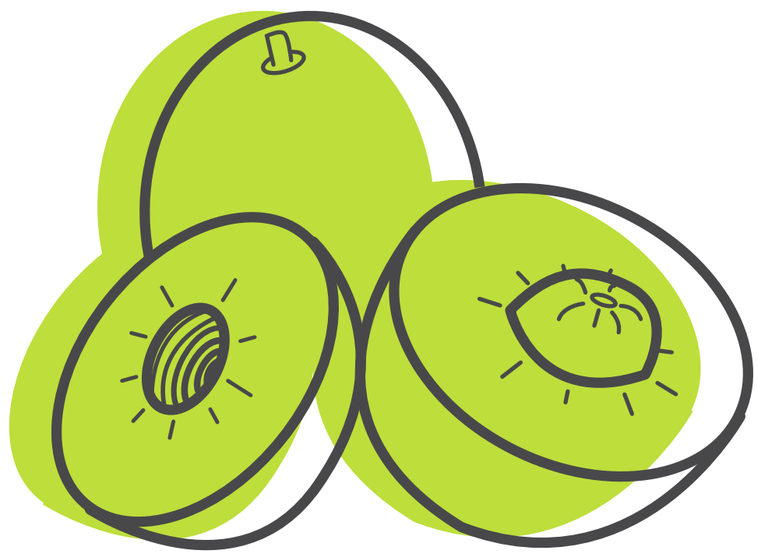
MORICHE PALM



Known as the “star of the wetlands” and **“tree of life”** (due to its diverse uses), the moriche palm is another plant that symbolizes the Cerrado. In addition to providing raw material for **medicines, food, handicrafts, and shelter**, the Moriche Palm plays a key role in **protecting the Cerrado’s springs and water courses**.

Growing up to 30 metres tall and 50 cm in diameter, the palm grows exclusively in wetlands.

UMBU



The word umbu originates from the Tupi term “ymbu”, which means “árvore que dá de beber” (literally “the tree you can drink”), referring to its ability to store water, particularly in its roots.

The fruit is small and rounded and has a sweet smell and pleasant, slightly sour flavour. It consists mainly of water and has considerable nutritional value, being rich in vitamin C. A popular fruit in theregion, it is eaten in its natural form or used as pulp and in ice-cream, jams, and sweets.

Most abundant in the transition area between the Cerrado and the Caatinga, umbu is a symbol of the cultural resistance of the family farmers, indigenous peoples, and traditional communities of the semi-arid region. Its roots are often used by backcountry cowboys to quench their thirst.

Source: Cerratinga

INTERESTING FACTS ABOUT THE MEDICINAL PROPERTIES OF THE CERRADO'S FLORAS[2]

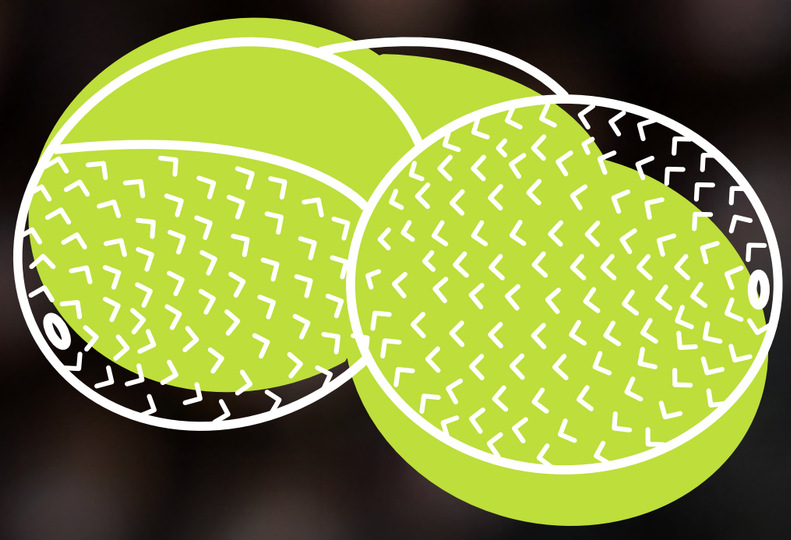
The rich biodiversity of the Cerrado provides roots, barks, resins, oils, leaves, clays, water, and various other natural resources that are carefully managed by indigenous and local peoples in the practice of traditional medicine.

