

INCOMPATIBILITIES BETWEEN AGRIBUSINESS AND THE CONSTITUTIONAL ENVIRONMENTAL ORDER

INCOMPATIBILIDADES DO AGRONEGÓCIO FACE À ORDEM AMBIENTAL CONSTITUCIONAL

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Abstract

This research resumes the concept of the right to development enshrined in the ideals of the 1988 Constitution of the Federative Republic of Brazil (CRFB). As part of such right, the constitutional environmental order represents an important instrument for improving reality, ensuring that all development processes are subject to the purposes of the State, as listed by society itself in the CRFB. It is in this sense that the right to development is related to agribusiness, a sector that represents the current Brazilian agrarian model and has played a strategic role in the national economy in recent decades. Hence, this article highlights the incompatibilities of Brazilian agribusiness with the environmental order established by the CRFB. Based on the hypothetical-deductive method, this study starts from the problem mentioned to verify the hypothesis offered and fulfill the objective presented, without losing sight of the critical perspective on the phenomena studied. As for research techniques, this is

Resumo

Esta pesquisa parte da concepção de direito ao desenvolvimento consagrada nos ideais da Constituição da República Federativa do Brasil de 1988 (CRFB). Integrante do chamado direito ao desenvolvimento, a ordem ambiental constitucional representa um importante instrumento de aprimoramento da realidade, fazendo que todos os processos de desenvolvimento se submetam aos fins do Estado, elencados pela própria sociedade na CRFB. É nesse sentido que se relaciona o direito ao desenvolvimento com o agronegócio, setor que representa o atual modelo agrário brasileiro e desempenha função estratégica na economia nacional nas últimas décadas. Este artigo tem como objetivo geral, portanto, evidenciar as incompatibilidades do agronegócio brasileiro face à ordem ambiental estabelecida pela CRFB. Esta pesquisa utiliza o método hipotético-dedutivo, partindo do problema mencionado para verificar a hipótese oferecida e cumprir o objetivo apresentado, sem perder de vistas a perspectiva crítica acerca dos fenômenos estudados. Quanto às técnicas



bibliographical and documentary research. The contribution identifies important contradictions and provides a benchmark for the study of the right to development from a broad perspective, in which this right is confronted with the model and the negative externalities of a sector that plays a strategic role in the Brazilian economy.

Keywords: agribusiness; Constitution; contradictions; development; right.

de pesquisa, trata-se de pesquisa bibliográfica e documental. A contribuição identifica importantes contradições e pretende oferecer, a partir disso, um referencial para o estudo do direito ao desenvolvimento numa perspectiva ampla, em que se confronta esse direito com o modelo e as externalidades negativas de um setor que tem função estratégica na economia brasileira.

Palavras-chave: agronegócio; Constituição; contradições; desenvolvimento; direito.

Introduction

This paper stems from an analysis of a dimension inherent to the *right to development* foreseen in the 1988 Constitution of the Federative Republic of Brazil (CRFB), understood as a legal *a priori* socially and democratically established.

Intrinsic to the right to development, the environmental order set by the CRFB (of the *ought* domain) inscribes the politics aims in the field of environmental relations and postulates, in its conformation, the implementation of an obviously better and more balanced new order than the existing one (of the *is* domain).

This constitutionally established environmental order represents, therefore, an important instrument for transforming and improving the real world, and this is its greatest intent. To this end, the CRFB, of leading character, projects a State that is resourceful and strong enough to fulfill its entire political program, having as its scope a set of guidelines and programs to be implemented by the State, the market and society, serving as a global normative plan guiding public policies and practices in general.

In this constitutional perspective, all development processes and projects must be legally subject to the purposes of the State, listed by society itself within the CRFB, even if in a negative sense, i.e., not contradicting the referred purposes.

In this context, we chose as our topic of debate the relation between the environmental dimension within the right to development and agribusiness, which has played a key role in the Brazilian economy in recent decades while producing numerous negative externalities that will be analyzed here.

Thus, this article seeks to highlight the incompatibilities between Brazilian agribusiness and the constitutional environmental order.

From a hypothetical-deductive approach and bibliographic and documentary research, we confront the agribusiness model and its negative externalities

with the meanings of the right to development inherent to the constitutional environmental order. The study, therefore, analyzes development from an economic and legal perspective (the *right to development*) in which the human person is also placed as the beneficiary and core subject of the analysis, since the agribusiness' consequences and negative externalities fall precisely here.

Additionally, the negative externalities of agribusiness—defined here as incompatibilities in relation to the environmental order and development model prescribed by the CRFB—were obtained from exploratory bibliographic research in the main Brazilian digital libraries, which is why the contradictions identified do not exclude others that may exist.

After selecting several works that address the deleterious effects of agribusiness, cited throughout this paper, we systematized the externalities found and then classified and confronted them with some of the main theoretical categories of the constitutional environmental order.

Although the research scope focuses on the categories of the right to development related to the constitutional environmental order, the analysis offer contributions for the study of the right to development in a new perspective that allows to confront its various dimensions with the material reality of the negative externalities produced by the various sectors of the Brazilian and world economy.

1 Right to development based on the constitutional environmental order

Internationally, the United Nations (UN) Declaration proclaimed the right to development as an *inalienable human right*, “[...] by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized” (ONU, 1986).

