

The Cerrado under threat

"It is fortunate that deforestation in the Amazon is diminishing, but it is increasing in the Cerrado: 30,000 km² are cleared every year"

What is it about? Where?

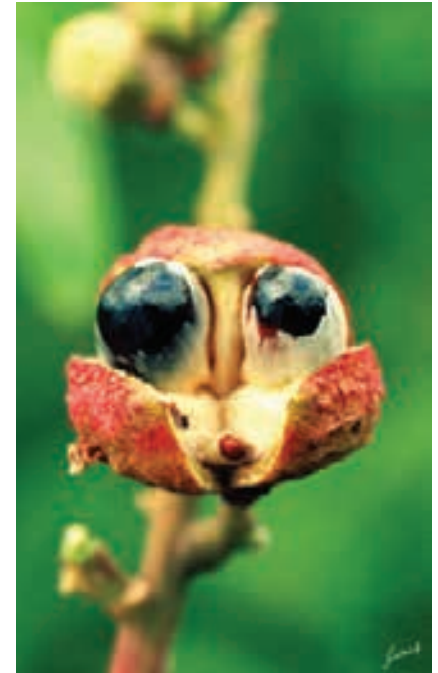
Many who have read adventures in their childhood, dream of a trip to the Amazon. The Amazon where jaguars live, giant butterflies like the blue Morfo flutter, and where trees can be as large as skyscrapers. The Amazon houses the largest diversity of animals and plants in the world. Where giant rivers like the Rio Negro and the Rio Amazon flow. They can be up to 10 kilometres wide and are sometimes called riomar or sea-river. Those rivers host more than 2000 fish species including a few pre-historic specimens. Brazil's nature appeals to both young and old. The largest part of the Amazon is located in Brazil, but the subcontinent includes other giant areas which are vital.

One is the Pantanal in western Brazil, with its numerous ponds and lakes. It also hosts a great variety of birds and animals. The Pantanal is the size of Portugal and is the

largest bird sanctuary in the world. As in the Amazon, many alligators and piranhas live there. Spotting animals is easier. This ecosystem has less vegetation which makes sighting of animals easier, even though they are less numerous.

What remains of the Mata Atlântica, the Atlantic forest, lies in the east of Brazil. The colonization by Europeans began in the 16th century in the east.

The fourth ecosystem is the Cerrado or Brazilian savannah located in the centre of Brazil which covers two million square kilometres. The Cerrado is a huge area connecting the Amazon, the Pantanal and the Mata Atlântica. This folder is about the Cerrado and was first published on September 11th, 2013. September 11th is the day on which the Cerrado is put on the political agenda in Brazil.



The Cerrado is - mostly underground - Latin America's water reservoir. Most of the rivers originate here.



'Cordel' literature are popular and inexpensively printed booklets or pamphlets containing amongst others poetry and they are common in North East Brazil. Antônio Alencar Sampaio, a professor at the Catholic University of Goiás, and one of the advocates for the protection of the Cerrado, wrote a long poem about this area's unique richness. The Cerrado is a natural system, and in Brazil they call this 'bioma'. We only reproduce the beginning:

Cerrado casa dos filhos
Vegetais e animais
Berço das águas e crias
Coração dos minerais
Fonte de expansão de vidas
Riquezas ambientais

Now the situation
In the Cerrado is tense
With fire and drought
As structural events
It has created resources
For a natural defence

The second largest biome
From Latin America dares
To vastly dominate
Two hundred million hectares
With the beauty and medicine
Which it proudly wears

Cerrado, home for children,
Both animals and plants
Cradle of babies and rivers
Heart of minerals and land
Where wealth is ecological
And life always expands

With the other ecosystems
Cerrado is entwined
His children live and share
Without being confined
Cerrado, Amazon and Pantanal
They are one of a kind

The man is old
With experience and wisdom
He has learned to be modest
And even changed his biome
But in his self-sufficiency
Everyone was welcome

The Caatinga and the Atlantic forest
Also relate
Because in fauna and vegetation
Cerrado did equate
But evolution went on
The Cerrado could not wait

The subsequent chapters in the long poem deal with the Cerrado's relationship with poison, climate, soil, water, fire, biosphere reserve, fauna, flora, medicinal plants, valuable food resources.

