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Articles

Public policies resulting from the change in the Forest Code: violation of Permanent Preservation Areas and their forms of intervention

Políticas públicas resultantes da mudança do Código Florestal: violação das Áreas de Preservação Permanentes e suas formas de intervenção

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ABSTRACT

Permanent Preservation Areas (APPs) are legally protected spaces in Brazil, originally established by the Forest Code of 1965, Law 4.771/65. Currently, the protection of these areas is governed by the Brazilian Forest Code, Law 12.651/12, which defines more complex criteria for environmental preservation. Compared to the previous legislation, the new law redefined the guidelines for APPs, creating the possibility of authorizing the maintenance of use in irregularly occupied urban and rural areas, reducing the protection bands of the banks of natural watercourses previously defined, as well as the percentages of protection. The aim was to analyze Brazilian public policies and forest codes, highlighting the changes made by Federal Law No. 12.651/12 in relation to the 1965 Forest Code, in order to assess their effectiveness in preserving permanent preservation areas and to identify the challenges and limitations faced in guaranteeing the preservation of these areas. Significant divergences were found, particularly with regard to the delimitation of water APPs, as well as discrepancies between public policies for the conservation of these ecosystems and the capacity to fulfill the environmental obligations arising from their management. The article concludes by proposing improvements in governance and public policies for the protection of APPs, with a view to balancing economic development and the conservation of natural resources.

Keywords: Public Policies; Forest Code; Permanent Preservation Areas; Governance; Protection

RESUMO

As áreas de Preservação Permanente (APPs), são espaços legalmente protegidos no Brasil, originalmente instituídos pelo Código Florestal de 1965, Lei 4.771/65. Atualmente, a proteção dessas áreas é regida pelo Código Florestal brasileiro, a Lei nº 12.651/12, que define critérios mais complexos de preservação ambiental. Em comparação à legislação anterior, a nova lei redefiniu as diretrizes para as APPs, criando a possibilidade de autorização para a manutenção do uso em ocupadas irregularmente, em áreas urbanas e rurais, diminuídas as faixas de proteção das margens dos cursos d'água naturais antes definidas, além dos percentuais de proteção. Objetivou-se analisar as políticas públicas e os códigos florestais brasileiros, ressaltando-se as modificações da Lei Federal nº 12.651/12 em relação ao Código Florestal de 1965, a fim de avaliar sua eficácia na preservação das áreas de preservação permanente e identificar os desafios e limitações enfrentados na garantia de preservação dessas áreas. Verificaram-se divergências significativas, particularmente quanto à delimitação das APPs hídricas, bem como às discrepâncias entre as políticas públicas de conservação desses ecossistemas e a capacidade no cumprimento das obrigações ambientais decorrentes de sua gestão. O artigo conclui propondo melhorias na governança e nas políticas públicas na proteção das APPs, com vistas a equilibrar o desenvolvimento econômico e a conservação dos recursos naturais.

Palavras-chave: Políticas Públicas; Código Florestal; Áreas de Preservação Permanente; Governança; Proteção

1 INTRODUCTION

Permanent preservation areas (APPs) can be defined as protected areas, covered or not by native vegetation, with the environmental function of preserving water resources, the landscape, geological stability and biodiversity, facilitating the gene flow of fauna and flora, protecting the soil and ensuring the well-being of human populations, according to Article 3 of Law No. 12,651/2012 (Brazil, 2012). These vegetations are essential for preventing major changes to riverbeds, ensuring the replenishment of groundwater and promoting the conservation of biodiversity. According to Lima and Zakia (2000), riparian forests are responsible for conserving the integrity of the watershed, guaranteeing the quantity and quality of the water it contains, as well as the aquatic ecosystem. For Silva *et al.*, (2024), the conservation of vegetation around springs is fundamental to guaranteeing the maintenance of the quality of water resources, regulating the flow regime and guaranteeing the stability of the soil, avoiding silting up of watercourses. It also plays an essential role in the

formation of ecological corridors, which are fundamental for preserving biodiversity and maintaining the balance of local ecosystems.

Although they are vital for maintaining biodiversity, the degradation of these environments has been widely documented by various studies. Silveira (2007) points out that the increase in impermeable areas due to construction and paving in urban areas without rainwater management leads to an increase in the frequency of surface runoff. Human interference and intervention in PPAs has a direct impact on the site itself, with repercussions for the population that lives in or depends on these ecosystems. According to Ribeiro (2022), urbanization and changes in land use can have negative impacts on the environment and human health, altering ecological systems and the local microclimate. In short, altering APPs results in severe impacts on both the environment and society.