In this regard, when the multidimensional notion of development centered on the human person (human development) enters the international normative level as the starting point for the enforceability of rights vis-à-vis national states and international bodies, human development begins to be treated as a *right to [human] development* which therefore presents itself as a type of human rights, as widely recognized in the literature (Anjos Filho, 2010; Piovesan, 2010; Rister, 2007).

If *development* can be understood as the improvement of people's living conditions in various dimensions (economic, social, and environmental), the *right to development* can be defined as the *right* to these better living conditions,

keeping with this important inherited characteristic of *human development* that is the centrality of the human person, its direct beneficiary.

At the national level, and as a requirement for the necessary consolidation, Soares identifies the relation between the right to development and several values and rights established by the CRFB:

The right to development is intrinsically linked to the democratic values contained in various Constitution provisions, including: citizenship and dignity of the human person (Art. 1, II and III); social rights (Art. 6: education, health, work, leisure, security, social welfare, protection of motherhood and childhood, assistance to the destitute); economic order founded on the dictates of social justice to ensure everyone a dignified existence (Art. 170); social order based on the primacy of work and aimed at social well-being and justice (Art. 193); guarantee to all, by the state, of the full exercise of cultural rights (Art. 215); duty of the Government and society to defend the environment for present and future generations (Art. 225); and the right to technological innovation (Art. 218), among others (Soares, 2010, p. 472; free translation).

Considering that the most modern concept of development requires at least three constitutive dimensions (economic, social, and environmental), this work will first identify and understand the scopes of the environmental dimension based on CRFB propositions.

One of the principles of the economic order consists of *environment protection* (Art. 170, VI, CRFB). This principle then goes on to shape the economic order (world of being), “[...] substantially informing the principles of *guaranteeing development* and *full employment*. In addition to being an objective [environmental protection] in itself, it is a necessary—and indispensable—instrument for achieving its purpose, which is to *ensure everyone a dignified existence*” (Grau, 2018, p. 248; free translation). The Constituent Assembly thus foresaw that environment protection be used as an essential instrument to guarantee full development and to ensure a dignified existence for all.

According to Grau (2018), the 1988 Constitution gave concrete form to the principle of *environment protection*, especially in its Article 225 and paragraphs (Chapter VI, Title VIII) which, although made up of a single article, is quite advanced and provides a vigorous response to agents that propose predatory exploitation of natural assets.

The 1988 Constitution, therefore, defined the ecologically balanced *environment* as a *right of all* and characterized it as *an asset of common use*¹ and

¹ Regarding the diffuse nature of this right, Derani (2008, p. 248; free translation) states that “the ecologically balanced environment is a constitutionally protected legal asset. This good cannot be

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 (Grau, 2018).

According to Derani (2008), the text of Article 225 consists of three parts: (1) presentation of a fundamental right: the right to an ecologically balanced environment; (2) description of a duty of the state and the community: to defend and preserve such ecologically balanced environment for present and future generations; (3) prescription of rules of conduct, including objective norms, aimed at ensuring the effectiveness of this right.

It is clear, therefore, that the 1988 Constitution adopted *sustainable development* as a necessary instrument to guide the implementation of some *attributes of sustainability*².

This is because, as expressed in the heading of Article 225, the concept of sustainable development also obeys the dual ethical imperative of solidarity with present and future generations (expressed in the Brundtland Report), as well as requires that criteria of social and environmental sustainability and economic viability be made explicit (Art. 225, § 1, IV and V, CRFB).

Hence, the 1988 Constitution clearly expressed its dissatisfaction with the mere notion of *economic growth*, demanding respect for the social and environmental dimensions via the adoption and implementation of public policies and the control of any and all productive activities harmful to the social and environmental aspects of development. According to Sachs (2002, p. 77; free translation), “only solutions that take these three elements into account, that is, that promote economic growth with positive social and environmental impacts, deserve to be called *development*”.

In analyzing Art. 225 and its paragraphs, we unveil what the environmental dimension of the right to development outlined by the Constitution actually implies, starting with Art. 225, Paragraph 1, which lists the measures that the Government must take to ensure the effectiveness of sustainable development, a concept implicitly accepted in the heading.

In addition to these means of action by the Government, the 1988

broken down into individual parcels. Its enjoyment is necessarily communal and reverts to individual well-being. It has already been said that the environment, as a legal asset, guarantees the basic conditions necessary for the maintenance and development of life in general and human life in particular”.

² Despite reservations from a significant part of the literature on the contradiction between the capitalist logic of development, which maximizes profits at the expense of nature, and sustainability dynamics, which is governed by balance and the interdependence of all with all and all with nature.

Constitution also imposes preservationist conduct on those who may directly or indirectly harm the environment, as established in Paragraph 2 of Art. 225. For Silva (2010), this provision emphasizes preventive action without neglecting repressive measures by requiring the recovery of the degraded environment via regular activities, and by subjecting conduct and activities harmful to the environment to penal and administrative sanctions, without prejudice to the obligation to repair the damages caused (Art. 225, Paragraph 3, CRFB).

Paragraph 4 of Article 225 declares the Brazilian Amazonian Forest, the Atlantic Forest, the Serra do Mar, the Pantanal Mato-Grossense, and the coastal zone as national patrimony, not to make them statically preserved, as Silva (2010) states, but so that their economic use is conducted under conditions which ensure environment preservation.

