

The Evolution of Brazilian Environmental Law, Advances and Setbacks

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ABSTRACT

In several countries, without exception, the environmental costs of various human activities continue to grow. National and international legal parameters, bilateral exploration treaties, along with global socioeconomic moments have greatly changed the position of the legislator and the responsible manager in Brazil regarding respect for the environment, and a sustainable development. The objective of this study is, by means of an exploratory bibliographical research, to verify the national advances achieved in defense of fauna and flora, as well as the legal setbacks imposed by an increasing exploitation of production as a way of strengthening the balance of trade, but which leaves a relevant environmental impact. The time elapsed between the entry into force of a law and the decrees that regulate it is very long and needs to be reviewed by the current legislators. The assumption that the lack of a more effective and immediate approach to the conservation of natural resources has influenced and directly influences the environmental and climatic condition the planet is in is what is expected to prove.

Keywords: Environmental Costs; Sustainable Development; Natural Resources

Introduction

The man-environment relationship has been abruptly modified over time, causing relevant impacts, due to human social organization, the consumption needs implemented mainly after the industrial revolution, causing an imbalance in the ecosystem. There is no way to analyze the unbalance of the ecosystem without adding to it the anthropic impacts caused by man in the search for his constant needs, whether salutary to his sustenance or not. And here arises a significant term, the Anthropocene. As HAMILTON (2019) describes, the Anthropocene is a rupture between man and nature by virtue of actions on two fronts, those capable of interfering with the ecological balance of the planet, and those that disturb the system. These disturbances can be punctual or gradual and staggered. These

disturbances are relevant and can be reduced through awareness, but the role of legislation as a moderating and educating power has great importance both in protecting the environment and natural resources, and in enabling socioeconomic growth in a sustainable way, thus the environmental legislation, the forestry codes, the formalization of permanent preservation areas, water resources, basic sanitation, solid waste, are necessary and very important points for social organization. The national solid waste policy aims to protect public health along with environmental quality, to reduce the risks caused by hazardous and toxic waste, as well as to encourage the recycling and reuse of waste with appropriate final waste treatment, and also to stimulate the conscious consumption of goods and services.

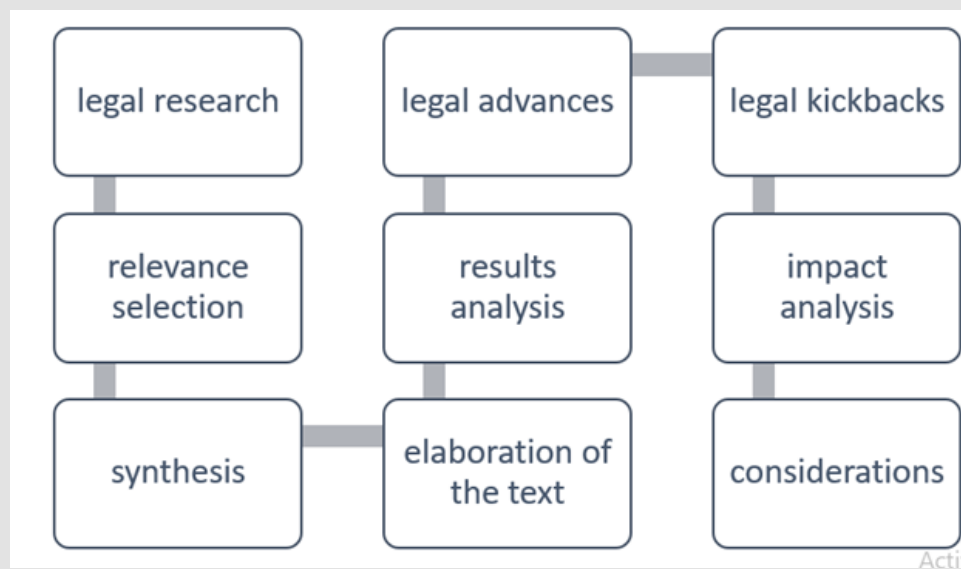
However, the national solid waste policy does not begin with the Law 12.305 of 2010 and its regulation in Decree 10.936 of 2022, even though this is its milestone, however, a set of positive and negative actions leveraged throughout the Brazilian environmental legislation mark the trajectory and the acute need for specific legislation that can really ensure the continuity of natural resources. «In several countries, without exception, it is clear that the environmental costs of various human activities continue to grow. It is not surprising, therefore, that as the third millennium approaches, concern for the environment will eventually acquire extraordinary importance»(HERMAN, et al. [1]). National and international legal parameters, bilateral exploitation treaties, along with global socioeconomic moments have greatly altered the position of the legislator and responsible manager in Brazil regarding respect for the environment, and a sustainable development. The objective of this study is, by means of exploratory bibliographical research, to verify the national advances achieved in defense of fauna and flora, as well as the legal setbacks imposed by an increasing exploitation of production as a way of strengthening the balance of trade, but which leaves a relevant environmental impact. Using rationalization, by means of the inductive - deductive method, the legal acts and facts and their direct implications to the

human being, the microclimate, and the environment will be critically observed; at the end it is expected a verification of the hypothesis that environmental exploitation without proper planning supported by science results in huge losses to the environment.