In this context, the formulation of public policies aimed at mitigating damage and protecting the environment represents not just an initial stage, but an ongoing process that includes the formulation, implementation and evaluation of regulatory compliance. These policies often lack clear environmental governance criteria, including robust management and evaluation mechanisms. The gaps often stem from different normative foundations and asymmetrical power struggles, factors that are recurrent in the complex political and institutional context during the drafting of Brazilian environmental policies. Furthermore, these difficulties are intrinsically linked to structural problems that compromise the effectiveness of planned actions. Although some of these policies provide for conflict resolution mechanisms and sanctions for non-compliance, the fragility of the institutions and non-compliance with commitments on the part of the public authorities or civil society significantly limit their effectiveness.

This article is structured as a qualitative analysis, using the bibliographic inductive method. The general objective of the study is to analyze Brazilian public policies and forest codes, highlighting the changes made by Federal Law No. 12.651/12 in relation to Forest Code Law No. 4.771/1965, in order to assess their effectiveness

in preserving permanent preservation areas and to identify the challenges and limitations faced in guaranteeing the preservation of these areas.

The work is divided into three parts: in the first, there is a brief reflection on the configuration of public policies with a focus on the preservation of APPs; in the second part, the treatment of APPs in the forest codes of 1934, 1965 and 2012 and the supplementary competence of states and municipalities in environmental matters were reviewed. Finally, actions, results and perspectives of public policies were identified as a contribution to the preservation of these ecosystems. Improvements and reflections are proposed on how these policies can be more assertive in preserving ecosystems, reconciling economic development with environmental conservation.

2 MATERIALS AND METHODS

2.1 Public Policies and Permanent Preservation Areas

There is no single definition of what public policy is. For Peters (1986), public policy is the sum of government activities, acting directly or through delegation, which influence the lives of citizens. Dye (1984) summarizes the definition of public policy as what the government chooses to do or not to do. According to Schmidt (2018), public policies consist of a set of decisions and actions articulated by government entities and civil society organizations, which, under state coordination, are aimed at resolving issues of public interest. Other definitions emphasize the role of public policy in solving problems. Thus, isolated actions do not constitute public policies; these involve an integrated set of actions and deliberations, with the aim of serving the collective interest and promoting social, economic, cultural and environmental well-being.

Public policies have the function of organizing and improving collective life, promoting development and ensuring equitable access to opportunities. According to Muller and Surel (2002), for this process to be fulfilled, public policies must follow a logical sequence, also known as the public policy cycle. This model separates public policies into phases: formulation, implementation and evaluation.

The formulation phase involves, in simplified terms, the processes of identifying and selecting problems that require state intervention, creating solutions or alternatives and making decisions. The execution stage concerns the implementation of the decisions made in the previous stage, while evaluation examines the impact of policies. Implementing cohesive public policies is a challenge for the government, which needs to design and implement public policies capable of improving the quality of life of the population and the environments in which they operate.

In democratic regimes, public policies aim to express the collective will by translating government goals into concrete actions and results. However, even in liberal systems, factors such as networks of interests, conflicts, power relations, ideologies, disputes over resources and legitimacy can influence the exploitation of environmental resources. According to Ruscheinsky (2010), the effectiveness of this process does not depend solely on the political will of managers, but is directly related to socio-environmental, cultural and political contexts. It is therefore essential to draw up a sustainable environmental action strategy that takes into account both the social forces involved and a thorough knowledge of the environmental issue so that the most appropriate measures can be innovated.

According to Milani (2008), social participation refers to the practice of including citizens and civil society organizations (CSOs) in the decision-making process of certain public policies. The democratic reform of the state and its public administration is based on the need to encourage the active participation of different actors, whether governmental or non-governmental, promoting the inclusion of citizens in defining the conditions for social organization and association. In this context, the active participation of the various sectors of society strengthens democratic governance, ensuring that government actions and decisions better reflect collective needs and interests, increasing the legitimacy of state actions.

The current environmental preservation scenario reveals that both ecosystems and population groups can be harmed if there is no joint action. The

active participation of society should be encouraged, not just to wait for solutions offered by the state, but to take responsibility for improving and preserving their own environment. According to Loureiro (2008), citizenship is not limited to the exercise of civil and political rights, but also includes ethical and social responsibilities towards the environment, fostering greater awareness and active involvement of society in environmental issues, with the main purpose of building values, concepts, skills and attitudes, which should contribute to a new relationship between society and nature. In short, environmental citizenship requires not only the guarantee of rights, but also ethical and social commitments to the preservation of biodiversity, in order to transform the interaction between society and nature.

