

  <https://doi.org/10.56238/alookdevelopv1-113>

### Josana de Castro Peixoto

PhD in Biology from the Federal University of Goiás-UFG.

### Charles Lima Ribeiro

PhD in Environmental Sciences from Unievangélica.

### Joana D'arc Bardella Castro

PhD in Economics from the University of Brasília.  
E-mail: joanabardellacastro@gmail.com

### Glennya Rodrigues Carvalho

PhD student in Environmental Sciences at the State University of Goiás.

### ABSTRACT

This chapter aims to reflect on the urgency of approving the Proposed Constitutional Amendment No. 504 of 2010, which amends § 4 of Article 225 of the Federal Constitution of 1988 to include the Cerrado and Caatinga among the biomes considered as national heritage. This study discusses the importance of preserving the aforementioned biomes and their treatment as national heritage, in order to preserve not only their biodiversity, but

also to discuss the rational use of agriculture and agribusiness. Thus, after presenting brief excerpts about the phytosionomy of the Cerrado and Caatinga, and the necessary reasons for the approval of the Proposed Constitutional Amendment, it is that the article addresses the constitutional hermeneutics to justify the change of article 225 and why the subject under debate is treated at the constitutional level and not infraconstitutional. Therefore, it is understood that, with this measure, to provide the ideal constitutional legal protection of these biomes, the Brazilian population, especially the people who live in the Midwest and Northeast Regions of Brazil, will value the Cerrado and the Caatinga, as vital elements of their existence, their culture, their heritage, taking better care of them, so that, the aforementioned article 225, have your goal set in its fullness. It is these debates and reflections that we intend to bring to this scientific article. For this, the qualitative method was used through the bibliographic research modality, using literature that discusses the theme.

**Keywords:** Cerrado, caatinga, federal constitution of 1988, proposal for constitutional amendment n. 504, of 2010.

## 1 INTRODUCTION

The Cerrado and the Caatinga are not considered National Heritage in the text of the Brazilian Federal Constitution, the reasons for this exclusion were not portrayed in the researched literature, which means that one third of the Brazilian national territory and the biodiversity associated with it, were forgotten and / or not included. The Constitutional Amendment Proposal n. 504, of 2010, called PEC n. 504/2010, proposes the amendment of § 4 of article 225 of the Federal Constitution, to include the Cerrado and the Caatinga among the biomes considered national heritage.

Article 225 of the Federal Constitution (1988) establishes the following:

Art. 225. Everyone has the right to an ecologically balanced environment, a good for the common use of the people and essential to a healthy quality of life, imposing on the Government and the community the duty to defend and preserve it for present and future generations.

Paragraph 1 - To ensure the effectiveness of this right, it is incumbent upon the Government:  
I - preserve and restore essential ecological processes and provide for the ecological management of species and ecosystems;

II - preserve the diversity and integrity of the country's genetic heritage and supervise the entities dedicated to the research and manipulation of genetic material;  
III - to define, in all units of the Federation, territorial spaces and their components to be specially protected, being the alteration and suppression allowed only through law, forbidden any use that compromises the integrity of the attributes that justify their protection;  
IV - require, in accordance with the law, for the installation of a work or activity potentially causing significant degradation of the environment, a prior environmental impact study, which will be publicized;  
V - control the production, marketing and use of techniques, methods and substances that pose a risk to life, quality of life and the environment;  
VI - promote environmental education at all levels of education and public awareness for the preservation of the environment;  
VII - to protect the fauna and flora, prohibited, in the form of the law, the practices that endanger their ecological function, provoke the extinction of species or subject the animals to cruelty.

Paragraph 2 - Whoever exploits mineral resources is obliged to recover the degraded environment, in accordance with the technical solution required by the competent public agency, in accordance with the law.

Paragraph 3 - Conduct and activities considered harmful to the environment shall subject violators, individuals or legal entities, to criminal and administrative sanctions, regardless of the obligation to repair the damage caused.

Paragraph 4 - The Brazilian Amazon Forest, the Atlantic Forest, the Serra do Mar, the Mato Grosso Pantanal and the Coastal Zone are national heritage, and their use shall be made, in accordance with the law, under conditions that ensure the preservation of the environment, including the use of natural resources.

Paragraph 5 - Lands vacated or collected by States for discriminatory actions necessary for the protection of natural ecosystems are unavailable.

Paragraph 6 - Plants operating with a nuclear reactor shall have their location defined by federal law, without which they may not be installed. (Emphasis added)

In addition, the article describes principles and rules that alert the Brazilian population about environmental education, sustainable development, national heritage, as well as, in a very understandable way, that the environment must be preserved for the future of the new generations.

From this reading of article 225 of the Federal Constitution (1988) that arose the great doubt of why the Cerrado and Caatinga biomes are not arranged in the fourth paragraph (§ 4), as national heritage, next to the Brazilian Amazon Forest, the Atlantic Forest, the Serra do Mar, the Mato Grosso Pantanal and the Coastal Zone.