The hypothesis that the lack of a more effective and immediate approach to the conservation of natural resources has influenced and directly influences the environmental and climatic condition of the planet is what we hope to prove.

Methodological Procedure

The present research had as a source of data a small bibliographic survey, carried out in the Capes base, academic repository, and congresses, aiming at the largest and most relevant set of data possible and that would truthfully portray relevant facts and acts and their direct and indirect implications on the environment, biodiversity, and the ecosystem. The interconnection between the legal environmental parameters and socioeconomic growth are intrinsic in this study, which makes it difficult to collect information in such a way that only the letter of the law is implicit, the preparation of this study followed the flow demonstrated below by Figure 1.



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Note: Source: adapted by authors

Figure 1: Structure of the literature search.

Theoretical Reference

In its scope in Article 5 of the Constitution of the Republic of 1988, it is quoted: «All are equal before the law, without distinction of any kind, guaranteeing Brazilians and foreigners residing in the country the inviolability of the right to life, liberty, equality, security and property.» The importance of this article and its scope in the life

of every citizen is immense, because the rights assured here by the Magna Carta are the basis of support for a society, where coexistence in groups with the environment respecting limits is assured. In its subsection LXXIII of the same article it is cited: Any citizen is a legitimate party to propose a popular action that aims to annul an act harmful to the public patrimony or to an entity in which the State

participates, to administrative morality, to the environment and to the historical and cultural heritage, being the author, except for proven bad faith, exempt from court costs and the burden of defeat; In its article 23, points VI and VII, the Constitution establishes that VI - protect the environment and fight pollution in any of its forms; VII - preserve the forests, fauna and flora (BRASIL, [2]). These aforementioned legal norms should be fulfilling their democratic role of protecting life, man and the environment, however, the periods of global economic crisis, along with the disorderly growth of cities with rural exodus in the 40s and 50s and the subsequent upswing of agribusiness in the 80s and 90s brought significant changes to a sustainable growth model (Sabino VALE, et al. [3]).

A relevant view is presented by Torres Nannini [4], when he tells us that the role by which agribusiness tries to present itself as a booster of the Brazilian trade balance through constant production rates, is not as simple as it seems, because the impact generated by the

Union in opening areas without prior impact studies brought several problems to the ecosystem, making it necessary to occupy these areas and subsidizing this production. In its history in the search for legislation that contemplates and protects its natural resources, Brazil has found a reinforcement with the actions of entities outside the State that seek, demand, and participate in very important decisions in the search for sustainable growth. Figure 2 below shows a projection of the Brazilian population growth from the year 1872 to 2000. (Pereira, et al. [5]). The population increase will bring social and environmental impacts, especially in these countries, impacting on climate change, the formation of megacities, pollution, among other problems that make the living conditions of the population precarious (Fonseca, et al. [6]). Population growth is significant and has long-term impacts, resulting in the growing consumption of natural resources, such as water resources, among others. The issue becomes more complex when it is observed that the growth happens unevenly, concentrated in the poorest regions (Cheng, et al. [7]).



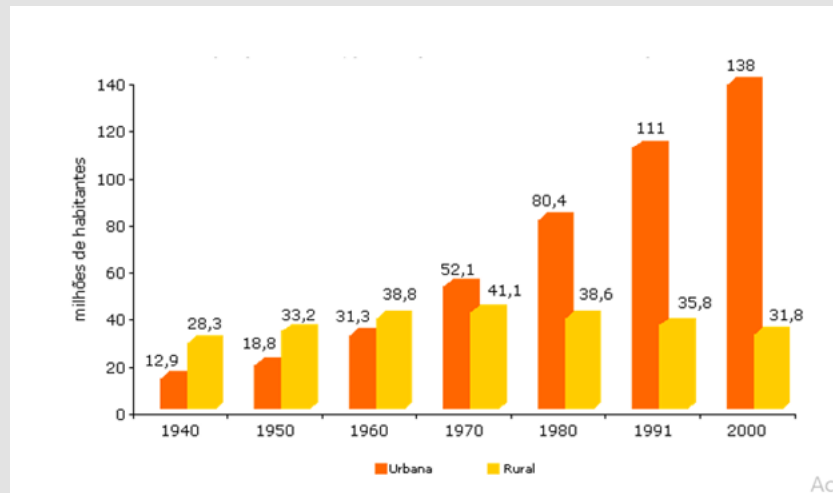
Note: Source: Demographic Census 2010

Figure 2: Brazilian population growth.