Silva (2010), then, sums up the new awareness that the 1988 Constitution takes on regarding the development process since the environment becomes an asset with intrinsic value, whose care policies imperative to the Government have repercussions on people's health and well-being and on the general conditions of their development. This new awareness would ensure the fundamental conditions for human life, and the environmental protection rules set in the CRFB end up safeguarding the right to it, "which is at stake when discussing the protection of environment quality, instrumental in the sense that through this protection what is protected is a greater value: *the quality of human life*" (Silva, 2010, p. 849; free translation).

According to the World Commission on Environment and Development (WCED), sustainable development is responsible for safeguarding the natural systems that sustain life on Earth, such as the atmosphere, water, soil, and living beings.

The process of satisfying essential human needs cannot, therefore, according to the stance taken by the CRFB, jeopardize natural systems that sustain survival itself, under penalty of incurring the simplest of contradictions, that of destroying the elements that sustain life to satisfy needs knowing that, without it, any discussion of needs will be logically undermined.

Productive activities must seek to satisfy human needs while producing the least possible impact on the environment, based on the adoption of the various attributes of sustainability. In essence, as WCED (1991) also recognizes, the exploitation of nature, the allocation of investments, the orientation of technological development and institutional change must harmonize and reinforce present and future potential to meet human needs and aspirations.

2 “Destructive chains”: agribusiness and the harm to the right to an ecologically balanced environment

We discussed in the previous section the constitutional provision concerning the principle of *environmental protection*, understood as an essential instrument to guarantee full development as part of the need to ensure a dignified existence for all (Art. 170, CRFB). Besides conforming the economic order (Art. 170, VI, CRFB), the 1988 Constitution gave concrete form to the principle of *environmental protection*, especially in its Article 225 and paragraphs (Chapter VI of Title VIII) which, although made up of a single article, is quite advanced and provides a vigorous response to agents that propose predatory exploitation of natural resources (Grau, 2018).

In fact, regarding the abusive use of these resources, agribusiness³—based on monoculture and extensive livestock farming—presents several points of incompatibility related to what the CRFB defines as an “ecologically balanced environment”.

As for the concept of agribusiness, we borrow from Delgado’s definition (2012, p. 89; free translation) as a “[...] purely descriptive of the production and distribution operations of agricultural supplies and industrial processing, conducted before, during and after agricultural production, the economic sum of which would constitute a kind of new economic activity sector”.

However, since some steps of the production chains belonging to agribusiness infringe, simultaneously, upon more than one constitutional principle linked to environment protection, instead of analyzing the incompatibilities of agribusiness with the constitutional provisions in Article 225, we will use the basic models of the agribusiness production chains (agriculture and livestock) as guiding threads for discussing the points in which it disagrees with the 1988 Constitution, including to provide greater objectivity and clarity in understanding the phenomena and contradictions.

The expression “destructive chain”, present in the title of this section, reflects both this peculiar methodological path and the contradictions to be debated along the agribusiness production chains, both in agriculture and livestock.

³ According to Fernandes (2008, p. 48; free translation), “agribusiness consists of a complex of systems which comprises agriculture, industry, market, and finance”. Moreover, the dynamics of this complex and its policies form an economic development model controlled by transnational corporations that work with one or more commodities and operate in several other sectors of the economy. It is from this peculiar relation between these various systems (agriculture, industry, market, and finance) that the notion of “commercial chain” is built around agribusiness, a key characteristic of its concept.

To better illustrate this path, the following subsections analyze the points in which agribusiness contradicts constitutional provisions regarding the environment, starting with the basic agribusiness production chains themselves.

2.1 Paving the way: deforestation and fires as the starting point of agribusiness chains

The production pattern of agribusiness chains in the Brazilian countryside—supposedly anchored in state-of-the-art technology—is often preceded by old techniques such as deforestation and fires, used to open fields and prepare the ground for new chains, often illegally and encroaching on public lands.

These preliminary practices are inherent to both monoculture-based agriculture and extensive livestock farming, typical of Brazilian agribusiness. According to Carneiro *et al.* (2015), who prepared the ABRASCO dossier, overexploitation of natural resources and environment degradation processes have as their vector the physical increase of deforestation and fires, which are associated with the agricultural expansion style of commodities—i.e., these destructive processes provide ideal ground conditions for the beginning of commodity agriculture.

However, these deforestation processes and fires result in several serious losses to the environment, including emission of gases into the atmosphere (responsible for increasing the greenhouse effect and global warming), soil erosion, and great loss of biodiversity (fauna and flora), responsible for the natural balance of life on the planet. EMBRAPA itself recognizes that fires are still widely used by Brazilian farmers, especially for cleaning and preparing the soil before planting, often performed indiscriminately and without monitoring which fatally damages the soil (elimination of essential nutrients to plants) and leads to a series of losses to biodiversity, ecosystem dynamics, and air quality (Rocha, 2015).

According to a survey conducted by the Global Forest Watch platform, Brazil had the largest loss of most primary (pristine) tropical forest of all countries in 2018: 1,347,132 hectares were deforested in 2018 alone (Weisse; Goldman, 2019).