The concept of social participation is being used in this context to refer to participation in decision-making and integrating processes of change, a reductive interpretation insofar as unconventional forms of knowledge and social participation can offer significant alternatives. It refers more to the empirical experiences of social groups with environmental problems, where the integration of local communities and the strengthening of the right to participation are key parts of environmental conservation policies. By valuing the contribution of these communities, it is possible to develop policies that meet their needs. They, who directly face the challenges and depend on these ecosystems, have valuable knowledge which, when combined with science and technology, can be used to solve problems with expertise.

Governance is understood as a process that decentralizes the design and management of public policies, with the aim of promoting the active participation of society in the continuous search for the harmonization of diverse interests. The environmental governance approach goes beyond the exclusive responsibility of the state and seeks the active participation of all sectors of society, including companies, non-governmental organizations and individual citizens, De Souza (2018) emphasizes that the combination and improvement of these forms of governance are essential to achieve effective and sustainable management of protected areas. Thus, the

successful implementation of these instruments depends on active coordination between government authorities and local communities, ensuring that all aspects of management are addressed in an integrated and collaborative manner.

In APPs, environmental governance requires the adoption of integrated socio-educational measures, with the aim of promoting the recovery of these spaces. According to Thorstensen and Mota (2020), governance creates collaborative environments that promote the coordination and planning of actions between the different actors involved. These environments facilitate coordination between stakeholders, enabling more integrated and efficient planning of the actions needed for conservation, sustainable management and recovery of degraded areas in protected areas. Among the priority actions of good environmental governance are encouraging public-private partnerships, the participation of non-governmental organizations (NGOs) and civil society organizations of public interest (OSCIPs) and the mobilization of civil society through environmental education.

The active participation of citizens strengthens democracy and encourages the development of public policies that are more inclusive and appropriate to local realities. According to Milani (2008), the involvement of citizens and civil society organizations in the formulation of local public policies can be analyzed in three dimensions. Firstly, citizen participation plays a fundamental role in improving the provision of social services, contributing to the control of their quality by challenging monopolistic production models. Secondly, participation offers citizens the opportunity to express their priorities in relation to public goods, ensuring that their needs are taken into account in the decision-making process. Finally, participation can innovate by politicizing social relations, promoting the creation of public spaces for the formulation of local public policies.

Integrating traditional knowledge into conservation policies is a fundamental aspect in Brazil. According to Diegues (2004), the communities that inhabit areas of natural ecosystems possess ecological knowledge accumulated over generations, which

can complement formally instituted conservation policies. The traditional ecological knowledge of local communities can complement conservation policies based on scientific data, promoting a more holistic approach adapted to local specificities. In Brazil, the use of traditional knowledge in areas such as the Pantanal has been encouraged by environmental education programs and sustainable management projects, which aim to promote agricultural and fishing practices that are compatible with the conservation of ecosystems.

The National System of Nature Conservation Units (SNUC), created by Law 9.985 of 2000 (Brasil, 2011), establishes guidelines for the participation of local communities in drawing up rules and actions for the protection of protected areas. Community participation in public conservation policies is encouraged through councils, projects and environmental education programs. According to Lima (2019), these programs, which include workshops, lectures and field activities, are essential to ensure that conservation policies are effectively implemented, promoting the sustainable use of resources and the preservation of biodiversity.

Extractive Reserves (Resex), for example, were conceived with the aim of guaranteeing the responsible use of natural resources by traditional populations, such as fishermen and farmers, aimed at the sustainability of the traditional population living there. According to Diegues (2004), the Resex are an example of how the inclusion of local communities in resource management can promote both the conservation of ecosystems and an improvement in the quality of life of these populations. The participation of these communities in the management councils of the Resex has been essential in ensuring that conservation policies respect the rights and needs of traditional populations, promoting the sustainable use of natural resources.

However, community engagement programs face significant challenges, such as the scarcity of financial resources, the lack of public policies to support these initiatives and anthropogenic pressures. According to Blengini (2020), the lack of financial resources for the ongoing implementation of these programs and the difficulty of

accessing the most remote areas limit the reach of environmental education policies and the involvement of local communities. In Brazil, the territorial vastness and cultural diversity of the populations located in regions adjacent to PPAs pose additional challenges for the effective implementation of environmental education programs, which often fail to address local specificities. For Barreto (2016), the lack of consistent public policies to support these initiatives still represents a significant obstacle to the full integration of this knowledge into environmental policies.

