The Political Economy of Planted Forests in Brazil:

Inconsistencies between the green narrative and governance provisions

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Abstract

In 2018, Brazilian authorities released a new policy plan for the planted forests sector. The plan's discourse promoted planted forests for their environmental and climatic potential, despite its actual contents prioritizing a highly commercial approach to the planting of forests. Motivated to better understand contradictions of the kind, this thesis' main objective is an in-depth analysis of Brazilian governance framework for planted forests, seeking to shed light on the political economy of planted forests activities in the country, as well as the interests driving those.

The approach taken by this study brings together two lines of research on the topic of planted forests: the often utilized political economy perspective, and the less frequent institutional-legal aspects that permeate analyses of the former. Accordingly, the research question guiding this enterprise is: *How does the Brazilian government promote planted forests and their multiple uses within its federal governance?* In order to answer to this question, this research uses a qualitative case-study approach, built upon document analysis of laws, decrees, rulings and policies that directly impact planted forests activities in Brazil. In addition, elite interviews were used to complement the data and analysis.

This research shows that the Brazilian state promotes planted forests for their potential to recover environmental assets, provide ecological services, and improve rural livelihoods. However, this green narrative is not effectively translated into the governance framework around their establishment, use, and expansion. The results show that Brazilian planted forests governance favors industrial and commercial uses of its resources, rather than the aforementioned socio-environmental goals. Those, however, are discursively used to justify the promotion of planted forests in sub-optimal contexts. This thesis argues that this scenario is made possible by an informal alliance between the state and the planted forests industry, in which the state perceives its national industry as a key component to its development project. By framing planted forests as part of the green economy, the planted forests governance framework aims to facilitate the operations of the industries, so that those can generate foreign revenue to finance the country's socio-economic growth.

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Lucas Silva Martins

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1 Introduction

In 2015, the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) was signed. The Paris Agreement set voluntary goals for climate mitigation and adaption in order to keep the global average temperature change below 2ºC, in comparison to pre-industrial levels (United Nations 2015). The Paris Agreement represented a successful continuation of the bottom-up, voluntary efforts that emerged in 2009, during the Copenhagen Summit (Sabel and Victor 2017, 17; Lee 2013).

Under the Paris Agreement and the Copenhagen Accord, Brazilian commitments have centered on the mitigation of carbon emissions from land use, land-use change and forestry activities. For this purpose, the country has emphasized the importance of curbing deforestation, recovering forest cover, and using its forest inventory as carbon sink to offset emissions from other sectors. Consequently, planted forests acquired prominence as effective tools to recover degraded lands, capture carbon from the atmosphere and, alongside it, improve the livelihood of rural and traditional communities (Brasil 2010; 2017).

In late 2018, the Brazilian government released a comprehensive policy to foster the expansion of planted forests. While the document recognizes planted forests as carbon sinks and sources of sustainable raw material (MAPA 2018), its focus does not match those goals set by the aforementioned voluntary commitments. In fact, at times, the 2018 policy contradicts the efforts to curb the effects of climate change. Within the referred piece of governance, ecosystem recovery, climate mitigation and livelihood improvement are not the priority, but mere side effects of the planting of forests. Evidently, there is nothing inherently problematic with commercial planted forests. However, the discourse used by the government portrays planted forests as an idealistic activity, which is capable of tying economic and ecological benefits in pursuit of a green economy. In light of the historical socio-environmental conflicts involving forest plantations worldwide and in Brazil (Kröger 2014a; 2016; Gerber 2011; Kenny-Lazar et al 2018; Andersson et al 2016; McElwee 2009; Scheidel and Work 2018), it becomes necessary to investigate how Brazilian authorities articulate the promotion and use of planted forests within the Brazilian governance framework.

This thesis departs from the abovementioned observations to explore the current federal governance framework for planted forests in Brazil. It is interested, therefore, in laws, decrees, rulings and policies that govern the establishment, use, and expansion of planted forests in Brazilian territory. For this purpose, I use documental analysis and elite interviews as methods to a qualitative case-study, in order to unveil the interests and discourses that shape Brazilian planted forests governance. My goal is to explain how Brazilian government supports planted forests within its legal and institutional framework, and what purposes planted forests serve within Brazilian governance.

1.1 Planted forests: international support for multiple uses

In its "Forest Resources Assessment Working Paper 180", the Food and Agriculture Organization of the United Nations (FAO) defined "Planted Forest" as a type of forest created mainly through the planting or deliberate process of seeding, in which the results are expected to compose more than half of the growing stock at maturity (FAO 2012, 8). Given such definition, planted forests should then be established via afforestation or reforestation, either for conservational or productive purposes (FAO 2010, 2). Therefore, it is clear that planted forests do not serve the same social, environmental, and economic roles as natural, indigenous forests. The goals attributed to the planting of forests vary from the subsistence of smallholders and commercial interests of private companies, to environmental uses such as rehabilitation of soil, water conservation, and carbon sequestration in projects like REDD+ (FAO 2010, 5). As of 2015, planted forests accounted for around 7% of the total forest cover on Earth, which amounts for 291 million hectares (FAO 2016, 9).