Also according to the platform, while some of the 2018 loss can be attributed to fires, most is due to logging in the Amazon, putting at risk the deforestation declines Brazil achieved in the early 2000s. Primary forest loss in 2018 was lower than its peak related to fires in 2016-2017, but still higher than from 2007 to 2015, when Brazil had reduced its deforestation rate by 70% (Weisse; Goldman, 2019).

Global Forest Watch also reports a 12% increase in the destruction of primary tropical forests from 2019 to 2020, especially in the Amazon which saw a 15% increase in that period totaling 1.5 million hectares (Weisse; Goldman, 2021).

According to most recent National Institute for Space Research (INPE) data—published by the PRODES Project, which monitors deforestation in the Brazilian Amazonian Forest by satellite—deforestation levels in the Legal Amazon went from 7,536 km² in 2018 to 10,129 km² in 2019, an increase of almost 35%. In the following years, the data indicated the following levels: 10,851 km² in 2020; 13,038 km² in 2021 (highest number recorded in a year since 2006; an increase of almost 75% compared to 2018); 11,594 km² in 2022; and, finally, 9,001 km² in 2023 (INPE, 2023).

These data show, therefore, a dramatic situation of intense and systematic deforestation processes in Brazil with inherent losses of biodiversity.

Preserving forests is fundamental to an ecologically balanced environment, especially for its function of causing rainfall and irrigating the other national regions, a process that is essential for agriculture throughout the country.

INPE's and Global Forest Watch's surveys also reveal that many hot spots of primary forest loss occurred near or within Indigenous territories, such as the Ituna Itata reserve, which recorded more than 4,000 hectares of illegal logging within its borders in the first half of 2018, more than double the total loss from 2002 to 2017. Ituna Itata is home to some of the world's last remaining uncontacted peoples who depend on the forest for survival and have preserved it for centuries (Weisse; Goldman, 2019).

In Brazil, and especially in the Amazon biome, deforestation is almost always related to the practice of fires. If, at the global level, the degradation of terrestrial ecosystems is responsible for approximately 23% of greenhouse gas emissions, in Brazil this number rises to 73% (Pompeu, 2019).

The sharp increase in deforestation and the large fires that ravaged the Amazon in 2019 and 2022 have drawn international attention to these serious Brazilian environmental issues, directly associated with the activities that make up the national economic base.

According to most up-to-date INPE data (2024) published by the *Queimadas* program, fire outbreaks in the Legal Amazon have increased dramatically in recent years, jumping from 90,408 cases in 2018 to 126,089 in 2019, and 150,783 in 2020, the highest number recorded in a single year since 2010. In 2021, 102,210 cases were registered, and in 2022 the number rose to a significant 145,101 cases. This number reduced to 126,964 cases in 2023.

The seriousness of these data led the National Congress to establish a Joint Commission on Climate Change (CMMC – *Comissão Mista de Mudanças Climáticas*) in 2019, with an interactive public hearing to discuss the matter. According to the experts heard at this public hearing, part of this destruction in the Amazon was caused by illegal deforestation: “most fires in the Amazonian Forest originate from illegal deforestation, used mainly to open areas for agriculture and livestock farming. Moreover, most illegal deforestation occurs in public areas” (Castro, 2019; free translation).

At this hearing, Paulo Moutinho, a researcher at the Amazon Environmental Research Institute (IPAM), pointed out the causes and dimensions of the problem stating that “[...] private lands in the Amazon, mostly agricultural and pasture areas, account for 21% of the total forest area and are responsible for 35% of deforestation” (Castro, 2019; free translation).

And we have vast empirical evidence to that effect. In August 2019, Greenpeace Brazil superimposed the maps of the fires onto forest maps published by INPE and the regions belonging to the agribusiness sector (maps published by the MapBiomias system). By cross-referencing the information, the organization identified where deforestation occurs:

Of the 23,006 hot spots in the Amazon recorded in the first 20 days of the month [August 2019], 15,749 occurred in forest or recently deforested areas, 5,445 in pasture areas, 832 in natural formation, and 602 in agricultural areas. Moreover, of the 6,295 hot spots recorded in the week of August 16 to August 22, 1,201 (19%) occurred in Conservation Units and of these, 364 (6%) occurred in Indigenous Lands (Queimadas na Amazônia..., 2019; free translation).

Thus, most hot spots occurred in forest or recently deforested areas. Data also reveal the great expansion of livestock farming in the region, superior to agriculture, as can be seen from the MapBiomias system comparing the advance of both practices in natural forest areas, especially in the Amazon, between 1985 and 2022 (Área de agropecuária..., 2023).

We, thus, see a great advancement of agribusiness—especially in pasture areas—over natural forests in Brazil. In fact, data provided by MapBiomias between 1985 and 2022 show that the area occupied by agriculture in Brazil grew by 50% in this period, advancing over 95.1 million hectares—an extension greater than the third largest Brazilian state, Mato Grosso, and equivalent to 10.6% of the national territory (Área de agropecuária..., 2023).

Other studies also point to the advance of soybean plantations in the Amazon and other important Brazilian biomes. Official data from the *Moratória*

da Soja report⁴ for the 2018/2019 harvest, produced in partnership with INPE, show that this commodity illegally occupies 88.2 thousand hectares of deforested forest in the Amazon (Rudorff *et al.*, 2020). Area about 37% larger than that recorded in the previous harvest (64.3 thousand hectares), and the largest ever recorded since the institution of the *Moratória*, in 2008. The report also points out that since the 2012/2013 harvest soybean plantations in deforested Amazon forests have increased significantly (Rudorff *et al.*, 2020).