(From: 'Conhecendo o bioma Cerrado'.
Cordel, by Antônio Alencar Sampaio.)

10 reasons to protect the Cerrado

Cerrado and Caatinga cover one third of Brazil's territory.

These two ecosystems are essential for ecological functions which are vital to the entire country.

The deforestation rate in the Cerrado is now double that in the Amazon

Brazil's major rivers originate and swell in the Cerrado.

The Guarani Aquifer (an underground layer of water-bearing soil) is recharged with water originating from the Cerrado.

The rain and rivers in central Brazil are crucial for electricity generation for 95 percent of the population.

Nowhere in the world do we find similar nature systems with such a high biodiversity.

Locals can build a strong economy based on the hundreds of fruit species from the region.

Many species threatened by the destruction of the Atlantic Forest survive in the Cerrado .

If the Cerrado and Caatinga are annihilated then other ecosystems will also be threatened.

'From: PEC of Cerrado and Caatinga - Fórum em Defesa do Cerrado' (Altamiro Fernandes, Goiânia)

“It is clear that major world leaders have different plans concerning food and regional development, even though they pretend to be committed to ‘sustainable development’ which is a fashionable term.”

September 11th and the Cerrado

September 11th reminds (almost) everyone of New York. September 11th, 2001 in this case. But September 11th, 1973 is the date Chilean President Salvador Allende was assassinated. An important date for Latin America.

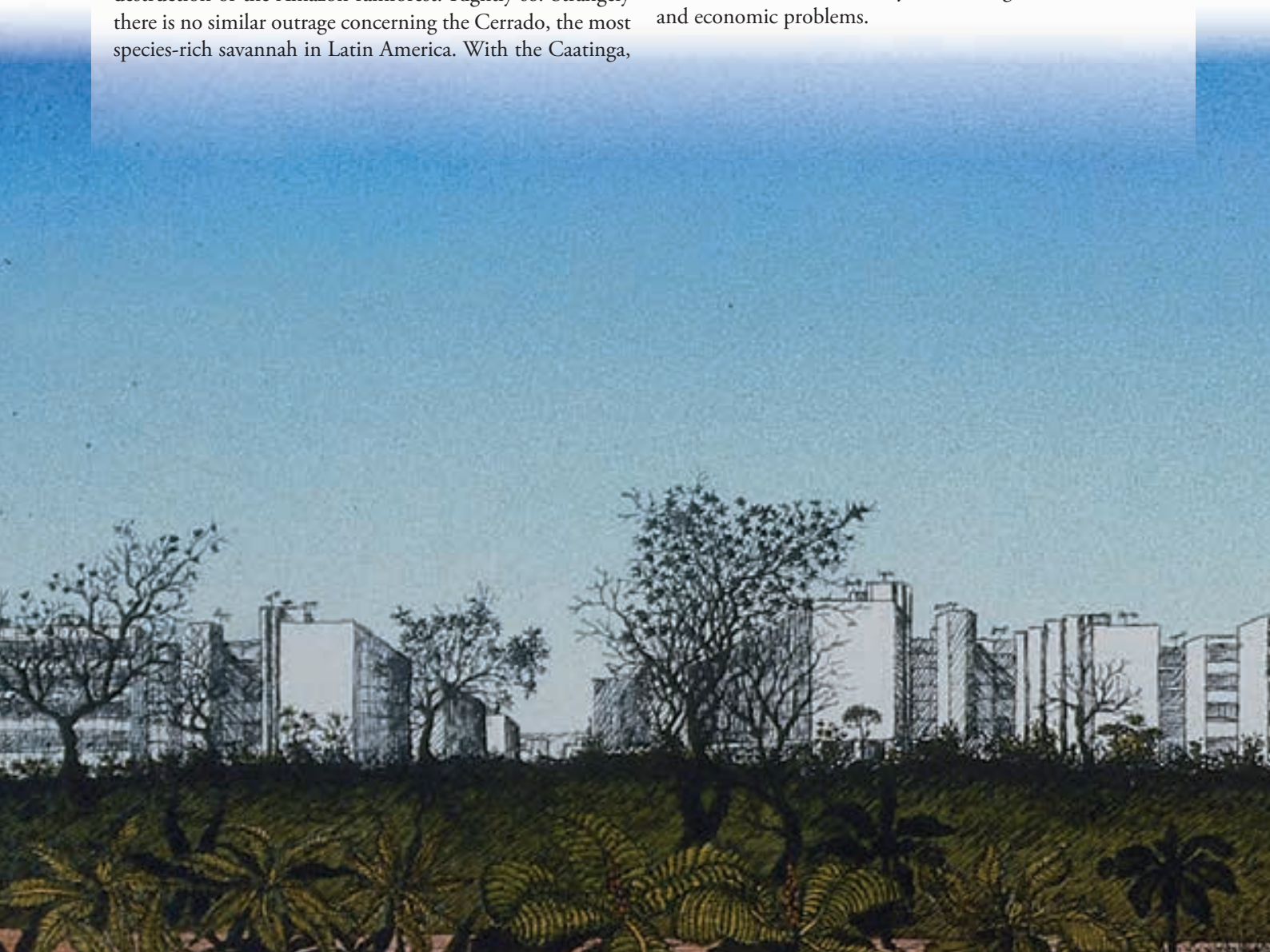
But September 11th is not only a date of death and destruction. Well-known people were born on that day, for example bishop Jacques Gaillot in France and Ary-Raios Pará in Brazil. Ary José de Oliveira -his original name- was a versatile man who knew how to surround himself with visual artists, poets, musicians, authors, journalists and environmentalists. In recognition of his work September 11th was declared National Day of the Cerrado.