This population growth has been constant in the urban area and the rural area of the country perceives little population variation as shown in Figure 3 below This population variation brings with it a range of citizens' needs to be met by government managers, opening space for discussion about the impacts generated by cities to the environment and the socioeconomic possibilities of exploration and land use, industrialization and marketing of goods and services. As cited by dos Santos [8], the arrival of immigrants to the country in the period of the first world war has a significant influence on the population, the customs and activities developed by these new Brazilians in their country of origin, bring a boost both in the countryside and in the cities as cited by the author. In the period between 1934 and 1988, the country had four constitutions that will be discussed later in this

study, however it is noteworthy that the letters of 34,37,46 brought little or no substantial contribution to the effective protection of the environment, as well as the structural planning of cities in their urban and rural areas. A fact that corroborates is the creation of the first Brazilian forest code dated January 23, 1934, through Decree 23.793 by then president Getúlio Vargas, but it already had «gaps» because in its Article 3 in the classification of forests:

- Protective.
- Remnants.
- Model.
- Yielding.



Note: Source: 2000 Census

Figure 3: Demographic trends between urban and rural households.

In its article 6th it is cited: «Artificial forests will be classified as model forests, constituted by only one or a limited number of forest essences, indigenous and exotic, whose dissemination is convenient in the region». This already set a legal precedent, because until this moment all Brazilian forests were native, and these criteria stipulated in articles 3, 4, 5, 6 and 7 opened spaces for discussion and interpretation. The country was in the 60s and 70s in a period of real estate verticalization, bringing aspirations about the new forms of condominiums boosting employment in construction, but also occurred in parallel a vertiginous change in the way of observing and planning real estate expansion, it was necessary to provide energy, sewage, treated water. In 1965, former president Castello Branco sanctioned the Brazilian Forest Code (Law 4.771/65), which, despite some punctual changes in the following years, served as the basis for the sector until recently, when the new code came.

Sustainability and Economic Growth

All these needs arising from this new socioeconomic and cultural vision placed demands on public managers as to the expansion of municipalities to meet the shortages of labor, space, and also as to the solid waste generated, with this the changes that occurred in the Brazilian environmental legislation, the creation of autarchies and agencies expanded the legal framework, although the tools necessary for legal compliance through monitoring, analysis, and research and development were still under development.

In their study (Flores, et al. [9]), describe the difficulties faced by the country in structuring cities and meeting basic sanitation needs of the population that migrated to the cities in search of the «miracle of growth.» The authors also report on this disorderly growth and the lack of municipal master plans that could meet the forest code and

at the same time be sustainable, which did not occur. They also show the need for a correlation between basic needs and very important environmental guidelines that were widely debated and approved by the Stockholm Protocol in 1972, the Kyoto agreement, and Rio 92. This worldwide concern with forest devastation for the implementation of farming and cattle raising activities, and the use of natural resources for commercialization is much older, dating back initially to the times of the empire with the constant commercialization of pau brasil. In the pre-colonial period - between 1500 and 1530 - the main economic activity was the predatory extraction of Brazilwood and by the end of this period the species was already thinning along the coast.

Along this same line of exploitation, other important species for the Portuguese market also began to become scarce. The exploration was nomadic in style. Fortifications were built along the coast with a double function: to protect the coast and the wood until shipping, mainly against French privateers. Once the wood was shipped, the explorers would leave the place. This style of exploration made the coast security fragile (Nantes, et al. [10]). Passing through the first republic with the opening of areas for the implementation of grandiose roads that would connect the country from end to end, reaching the 1930s when Getúlio by decree, already mentioned above, instituted the first forest code that would only be regulated by Law 4.771/1965 that will be better discussed later in this study. What can be noted in the literature are the commercial and industrial demands being answered by managers before the social and socio-environmental demands. To shape its growth, the country needed to institute a structure both in the legal framework, as well as in internal bodies and independent autarchies to sanitize and plan this development and meet the desires of the growing population.

Structure and Social Policies

Brazil has sought through the creation of service organizations and their mechanisms necessary to meet the basic needs of its population, has been a gradual work, on April 16, 1991, through Decree No. 100 is created the National Health Foundation (FUNASA), in 1993 the Program for the Modernization of the Sanitation Sector (PMSS), then in 1996 is created the National Sanitation Information System (SNIS). In 1997 through Law 9. 433/1997 the National Water Resources Policy, which was replaced by Law 11.445 and updated by Law 14.026/2020 that formalizes the regulatory framework of basic sanitation. This entire legal framework still needed legislation for solid waste. The complexity and interconnectivity of this topic with other areas such as production processes, consumption, behavior, and social habits form the broad concept of sustainable waste management. The problem generated by solid waste is intrinsically related to the environment, but not only because of its generated impact, but also because of its relationship with energy waste, the consumption of a greater number of natural resources generating a dependence on non-renewable energy sources creating a paradox. (ZHANG, et al. 2022); as well as the water crisis caused by climate change at the expense of anthropic activities. Life on the planet consists of a substantial portion of water, a chemical compound formed from two hydrogen atoms and an oxygen atom (LEITE, et al. [11,12]); reported in their study when they cite the 2030 agenda in its Sustainable Development Goals (SDGs) 06 and 14, water is a necessary asset for everyone and needs to be conserved, and environmental preservation is one of the factors for maintaining its renewal cycle.