But the impacts of agribusiness on the Amazon biome are much more serious: according to Rudorff *et al.* (2020), the soybean crop took 5 million hectares of the Amazon in 2018. Rudorff *et al.* (2020, p. 32; free translation) state that “[...] since the *Moratória* came into force, the area cultivated with soybeans in the Amazon has more than quadrupled, from 1.14 million ha in the 2005/06 harvest (before the *Moratória*) to 5 million ha in the 2018/19 harvest [...]”. Hence, agribusiness greatly benefits from deforestation prior to the *Moratória* while expanding its soybean plantations within an area considered national patrimony (Art. 225, Paragraph 4, CRFB).

Although the agribusiness sector denies any ties to the fires in the Amazon, such areas are likely to be converted into soybean plantations or used for extensive livestock farming, just as a large part of the areas deforested in the past are now occupied by the sector without any constraint:

This is due to the expansion of soybeans essentially over pasture areas resulting from deforestation prior to *Moratória da Soja*, which reveals its effectiveness in mitigating the advance of soybean on new deforestation but not preventing the advance of soybean farming in the biome (Rudorff *et al.*, 2020, p. 30; free translation).

For expanding production areas, the sector uses spaces in which “the damage has already been done” as an strategy, so much so that currently even IPAM scientists like Moutinho affirm that agribusiness no longer needs to deforest, as it would be enough to use the already degraded areas: “there are currently 15 to 20 million hectares already degraded and abandoned in the Amazonian Forest. If this area is recovered and used for agricultural production, it will no longer be necessary to cut down more forest to expand production” (Castro, 2019; free translation).

A statement that sounds like an act of desperation from the intense advance of commodity production in the region, worsened by a recent leniency policy

⁴ *Moratória da Soja* [Soy Moratorium] is a commitment not to purchase or finance soy grown in Amazon deforested areas drafted by the Soy Working Group (GTS), which is made up of agribusiness companies and civil society organizations (Rudorff *et al.*, 2020).

from the 2019-2022 federal administration, which notoriously and systematically loosened the inspection work of environmental agencies and facilitated environmental licensing processes in flagrant violation of the duties imposed by Article 225, Paragraph 1, of the CRFB.

2.2 Monoculture and livestock chains and their environmental aspects

It is not only the Amazonian biome that the large agribusiness production has expanded into. The *Atlas do Agronegócio* [Agribusiness Atlas] highlights, in particular, the advance of its activities onto the Cerrado biome with 178 million hectares registered as private property and only 7% of protected area, representing one of the highest deforestation rates in Brazil: “It is estimated that 52% of the Cerrado has already been degraded or suffered irreversible loss. The main factor of change in land use is none other than industrial-scale agriculture” (Santos; Glass, 2018, p. 15; free translation).

As for the cause of degradation and expansion of agriculture, the *Atlas* estimates that “from 2000 to 2016, according to data from the MapBiomias platform, the perennial cultivation of grains (e.g., soybean, corn and sorghum) increased from 7.4 million to 20.5 million hectares, an area twice as large as Portugal” (Santos; Glass, 2018, p. 15; free translation), and livestock farming maintained its uncontested reign, advancing from 76 million to 90 million hectares of pastures, a territory equivalent to Venezuela.

Hence the relationship between great environmental devastation and high productivity rates, which makes the Midwest region the leader in both categories. The record breaking productivity of the sector is, inevitably, achieved either by expanding its frontiers or by intensifying the use of pesticides. Both paths are catastrophic from a socio-environmental point of view. On the other hand, regarding the impacts on the Caatinga biome, the *Atlas* highlights that:

No less than 93.2% of the land corresponds to private properties, with only 2% of the biome protected by conservation units. Massive investment in irrigation projects associated with the transposition of the São Francisco River has contributed to fragment the biome and accelerate the rancherization process (Santos; Glass, 2018, p. 15; free translation).

Following the “destructive chain” of agribusiness, after deforestation and fires a field is opened for the installation of monoculture or meat (livestock) chains, which intensifies the environmental issue even more.

Starting with monoculture, it consists of a method that contradicts a basic

principle of nature, according to which diversity is synonymous with stability (Romeiro, 2007), i.e., the more diverse the vegetation of an ecosystem, the more sustainable and stable it tends to be.

This contradiction reveals, as several studies on the subject have already proven, that practicing monoculture—the basic organizational structure of agribusiness agriculture—has led to land exhaustion for several reasons.

Firstly, soil losses due to the intensification of erosion and degradation of its physical structure, leading to sanding or desertification⁵ as a result from soil impoverishment, i.e., the decrease of organic matter caused by inappropriate land use.

According to Araújo and Oliveira (2017), occupation of extensive areas by monocultures, an agribusiness productive model, is responsible for the ecological imbalance in Brazilian territories, as high productivity rates lead to a large loss of biomass in biomes. Such a practice results in a reduction in native vegetation cover and the consequent imbalance of biogeochemical cycles and climatic conditions leading to biodiversity loss.

