



# Cerrado

## Birthplace of Brazilian waters

### Occupation and opportunities

It has already lost more than half of its original vegetation due to the expansion of the frontiers of agricultural and livestock raising activities and less than 3% of its area is effectively protected in conservation units.

### Sustainable development

It is the second largest Brazilian biome after the Amazon and home to rare species of plants and animals of great importance to both rural and urban communities.

### Natural asset

This deep-rooted savannah formation, one of the biologically richest of the whole planet, is home to 5% of all the species that exist and to one in every three Brazilian species.





ming from dozens of small rivers and streams that have their springs in protected areas within the sphere of the Cerrado biome. Furthermore, a diagnostic survey has shown that there are more than 6.7 thousand centre pivot systems installed, irrigating areas of 20 to 150 hectares in the Cerrado, and mainly concentrated in the areas of Cristalina (Goiás), Paracatu (Minas Gerais) and Luiz Eduardo Magalhães (Bahia).

With its 'Action Plan for the Prevention and Control of Deforestation and Burning in the Cerrado - Conservation and Development (2010), the Brazilian Government has committed itself to recuperating at least 8 million hectares of degraded pastureland and reducing gas emissions stemming from deforestation in the Cerrado by 40% by the year 2010. That commitment implies that over the coming decade, Brazil will have to reduce the annual volume of deforestation from 14.2 thousand square kilometres to 8.5 thousand square kilometres or less.

## Sustainable development

In the 1990s Brazil, WWF-Brazil promoted ecotourism, agro-ecology and environmental education in the Chapada dos Veadeiros region in the state of Goiás. In November 2000 the Chapada area of 2.8 million hectares encompassing parts of 26 municipalities in the northeast of Goiás state was granted the status of Cerrado Biosphere Reserve II (Goiás) by the United Nations.

WWF-Brazil is also active in fostering the preservation and recuperation of Cerrado areas in the Upper Paraguay River basin on which the healthy maintenance of the vast Pantanal wetlands depends. WWF Network classifies the Cerrado-Pantanal among its 35 top priority areas for conservation worldwide.

Joining forces once again with civil society entities, private sector organisations and government bodies, WWF-Brazil has structured a new set of actions for the biome with an initial time frame of four years and focussed on the triple boundary of the states of Goiás, Minas Gerais and Bahia in the region surrounding the Grande Sertão Veredas and Cavernas do Peruaçu National Parks.

The Federal Government has decreed the formation of a 1.5 million hectare mosaic of federal and state protected areas, pri-

vately owned reserves and indigenous lands. It will account for 8% of the total Cerrado area under some kind of protection.

WWF-Brazil will be working along four lines of action:

- **responsible crop and cattle farming** – stimulating the adoption of good practices that will make production more profitable, competitive and sustainable and that will simultaneously offer the consumer safe food products associated to reduced levels of greenhouse gas emissions in their production;
- **Nature conservation** – reducing impacts on the areas surrounding the Grande Sertão Veredas National Park by established dialogues with land owners and farmers in the region to discuss economic chains, and public policies and to offer them support;
- **landscape planning** – developing landscape-orientated ecological and planning criteria to guide and improve the land use and settlement processes, recuperating legal reserve areas and creating ecological corridors;
- **rescuing the Cerrado** – disseminating values and knowledge of situations, impacts and successes associated to best practices in land use in the Cerrado biome.



\* All the figures and information set out in this document have been taken from published scientific studies and/or from official documents of the Brazilian government.

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The Cerrado extends into ten states and the Federal District and apart from that there are isolated occurrences of it in the states of Roraima, Amapá, Amazonas and Pará.



substituted by open range cattle-raising which dominated the regional economy up until the 1950s. Following that in the wake of the construction of Brasília and the city of Goiânia came more highways, and railways and Agricultural Policy Packages that fostered the so-called Green Revolution.

About six in every ten hectares of the biome are suitable for mechanized agriculture and accordingly, that natural propensity has led to the occupation of 850 thousand square kilometres of Cerrado (more than 40%) by crop farming, other agricultural activities and planted pastureland. It has been estimated that 70% of artificially implanted pastures in Brazil are now degraded areas especially those in former Cerrado areas and in the transition areas between Cerrado and the Amazon formation, and that degradation seriously jeopardises the productivity and sustainability of cattle-raising activities.

The biome is responsible for more than a quarter of Brazil's annual grain production and for four in every ten head of cattle in the national cattle herd. Furthermore, more than ten million tons of the vegetable Carbon produced in Brazil every year stem from the natural vegetation of the Cerrado and most of it is consumed by the steel industry.

The Cerrado has already lost half of its original vegetation to the farming of commodity crops like soy, cotton and sugar cane; also to open range cattle-raising activities, energy generating and urbanisation. In the years from 2002 to 2008, the overwhelming demand for areas in which to produce resulted, in a deforestation rate of more than 14.2 thousand square kilometres a year. Currently it is considered that only 20% of the original biome can be considered intact, and worse, its surviving areas are highly fragmented.