Thus, the Cerrado is one of the hotspots of global biodiversity, a priority point for the conservation of the planet, as well as one of the most threatened biomes (Myers *et al.*, 2000; Silva & Bates, 2002). In addition, the region has the largest underground reserves of fresh water in the world, namely, the Guarani, Bamuí and Urucaia Aquifers – which supply the main hydrographic basins of the country<sup>1</sup>.

---

<sup>1</sup> For more information on the world's largest underground freshwater reserves, read: <http://www.abc.org.br/IMG/pdf/doc-815.pdf>. Access on: Nov. 10. 2013.

It is pontificate that the cerrado is the second largest plant formation in South America, having in its domain's great cultural expressions of local communities, as well as paradisiacal scenarios, which form the richest savanna on the planet<sup>2</sup>.

Added to this, there is the Caatinga biome, which in addition to being the only exclusively Brazilian biome, is considered one of the 37 great natural regions of the planet, next to the Amazon and the Pantanal. According to about a third of the plants and 15% of the animals are exclusive species of the Caatinga, that is, it has a high degree of endemism<sup>3</sup>.

Thus, the proposal for Constitutional Amendment (PEC) 504, of 2010, which was first presented only in 2003, needs to be approved, to legitimize the development of these biomes in various sectors, be they environmental, economic and cultural of Brazil.

Given the importance of the above, it is urgent to achieve legal certainty to ratify the Cerrado and Caatinga biomes, provided as a constitutional clause, for the evolution of freedom, culture, sustainable agriculture, in short, the quality of life with well-being of the Brazilian populations that live in these biomes. It is these debates and reflections that we intend to record in this scientific article.

The qualitative method was used, through the bibliographic research modality, with literature that discusses the theme.

## **2 EVOLUTION AND DELIMITATION OF THE CERRADO**

The Cerrado is considered one of the <sup>4</sup> most important biomes in the world, being the second in South America and occupies about 22% of the area of the Brazilian territory, distributed over more than two million square kilometers. According to Barbosa, Schmidy (2010), Braga (2011), the Brazilian cerrado reaches the states of Goiás, Tocantins, Mato Grosso do Sul and the Federal District.

It includes the southern part of Mato Grosso, the east of Bahia, the west and north of Minas Gerais, the south of Maranhão, much of Piauí and extends in the form of a corridor to Rondônia and, disjointly, in certain areas of the Brazilian Northeast and in part of São Paulo.

The cerrado continuously covers the states of Goiás, Tocantins, the Federal District, parts of Maranhão, Mato Grosso do Sul, Minas Gerais, Bahia, Ceará, Piauí, Rondônia, São Paulo and small areas of northern Amapá, Amazonas, Pará and Roraima.

---

<sup>2</sup>Cerrado, available in: <[http://www.wwf.org.br/natureza\\_brasileira/areas\\_prioritarias/cerrado/](http://www.wwf.org.br/natureza_brasileira/areas_prioritarias/cerrado/)>. Accessed Nov. 10. 2013. Adapted.

<sup>3</sup>Available on: <<http://www.cearanews7.com.br/noticias/dia-dia/ficc-quer-apoio-da-bancada-cearense-para-aprovacao-de-pec-que-torna-caatinga>> Accessed: 10 Nov. 2013.

<sup>4</sup>According to the definition of the Brazilian Institute of Geography and Statistics (IBGE), the biome is a set of animal and plant species that live in neighboring plant formations in a territory that has similar climatic conditions and a shared history of environmental changes, which results in a biological diversity of its own [...] it can be named according to the predominant vegetation (case of the Amazon, Cerrado and Atlantic Forest), relief (Pantanal), climatic conditions (example of the caatinga in the semi-arid Northeast) or physical environment (biome coastal and marine zones). Available at: <<http://naturaekos.com.br/biodiversidade/biomas-brasileiros/>>. Access in: Oct 07. 2013.



The Cerrado is a word of Spanish origin that means "closed". It has as characteristic trees of tortuous branches and of small sizes, with deep roots, with hard and thick bark, with the leaves covered with hairs with the presence of grasses and sedges on the dais of the trees.

In this conception we bring Souza (1973, p. 43), in his *Dictionary of Forest Terminology*, makes the following definition for the Cerrados:

They are formed by twisted, low spaced trees with crooked branches and thick, rhyming or cracked bark. Between the arboreal part, forming the bottom, there is a more or less dense settlement of grasses and grassland plants. In Central Brazil the savanna is wooded or, more often, shrubby. Such elements are populated by dry, very sandy soils, or hard soils, such as 'toá'. The density and size vary greatly according to the soil, but above all according to the degree of devastation to which they are subjected. The flora of the cerrado fields is heterogeneous and exhibits strong local variation.