The conflict between economic and socio-environmental interests is one of the main challenges in implementing public policies aimed at environmental preservation. Barreto (2016) argues that, although there are laws that guarantee the participation of local communities, such as Law 12.651/12 (Forest Code), in practice, the economic power of sectors such as agribusiness prevails over the rights of these populations, resulting in the degradation of humid ecosystems and the loss of biodiversity. This scenario reflects the difficulties in reconciling economic development with environmental conservation, especially when powerful economic interests find legal and institutional loopholes that allow intensive exploitation of natural resources, often to the detriment of the ecological balance and the communities affected. The environmental rehabilitation of APPs and the exclusion of practices of omission or violation of environmental laws are essential to transform a hostile environment into a space that promotes dignified sociability, based on rights and duties.

This transformation involves an integration of urban and rural designs that respect and interrelate with natural processes, including rivers, springs, native trees, ecological corridors and green areas. It is essential that these dimensions are preserved and respected, as a healthy and sustainable environment contributes to the quality of life of society, animals and plants, because the urban environment, according to Scalise (2001), is not only made up of buildings, but also of the relationship between built-up areas and open areas that serve as places of communication and encounter, performing diverse functions.

2.2 History of permanent preservation areas in Brazilian forest codes

The beginnings of the concept of a permanent preservation area (APP) date back to 1934, with the enactment of the first Brazilian Forest Code, Decree 23.793, of January 23, 1934. This legal framework already foresaw the need to protect natural resources, especially areas considered essential for maintaining ecosystems, such as riverbanks, steep slopes and hilltops. Under the 1934 Forest Code, what is now considered a "permanent preservation area" was prescribed in Article 4, and referred to protective forests. These, depending on their location, served to conserve the water regime, prevent erosion, protect sites that deserved to be preserved because of their beauty, among other things (Brasil, 1934)

From 1934 to 2012, Brazilian environmental legislation evolved, becoming progressively stricter. However, this evolution is marked by ambiguities in its interpretation, which often results in confusing rules that are difficult to apply. This complexity is reflected not only in the difficulties of implementation, but also in divergent understandings of the scope and applicability of the laws.

Thirty-one years after the 2nd Brazilian Forest Code, Federal Law No. 4.771, of September 15, 1965, the regulations that dealt with protective forests had not changed much and it was after the Forest Code was published that all forests and other forms of vegetation in the national territory were considered to be goods of common interest to all the inhabitants of Brazil. By mentioning "goods of common interest", the 1965 Forestry Code can be considered the forerunner of the 1988 Federal Constitution, which conceptualized the environment as a good for the common use of the Brazilian people, article 225.

Paragraph 1 of Article 3 of Law No. 4.771/1965 established that the total or partial suppression of forests in permanent preservation areas would only be allowed with prior authorization from the Federal Executive Branch, if necessary to carry out works, plans, activities or projects of public utility or social interest. These authorizations had

to ensure that the environmental impacts were minimized and that the affected areas were compensated for through measures to recover the degraded areas.

The Forest Code of 1965 introduced important limitations on the use of private property by making it compulsory to protect APPs and Legal Reserves (RLs) within rural properties. Before this legislation, property rights were practically unrestricted, and environmental preservation only occurred when an area was considered to be of social interest, such as the protection of water sources for urban supply. With the advent of the Forest Code, land use began to comply with new principles of environmental protection, without the public authorities being obliged to compensate the owner for the restriction of use, since preservation came to be seen as an environmental duty inherent to private property.

In 2012, the Law for the Protection of Native Vegetation, also known as the Forest Code, was sanctioned through Law No. 12.651, which aims to protect native vegetation through various external measures for the preservation and recovery of this vegetation in urban and rural areas. This code establishes environmental policies and economic incentives that not only promote conservation, but also seek to restore environmental liabilities. Inspired by the 1965 Forest Code, the current Forest Code has updated and expanded the concept of public utility, social interest and low environmental impact activities, as set out in Article 8, allowing other competent environmental bodies to issue authorizations, in addition to the Federal Executive, depending on the nature of the project.

However, the argumentative logic behind the promulgation of the code is associated with the need for development, modernization and a response to social demands, similar to what is known as “ecological modernization”. This concept refers to the process by which political institutions internalize ecological concerns in order to reconcile economic growth with the resolution of environmental problems, emphasizing technological adaptation, the celebration of the market economy, the belief in collaboration and consensus [...It rejects political regulations; it sets out to put

a price on what is priceless; it opposes the logic of interests to the logic of rights; it tends to equate the environment with the logic of private property; the "environment" is seen as a "business opportunity"; the environment and sustainability become important categories for inter-territorial and inter-urban competition; in order to attract capital, "ecology" and "sustainability" can become just a symbol, an attractive brand (Acselrad, 2010, p. 107, 109-110).