Brazilian Law allows for the felling and clearing vegetation on eight in every ten hectares of rural properties in the Cerrado whereas in the Amazon biome, eight in every ten hectares are required to be preserved.

## Biodiversity conservation

Deforestation, deliberate burning and wildfires are extremely harmful to the Cerrado's biodiversity and to make matters worse, Protected Areas only encompass 168 thousand square kilome-

## Occupation and economy

The Cerrado is the second largest vegetation formation on the South American continent with an area of two million square kilometres, second only to the Amazon. Originally a quarter of all Brazilian lands were dominated by this particular vegetative formation scattered over the country in the form of natural grasslands, Buriti swamps, forests and deep-rooted savannahs. That great variety of formations coupled to the different types of soil and the abundance of water largely explains the Cerrado's richness in terms of life and species.

The first signs of any type of human presence in the region go back 12 thousand years. However, its occupation and settlement by non-indigenous populations only began in the 18th century and was motivated by the quest for gold and precious stones. In the 1930s the construction of the São Paulo – Anapolis railway stimulated occupation and settlement of the region. Shortly afterwards, the search for valuable minerals was

The climate in the Cerrado is seasonal tropical with two clearly defined seasons: the dry season which goes from May to September, and the rainy season from October to April.





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**Around 30 million Brazilians live in Cerrado, including Quilombola communities, traditional inhabitants of the “Gerais”, Babassu nut extractivists, riverside dwellers and indigenous.**

tres of the Biome (8,2%). Furthermore, of that total only 3% are effectively protected.

It has been estimated that one in five of the species considered to be exclusive to the Cerrado formation are no longer surviving in the Protected Areas. And 137 animals species and 132 plant species belonging to the Cerrado biome are listed as being under threat of extinction.

The tiny area currently under official protection only serves to underscore the urgent need to create more Federal, State, Municipal and Private Protected Areas. Government Plans foresee the expansion of areas under protection in this biome to 2.1 million hectares and the consolidation of the existing protected areas, which contain more than 400 priority areas for conservation.

In addition to their effective role in conserving Nature, the Protected Areas established in the Cerrado and other small conserved areas, provide ecological services free-of-charge thereby benefiting ecological equilibrium and favouring human activities. Among such services are: maintaining the good quality of the air, supplying pure water, and defence against flooding and erosion. Almost 300 native species of this biome are used as food, medicine or raw material for handicrafts, especially by the traditional communities that inhabit the area.

## Naturally rich

Even though it is still insufficient to guarantee their perpetual preservation, the network of Preserved Areas of the Cerrado is home to incomparably beautiful scenery and it plays an important role in boosting local and regional economies. At one stage The Chapada dos Veadeiros National Park alone (Goiás) was responsible for a turnover of more than 7 million Reals a year in the form of entrance tickets, and tourist spending on restau-

rants, inns and hiring tourist guides. That calculation was made in the 1990s, when that particular Preserved Area received 12 thousand visitors per year, 40% less than the current numbers.

The Cerrado's relief with very few highlands, and the dreary appearance of its sparse vegetation of low trees with very thick bark gave rise locally to the idea that it was a poor monotonous vegetation of little worth but in fact it is quite the opposite. The Cerrado is actually the site of surprising and exotic landscapes endowed with a singular type of beauty revealing their high economic and tourism potential and it is home to a rich culture of its own. The biome is also the site of 4 thousand caves, 60% of all Brazil's officially registered caves.

In the Cerrado there is a profusion of natural grasslands, Buriti palm swamps and forests cut across by crystal clear rivers and streams, with many waterfalls. Within its domains can be found imposing plateaus or *Chapadas* like the Parecis, the Guimarães, the Pacaás Novos, the Veadeiros and the Espigão Mestre. They mark the watershed divides between various river basins like the São Francisco, the Tocantins, the Paraná and the Uruguay.

The Cerrado has been acknowledged as the richest savannah formation on the Planet in biodiversity terms and is home to 120 species of reptiles, 150 amphibian species, 161 species of mammals, 1,200 kinds of fish, and 837 bird species. It also has 11.6 thousand catalogued species of plants and 5% of them can only be found in this particular biome. Furthermore, there are 90 thousand species of insects of which 13% are butterflies, 35% are bee species and 23% are tropical termite species.

To sum up all that information it can be said that the Cerrado actually protects 5% of all the species that currently exist in the world and three in every ten Brazilian species.

## Opportunities

In the Cerrado are the springs and headwaters that are destined to replenish three important aquifers and to feed six of Brazil's eight major river basins – the Amazon, the Tocantins, the North-Northeast Atlantic, the São Francisco, the East Atlantic and the Paraná-Paraguay. This last basin is intimately connected to the question of the survival of the Pantanal, the world's largest freshwater wetland.

Nine out of ten Brazilians actually consume electricity that has been generated by the waters of the Cerrado. The inhabitants of the Brazilian capital are supplied with water co-



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