The Cerrado Biome comprises vegetation types and <sup>5</sup> endemic<sup>6</sup> species of fauna and flora<sup>7</sup> and is characterized by presenting three major types of phytophysionomies (formation): Forest Formations (predominance of tree species, with formation of a continuous or discontinuous canopy), Savanna Formations (trees and shrubs spread over the grassy stratum, without the formation of a continuous canopy) and Campestres Formations (areas with a predominance of herbaceous species and some shrubs, missing trees in the landscape), which have several subtypes (RIBEIRO & WALTER, 1998).

The Cerrado along with the Atlantic Forest is considered one of humanity<sup>8</sup> s <sup>9</sup> biodiversity hotspots (Myers *et al.*, 2000; Silva & Bates, 2002), presents a great abundance of endemic species and suffers an exceptional loss of habitat. It has a seasonal climate (dry winter) and very diverse fauna and flora. The Brazilian Cerrado is classified as the richest savanna in the world. According to data from the Ministry of the Environment - MMA, available in <http://www.mma.gov.br/biomas/cerrado> the

---

<sup>5</sup>Fauna is the set of animal species that live in a certain area (forest, country, specific ecosystem). Available at [http://www.suapesquisa.com/o\\_que\\_e/fauna.htm](http://www.suapesquisa.com/o_que_e/fauna.htm)>. Accessed Nov. 11. 2013.

<sup>6</sup>Flora is the set of plant species (plants, trees, etc.) of a particular region or specific ecosystem. Some species of the flora of the Brazilian Cerrado: jacaranda, terminalia, conarus, andirá, salácia, Antonia, miconia, rustia formosa. Available at: < [http://www.suapesquisa.com/o\\_que\\_e/flora.htm](http://www.suapesquisa.com/o_que_e/flora.htm)>. Accessed Nov. 11. 2013.

<sup>7</sup>They are beings, be they animals or plants, which by basic characteristics are not found in any other natural environment than the one from which it originates. That is: that being that is considered typical of a certain region, without being found in any other, even if similar. There is a subdivision between the endemic species, which are the neoendemic and the paleoendemic. The neoendemic refer to the species that originated in a certain place and have not yet had time to spread to other regions, and the paleoendemic refer to the species that are in a regressive dynamic and that is the only place where the species survives. Some examples of these endemic species are: the hummingbird flower-of-tie, tail-soft-of-the-mountain, and the cerrado jay. Available at:<[http://biogeografia-ufsm.blogspot.com.br/2010/06/especies-endemicas-nos-biomas\\_3710.html](http://biogeografia-ufsm.blogspot.com.br/2010/06/especies-endemicas-nos-biomas_3710.html)>. Accessed Nov. 11. 2013.

<sup>8</sup>*Hotspot* is any priority area for conservation, that is, of high biodiversity and threatened to the highest degree. It is considered *Hotspot* an area with at least 1,500 endemic species (not found anywhere else) of plants and that has lost more than 3/4 of its original vegetation. Available at: <http://www.cenedcursos.com.br/hotspots-conservacao-biodiversidade.html>. Access on: 09 Nov. 2013.

<sup>9</sup>Biodiversity is the variety of life forms on the planet, comprising the terrestrial and marine ecosystems and the ecological complexes of which they are part, in addition to the diversity within species, between species and ecosystems. Biodiversity varies according to different ecological regions, and is much higher in tropical regions than in temperate climates. Available in: < <http://www.significados.com.br/biodiversidade/>>. Access on: 09 Nov. 2013.

Brazilian Cerrado presents extreme abundance of endemic species and suffers an exceptional loss of habitat. From the point of view of biological diversity, the Brazilian Cerrado is recognized as the richest savanna in the world.

The diversity of species of animals and plants are at risk of becoming extinct, data from the Ministry of the Environment, it is estimated that 20% of native and endemic species no longer occur in protected areas and that at least 137 species of animals that occur in the Cerrado are threatened with extinction. After the Atlantic Forest, the Cerrado is the Brazilian biome that has undergone the most changes with human occupation.

With the growing pressure to open new areas, aiming to increase the production of meat and grains for export, there has been a progressive depletion of the natural resources of the region. In the last three decades, the Cerrado has been degraded by the expansion of the Brazilian agricultural frontier. In addition, the Cerrado biome is the scene of an extremely predatory exploitation of its woody material for coal production.

Despite the recognition of its biological importance, *of all the world's hotspots*, the Cerrado has the lowest percentage of areas under full protection. The Biome presents 8.21% of its territory legally protected by conservation units; of this total, 2.85% are fully protected conservation units and 5.36% are sustainable use conservation units, including the Private Natural Heritage Reserves - RPPNs (0.07%).

It is known that many populations: indigenous ethnic groups, quilombolas, geraizeiros, ribeirinhos, babaçueiras, vazanteiros and quilombola communities survive from the natural resources of the Cerrado, these communities are part of the Brazilian historical and cultural heritage, and hold a traditional knowledge of its biodiversity.

Second, (KLINK; MACHADO, 2005) the transformations that occurred in the Cerrado caused great environmental damage – habitat breakdown, ecosystem degradation, biodiversity extinction, changes in burning regimes, invasion of exotic species, soil erosion, aquifer pollution, imbalances in the carbon cycle and possibly regional climate changes.