In Brazil, environmental policy has been the target of setbacks in recent years, with the relaxation of environmental laws and the reduction of budgets for monitoring and conservation. According to Santos (2019), pressure from agribusiness and mining has weakened environmental protection policies, especially in sensitive regions where the conservation of permanent preservation areas conflicts with the economic interests of large rural producers. According to Godoi (2022), although Law 12.651/12 introduces innovative instruments to control and encourage compliance with the standard, it also allows for a reduction in the areas of native vegetation to be preserved or restored, which weakens the two mechanisms for protecting vegetation: APPs and Legal Reserve areas. According to Alho et al. (2019), although Brazil has made progress in terms of environmental legislation, the threats analyzed are generally linked to ineffective control and lack of enforcement of existing legislation, due to the inefficient organizational structure. There are gaps in law enforcement and inspection in these areas is often compromised by a lack of staff and the vast territorial extension, which makes it difficult to continuously monitor protected areas.

Brazil's environmental policies are formulated at federal level, but their implementation depends heavily on the states and municipalities, which often results in unequal application of the laws. According to Santos (2019), this decentralization creates regional disparities, especially in the Amazon and Pantanal states, where the lack of financial and human resources compromises the monitoring and enforcement of environmental laws. According to Rocha (2018), Brazilian legislation is one of the most advanced in Latin America when it comes to environmental protection, but

its implementation faces challenges, such as the lack of effective enforcement and growing pressure from agribusiness and the real estate sector.

The maintenance of APPs in urban areas has been the subject of conflict since the 1986 revision of the Forest Code (Federal Law No. 4.771/65), starting with the amount of legislation at federal, state and municipal level that deals with the length of riverbanks, springs and wetlands away from urban land subdivisions. This generates subsidies for those who know the loopholes in the laws and use them for their own benefit or for real estate speculation, leaving some on the sidelines and benefiting others. The main victim is still nature, with the de-characterization of the APP from its natural and original format, which generates, among many other damages, floods with their countless losses.

Federal Law No. 6.766/79, amended by Law No. 14.285, of December 29, 2021, article 4, III-B, which provides for the subdivision of urban land, states that along current and dormant waters, the areas of non-buildable strips must comply with the municipal or district law that approves the territorial planning instrument and that defines and regulates the width of the marginal strips of natural watercourses in consolidated urban areas, under the terms of Law No. 12,651, of May 25, 2012, with the obligation to reserve a non-buildable strip for each stretch of bank, indicated in a socio-environmental diagnosis prepared by the Municipality (Brasil, 2021b)

In other words, Law No. 14.285/2021 *directly* granted municipalities the power to regulate marginal strips of watercourses, with the aim of making the limits established in Law No. 12.651/12 more flexible. Article 30(I) of the Federal Constitution gives municipalities the power to legislate on matters of local interest. In this context, municipalities play a key role in water governance, since their administrative duties include the provision of water supply and sanitation services, as well as urban planning (García *et al*., 2019). This autonomy enables more robust management of water resources, allowing municipalities to develop solutions adapted to the particularities of their geographical and social contexts. In this way, the decentralization of decisions

can result in better environmental outcomes, favouring more effective responses to local water management challenges.

However, in relation to urban APPs, Federal Law No. 12.651/12 brought progress with the clear definition of their existence and limits identical to those of rural APPs. Despite this, Ramos and Ahmad (2012) and Fernandes (2012) state that this law has weakened environmental protection with certain changes, allowing for greater environmental degradation in previously protected areas. Fernandes (2012) argues that, in relation to the 1965 Forest Code, the changes introduced by Federal Law No. 12.651/12 are in direct contradiction to the constitutional provisions that deal with the public authorities' obligations to ensure an ecologically balanced environment, as well as putting the population's well-being at risk.

In relation to the Forest Code of 1965, Law 12.651/12 reconfigured categories of preservation areas, creating the possibility of authorizing the consolidation of irregular occupations in urban and rural areas, reducing the protection bands previously defined, as well as the percentages of protection. According to Rodrigues and Matavelli (2020), the amnesty granted to those who deforested illegally and the significant reduction in APPs promoted by Law 12.651/12, consolidates environmental degradation, showing the country's stance goes against scientific knowledge and environmental policies. The poor management of areas of native vegetation harms society by compromising essential ecosystem services such as climate regulation, erosion control and biodiversity conservation. Once degraded, it is not possible to fully restore these areas; when possible, it is partial, slow and financially costly.

It is worth noting that Law No. 12.651/2012 *reduced* the buffer strips along the banks of natural watercourses compared to the 1965 Forest Code.