The Cerrado is crucially important

The public opinion in Brazil, the international press and therefore the public opinion worldwide, are sensitive to the destruction of the Amazon rainforest. Rightly so. Strangely there is no similar outrage concerning the Cerrado, the most species-rich savannah in Latin America. With the Caatinga,

the other typical ecosystem which is a very dry area in North-East Brazil, it covers 30 percent of Brazil's surface. The Cerrado extends over two million square kilometres. It is literally located in the centre of Brazil, in eleven states: Maranhão, Piauí, Bahia, Minas Gerais, Tocantins, Goiás, Mato Grosso, Mato Grosso do Sul, São Paulo, Paraná, Pará and Rondônia.

While it is fortunate that the deforestation in the Amazon decreases, the deforestation in the Cerrado increases at a rate of 30,000 km² per year, two to three times more than the deforestation of the Brazilian Amazon. While the Amazon forest stretches across several countries, this unique savannah is completely located in Brazil. The Cerrado is also a link between the different biomas / ecosystems. Animals threatened with extinction in the Atlantic Forest (Mata Atlântica), a small remainder of the original forest on the Atlantic Ocean, are sometimes more common in the Cerrado. This immense area is at the centre of Brazil's aquifer system. If springs and rivers that originate here dry out, then Brazil will not only have ecological, but also social and economic problems.



Amazônia, Pantanal and Mata Atlântica are protected since 1988 with the status of Patrimônio Nacional (National Heritage). Cerrado and Caatinga are not protected. For this reason a strong movement emerged in recent years to protect also this unique area. It is necessary to combine ecological arguments with economic and social arguments. In Portuguese, the ecological arguments can be nicely arranged as ABC: água, biodiversidade e clima (water, biodiversity and climate). These three are linked with each other and they are linked to the choices we must make to have a different social and economic development. 40% of the Cerrado has already been deforested.