### **3 PRESERVATIONS OF THE CERRADO AND THE CAATINGA**

In the first decades of the eighteenth century, when the occupation of the region currently known as the Cerrado biome began, the raising of cattle in natural pastures and rudimentary agriculture occurred only to provide food to the population that was occupied by the only activity stimulated by the Portuguese Crown: the extraction of gold. With the decline of mining, after this period of gold, the population that remained in the Cerrado resorted to subsistence agriculture and remained isolated from the coast (DIAS, 2008).

The Cerrado is the biome that suffers the most environmental pressure, either by the favorable natural and social conditions, or by the imaginary associated with it.

Its identification as the "breadbasket of the world" was not accompanied by environmental concern, which today finds it difficult to be considered in the production process, which has incorporated increasingly larger areas.

The recovery of degraded pastures, despite not yet having strong government support, was presented by the Brazilian government at the 15th Conference of the Parties (Cop 15) as one of the means of achieving the goals of reducing Greenhouse Gas (GHG) emissions, which include reducing the pace of deforestation in the Amazon and the Cerrado (BRASIL, 2010). One of the proposals for the recovery of degraded pastures includes the integration of livestock crops.

In the same way, it is evident the fast pace with which [...] the sugar-alcohol culture [...] advances in Goiás, mainly on areas already destined for other agricultural uses. On the other hand, there is, so far, no significant contribution resulting from this expansion on the Goiás economy, both with regard to the circulation of wealth and the generation of jobs. Equally worrisome is the finding of environmental liabilities in areas of permanent protection and in those considered priorities for the conservation of biodiversity.

Thus, it is essential to plan for the occupation of new areas, as well as systematic monitoring, through orbital, cartographic and census data of the areas already occupied, or in the process of occupation. (Ribeiro, [et all],2008:6)

According to Morais, 2011:281

It is verified that the Cerrado region, the impacts have been significantly greater in relation to the other tropical forest domains, although the national and international attentions have not dispensed greater attention to this fact. For example, it can be mentioned that in the Federal Constitution of 1988, which for the first time protected the country's environment; the Cerrado[...] and the caatinga[...] did not receive the same treatment received to the ecosystems of the Amazon Forest, Atlantic Forest, Pantanal of Mato Grosso and the Coastal Zone, in its chapter VI at. 225 item VII § 4.

According to Morais, it also points out that all environments have the right to balance, healthy quality of life for local populations, as well as national heritage, the public power has the duty to ensure the preservation of the environment, including the use of natural resources [...]

The Cerrado is today the largest agricultural frontier in the country, deserving all care in its management, in order to preserve its water resources and the unparalleled biodiversity of its fauna and flora still little studied. (MORAES, 2011)

Morais in his study is imperative to point out (2011:294):

Considering that about 60% of the State's GDP is due to the agro-industrial performance, it was verified over the historical period[...] The economic growth of the region is related to the

deforestation of the Cerrado, which incorporates areas, before natural vegetation, into the productive system. This relationship is also proven when we relate the increase in the number of heads of the cattle herd between 1970 and 2000 and the evolution of the loss of vegetation areas of the Cerrado in the same period.

Drumond [et ali] wisely demonstrates the problem of the Caatinga Biome (2000 4-5. p):

Although presenting such adverse environmental characteristics, the occupation of the caatinga ecosystem took place mainly through the formation of cattle corrals around the banks of the São Francisco River and its tributaries. The cattle were raised on the loose inside the caatinga, with water from the springs and ponds. Next to the corrals and near the water sources, communities developed that made swiddens for the planting of beans, rice, corn, sugarcane, cassava and cotton. The villagers could hunt, fish and collect other food, mainly fruits, which contributed to form an extractive society par excellence. Currently, the Northeast region covers a population estimated at more than 25 million inhabitants, and presents structural problems regarding the sustainability of food production systems, which combined with the constant negative effects of the climate, such as droughts, hinder its maintenance and development, leading to deterioration of soil, water, decreased biodiversity of species and, As a consequence to the environment, the beginning of the desertification process. The poverty of the region has as a consequence the inadequate latifundial structure, the agricultural credit system, the commercialization, the technical assistance, the deficient educational system and the periodic occurrence of drought, among others. The basis of the region's economy is agriculture, rainfed and irrigated, in certain areas. In dryland areas, harvest risks are great and increase in periods of drought. In irrigable areas, there is a risk of salinization, although there are 5 growing productions of olerícolas and the fruit-growing of mangoes, grapes, bananas and coconuts, among others. Regarding livestock, the support capacity of the caatinga is 8 to 13 ha/cattle and 1 to 1.5 ha/goat. The Northeast region has 10.4 million goats corresponding to 88% of the Brazilian herd, and sheep farming corresponds to 39% of the herds with 7.2 million sheep. As a food alternative, the formation of pastures of exotic grass buffel grass has been growing, which advances in the region. (DRUMOND [et ali].2000. p.4-5)

In addition to the numerous justifications for the conservation of the caatingas, based on the preservation of genetic diversity and the importance for other natural resources such as soil, water and fauna, the extractive value of this ecosystem is particularly crucial in regions where agricultural activities are common such as constant burning, land use and logging for different purposes.