In *Law 4.771/1965, article 2, forests and other forms of natural vegetation located: a) along rivers or any watercourse* from its highest level in a marginal strip whose minimum width will be (...) *are considered permanent preservation for the sole purpose of this Law.* In *Law 12651/2012, article 4, the following are considered Permanent Preservation Areas,*

in rural or urban areas, for the purposes of this Law: I - the marginal strips of any natural perennial and intermittent watercourse, excluding ephemeral ones, from the edge of the regular bed, at a minimum width of: (...) *(Brazil, 1965).*

According to Antunes (2022), the main difference between the rules refers to the criteria for measuring the environmental protection strip in marginal areas of watercourses. In the repealed regime, the measurement of the buffer strip considered the *maximum flooding area (taking into account seasonal floods)* to start counting the buffer strip. Now, with the current legislation, the measurement is made from the regular riverbed, taking into account the annual average, which has resulted in an effective reduction in the protected area.

This change, which reduces APPs along rivers, was deemed constitutional by the Federal Supreme Court (STF). The understanding was that, despite the reduction in protected areas, the rule still complies with the principles of environmental protection and sustainable development, while offering greater flexibility for land use and property rights on the banks of watercourses. This decision sparked debate, especially regarding the balance between environmental preservation and economic interests.

2.3 Supplementary competence of states and municipalities in environmental matters

The administrative structure of the Brazilian state is intrinsically linked to the distribution of powers between the different levels of government. Brazil adopts federalism, which gives each federal entity specific political autonomy. According to Bastos (1990), competence refers to the powers that legislation attributes to each public body so that it can carry out its functions effectively. In turn, Mukai (1999) defines competence as the extent of authority that the Constitution or legislation confers on public agents to carry out specific acts. This distribution of competences is crucial for the proper functioning of public administration and the implementation of public policies.

According to Silva (2003), the distribution of powers between federal entities in environmental matters follows the same parameters adopted by the Federal Constitution in relation to the distribution of powers in other matters. The supplementary powers of the states and municipalities find constitutional support in the system of distribution of powers established in articles 23 and 24 of the 1988 Federal Constitution. Article 24 states that the Federal Government, the States and the Federal District have concurrent competence to legislate on environmental protection, with the Federal Government formulating general rules and the States and the Federal District having supplementary competence. In this context, if there is no federal legislation dealing with general standards or in situations where federal legislation is insufficient, the states can exercise full legislative competence to meet their specific needs, as established in §3 of article 24 (Brazil, 1988).

According to Machado (2001), this full competence, however, has both qualitative and temporal limitations. State rules must be strictly linked to regional peculiarities or interests and must be adapted to any supervening federal legislation dealing with the subject. The supplementary competence of states and municipalities is essential to complement and improve federal legislation, especially in situations where gaps or imperfections are identified in the general rules. In this way, the supplementary action of sub-national entities ensures that environmental protection is more effective and adapted to local needs. According to Bim and Farias (2015), in practice, what prevails in relation to legislative competence in environmental matters is concurrent competence between the Union and the States and the Federal District, with the Union having the competence to legislate on general rules and the States and the Federal District having the competence to supplement the general rules issued by the Union. Municipalities can legislate on environmental issues of predominantly local interest, as long as they respect the general rules that have been issued by the Union or the State, with exclusive and supplementary, common administrative competence based on arts. 23, 30, 225 caput of the Magna Carta and also on the principles of preponderance of interests and

subsidiarity.

The Brazilian Federal Constitution does not explicitly define the concept of a general rule, which is left to doctrine and jurisdiction. According to Machado (2001), the purpose of the general standard is to establish a rule that has uniform application in a given territory. In the environmental context, or in other areas of concurrent competence, the federal general rule does not necessarily have to extend to the entire national territory. For example, a general federal environmental standard can be regulated exclusively in the areas mentioned in article 225, § 4, such as the Amazon Rainforest, the Serra do Mar and the Pantanal. Thus, a general rule can be applied to a specific ecosystem, a river basin or a single plant or animal species.

General federal environmental rules cannot infringe on the autonomy of states and municipalities by requiring them to have an environmental administrative structure identical to that practiced at federal level. According to Kelsen (1998), a specific law can be a form of normative detailing, which complements the general law by providing rules that apply to more restricted and differentiated situations, while maintaining coherence with the legal system. In this sense, autonomy does not mean the disunity of the federated entities. Nor should it lead to conflict and the dispersion of efforts, but rather autonomy should allow municipalities to have, or be able to have, systems of administrative action that are not similar or dissimilar to those in force in the states. States, in turn, may also have their own environmental administrative organization that differs from that of the federal government. In this context, with the exception of concurrent competence, there is no hierarchy between federal, state, district and municipal laws.