The convenience offered to the consumer has sensitively transformed the shape of the market for products of daily necessity. The production of waste is huge, whether in primary or secondary packaging, where all have a single destination: the municipal solid waste collection and disposal system (LIGUORI, et al. [13]). According to DE [14], in its article 1, Decree 10,936 of January 12, 2022, regulates the National Solid Waste Policy in Law 12,305 of 2010 and integrates it into the national environmental policy and its national guidelines through Law 11,445 of January 5, 2007 and also Law 14,026 of July 15, 2020. Which opens a legal void, because in its scope Law 14.026 is cited in its incorporation into Law 11.445 in its article 3 item I paragraph «C»: «Urban cleaning and solid waste management: consists of the activities and the provision and maintenance of infrastructure and operational facilities for the collection, manual and mechanized sweeping, urban preparation and maintenance, transportation, transshipment, treatment and final disposal environmentally adequate of domestic solid waste and urban cleaning waste;» Law 12,350 of 2010 in its article 6, point VII cites: «The recognition of reusable and recyclable solid waste as an economic good and of social value, generator of work and income and promoter of citizenship;» . By definition, in its article 3, item X, Law 12,305 enacted on August 2, 2010, states «solid waste management:» set of actions exercised, directly or indirectly, in the phases of collection, transport, transshipment, treatment and final disposal of

environmentally adequate solid waste and environmentally adequate rejects.

In accordance with the municipal integrated solid waste management plan or solid waste management plan, required under the form of this Law»; and continues in its point XVII showing that: «the shared responsibility of the life cycle of products between manufacturers, importers, distributors, traders, consumers and the holders of public services of urban cleaning.» (BRAZIL, 2010). Soon it must be assumed that the responsibility is not only legal, but also socioeconomic and public health, also intrinsically linked to the country's legislation. In its article 225 the Constitution cites: «Everyone has the right to an ecologically balanced environment, an asset for the common use of the people and essential for a healthy quality of life, imposing on the public authorities and the community the duty to defend and preserve it for present and future generations. «Citing also that: § To ensure the effectiveness of this right, the Public Power is responsible for: I - Preserve and restore the essential ecological processes and provide for the ecological management of species and ecosystems; IV - Require, under the form of the law, for the installation of any work or activity with the potential to cause significant degradation of the environment, a prior environmental impact study, to which publicity will be given; V - Control the production, commercialization and use of techniques, methods and substances that involve risks to life, the quality of life and the environment; As cited by (VEDA, et al. [15]), the constitutional guarantee assured here, allows the Brazilian citizen the fundamental right of respect by institutions to natural resources so relevant to human beings, and their well-being, although in a practical way it is not observed.

Based on what has already been demonstrated and through historical research and bibliographic survey, this study aims to verify the advances and the legal duplicity of the national framework that faces the National Policy for Solid Waste. The legal devices, the constitutional guarantees obtained, the advances and setbacks during the process that culminates with the enactment of law 12.305/2010 and decree 10.936/2022 will be discussed.

The main contribution of this study is based on the construction of the legal precept that over time sought to cover the faces of Brazilian socioeconomic sustainability, its environmental contribution, and the bottlenecks encountered that brought about significant legal changes.

Starting from the Legal Basis a Theoretical Referential

As cited in BRASIL (2010), the discussions of the Project of Complementary Law (PLS 354/89) were under discussion for nineteen years, the periodical also cites that in parallel were one hundred and forty projects that also dealt with the same subject since 1989; in this interval between 1989 and 2010 of discussions in the legislature, ABRELPE in its 2010 report cites that the population growth was about 1% and the growth in solid waste generation was 6.3% jumping in 2009 from 57. 011. 138 tons to 60,868,080 tons in

2010. ABRELPE only starts its historical series on the panorama of solid waste from 2003. What can be noted is that the period between the discussion and implementation of legal protective devices and population growth shown by Figure 1 shows a temporal disparity of 25 years, and the environmental consequences generated in this period begin to become serious environmental aggravating factors.

Legal Background: The first Brazilian Forest Code was created by Decree-Law 23.793 of 23 January 1934 and reissued by the military government in the form of Law 4.771 of 15 September 1965, a very broad and strong legislation, as can be seen in its article 1 §2º clause I item a: Small rural property or family rural possession: that exploited through the personal work of the owner or occupant and his family, admitted the occasional help of a third party and whose gross income comes, at least in eighty percent, from agroforestry or extra-forestry activity, whose area does not exceed: (a) one hundred and fifty hectares if located in the States of Acre, Pará, Amazonas, Roraima, Rondônia, Amapá and Mato Grosso and in the regions situated north of the 13º S parallel in the States of Tocantins and Goiás, and west of the 44º W meridian in the State of Maranhão or in the Pantanal Matogrossense or South of Mato Grosso; This code goes on to formulate the legal reserve areas and their percentages, the legal distance to respect receiving bodies and the biome, the code goes on to show the type of trees that can be cut down for agricultural cultivation, in other words, a relevant document. In its article 2, this forest code considered as permanent preservation areas the forests and other forms of vegetation located Along rivers or any watercourse from its highest level in a marginal strip whose minimum width will be.