Therefore, concern for the conservation and preservation of natural resources will be an indispensable condition for predicting the regular use of land by its owners, as well as discovering and developing non-destructive methods of using forest resources that are applicable to the region.

In this way it becomes evident and urgent the knowledge of the flora, fauna, soil and climate with fundamental information for the development of any strategies of actions, evidencing the value of biodiversity, which will contribute to a better planning of management, uses and enrichment of the caatinga. (DRUMOND.2000. p.6)

Campos (2013, 7. p) reflects;

What is certain is that we live in a society that has competition as its basis, with economic demand and reward and the pursuit of political power. Hence the difficulty of change and perception of something different, because we are inserted in a social order and involved by a power structure that thus shapes us. And at the different levels and economic, social, political, business, cultural activities, the hierarchies and differences they gave were incorporated as part



of identity, as something of our way of being. However, it becomes urgent to change our daily habits, rethinking our relationship with the environment.

In addition, all societies need a foundation of information and knowledge, a structure of laws and institutions, and sound economic and social policies in order to progress rationally.

The knowledge acquired and the appropriation of cultural assets by the community are indispensable factors in the process of integral conservation or sustainable preservation, as it strengthens the feelings of identity and belonging of the resident population, and also stimulates the struggle for their rights, as well as the exercise of citizenship itself.

Environmental ethics is built from environmental education. This, in turn, has been timid, but it must be expanded so that the human species continues to exist. The search for sustainability is the answer we must seek and is the result that human ecology wants (MARCONDES, 2013).

#### **4 APPROVAL OF CONSTITUTIONAL AMENDMENT PROPOSAL NO. 504 OF 2010: A LEGAL GUARANTEE OF ECONOMIC, ENVIRONMENTAL AND CULTURAL DEVELOPMENT OF THE CERRADO BIOMES**

The history of the insertion of environmental law in Brazil, according to Freitas (2001) were given even in the seventies. It was the brainchild of pioneering initiatives in and out of court, some of which were the fruits of the United Nations Conference on the Environment, held in Stockholm, Sweden, from June 5 to 16, 1972.

According to the jurist, the initiatives evolved in the 1980s, (p.24), with the entry into force of the National Environmental Policy Law, Law No. 6938, of 1981, then, due to the Public Civil Action Law, Law No. 7347, of 1985, and finally, with the entry into force of the new Federal Constitution of 1988.

Therefore, the constitutional interpretation of article 225 of the Federal Constitution (1988) was built to be consistent with the principles of environmental law and sustainable development with its various aspects, such as cultural, social, political, economic, ecological, spatial and environmental, inherent to its own concept. (SACHS, 1993 apud PIRES, 1998)

Therefore, it appears that environmental law envisions a quality of life with preservation of the environment for the entire Brazilian population, which should enjoy a healthy and ecologically balanced environment.

Thus, the scope of environmental law does not and has never made restrictions on the development of agriculture and livestock, much less on their expansion, not even on the budgetary expenditures and investments of governments in these respective sectors.



Despite this, the constitutional text, in this case, the fourth paragraph of article 225 of the 1988 Magna Carta, does not recognize the Cerrado and Caatinga as national heritage.

It is believed that the constituent legislator forgot to support these two regions, of such great cultural, environmental and economic relevance of Brazil.

However, what is questioned as incomprehensible is the delay in correcting this ill-fated forgetfulness. Let's see what the jurist Antunes observes (2013, p.913):

Although they are not included in the Federal Constitution, in the form of express reference, neither the Caatinga nor the Cerrado are alien to the constitutional system of environmental protection. It is the very essence of Article 225 that essential ecosystems, and the magnitude of the two that have been forgotten, are not separated from the special protection of the Basic Law of the Republic. In fact, the forgetfulness of the two ecosystems mentioned serves to demonstrate, thoroughly, that the trend adopted by the constituent was not the most appropriate. More important than publishing a list of assets that deserve to be elevated to the category of national heritage is undoubtedly to establish a precise outline of the assets, so that they can be framed in such a legal category. This ensures that, on a case-by-case basis, the concept can be filled in properly. (Emphasis added)

Given this, despite the constitutional legislator guaranteeing the right to a healthy environment, as a fundamental right of the citizen and giving general provision *in the caput* of article 225, of CF/88, it is necessary to insert as a legal basis the protection of the Cerrado and the Caatinga, being of paramount urgency that these biomes are explicitly mentioned in the fourth paragraph, of the same article of CF/88, together with the other biomes already prescribed, for a constitutional legal guarantee.