The question is: does Brazil need one more million hectare of land to compete with soy, ethanol, cotton or other commodities on the international market. The production of those requires a lot of energy and causes much destruction in the Cerrado. Or can more farms be family farms? They operate on smaller areas, they provide a good income and produce many different products. Creativity is required to transfer the vast wealth to the peasants. Preferably in consultation with the environmental movement, and with the civil society.

In any case, creativity is at hands. Think of the delicious picolés, ice lollies made with some of the many fruits from the Cerrado. The “Fórum Goiano em Defesa do Cerrado” (Forum of the state of Goiás to defend the Cerrado) wants to reach a large consensus for a new and different development. This wide forum asked Wervel to internationalise their struggle, beginning in Europe.

We will constantly need to be alert. An indignant woman told us her story. She was so happy that picolés containing fruits from the Cerrado were sold in the courthouse. Later, and without any consultation, those ice-lollies were replaced by products from the food giant Nestlé. It is clear that major world leaders have different plans concerning food and regional development, even though they pretend to be committed to ‘sustainable development’ which is a fashionable term.

Can art save the world?

Writing books is one activity, making beautiful pictures another. The most recent books published by Wervel were illustrated by drawings made by students, teachers and communities from Matinhos in the state of Paraná. It is an indication of the strong involvement of many Brazilians with what happens to their fragmented country. A fragmented Brazil means that they are internally torn apart. They want to show this wound and express their hope for change.

In Goiânia there is an outstanding artist: João Caetano. In the same way as Ary Pará Raios he raises public awareness, both in Brazil and abroad, of the tragedy in the Cerrado. He makes touching photos showing the beauty of what remains of the Cerrado. Since its creation in 1990 Wervel publicises the negative effects from soy mono-culture and conventional agriculture which are felt on both sides of the ocean.

Not only do we denounce the situation in the Amazon, but also the socio-economic situation in southern Brazil, the cultural destruction in the northern state Maranhão, the importance of the Cerrado and much more. Over and over, we denounce the negative consequences in Brazil and elsewhere caused by Europe’s conventional agriculture.

Intellectual arguments are not sufficient, we also want to use art and appeal to the heart. For Wervel’s twentieth anniversary, we invited this gifted photographer to Brussels. Brussels, capital of the European Union where decisions are made concerning international agricultural policies, deserves to see the splendour of the Cerrado.

Decisions made in Europe have implications for Brazil. Decisions made in Washington DC affect Brussels and Brasília. Options chosen in Brasília affect the planet.

João Caetano published several books with an emotional message, like ‘Ecos da Natureza/Echos of Nature’, 2006. See: <http://www.joaocaetano.art.br/>

The spoilt Cerrado party

6000 tree species

837 bird species

195 mammal species

780 fish species (Pantanal included)

113 amphibians

Official figures (2004) from the Brazilian Ministry of the Environment.

Some studies claim there are 10,000 species of plants, of which 4400 are endemic. In the Federal District (Brasília), there are 233 species of orchids and a still unknown number of animal species. In the same metropolitan area, 430 bird species have been observed. Compare that with Brussels. The capital of the European Union, the capital of Belgium, the capital of Flanders. Here we occasionally hear the blackbird whistling or see a pigeon flying. That is about all. Oh, yes, exotic parakeets invade the Brussels parks and the Sonian forest.

Richest savannah in the world?

Many rivers have their headwaters in the Cerrado. Those rivers are not only flowing in Brazil, many continue their journey in Latin America. Small sources for the Paraná start to flow from the centre of Brazil and continue to flow to Buenos Aires, capital of Argentina.

It is the most species-rich savannah of Latin America. Some studies and action groups argue that it is the “richest savannah in the world”. “Cerrado” is a collective name for various ecosystems: natural grasslands, different types of open forest and dense forest.