1. 30 (thirty) meters for watercourses less than 10 (ten) meters wide.
2. 50 (fifty) meters for watercourses between 10 (ten) and 50 (fifty) meters wide.
3. From 100 (one hundred) meters for watercourses 50 (fifty) to 200 (two hundred) meters wide.
4. Two hundred (200) meters for watercourses that are two hundred (200) to six hundred (600) meters wide.
5. Five hundred (500) meters for waterways that are more than six hundred (600) meters wide.
 - a. Around ponds, lakes or natural or artificial water reservoirs.
 - b. In springs, even if intermittent and in so-called «water eyes», whatever their topographical situation, within a minimum radius of fifty (50) meters in width.
 - c. On hills, hills, mountains, and mountains.
 - d. On slopes, or parts thereof, with a slope of more than 45º, equivalent to 100% on the line of greatest slope.

The concern with the preservation of springs and receiving bodies and their ecosystem was already relevant to this code. And

this concern persists in the new forest code through Law 12.651 of May 25, 2012 when in its Article 1 establishes the general rules on the protection of vegetation and in its Article 2 § 1 and 2 that liability for degraded areas persists and are transmitted to the successors of the property, although the modification by the new code the Article 2 of 1965 and the insertion of the terms: item I: « the marginal strips of any natural perennial and intermittent watercourse, excluding the ephemeral ones, from the edge of the gutter of the regular bed, in a minimum width of». For this simple modification opened space for a narrowing of the preservation strip and consequently the use of this area, whether in agricultural or urbanization activities. Article 20 of the revoked code states : Industrial companies which, by their nature, consume large quantities of forest raw material will be obliged to maintain, within a radius where exploitation and transport are deemed economical, an organized service which guarantees the plantation of new areas, on their own land or on land belonging to third parties, whose production under rational exploitation is equivalent to that consumed for their supply. Sole Paragraph.

Non-compliance with the provisions of this article, in addition to the sanctions provided for in this code, obliges the violators to pay a fine equivalent to 10% (ten percent) of the commercial value of the native forest raw material consumed, in addition to the production in which they participate. Reforestation as a form of prevention of the effects caused in the extraction, production by the companies causing the environmental impact. A substantial advance for the moment when this forest code was created. The instruments of prevention are still elaborated, such as the ecological and agricultural zoning under the supervision of Ibama and Conama, which until then was only a collegial body, but not really established. Conama was created in 1981, by the National Environmental Policy Law no. 6.938/81. The activities of Conama started with the regulation given by decree no. 88.351/83. From 1992 on, Conama has been linked to the MMA. In January 1967 through Law 5.197, the beginning of the care with wild animals that would later be complemented by law 9.605/98 that is the law of environmental crimes:

SECTION I: CRIMES AGAINST FAUNA

Example: Killing, chasing, hunting, capturing, using specimens of wild fauna, native or in migratory route, without the proper permission, license, or authorization from the competent authority, or in disagreement with the one obtained (Art. 29).

SECTION II: CRIMES AGAINST FLORA Example: Receipt or acquisition, for commercial or industrial purposes, of wood, firewood, charcoal, and other products of vegetable origin, without the need for a license from the seller, granted by the competent authority, and without a copy of the document that must accompany the product until its final transformation (Art. 46).

SECTION III: POLLUTION AND OTHER ENVIRONMENTAL CRIMES.

Examples: Causing pollution of any nature at levels that result or

may result in damage to human health or cause the death of animals or significant destruction of flora (art. 54). Build, remodel, expand, install, or cause to operate, anywhere in the national territory, potentially polluting establishments, works or services without a license or authorization from the competent environmental agencies, or in violation of the pertinent legal and regulatory norms (art. 60). Table 1 shows the legislation enacted from 1965 to 1989. In this framework are 24 years of environmental discussion and ends with a milestone of extreme relevance with the Law 7.802/89 that starts the work on empty containers of pesticides, their production, labeling, transportation, storage and final destination of the same. As PAREDES

[16], mentions in his work until the 1988 Constitution, there was no specific mention of environmental prevention, biodiversity, or the ecosystem. The Constitution of the Empire, of 1824, did not make any reference to environmental issues; it only dealt with the prohibition of industries contrary to the citizen's health. However, the measure already brought some progress in the context of the time. The republican text of 1891 attributed legislative competence to the Union to legislate on mines and land (until the new wording given by the Constitutional Amendment of September 3, 1926). Observing the extractives to supply the needs of the crown.

Table 1: Legal history.