Regarding the inclusion in the fourth paragraph of article 225 of the Federal Constitution of 1988, the aforementioned biomes, we gather from the teachings of the Mendes jurists; Rabbit; Branco (2002), who explain that the drafters of the Political Constitution of the Empire of Brazil inserted in their text the always remembered article 178, where they decreed that "it is only constitutional what concerns the limits and respective attributions of political powers, and the political and individual rights of citizens. Everything, which is not constitutional, can be changed without the formalities referred to, by the ordinary legislatures." And yet, they assert:

With this decision, of course, they will not have formulated a substantial, invariant, and universally valid concept of what was a constitutional matter; but there is no doubt that they have established, with obligatory observance, at least within the limits of the Empire, which matters, in the body of the Constitution, by their relevance, would merit materially constitutional status, and in what way the ordinary legislators – as holders of the so-called derived constituent power – would be legitimized, in an exceptional character, to carry out any modifications in this essential content, which, though important, did not seem to them untouchable or deserving of protection under the eternity clause. (MENDES; RABBIT; WHITE; 2002, p. 37)

Thus, since the Imperial Constitution of Brazil, the constitutional norm has the legal apex level of a country, not being subject to the changes proposed for ordinary laws - easier to change - by the infraconstitutional legislator.

Today, as we know, only through the legislative process of a proposed constitutional amendment can a constitutional provision be changed, with the exception of the stony clauses, and this process is not fast, it requires a more in-depth analysis of the issue, passing through the approval of several committees of the National Congress, as well established by Article 60 of the Federal Constitution of 1988. In this tuning fork, the famous jurist Bastos (2002, p.109) also teaches:

Of evident implications to substantiate the distinctive character of the constitutional interpretation is the fact that the Constitution is the basis of ultimate validity of all the other norms of the legal system. Thus, even if it is a question of deriving the meaning of a norm from ordinary legislation, it will proceed to seek elements of the Constitution. This is what Gomes Canotilho calls the heteronomous determinant function of the constitutional precepts in relation to the hierarchically inferior norms. (Emphasis added)

It can be seen that it is literally written in the Federal Constitution of 1988 gives a legitimacy and primate significance for the protection of the Cerrado and Caatinga biomes, as well as placing them on a level of understanding that they must be preserved by the population as national heritage.

There will no longer be the need for the operators of the right to interpret article 225, CF/88, when they need to give the same treatment to the Cerrado and Caatinga as the other biomes described in paragraph 4, of the same article of CF/88, while when performing a simple reading, any citizens will already consider them literally as national heritage.

According to Bastos (2002) being the Constitution the foundation, the corollary of validity of all other laws, the determination of the meaning of one of its norms may matter in the removal of an infraconstitutional rule until then in force, but that becomes incompatible with the constitutional norm of the way in which it comes to be understood.

It is necessary that the constitutional amendment n. 504, of 2010, in being approved, has an effect, which the jurists call, using the Latin, *erga omnes*, that is, against all, effect for the whole population.

Moreover, one cannot forget the unique characteristics, *hotspots*, of these biomes. According to Padua (2009), understanding the biomes allows to present social and human elements in the geographical understanding of what the Brazilian biomes are, also capturing their identity in terms of social occupation and cultural life.

That is, the designation of the six great biomes, in this sense, uses terms that have already gained density and popularity in the language and culture of the various regions. [...] far from being hermetic or scientific, the words Amazon, Caatinga, Atlantic Forest, Cerrado, Pantanal and Pampa are easy to understand, invoking in individuals and social sectors a sense of belonging and identity. (PADUA, 2009, p.123). Hence, the need for immediate approval of PEC No. 504, of 2010, of the Cerrado and Caatinga, is reiterated.

## 5 FINAL CONSIDERATIONS

Given all the above, the Caatinga and the Cerrado as National Heritage, in the fourth paragraph of article 225, of the Magna Carta of 1988, is to recognize the biomes as part of life, of the feeling of belonging of Brazilians, especially from the Midwest and Northeast.

Therefore, it is urgent to approve the Constitutional Amendment Proposal No. 504, of 2010.

Thus, it is inferred that the approval of the PEC will bring legitimacy and significance to both biomes, but this constitutional insertion alone is not enough. It is necessary that both are treated in a perspective of economic, political and social sustainability, so that they contribute to the production, growth of agriculture, and consequently, of Brazil and its population.

The Cerrado, as explained in its own item, is a *hotspot* region, with a very rich phytosionomy, with native species that must be preserved.

Despite this, the fauna, over the years, is increasingly weakened, because, although there is a rich variety of animals, represented by a diversity of species, the densities of individuals are low and few endemic species (peculiar to the region).

That is, the framing in constitutional legislation would probably slow this situation down.

It is worth emphasizing that the Cerrado, according to IBGE data (2013), still has 178 species of mammals, 591 of birds, 177 of reptiles, 79 species of amphibians, 241 of fish and 221 bees.

About the Caatinga, the only biome totally located in the Brazilian territory, it is necessary to emphasize that this biome has equal importance to the Cerrado and mainly affects the population of the northeastern sertão, the sertanejo, the cowboy, its community that from this biome raises its cattle and extracts products for its survival. The connection of the sertanejo with his "ox", has a cultural and sociological relevance of extreme importance and must be respected.