Bim and Farias (2015) point out that, as a result of the sole paragraph of article 23 of the Federal Constitution, Complementary Law 140/2011 was enacted, which establishes guidelines on the division of powers between federal entities in environmental management, regulating items III, VI and VII. It assigned various functions to the Federal Government (Art. 7), States (Art. 8), Municipalities (Art. 9) and

the Federal District (Art. 10) as administrative competencies. In terms of environmental licensing, the states have powers that do not fall to the Union or the municipalities (residual powers). In addition to the Magna Carta, Complementary Law no. 140/2011 has granted the municipality supervisory and authorizing powers in the broadest sense, a fact that is unfortunately still not peaceful, even after the assertiveness of the 1988 Constitution (Brasil, 2011).

The loosening of environmental licensing laws brought in by Law 12.651/12, which restricts the actions of national councils, raises deep concerns about transparency and democratic participation in decision-making processes that affect the environment in Brazil. These legislative changes, promoted under the argument of reducing bureaucracy and encouraging economic development, have the potential to weaken social control mechanisms and dilute the oversight capacity exercised by civil society and specialized collegiate bodies. By limiting the role of national councils, which traditionally act as spaces for dialogue between different sectors of society and the government, there is a risk of marginalizing critical voices and disregarding the diversity of perspectives allowed for the construction of balanced and sustainable environmental policies. In this way, such measures not only compromise the mission of environmental protection policies, but also call into question the fundamental principles of participatory democracy, by reducing transparency and accountability in the sustainable management of natural resources and the preservation of ecosystems.

Complementary Bill 71 of 2019 sought to speed up environmental licensing processes by allowing the tacit issuance of a license when deadlines were not met (Brasil, 2019). However, the idea of "self-licensing" raised concerns about the effectiveness and impartiality of environmental inspection (Andrade and Oliveira, 2021). By reducing the participation of municipal and state inspection and administrative bodies, "self-licensing" opens up loopholes for the approval of projects with significant environmental impacts without proper technical analysis. This approach not only disregards the inherent complexity of environmental impact studies, which often require time for

careful and multidisciplinary evaluation, but also raises concerns about regulatory capture, where economic interests may prevail over the criterion of environmental protection.

In a context where the preservation of APPs is fundamental, these legislative changes could result in profound consequences and generate adverse effects. Riparian forests play crucial roles in maintaining and preserving the biodiversity that depends on them, and their destruction has an impact on the entire biological cycle that depends on preserved native vegetation. The full restoration of riparian vegetation is a lengthy and complex process that can take decades, compromising not only local biodiversity but also the health of ecosystems as a whole. The proposed legislative changes jeopardize compliance with environmental governance and threaten the sustainability of natural resources. Therefore, the protection of these ecosystems is vital to guarantee environmental security and the availability of resources for generations to come.

3 RESULTS AND DISCUSSIONS

The study revealed that Brazil's vast territory and diverse ecosystems make the process of implementing and managing public policies to protect PPAs more complex. Despite the existence of a robust regulatory framework, with the Forest Code, Law 12,561 of 2012, many policies aimed at conserving APPs are fragmented and face coordination difficulties. Overlapping competencies between federal, state and municipal bodies create gaps and redundancies, which hampers the effectiveness of protection and enforcement actions.

The Forest Code, Law No. 4.771 of 1965 (repealed), considered the forerunner of the 1988 Federal Constitution because it conceptualized the environment as a good for the common use of the Brazilian people, introduced important limitations on the use of private property by establishing the obligation to protect APPs and Legal Reserves (RLs) within rural properties. It also established that the total or partial suppression of native vegetation in permanent preservation areas would only be allowed with prior

authorization from the Federal Executive Branch, if necessary to carry out works, plans, activities or projects of public utility or social interest.

Compared to the 1965 Forest Code, Law No. 12.651/12 redefined the categories of preservation areas, with significant changes to the protection regime: allowing the regularization of irregular occupations in urban and rural areas, with a reduction in the protection bands and a reduction in the protection of the remaining vegetation and the previously established percentages. In addition, the new legislation revised and expanded the concepts of public utility, social interest and low environmental impact activities, giving other competent environmental agencies, in addition to the Federal Executive, the prerogative to grant authorizations according to the nature of each project. In addition, Law No. 12.651/2012, in contrast to the previous Forest Code (Law No. 4.771/1965), granted amnesty to those who deforested illegally and significantly reduced permanent preservation areas (APPs). These changes favor the consolidation of environmental degradation, reflecting an approach that diverges from scientific knowledge and environmental policy guidelines.