Law No. 6,225, of July 14, 1975	Provides for discrimination, by the Ministry of Agriculture, of regions for mandatory execution of soil protection and erosion combat plans and provides other measures
Decree-Law No. 1,413, of August 14, 1975	Provides for the control of environmental pollution caused by industrial activities
Law No. 6,803, of July 2, 1980	Provides basic guidelines for industrial zoning in critical pollution areas and provides other measures.
Lei nº 6,902, dated April 27, 1981	Provides for the creation of Ecological Stations, Environmental Protection Areas and other measures...
Law No. 6,938, of August 31, 1981	Provides for the National Environmental Policy, its purposes and formulation and application mechanisms, and provides other measures
Law No. 7,365, of September 13, 1985	Provides for the manufacture of non-biodegradable detergents
Law No. 7,643, of December 18, 1987	Prohibits cetacean fishing in Brazilian jurisdictional waters and provides other measures...
Law No. 7,661, of May 16, 1988	Establishes the National Coastal Management Plan and provides other measures.
Law No. 7,735, of February 22, 1989	Provides for the extinction of bodies and autonomous entities, creates the Brazilian Institute of the Environment and Renewable Natural Resources and provides other measures.
Lei nº 7,754, dated April 14, 1989	Establishes measures to protect existing forests at the sources of rivers and provides other measures
Law No. 7,797, of July 10, 1989	Creates the National Environment Fund and provides other measures
Law No. 7,802, of July 11, 1989	Provides for research, experimentation, production, packaging and labeling, transportation, storage, marketing, commercial advertising, use, import, export, destination of waste and packaging, registration, classification, control, inspection and supervision of pesticides, their components and the like, and provides other measures.

The 1934 Constitution gave protection to the natural beauties, the historical, artistic, and cultural heritage, giving the Union competence to legislate on the subsoil riches, the mines, the waters, the forests, hunting, fishing and its exploitation, but the political moment the country was facing, and its revocation brought a new status to environmental discussions that only returned to discussion more effectively in the 1967 Constitution. The Letter of 1937 was also concerned with the protection of historical, artistic and natural monuments, as well as landscapes and places especially endowed by nature; it included among the matters of the Union's competence to legislate on mines, waters, forests, hunting and fishing and their exploitation; it also took care of the legislative competence over the subsoil, waters and forests, as well as the protection of plants and flocks against diseases and harmful agents. The 1946 Constitution, besides maintaining the defense of the historical, cultural and landscape heritage, preserved the Union's competence to legislate on general norms for the defense of health, subsoil riches, waters, forests, hunting, and fishing. The 1967 Constitution insisted on the need to protect the historical, cultural and landscape heritage; it said that

it was the Union's competence to legislate on general norms for the defense of health, on deposits, forests, hunting, fishing, and waters. The 1969 Charter, an amendment granted by the Military Junta to the 1967 Constitution, also dealt with the defense of the historical, cultural and landscape heritage. Regarding the division of competencies, it maintained the provisions of the amended Constitution.

On July 9, 1970, through Decree 1.110, the National Institute for Agrarian Reform (INCRA Instituto Nacional de Reforma Agrária) was created, incorporating the Brazilian Institute for Agrarian Reform (IBRA) and the National Institute for Agrarian Development (INDA), as well as the Executive Group for Agrarian Reform (GERA), and consequently extinguishing them as soon as the President of INCRA took office. A strong Institute with a robust budget and a staff of permanent and contract employees from other extinct organs, its role should be to implement agrarian reform in the country, although here begins a major regression in environmental policy and the 1965 forest code. The main milestone of this regression is marked by the construction of the Trans amazon highway in the 1970s, which was

supposed to be a plan for national integration, although it was only an opening of areas for cultivation and agrarian colonization («Neto [17]»). For (DIAS, et al. [18]) the discussion between the federal legislation as the areas of permanent preservation APPs and the state legislation conflict as the range of protection of soils near the veredas, according to the authors, while the new forest code of 2012 decreases the range of preservation, the state legislation analyzes the morpho-physiological characteristic of the soil and the range of preservation. «Modifications such as the provision of the possibility of counting Permanent Preservation Areas in the calculation of the percentage of Legal Reserve, provided in art.

15 of Law no. 12.651/2012, for example, go against the already mentioned fundamental right to an ecologically balanced environment, provided for in art. 225, caput, of the Constitution of the Republic of 1988, and the principle of prohibition of environmental regression» (VEDA, et al. [15]). According to EMBRAPA SOLOS [19], the lack of studies for the mapping of Brazilian soil types, brought with it some very important problems for Brazilian agriculture due to the expansion of the activity and increase in cultivated areas. With this the productive reflexes were only really felt with concrete technological support, feasibility studies, mapping of soil types, maintenance, and occupation of soils only with real possibility of productive use, as well as, with crop rotation, creation of one more crop to supply the internal and external needs of the products. The idea of no-till farming to protect the soil, the creation of the sanitary break period to avoid the proliferation of pests from one perennial crop to another, was only possible with the technological implementation in the agricultural sector. According to (HORÁK-TERRA, et al. [20]), the cerrado or savanna is a region of an ecosystem of high complexity and great possibility of environmental recovery, with a range of approximately 18,000 km², acid pH, high humidity, rich in minerals and fiber, with predominantly hydromorphic soils. The population growth has necessarily brought the need to increase production (WILKINSON, 2010), (MALUF, et al. [21]), opening new areas either for the perennial cultivation of cereals, sugar and alcohol.