Therefore, like the Cerrado, the Caatinga has been deforested in an accelerated manner. According to data collected by the Ministry of the Environment (2013), the occupation of the Caatinga has become one of the biggest problems, as man, after centuries of occupation, understands little about how this biome develops and how fragile it is.

Preserving this biome is paramount to the cultural – sustainable – survival of people and place, and this is what the constituent legislator needs to understand.

It is also reiterated that according to EMBRAPA (2007), deforestation, extractivism, agriculture, livestock, mining and construction of dams are among the main activities that cause damage to the Cerrado and the Caatinga, in addition to the environmental problems of the Caatinga, which are aggravated by the occurrence of long periods of drought that often affect the Sertão.

That is, to treat these biomes as national heritage is to endorse a right of the population, which already understands the value of these regions.

It is concluded, then, that, according to Sachs (1993 apud *PIRES, 1998*), in order to reach the desired sustainability, especially of the biomes mentioned, it is necessary to think of transition strategies that reorient the development of its matrix, as well as its means and objectives.

This understanding is complemented by Pires (1998, p.64), who states that [...] today's environmental problems are the result of economic growth, supported by a science and a technique, which privileges profit over preservation, capital to labor, economic to social, power over ethics.

#### **ACKNOWLEDGMENTS:**

Laboratory of Research and Innovation in Traditional and Environmental Knowledge of the Cerrado. University Unit of Socioeconomic Sciences and Humanities (UnUCSEH) - Nelson de Abreu Júnior. State University of Goiás, UEG, Anápolis, GO.

Research Laboratory, Center for Research in Economics-NEPE Campus Anápolis de Ciências Socio Economia e Humanas (UnUCSEH) Nelsom Abreu Junior. State University of Goiás, UEG, Anápolis, GO. *To the CAPES Improvement Program*



## REFERENCES

- Andrade-lima, d. 1981. *The caatingas dominium*. Revista brasileira de botânica 4: 149-163.
- Antunes, paulo de bessa. Direito ambiental. 15. Ed. São paulo: atlas, 2013.
- Barbosa, a. S.; schmitz, p. I. Ocupação indígena do cerrado, esboço de uma história. In: sano, s. M.; almeida, s. P.; ribeiro, j. F. (eds). Cerrado: ecologia e flora. Embrapa cerrados: Brasília-df, 2008. P. 47-67.
- Bastos, celso ribeiro. Hermenêutica e interpretação constitucional. 3. Ed. São paulo: Celso Bastos editor, 2002.
- Bernardes, Júlia adão; Ferreira, Francisco pontes de Miranda. Sociedade e natureza. In: da cunha, Sandra Baptista; guerra, Antônio josé Teixeira (....). A questão ambiental: diferentes abordagens. 7ª ed. Rj: bertrad brasil, 2012.
- Braga, juliana. Com patente da unb, empresa vai produzir extrato de pequi em cápsulas. Descoberta de professor da unb espera apenas autorização da ANVISA para chegar às gôndolas. Unb agência. Brasília, 15/07/2011, seção de ciência. Disponível em: <http://www.unb.br/noticias/unbagencia/unbagencia.php?id=5366>. Acesso: 30 de nov. De 2022
- Branco, Samuel Murgel. *Caatinga: a paisagem e o homem sertanejo*/Samuel Murgel branco – 2. Ed. São Paulo: moderna, 2003 – (coleção desafios).
- Brasil. *Nationally appropriate mitigation actions*. 2010.
- Brasil. Constituição (1988). Constituição da república federativa do brasil. Brasília, df: senado, 2012.
- Brasil. Coletânea de legislação ambiental. Organização dos textos, notas remissivas e índices por odete medauar. 12. Ed. São paulo: rt, 2012.
- Brasil. Legislação de direito ambiental/organização luis paulo sirvinkas: coordenação anne joyce angher- 2.ed.-são paulo:rideel 2010.
- Caatinga. Disponível em: <<http://www.mma.gov.br/biomas/caatinga>>. Acesso: nov. De 2013.
- Campos, Francisco itami. Novo paradigma. Opinião, o popular: goiânia, domingo, 2 de junho, 2013.
- Campos, milton César costa, et al. Percepção ambiental: experiência em escolas de ensino fundamental em humaitá (mg). *Ambiência Guarapuava (PR)*, v.8 n.1 p.35-46, 2012 issn 1808-0251.
- Dias, Bráulio Ferreira de Souza. Conservação da biodiversidade no bioma cerrado: histórico dos impactos antrópicos no bioma cerrado. In: Faleiro, Fábio gelape; farias neto, austeclínio Lopes de (eds.). *Savanas: desafios e estratégias para o equilíbrio entre sociedade, agronegócio e recursos naturais*. Planaltina (df).
- Empresa brasileira de pesquisa agropecuária. Disponível em: <http://www.infoteca.cnptia.embrapa.br/bitstream/doc/122743/1/00081410.pdf>. Acesso em: 10 de nov. 2022
- Embrapa cerrados, 2008. P. 303-33.