Decades old controversy

In the literature, in the field and in the political discussions there are opposing views on how to “open-up” this vast area. One version states that the Cerrado is so marginal due to the combination of poor soil with a high aluminium content and regular fires. Others say it is due to the rainfall. The Amazon is so abundant although its soil is poor, but there is constantly high rainfall. That’s why it is called a rainforest. The annual cycle of months-long drought followed by the rain season shaped the Cerrado. There is some consensus that the soil quality and the fire play a role, but the cycle of drought and rain is decisive in making this area unique. The Cerrado covers 192.8 million hectares spread over 11 states and accounts for 22,65 percent of Brazil’s land area. It has a population of 22 million people.

Latin America’s water reserve

Plant transpiration rate (mm per day*)

• Cerrado in rainy season	2.6
• Cerrado in dry season	1.5
• Rice	4.3
• Sunflower	5.6
• Maize	2.8
• Soy	8.4
• Wheat	4.4
• Pasture	2.6
• Slash pine	4.7
• Eucalyptus	6.0

Source: Miranda and Miranda, 1996.

• 1 mm/day is equal to 10 m³ evaporation per hectare, per day.

Water management is fundamental to the Cerrado. For Brazil. For Latin America. For the planet. In the Cerrado trees usually remain small and twisted. Many species have leathery leaves and a thick bark, reducing their moisture loss. Compare a shrub in the Cerrado (from 1.5 to 2.6 mm water loss/day) with soy (8.4 mm/day). Due to the recurring drought, the roots penetrate deep into the soil.

On the other hand, the often porous soil facilitates water infiltration. So huge aquifers (underground layers of water-bearing soil) were formed over millions of years: the ‘Aquíferos’ (Gaurani, Bambui and Urucuia).

Also on this subject there is controversy: a portion of the water would be from a formerly vaulted sea and salty and therefore unusable. Whatever, the Cerrado functions like a sponge and provides much water to these Aquíferos and many important rivers. Because of massive deforestation, the slowly accumulated water reserve threatens to dry up within a few decades. This has visible catastrophic consequences, not only for the Cerrado itself, but for the water management for almost all Latin America.

Biomass

The traditional livestock could live and enjoy the feast of hundreds of flowers and the richness of fruit. In recent years, many pastures were planted with exotic grasses which choke the original diversity. The monoculture of soy, corn and sugar cane give the mortal blow.

That is the obvious answer to the many “inspired minds” who claim that Western style intensive livestock farming is the solution to the

'Cerrado' is a collective name for various ecosystems: natural grasslands, different types of open forest, dense forest.

food problem and to global warming. When cattle is confined in stables in Belgium maybe it is possible to capture the methane, but the feed is largely produced elsewhere requiring lots of energy and causing the destruction of the ecosystem.

Worldwide, there is a boom of pig and chicken factoryfarms. They are based on soy and corn. The 'worthless' Cerrado becomes "Number One to be!"

Native trees in the state of Minas Gerais are used as firewood. They are ideal to produce charcoal for the blast furnaces. A nearly extinct tree is named the Carvoeiro (carvão is charcoal).

Planting eucalyptus trees is branded 'reforestation' and therefore receives all kinds of aid, including Kyoto Money intended to help projects which capture carbon. It is overlooked that the balanced soil life and the original vegetation of the Cerrado are fundamental to absorb much CO₂.

The "clever" trees in the Cerrado can not compete with the fast growing eucalyptus trees which come from Australia. An hectare of original Cerrado vegetation yields 10 to 40 ton of biomass, this requires little water consumption. Compare this with 350 to 550 ton of biomass per hectare for the Amazon rainforest. Eucalyptus trees produce more than 300 ton of biomass (per hectare) in the Cerrado and thus contribute considerably to the drying. In fact, two thirds of this biomass is water. An adult eucalyptus tree in monoculture needs between the 700 to 1000 litre per day, depending on the density at which they are planted. An adult eucalyptus tree, standing on its own, can absorb up to 20,000 litre per day. The evaporation (see table) is also much higher than with native trees which are adapted to the local conditions.