Similarly, Derani and Scholz (2017) recognize that the monoculture production system, a core characteristic of agribusiness, is the main cause of ecological imbalance in the Brazilian biomes. When a single variety is planted at a high production rate and intensive use of pesticides, the result could only be “[...] loss of biomass, reduction of native vegetation cover (deforestation), imbalance of biogeochemical cycles (soil compaction and erosion, as well as excessive water consumption and silting of rivers and springs), climate change, and reduction of biodiversity” (Derani; Scholz, 2017, p. 10; free translation).

Effects on fauna are also impactful since this type of agriculture implies the loss or degradation of the natural habitats of several species. According to the Chico Mendes Institute for Biodiversity Conservation (ICMBio), agriculture is the main responsible for threats to animal life in Brazil, since this activity contributes decisively to the loss and deterioration of habitat or to the direct removal of species from nature:

⁵ The case of the Pampa biome, in Rio Grande do Sul, which had a large area affected by sanding due to the intensification of soybean planting, stands out: “Throughout the state, at least 6,000 hectares of rural areas are estimated to be covered by sand. Sanding does not depend only on human action, but there is a consensus among researchers that the expansion of commercial agriculture helps to intensify erosion processes. Deforestation of native flora for soybean plantations, for example, leads to the extinction of vegetation in specific state regions and contributes to exposing the soil to wind and storms. High levels of rainfall and the region’s sandy soil create furrows inside the soil and open cracks that expand with each flood, forming sand craters called ‘gullies’” (Giovannaz, 2017; free translation).

Throughout Brazil, the main factors of pressure on continental species stem from agricultural activities, either by fragmentation and decrease in habitat quality in areas where the activity is consolidated or by the continuous process of habitat loss where the activity is expanding. These activities affect 58% of the 1,014 continental species considered threatened (ICMBio, 2018, p. 69; free translation).

If other vectors such as *pollution* and *fires*, also related to agricultural activity, are considered the impact is even greater:

Pollution, whether industrial, urban, or agricultural, caused by pesticide use is the fourth threat that most affects continental species, mainly impacting invertebrates (river crabs, limnic mollusks, butterflies, and springtails), but also affecting bony fish, birds, amphibians, reptiles, and mammals (ICMBio, 2018, p. 69; free translation).

Impacts on fauna brings immeasurable damage to humanity, as the interference of agribusiness ends up breaking food chains and unbalancing the entire flow of the natural chain. Moreover, by weakening biodiversity monoculture also contributes to the increase of pests, precisely due to ecosystem homogenization (Camacho, 2012). It is worth emphasizing once again the fundamental rule of nature: the greater the diversity of a given ecosystem, the greater its sustainability tends to be. Consequently, the lower the diversity, the lower its sustainability.

In this situation, pesticides emerge precisely to solve the various problems linked to monoculture. Sant'Ana (2012) states that the modernization of agriculture conducted in Brazil and the new technological standard of so-called modern agricultural practices failed to address the fundamental problems of monoculture.

Rather than to solve the real problems inherent to monoculture, agricultural scientific production, especially coordinated by EMBRAPA, has focused on developing fertilizers and pesticides aimed at ensuring soil fertility and combating pests to further boost agricultural production based on this model. The agribusiness production model therefore challenges the limits of soil fertility and the soil's natural productive capacity.

However, the "solution" found by agribusiness further expands the environmental damage caused by the "destructive chain" since it conditions agricultural production to the wide use of chemical agents, i.e., it makes agricultural production chemically dependent, hence all the social consequences analyzed and large environmental impacts, such as soil, water, and air pollution.

Many studies have analyzed the negative impacts of widespread pesticide use on the Brazilian ecosystem. Lopes and Albuquerque (2018), for example,

identified and systematically reviewed 116 studies published in Brazil between 2011 and 2017, showing via empirical evidence the negative impact of pesticides on the ecologically balanced environment:

Overall, the studies identified in the chosen database show an important interference of pesticides in the ecosystem balance and, consequently, in animal and human life. Impacts range from alterations on soil composition through water and air contamination, which can interfere with living terrestrial and aquatic organisms, altering their morphology and function within the ecosystem. Changes in the ecosystem and morphology of many animals and plants used in human food can also negatively interfere with human health (Lopes; Albuquerque, 2018, p. 523-524; free translation).

In science, the relation between pesticide use and socio-environmental damage is agreed upon. Last decades' productive experience shows that intensive pesticide use is inherent to the agribusiness productive model, i.e., that this production model would not survive the removal of this element so harmful to human health and the environment. Assertion corroborated by a statement from the former Bayer president in Brazil: "One cannot grow 35 million [tons] of soybeans as Brazil does without glyphosate for the cost of production would be too high and productivity, low" (Bohne, 2019; free translation).

Such a statement only proves how dependent agribusiness is on pesticides and the destructive model established since the green revolution. This relation is so intense that we can no longer dissociate agribusiness from pesticides, since the former would not exist without the latter given the low productivity of agricultural crops, which would make exports unfeasible and compromise their own competitiveness in the global market.

Hence, the thesis of internalizing externalities in the production cost are ungrounded since measures such as this would not imply overcoming the externalities, but only in their compensation on the price, i.e., in pricing human health and the environment, which evidently does not seem to be the solution, at least for those who seriously seek to overcome the social and environmental issues resulting from agribusiness.