2 *Sources: ISPN, Articulação Pacari*

MORICHE PALM OIL

The virgin oil extracted from the fleshy part of mature fruits is extremely **rich in oleic acid**, which is equivalent, in terms of composition, to the fatty acids contained in traditional oilseeds. The unripe fruits also contain significant quantities of lauric and myristic acid, which besides being used by the pharmaceutical industry are good dewormers for humans. The oil extracted from the pulp is used to treat insect bites.

Moriche palm oil is used by the cosmetic industry in sunscreens and after-sun lotions because of its **anti-irritant properties**, reducing the redness of sunburn and protecting the skin against ultraviolet rays.



MANGABA

Mangaba is a tree that produces latex similar to that of the rubber tree. Its bark is used to treat skin conditions and **improve liver function** and the tea made from mangaba leaves is used to relieve **menstrual pains**.

FAVA D'ANTA

The pharmaceutical industry is interested in Fava D'Anta because it contains the **flavonoid rutin**, making it an economically important plant. A greenish yellow powder, rutin reduces LDL-cholesterol, helps **strengthen the walls of blood vessels, and is used to treat and prevent small varicose veins.**

PACARI

The liquid made from soaking the inner bark and leaves of the pacari tree is drunk to **treat stomach ulcers and lose weight and is also used as a pick-me-up, febrifuge, anti-inflammatory, and anti-diarrheal remedy**. It is widely used in the State of Mato Grosso for the treatment of ulcers and inflammation.

TRADITIONAL AND INDIGENOUS PEOPLES

Besides its importance from an ecosystem perspective, the Cerrado also **safeguards a large part of Brazil's historic and cultural heritage**. People who share traditional knowledge about the use of biodiversity can be found in all corners of the region and many depend on the Cerrado's natural resources for their livelihoods.

These traditional and indigenous peoples have developed specialist knowledge about the use of natural resources, the climate, and natural rhythms, and generally **promote the conservation of the biome and appreciation of its biodiversity**. Today, these peoples are therefore considered the custodians of biodiversity and waters of the Cerrado.

SNAPSHOT OF THE CERRADO

Beef and soybean supply chains and land speculation are the leading drivers of deforestation in the Cerrado. The rate of native vegetation loss is alarming, making the Cerrado one the world's biggest and most active deforestation fronts. National Institute for Space Research statistics reveal that the Cerrado has lost 1 million hectares of forest per year since 2009.

DEFORESTATION

The biome has lost practically **half of its native vegetation cover**. In 2018 alone, 660,000 hectares of forest were cleared.

The Cerrado loses an average of **1 MILLION** hectares of forest per year

DEGRADED AREAS

It is estimated that 30% of pastures in the Cerrado are highly degraded and underused. This means that finite resources and **cultivable land are being wasted** whilst new areas of native vegetation are being cleared.

30%
of pastures are highly degraded and underused

LACK OF LEGAL PROTECTION

Unlike the Amazon, most of the land in the Cerrado is privately owned. Only 8% of the biome is legally protected under Brazil's national protected area system, and a mere 3% is covered by strictly protected areas – one of the lowest levels of protection among the world's biodiversity hotspots.

Moreover, the Forest Code requires farmers to preserve only 20% of the natural vegetation on their land (35% in areas of transition between the Cerrado and the Amazon). Therefore, in the best-case scenario of full compliance, **this legislation effectively permits the legal deforestation of roughly 40 million hectares of Cerrado.**

8%
of the Cerrado is officially protected

3%
of the Cerrado is covered by strictly protected areas

FOREST CODE
provides little protection

WHAT DO WE NEED TO DO NOW

CURB
DEFORESTATION

RESTORE
DEGRADED PASTURES

RESTORE
NATIVE VEGETATION

TO SAFEGUARD THE FUTURE OF THE CERRADO?

STRENGTHEN
EXTRACTIVIST PRODUCTION
AND VALUE **INDIGENOUS CULTURES**

CREATE MORE
PROTECTED AREAS

CURB
DEFORESTATION AND LAND CONVERSION

The first step is to **remove deforestation from beef and soybean supply chains**. Together with land speculation, these are the leading drivers of deforestation.

(Markets) The value chains of these commodities play a vital role in the development and implementation of voluntary commitments to remove deforestation from their supply chains. This can happen at sector level, as is the case with soybean production and the Cerrado Working Group, or at the “individual” level, with individual companies and farms – as is the case still with the beef supply chain.

(Financing) Companies and financial institutions along the supply chain play a crucial role in creating demand for deforestation-free products and discouraging business activities that promote deforestation.