Regained party?

Eucalyptus trees supply pulp for the international paper industry. The genetically engineered variant will provide second generation ethanol. Soy bean is for animal feed and biodiesel. Sugar Cane is for the production of sugar, for applications of synthetic biology and mostly to satisfy ethanol demand for automobiles. All well and good, but you can not throw a party with this. Even pure water might be missing at the banquet. Poverty everywhere.

Gradually people begin to understand that the richness of the original Cerrado can provide for a banquet. For centuries the population fed with the nutrient rich fruits pequi, buriti, araticum, mangaba, cagaita, cajuzinho, bacuri, etc. Now it is important to build an economy, not based on monoculture, but based on the original polyculture. An economy from which everyone can benefit: the different ecosystems, the people, animals, plants, water management, the climate, agriculture with predictable seasons, the urban population,

the peasants, indigenous people, the trade balance. People become gradually aware of this.

Save the black vulture!

Initiatives to sensitize the population are needed when a crisis happens. But too often they remain on the fringe. Or near a ditch: Not only is the soy mob clamping down on the countryside, but also the real estate mafia is grabbing land in the vicinity of towns.

In the capital Brasília there is a movement called Salve o Urubu! (Save the Black Vulture). The Urubu vulture is a scavenger and clearly not a symbol of biodiversity. He cleans waste and dead animals. The ditch (Corrego) on the outskirts of Brasília is called Corrego do Urubu. The population wants to promote lifelong environmental education. They want to regenerate the vegetation around the Corrego and clean the water. Good examples are agroforestry and mandala vegetable gardens.

Oca do Sol is a non-governmental organisation involved in this project. Oca means hut which is the original home of the indios and it symbolises their inspiring wisdom. Oca do Sol is part of an ecovillage and aims to connect spirituality with ecological lifestyle. The focus is very much on the importance of water and its consumption. At the same time and also in Brasília there is a campaign called Exterminadores do futuro [exterminators of the future] which aims to oblige politicians and their voters to look at themselves in a mirror: how large is the ecological footprint, how much destruction is caused by politicians competing for the favour of the voters? This campaign combined with a recently approved law: ficha limpa (politicians may not have been convicted in court) might contain the politician's urge for expansion.

Will we be able to bring/witness the change? Or will the Urubu become a mere symbol of huge rubbish dumps next to dried out rivers within the next twenty years?

An interesting essay by Carlos Eduardo Mazzetto Silva talks about this dispute: O Cerrado em Disputa: apropriação global e Resistências locais (The Cerrado in dispute: global appropriation and local opposition), 262 pp. Edited by Pensar o Brasil, 2009.

See also: www.urubu.org.br, www.salve-o-urubu.blogspot.com

10 more reasons to protect the Cerrado

Flavours of picolés, ice lolly's, made with fruit from the Cerrado (www.frutosdocerrado.com.br)



Borrow the photos made by Caetano and organize an EXHIBITION on the Cerrado and its value. For display in schools, movements, NGOs. The photos show the downside of the 'Brazilian miracle'.

Details & photos: www.wervel.be/cerrado

Books: 'Brazilië-Europa in fragmenten?', Wervel, 2010; 'Legal! Optimisme -realiteit- hoop', Wervel, 2012. Both books are available in Portuguese and Dutch.



Promote the Youtube film "The Cerrado under threat" which outlines our message! **SHARE** via www.wervel.be/thecerradounderthreat



Contribute to raise awareness by participating to the Wervel Cerrado team! Contact: luc@wervel.be

Imprint

This folder was published on September 11th 2013, Cerrado day, as an attachment to the Wervel journal. The folder can be ordered separately at € 1/piece.

Simultaneously to the publication of this folder the Youtube film "The Cerrado under threat" was put online (in Dutch, English and Portuguese). This short film summarises our message. It was produced by the Wervel Cerrado team and is intended for a broad audience.

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