Filipini, gedalva Terezinha ribeiro, et al. A educação ambiental em bacias hidrográficas: uma experiência nas escolas públicas do rio do peixe (sc). Ver. Eletrônica maestr. Educ. Ambient. V. Especial, setembro de 2010.

Freitas, vladimir passos de. A constituição federal e a efetividade das normas ambientais. São paulo: editora revista dos tribunais, 2005.

Klink, c.a. E machado, r.b. Conservation of brazilian cerrado. Conservation biology. 2005.19:707-713. Machado, r.b.; ramos neto, m.b.; pereira, p.g.p.; caldas, e.f.; gonçalves, d.a; santos, n.s.; tabor, k.; steininger, m. Estimativa de perda de área do cerrado brasileiro. Conservação internacional, 2004. Brasília, df.

Listas de espécies da fauna e flora ameaçadas de extinção. Disponível em: <<http://www.ibama.gov.br/documentos/listas-de-especies-da-fauna-e-flora-ameacadas-de-extincao>>. Acesso: nov. De 2022.

Marcondes, thereza cristina bohlen bitencourt. Ambiente e direito: sociedade e ética. Conteúdo jurídico, brasília-df: 17 set. 2012. Disponível em: <<http://www.conteudojuridico.com.br/?artigos&ver=2.39084>>. Acesso em: 30 abr. 2022.

Mendes, gilmar ferreira; coelho, inocência mártires; branco, paulo gustavo gonet. Hermenêutica constitucional e direitos fundamentais. Brasília-df: brasília jurídica, 2002.

Ministério do planejamento, orçamento e gestão. Instituto brasileiro de geografia e estatística. Disponível em: [http://www.ibje.gov.br/home/presidência/noticias/21052004biomashtml.shtm#sub\\_pesquisa](http://www.ibje.gov.br/home/presidência/noticias/21052004biomashtml.shtm#sub_pesquisa). Acesso em: 10 de nov. 2022.

Morais, r.p. Desmatamento do cerrado e mudanças no uso da terra ta bacia do rio araguaia entre as décadas de 1960-1990 e suas consequências para a morfologia do canal do médio araguaia. In: prietrafesa [et ali.] Transformações no cerrado: progresso, consumo e natureza. Goiânia: ed da puc goiás, 2011:275-299.

Pádua, j. A.(org). Desenvolvimento, justiça e meio ambiente. 1 ed. Belo horizonte: editora da universidade federal de minas gerais, 2009. 325p.

Pires, mauro oliveira. A trajetória do conceito de desenvolvimento sustentável na transição paradigmática. In: braga, maria lucia s. E duarte, laura maria g. Tristes cerrados: sociedade e biodiversidade. Brasília: ed. Paralelo 15, 1998.

Ribeiro, j. F.; walter, b. M. T. As principais fitofisionomias do bioma cerrado. In: sano. S. M.; almeida, s. P.; ribeiro, j.f. Cerrado: ecologia e flora. Embrapa: brasília – df, 2008. 1.279p

Sachs, ignacy. Barricadas de ontem, campos de futuro. In: estudos avançados 68. Universidade de são paulo. Vol. 24. Jan-abr 2010. P.25-38.

Senado federal. Disponível em: <http://www.camara.gov.br/proposicoesweb/fichadetramitacao?idproposicao=483817>. Acesso: out. De 2022.

Silva, j.m.c. Da & j.m. Bates. 2002. Biogeographic patterns and conservation in the south american cerrado: a tropical savanna hotspot. Bioscience 52: 225-233.

Silva, f.b.r., g.r. Riché, j.p tonneau, n.c. Souza neto, l.t.l. Brito, r.c. Correia, a.c. Cavalcanti, f.h.b.b. Silva, a.b. Silva, j.c. Araújo filho & a.p leite. Zoneamento agroecológico do Nordeste: diagnóstico do quadro natural e agrossocio-econômico. 2v. Embrapa - cpatsa/cnps, petrolina, pe. 1994.

Souza, p. F. Terminologia florestal: glossário de termos expressões florestais. Rio de janeiro: fundação ibge, 1973.

Reigota, marcos. O que é educação ambiental. 2. Ed. Sp: brasiliense, 2009,292 p.

Ribeiro, n.v. [et ali]. Expansão sucroalcooleira no estado de goiás: uma análise exploratória a partir de dados. Revista brasileira de cartografia no xx/yy, 2008. (issn 0560-4612).

Rodal, m.j.n. & e.v.s.b. Sampaio. 2002. A vegetação do bioma caatinga. P.11-24 in: vegetação e flora das caatingas (sampaio, e.v.s.b., a.m.; giulietti, j.

Veiga, José Eli da. Indicadores de sustentabilidade. Estudos avançados 24 (68), 2010.