The main difference between the laws lies in the criteria used to determine the environmental protection strip along the banks of watercourses. Law No. 12.651/2012 reduced these strips compared to the 1965 Forest Code. Under the repealed legislation, the delimitation of the protection area considered the maximum extent of flooding, covering seasonal floods. However, the new legislation establishes that the measurement should be made from the regular riverbed, based on the annual average, which resulted in a significant reduction in the protected area.

Justified by the intention to reduce bureaucracy and contribute to economic development, Self-licensing and Complementary Bill 71/2019 are measures that compromise social control mechanisms and reduce the effectiveness of inspections carried out by civil society and specialized collegiate bodies. These measures contribute to the weakening of environmental licensing rules imposed by Law No. 12,651/2012 and by decrees that limit the actions of national councils. These legislative changes

raise serious concerns about transparency and democratic participation in decision-making processes related to the preservation of Brazilian APPs.

The changes to Law 12.651/12 have had an impact on the protection of APPs, with the flexibilizations reducing them considerably to the extent of the area currently protected on the banks of watercourses, and it is even possible that, due to topographical characteristics, there will be a reduction greater than the strip itself. This change makes it possible for anthropogenic activities and even human settlements to occupy the larger riverbeds. As the larger bed is subject to flooding during the flood period, it is to be expected that there will be an increase in cases of material damage, as well as a risk to human life.

In this sense*, when analyzing* public environmental policies aimed at the preservation and conservation of APPs and Brazilian forest codes, highlighting the main points of conflict between Forest Code No. 4.771 of 1965 and Forest Code No. 12.651, 2012, in order to assess its effectiveness in preserving permanent preservation areas and identify the challenges and limitations faced in guaranteeing the preservation of these areas. The analysis of the changes to the forest codes and public policies for preserving PPAs reveals a picture of setbacks in environmental protection, with Law 12.651/2012 allowing for flexibilities that weaken the conservation of these essential ecosystems. The reduction in protected areas and the granting of amnesties to environmental offenders indicate a move away from sustainable environmental policies, putting the preservation of natural resources at risk and compromising the balance between development and conservation in Brazil.

4 CONCLUSIONS

This article sought to analyze the configuration of environmental public policies in Brazil, highlighting the evolution of the Forest Codes and their implications for the management of permanent preservation areas (APPs). It was observed that the drafting and implementation of these policies not only reflect social and environmental

needs and challenges, but are also influenced by specific interests that often prioritize economic gains over environmental protection. The analysis revealed that, despite legislative advances, such as the current Forest Code, there is a persistent weakness in the effectiveness of these rules, due to interpretative ambiguities and the actions of certain sectors that use the legislative framework to legitimize environmental degradation practices. This highlights the need for greater alignment between legal guidelines and the effective preservation of ecosystems, with more robust environmental governance geared towards the common good.

As structured, this article presented the evolution of public policies for the preservation of APPs, analyzing the changes in the Brazilian Forest Codes and the impact of the supplementary powers of the states and municipalities on the application of these rules. It was observed that, although legislation has become more comprehensive over the years, the ability to implement public policies still faces important challenges, such as pressure from economic interests and legal ambiguities. The historical analysis of the Forest Codes of 1934, 1965 and 2012 shows that while environmental measures have evolved on paper, in practice their implementation often comes up against political, economic and social issues that limit their ability to fully preserve ecosystems.

Thus, the need to strengthen environmental governance in Brazil, which involves the participation of the government, local communities, civil society, companies and NGOs, is strengthened by the National System of Conservation Units (SNUC) through the implementation of technical training and environmental education programs. These initiatives, aimed at communities located in permanent preservation areas (APPs), represent an effective strategy for promoting involvement in the management of public policies and local protagonism in environmental conservation. Based on their traditional knowledge and daily experiences, these communities play an essential role in formulating public policies that are more appropriate to socio-environmental realities. In addition, encouraging sustainable practices, such as artisanal fishing and organic farming, through economic and financial support, favors the responsible use

of natural resources, contributing to the preservation of ecosystems and improving the quality of life of the populations involved.

In this context, public policies aimed at conserving PPAs should be treated as a priority in Brazil and integrated with other sectoral policies, such as agribusiness, water resources and regional development. The future of these ecosystems depends on the capacity of governments to overcome the challenges identified, adopting more assertive and participatory approaches, and promoting a balance between environmental conservation and economic development. The implementation of these measures is essential to guarantee the preservation of these vital ecosystems for present and future generations.

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