(Policy) The development and implementation of policies to tackle deforestation are essential not only to complement market level actions, but also to minimize the conversion of natural ecosystems to other land uses, such as infrastructure, mining, and other agricultural activities.

RESTORE
DEGRADED PASTURES

It is estimated that 30% of pastures in the Cerrado (more than 23 million hectares according to the Atlas of Brazilian Pastures - LAPIG/2017) are highly degraded and underused. This means that **finite resources and cultivable land are being wasted** whilst new areas of native vegetation are being cleared.

Currently, most of the expansion in the production of soybeans and other commodities in the Cerrado occurs in pastures. However, it is important to scale up and accelerate this process by developing **financial mechanisms designed to promote the use of degraded areas**, thereby preventing deforestation.

These mechanisms are important to ensure the viability of agriculture in areas that require greater investment in initial years.

In the case of beef production, in addition to financial mechanisms, it is also important to support **technology transfer** for owners of ranches with extremely low productivity levels in comparison to national standards (less than one head per hectare).

These financial mechanisms could be developed in the public rural credit system (such as the ABC) or through supply chains, when traders or meat packing plants fund the reconversion of pasture to arable land, tree planting, or intensification of beef production.

Given their direct link to farmers, the **private sector** (primarily traders and meat packing plants) and **financial institutions** should play a key role in this shift in land use, bringing together, transferring, and engaging technical information for their suppliers and promoting action at the necessary scale.

RESTORE
NATIVE VEGETATION

Restoring native vegetation helps to **recover ecosystem services** lost due to land conversion. The focus on permanent preservation areas helps to **increase habitat connectivity, protect essential water resources, and sequester carbon.**

The effective implementation of the Forest Code is vital to ensure the recuperation of ecosystem services. Environmental regulation programmes are key mechanisms for promoting the restoration of native vegetation.

The engagement of the private sector and financial institutions is also vital to achieve the necessary scale and ensure farmer adherence. To scale up and accelerate the restoration of native vegetation, we need ensure that farmers have access to technical information about the restoration process, inputs (saplings, seeds, etc.), and financial support. The private sector and financial institutions should be the main drivers of this process.

Restoring vegetation that is native to the Cerrado also strengthens traditional peoples and communities, who, as custodians of knowledge and living in areas that are rich in biodiversity, will be able to produce seeds and saplings thereby generating further sources of income.

STRENGTHEN EXTRACTIVIST PRODUCTION AND VALUE INDIGENOUS CULTURES

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The traditional and indigenous peoples of the Cerrado have developed knowledge and ways of life that generally **promote the conservation of the biome and appreciation of its biodiversity**. Extractivism is a key activity for the conservation of the biome, providing income for local communities and helping to improve quality of life and ensure the permanence of traditional peoples in the Cerrado.

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Strengthening the market for products derived from the sociobiodiversity of the Cerrado is one way of valuing the ecosystem and promoting more inclusive regional development underpinned by natural habitat protection, counterposing a model based on the conversion of natural ecosystems and large-scale agriculture. It is also a way of **reviving and preserving the cultural values and traditions** of theses peoples and communities.

Simply promoting the opening of new markets or the inclusion of products derived from sociobiodiversity by manufacturers and retailers is not enough. It is vital to s**et up and strengthen cooperatives and grassroots organizations, organising the supply chains** of products derived from sociobiodiversity to achieve scale and promote well-structured sustainable processes from production to consumption, ensuring fair resource distribution.

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At the same time, it is important to **promote policies and financial mechanisms** that drive and strengthen the production and commercialization of these products.

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CREATE MORE PROTECTED AREAS

The expansion of protected areas in the Cerrado is important to **raise the level of protection of natural habitats** in priority conservation areas. Sustainable development reserves, extractivist reserves,and indigenous and Quilombola lands are important both from a conservation perspective and for strengthening the livelihoods of traditional peoples and communities and preserving their cultural values and ways of life.

It is therefore essential to **strengthen the network of partner organisations at different levels** to take this discussion to the competent government bodies.

Under the Forest Code it is possible for land owners to compensate environmental liabilities using areas in protected areas, thus providing the opportunity to create new protected areas and regularise existing areas.

Against the current political backdrop, urgent measures are required to avoid so-called protected area downgrading, downsizing and degazettement events.

THE CERRADO CAN'T WAIT.

JOINING FORCES TO PROTECT THE CERRADO!