Moving on with the "destructive chain", now regarding the use of Genetically Modified Organisms (GMOs), several studies have shown the positive relation between the GMOs and pesticide use, as evidenced by soybean cultivation in Brazil, dominated by the use of GMOs and leader in pesticide use.

Derani and Scholz also point out other important negative externalities related to GMOs:

GM crops expose nature and people to serious life risks. The negative externalities are many: health risks; loss of genetic diversity in agriculture; loss of natural genetic diversity; genetic pollution; emergence of super-pests; extermination of insects beneficial to agriculture; disappearance of microbial life in the soil; impacts on ecosystems; control of seeds by multinationals; increase in unemployment and social exclusion; and risks to food safety (Derani; Scholz, 2017, p. 12; free translation).

At the end of the monoculture production chains, at least in the field, the literature points to the disposal of pesticide packaging as a serious environmental externality. On this topic, the study by Carneiro *et al.* (2015) note that about 50% of this waste is properly disposed of in Brazil (waste sorting). Additionally, 8.9% of the packages are left in the field; 1.2% reused; 3.5% goes to the regular waste; 13.4% are stored in the agricultural establishment; and, finally, about 25% end up burned or buried, which further aggravates the environmental issue inherent to the pattern of pesticide use.

In addition to monocultures, other production chains that significantly impact the Brazilian economy are livestock farming chains (cattle, pigs, poultry, etc.). According to data from the Ministry of Agriculture and Livestock, Brazil has a cattle herd of about 234 million head, 44 million head of pigs, 21 million head of sheep, and almost 1.6 billion poultry, with pasture areas equivalent to 1/5 of the national territory (Rebanho bovino..., 2023).

All this production has an obvious and profound impact on the environment. It is important, however, to qualify and quantify some of the main impacts generated by Brazilian livestock farming on nature.

Research developed at the Center for Advanced Studies in Applied Economics, University of São Paulo, conducted by De Zen *et al.* (2008) concluded that the main issues related to livestock are the degradation of environmental systems⁶, soil degradation⁷, pollution of water resources⁸, and greenhouse gas emissions.

According to the authors, livestock-related negative externalities, especially cattle raising “[...], are correlated with the main means of production adopted in Brazil—the extensive system”, characterized “by low investment in training

6 “Depletion or low productivity of certain areas encourages their expansion over natural biomes, destroying the natural habitats of several species. Along with other agricultural and timber activities, livestock farming emerges as one of the main vectors for agricultural frontier expansion, threatening biomes such as the Cerrado and the Amazon” (De Zen *et al.*, 2008, p. 3; free translation).

7 “Resulting from low investment in pasture maintenance, which can even cause soil compaction and erosion” (De Zen *et al.*, 2008, p. 4; free translation).

8 “Through the load of nutrients (nitrogen, phosphorus, potassium from manure), hormones, heavy metals, and pathogens carried to the riverbed by soil leaching” (De Zen *et al.*, 2008, p. 4; free translation).

(especially when the acquired land already contains some type of pasture) and pasture maintenance” (De Zen *et al.*, 2008, p. 3; free translation).

De Zen *et al.* (2008) also consider greenhouse gas emissions, a global concern, as the main externality of Brazilian livestock farming:

Due to the large number of animals around the world, estimates show that a cattle herd emits about 9% of the total of greenhouse gases generated by human action. This share is greater than sectors seen as polluting, such as transportation. In Brazil, for example, if GHG emissions generated by fires and deforestation are excluded, cattle raising (including beef and dairy cattle) becomes the largest source of emissions, with more than 260,000 Mg of CO₂eq., which accounts for more than 42% of GHG emissions (De Zen *et al.*, 2008, p. 4; free translation).

High levels of methane (CH₄) and nitrous oxide (N₂O) emissions by Brazilian livestock are also highlighted by studies on the topic (De Zen *et al.*, 2008; Amaral *et al.*, 2012), and the increase in greenhouse gas emissions has dominated debates and the worldwide concern regarding global warming.

Another serious negative externality resulting from agribusiness activities concerns the high water consumption and worsening of the water crisis, i.e., “water insecurity”. In Brazil, it is estimated that:

Water use for animal production and drinking (animal use, 11.6%) is greater than for urban supply (9.1%), and the sum of these two does not reach 32% of the total water consumption allocated for irrigation (66.1%), which, in turn, corresponds to most of the average consumption in Brazil (Costa *et al.*, 2021, p. 99; free translation).

These are, therefore, the main negative externalities resulting from the “destructive chains” of monocultures and livestock farming, which compromise soil quality by reducing arable areas, weaken biodiversity, contribute to the increase of pests, pesticide use, and soil, water, and air contamination.

3 “Growing by dying”: agribusiness in the exercise of environmental protection and the right to life at stake

Data presented thus far shows that agribusiness practices have placed themselves outside the precepts of sustainable development, as established by the 1988 Constitution in the Article 225.

The high rates of deforestation and fires driving agribusiness expansion reveal immeasurable damages to the ecologically balanced environment. Such *modus operandi*, contrary to the constitutional order, is already affecting the natural flow

of rainfall and temperature balance in several regions of Brazil and worldwide, among other environmental consequences still unknown to humanity but which will inevitably befall on present and future generations.