With this increase in production to supply the market, there is also a need for natural resource management through sustainability, as reported by (LIMA, et al. [22]), respect for the environment and responsible land use. Worldwide, the concern about atmospheric contaminants that can bring great climatic damage to the planet is beginning to emerge. In 1985, nations met in Vienna, Austria, to express their technical and political concern about ozone depletion, which resulted in the Montreal Treaty for the reduction of potentially ozone-depleting gases. The observation that the period between the publication of a law, decree, normative instruction, standard, and its subsequent regulation by a complementary document is at least five years, as shown in Table 1 above, opens up a difficult space for understanding. This is perhaps the biggest precedent that the polluting agent cited in Article 3 item IV of Law 6.938 of 1981, that is, the lack of timely complementary legislation at the federal, regional or municipal level ends up benefiting the environmental offender. The

agricultural and industrial expansion that the country was beginning to experience brought with it the need for legal improvements for the implementation of these parks and the areas that would be opened, greatly altering the existing structure. One of these changes is Law No. 6.938, of August 31, 1981, which established the National Environmental Policy: Art. 1 - This law, based on articles VI and VII of art. 23 and art. 235 of the Constitution, establishes the National Environmental Policy, its objectives and mechanisms for formulation and application, constitutes the National Environmental System (Sisnama) and institutes the Environmental Defense Registry.

The National Environmental Policy: Art. 2^o - The National Environmental Policy has as its objective the preservation, improvement and recuperation of the environmental quality favorable to life, aiming to assure, in the country, conditions for socioeconomic development, for the interests of national security, and for the protection of the dignity of human life, observing the following principles I - Governmental action in the maintenance of ecological balance, considering the environment as a public good to be necessarily secured and protected, with a view to its collective use; II - Rationalization of the use of the soil, the subsoil, the water, and the air; Art. 3 - For the purposes foreseen in this law

- I. The environment is the set of conditions, laws, influences and interactions of physical, chemical and biological order; that allows, protects and rules life in all its forms.
- II. Degradation of the environmental quality, the adverse alteration of the environment's characteristics
- III. Pollution, the degradation of the environmental quality resulting from activities that directly or indirectly.
 - a) Harm the health, the safety and the wellbeing of the population.
 - b) create adverse conditions for social and economic activities.
 - c) affect the aesthetic or sanitary conditions of the environment.
 - d) release materials or energy in disagreement with the established environmental standards.
- IV. Polluter: the individual or legal entity, of public or private law, directly or indirectly responsible for activities that cause environmental degradation.
- V. Environmental resources: the atmosphere, inland, surface and underground waters, estuaries, the territorial sea, the soil, the subsoil and the elements of the biosphere, the fauna, and the flora. The regulation of this law came through a set of decrees where one of them has significant relevance, is Decree 5.975 of November 30, 2006, which in its article 10 cites Art. 10. The exploitation of forests and successor formations that imply suppression by clear cutting of natural arboreal vegetation will only be allowed by means of suppression authorization for the alternative use of the soil issued by the competent organ of SISNAMA. § 1 . Alternative

land use is understood to mean the substitution of forests and successive formations for other land covers, such as colonisation projects for agrarian reform, agriculture and cattle raising, industry, energy production and transmission, mining, and transport. § The suppression authorization request mentioned in the caput will be regulated by a specific rule by the competent environmental agency, and must indicate, at least, the following information

1. The georeferenced location of the property, the permanent preservation and legal reserve areas.
2. Compliance with forest repositioning.
3. The effective use of the already converted areas; and
4. The alternative use to which the land to be deforested will be put. § 30 The small rural owner or family owner, as defined in art. 1, § 2, item I, of Law 4.771, of 1965, is exempt from indicating the location of the property, the permanent preservation areas, and the legal reserve, as dealt with in item I of § 2. In other words, its article 4 loses relevance and a legal space is opened for construction, mining and agricultural cultivation in areas that were previously preservation areas. On January 8, 1997, Law 9.433 was published, establishing the National Water Resources Policy; in its article 1, it cites, in items I to VI, the importance of water as an asset of public domain, endowed with economic value, finite, and in item VI, that the management of water resources should be decentralized; although in its article 5, it establishes fees for its use and compensation to municipalities for the sustainable management of this asset. The technical chambers of CONAMA, through resolutions 396/2008 and 397/2008, modify the standards for the disposal of polluting waste and also begin to address another crucial point, which is groundwater, an extremely important issue for a strong and comprehensive water resources policy (CONAMA, [23]).

Redemocratization

As cited PINTO [24], with the end of the military regime in 1985 and the redemocratization of the country and subsequently the preparation of the Constitution of the Republic of 1988 begins a new phase of discussions on the issues necessary for the development of employment and income in Brazil and together, discussions now not by a military junta but by a congress elected by the people. According to the author, the country was going through a serious economic and social crisis, with growing cities, high unemployment rates, bringing with it the swelling of the cities and their environmental impacts. In his study SOUZA [25], makes a complex survey of the Brazilian per capita income from 1926 to 2015, going through the periods of regime of exception and the redemocratization of the country, showing the sharp growth curve achieved with the resumption of a democratic regime, the mitigation of social ills with emphasis on the distribution of income achieved in this period. As SCHOOL, (2019)

shows in his work that the importance of legislative chambers at the federal, state and municipal level goes far beyond the preparation of laws and oversight of public spending by the manager, in the case of the municipality the councilors should have as their main function to prepare the city to think about all its needs, and one of the tools that provide this support is the master plan that is a way to rethink the city as an attractor of social welfare in the concept of smart city, providing the plans for urban mobility, sanitation, solid waste, agriculture.

For (ASSAD, et al. [26]), the role developed by Brazilian agriculture has always influenced and been influenced by political, social and cultural changes, and although the country has continental dimensions, its history has always been marked by primary agriculture. The authors also point out the strength of Brazilian agribusiness in the generation of jobs, and its important participation in the Brazilian Gross Domestic Product (GDP). This strength played by the productive sector has proven to be increasingly greater, both through the subsidies offered to production and through the record numbers in each harvest. According to (DE AREA LEÃO PEREIRA et al. [27]) cites in their study, the importance of the Amazon to Brazil and to the planet is immense, not only as a climate and atmospheric regulator, but also as a thermometer capable of interfering greatly in the planet's temperature, the authors in a turning point that would be reached with increased deforestation to open new agricultural areas, becoming a savanna, or the loss of its biodiversity would be destroyed. As stated by (ARCINIEGAS PASPUEL, et al. [28]), some forest spots in the country may already be reaching this tipping point due to the large areas opened for agriculture and the new cities that accompany this movement.

Development and Sustainability

As cited by (LIMA, et al. [29]), the continental proportion of Brazil added to an immense disparity of precipitation in the regions of the country and population density quite deformed the concentration of fresh water and rainy periods bring the cities even more constant problems in relation to water resources available. The authors cite the UN when the institution shows that the world population in 1950 was 2.6 billion people to 7.3 billion in 2015 with an average growth rate of 1.3% per year, in this report the UN also reports that the Brazilian population in 2018 corresponded to 86.6% and the projection for 2050 will be 92.4%. As stated by WANG, et al. (2019) in their study, urbanization is an inevitable process, the significant contribution of cities in socioeconomic and industrial development is of great relevance, as it is also in anthropic impacts on the environment. The contribution of 60 to 80% in global CO2 emissions and their high energy consumption for the maintenance of activities place cities in an environmental paradox.

Environmental Education

According to (SANTOS, et al. [30]), the concept of environmental education is much broader than a simple ecological vision, it is a

way to awaken in each one their right to citizenship and the need to exercise it for the collective good and for the planet. According to the authors, this precept is perhaps the greatest difficulty in including environmental education in the curriculum guidelines. According to (ANTONIO, et al. [31]), they cite in their study the precept of the national curriculum parameters, since environmental education are only guidelines for a broad process that would require much more educators to their students on the essence of the subject, because the scope of environmental education goes beyond ecological spaces and puts the student in the discussion of their social participation as a citizen responsible for their actions and knowledge of attitudes capable of improving coexistence with the environment. As cited by (VIEIRA, et al. [32]), in their study are several difficulties faced by higher education institutions in implementing an environmental management system and even an adequate environmental curriculum, the lack of environmental awareness built throughout the student career, are points that hinder the insertion of environmental education according to the authors. Although the environmental codes and the national policies for water, environment, water resources, and solid waste contemplate a discursive and inclusive environmental education, the practice indicates another side.

In the opinion of (SANTOS, et al. [33-45]), the interdisciplinarity of environmental education can be a predominant factor in the insertion of the student in the context of their region and formulate a concept that encompasses the curriculum teaching as a whole to the learning process. The authors note that environmental literacy forms individuals who are more aware of their transformative role as citizens, respecting their local environment and learning sustainable coexistence.

Final Considerations

The national policies of water, water resources, environment, forest codes were and form the construction of what should be the National Solid Waste Policy with Law 12,305 of 2010 and its regulation through Decree 10,936 of 2022. This inquiry has led to important considerations that can help in decision making on such a relevant subject.

1. The environmental setbacks caused by the demise of the '65 environmental code and the amendments to the new code have caused serious damage to the environment due to socioeconomic growth that has not yet been successful.
2. The time lapse between the entry into force of a law and the decrees regulating it is very long and needs to be reviewed by the current legislators.
3. Respect for the 1988 Constitution should be strictly demanded of the government by the citizens.
4. The latent need for energy reuse of urban solid residues is of extreme relevance.

5. The legislative entities in all governmental spheres need more support from our scientists in the elaboration of norms, regulations, technical notes, decrees and laws.

6. In all the researched codes there is always a reference to environmental education, although this is little discussed in the academies, except for specific courses for this purpose.

7. The enforcement of environmental law should start in the municipality, because the problems exist, and the solutions may also be there. Technology transfer from academia should be a priority for government managers, to ensure that real projects can be effectively implemented, and results obtained. Rapid population growth is transforming cities in an exponential way, and more effective attitudes are needed for this. The limitations found in this work are mainly in the lack of knowledge of environmental law necessary for a more in-depth discussion on the subject, and also in the number of legal acts, either by municipalities, government agencies, or councils that although with changes in government policy have been extinguished or incorporated into other bodies, their normative instructions, resolutions, and decrees have not lost their legal value, and this situation causes legal «duplicity» at various points in environmental legislation.

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