Unbridled exploitation of Brazilian natural forests and the expansion of agribusiness in these areas only reveal the inability of this sector and the State to: preserve essential ecological processes and provide the ecological management of species and ecosystems (Art. 225, Paragraph 1, I, CRFB); preserve diversity (Art. 225, Paragraph 1, II, CRFB); control production, commercialization and use of techniques, methods and substances that pose a risk to life, quality of life and the environment (Art. 225, Paragraph 1, V, CRFB); and protect fauna and flora (Art. 225, Paragraph 1, VII, CRFB), as well as national patrimony such as the Brazilian Amazonian Forest (Art. 225, Paragraph 4, CRFB).

Monoculture and livestock chains also produce various negative externalities in the environment which allow us to conclude that agribusiness is incompatible with the right to an ecologically balanced environment established in Art. 225. Agribusiness, inscribed in the economy of the world of being, is far from observing the principle of environment protection set forth by CRFB Art. 170, VI, and the entire constitutional system.

Moreover, Leonel Júnior and Helmold (2018) remind us that another important apparatus for guaranteeing the protection and proper use of existing natural resources, is Art. 186, II, CRFB, which addresses the socio-environmental function of rural property. When unproductive, agribusiness lands clearly fail to fulfill the socio-environmental function defended by the 1988 Constitution.

But when productive, most agribusiness properties do not fulfill the constitutional socio-environmental function imposed, since they fail to effectively use the available natural resources and to preserve the environment (Art.186, II, CRFB). As the specialized literature has shown, many of them do not even observe the provisions that regulate labor relations or exercise an exploitation that favors worker well-being and are therefore also incompatible with CRFB Art. 186, III and IV.

On the other hand, the prospects are not promising for adequate environment protection as prescribed by the 1988 Constitution, since the agribusiness sector became the main driving force in the setback of socio-environmental legislation and the defense of rights, replaced by infra-constitutional and clearly unconstitutional laws for violating the most elementary CRFB principles.

What we see is precisely its strengthening, with the sector dominating the Legislative Branch, exerting pressure on the Executive Branch and influencing

the Judiciary Branch (Santos; Glass, 2018) to dismantle environmental policies in a clear objective: to capture and fully adapt the environment to the interests of agribusiness.

Once again, this results in immense inequality, since the benefits generated by the sector's activities are private, while the losses, of all kinds, are socially shared, revealing a picture of serious social injustice which is heterogeneously distributed across the national territory, accentuating regional inequalities (Art. 3, III, and Art. 170, VII, CRFB).

Importantly, the environmental risks and damages themselves are unevenly distributed in this systemic degradation process⁹.

These risks and damages are generally borne by the poorest populations, which further aggravates social inequality (Art. 3, III, and Art. 170, VII, CRFB) now caused by the negative environmental externalities of agribusiness.

By consolidating the right to an ecologically balanced environment as an asset for common use and essential to a healthy quality of life (Art. 225), as well as by subjecting the existing economic order to the principle of environmental protection, the 1988 Constitution declared that mere economic growth is not in the interest of national development if devoid of concern for environmental sustainability.

Hence one must resume, in light of the negative externalities generated by agribusiness, the debate around the environment as an essential element for everyone's healthy quality of life, as it is a diffuse and intergenerational right.

Brazil's experience of agribusiness has unveiled the increasingly accelerated consumption and degradation of natural resources, compromising the survival and healthy quality of life of future generations, violating the solidarity pact instituted by the 1988 Constitution. In fact, if the CRFB took the environment is an asset, a patrimony, a value itself, the conservation of which is imperative for all to ensure the health, well-being of the human person and the conditions of their development, there is no denying that the quality of the environment effectively ensures the fundamental right to life (Silva, 2010).

That is why Silva (2010) states that this is a preponderant value, which is above any considerations linked to growth, such as respect for the right to property and private initiative. For this same reason, we can affirm that the imperatives of environment protection are above any goals of agricultural productivity, of generating positive balances in the trade balance or of GDP composition.

⁹ On this topic, see the following works: Marandola Jr. and Hogan (2006) and Martinez-Alier (2012).

Satisfying human needs—if one considers this the objective of economic development, in the best and most ethical of cases—cannot, therefore, according to the stance taken by the 1988 Constitution, put at risk the natural systems that sustain life itself.

In the true spirit of the 1988 CRFB, no economic strategy is therefore authorized to override the right to life and dignity of people, as has been systematically done in Brazilian agribusiness in its contradictory movement of “growing by dying”.

Final considerations

This article highlighted the incompatibility of Brazilian agribusiness with the environmental order prescribed by the 1988 Constitution of the Federative Republic of Brazil (CRFB) and, ultimately, with the right to development inscribed.

Our analysis found important elements of incompatibility between Brazilian agribusiness and the right to development inherent to the CRFB’s environmental dimension.

From the aspects addressed, we observe a contrast between the agribusiness model and its negative externalities and some of the main theoretical categories pertaining to the constitutional environmental order and the right to development, including with relation to the constitutional provisions violated by each Brazilian agribusiness’ group of externalities and activities.

Finally, although the research scope focused only on certain categories of the right to development (extracted from the constitutional environmental order), this work offers a proposal and model that can be reproduced in analyses confronting other facets of the right to development (related to other fundamental rights, to the economic, social dimension, etc.) with other sectors of the capitalist economy, revealing systemic contradictions and fractures which can be repaired or, at least, mitigated by public policies.

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