Given the myriad potential benefits of planted forests, it is not surprising that many international actors have been supporting and pushing the expansion of those, particularly in developing countries. Since the Earth Summit held in Rio de Janeiro in 1992, the United Nations recognizes the role of planted forests in providing sustainable industrial raw material and renewable energy (UNCED 1992, chapter 11). Furthermore, in 2010, the FAO publicized its commitment to promote sustainable managed planted forests as a strategy to combat poverty and mitigate the

effects of climate change (FAO 2010). Similarly, the UNFCCC proposes using planted forest as carbon sinks, given their capacity to absorb CO_2 from the atmosphere (UNFCCC 2004). Beyond UN organizations, other actors promote the use of planted forests for their several purposes, such as consulting firms; industry associations (notably paper industries); and development agencies, like the Japan International Cooperation Agency (Gerber 2011, 167). The European Union adds the use of biofuels to the list of potential mitigation actions assigned to planted forests (European Parliament and Council of the European Union 2009).

Amid this scenario, countries continue to incorporate planted forests in their environmental governance, as well as in their economic activities. Cases of planted forests expansion in the global South are abundant, especially in tropical countries, such as Brazil. In the next sections I present a brief overview of planted forests in the country, before moving on to the rationale of the thesis.

1.2 An overview of Brazilian planted forests

Brazilian authorities have historically struggled to curb deforestation, especially considering the economic dependence on extractive and farming sectors, such as mining, forestry, and agribusiness. Opportunely, the country's soil and weather conditions present an ideal environment for the development of certain types of forest species, such as *Eucalyptus spp.* and *Pinus spp.* For this reason, productivity levels of planted forests in Brazil have far exceeded those of temperate climates, making the planting of forests – mainly exotic species – an attractive activity in commercial terms (Payn et al. 2015; Foelkel 2005). Therefore, the adoption of planted forests as sources of raw material became an opportunity to alleviate pressure on native forests, while simultaneously fostering the development of profitable economic activities.

Planted forests in Brazil became widespread during the second half of the 20th century, after the military government supported their expansion via tax incentives and industrial policies (Hora 2015). At that time, the planted forests inventory served primarily the purpose of supplying raw material for the industries – e.g. paper, pulp and steel – which, in turn, would address the domestic demand for goods, and generate additional revenue by exporting the surplus (Foelkel 2005, 68). This state-

led import substitution strategy would start to decline in the 1970s, but was only fully replaced by an export-oriented approach in the 1990s (Pereira 2010, 96). Therefore, in that context, the planted forests sector fit well within that broader developmentalist project. Enjoying the privileges of government support, the planted forests industries prospered and grew in scale. After the 1990s, Brazilian planted forests sector heavily invested in research and technologies to increase its comparative advantages, in order to better compete internationally (Foelkel 2005). As a result of the favorable soil and weather conditions, and of the investments in research and technology, Brazil is currently among the five largest producers of industrial wood, sawn wood, wood biomass, and pulp (Brasil 2011).

A glance at Brazilian submissions to the FAO's "Global Forest Resources Assessment" shows that planted forests still maintain their historical primary goal of fulfilling productive needs of the industry, rather than conservational and ecosystem roles (FAO 2006; FAO 2015; Brazil 2014). According to official data from the Brazilian Institute for Geography and Statistics (IBGE, in Portuguese), planted forests area in 2016 was of 10 million hectares – around 1% of the country's territory (MAPA 2018). Planted forests are responsible for providing more than 90% of all wood used in industrial activities in the country (MAPA 2018, 13). In 2017, the contribution of the planted forests industries to the economy represented 10 billion USD in foreign revenue, amounting for 5% of the country's total exports – the fourth most lucrative sector of the economy (MAPA 2018, 13). Notwithstanding, planted forests directly employ 510,000 people (MAPA 2018), which reflects the high mechanization of the activities.

In sum, planted forests in Brazil emerged as a convenient source of industrial raw material, capable of meeting the country's need for foreign revenue and the government's efforts to decrease deforestation rates. Currently, planted forests contribute significantly to Brazilian gross domestic product (GDP), but represent almost nothing in terms of job opportunities for the population. While the country has advocated for ecological and climatic uses of planted forests in its commitments to the Copenhagen Accord and the Paris Agreement, the main uses of planted forests in Brazil are industrial.

This context, however, is not free of problems. The economic use of planted forests in Brazil has often been associated with land conflicts, as well as environmental disruptions caused by plantation expansion (Gerber 2011, LAG 2018). In the next section I present a brief contextualization of the controversies involving planted forests in Brazil.

1.3 Controversies related to planted forests in Brazil

Despite the myriad of potential benefits, the establishment of planted forests has been permeated by socio-environmental conflicts in many areas of the global South (e.g. Gerber 2011; Xu 2018; Kenny-Lazar et al. 2018), including South America (e.g. Andersson et al. 2016). In Brazil, the situation is not different.

According to Kröger (2012), the establishment of planted forests in Brazil during the military regime was marked by violence and the dispossession of local communities. Since 1974, the Brazilian Pastoral Land Commission (CPT, in Portuguese) has registered crimes such as "murders, slavery, criminalization of resistance and deprivation of livelihoods" connected to the expansion of planted forests in the country (Kröger 2012, 951). In 2018, the Norwegian Solidarity Committee for Latin America (LAG, in Norwegian) published a report condemning Brazilian planted forests industries, particularly pulp and paper, for the violation of human rights, working rights, and the Convention 169 of the International Labour Organization[1] (LAG 2018). According to the report, the company Veracel Celulose has appropriated lands of the Pataxós, who have been deprived of their means of subsistence, while Suzano Papel e Celulose has been accused of dispossessing local peasants and indigenous communities for the expansion of their planted forests inventory (LAG 2018).

[1] Also known as the "Indigenous and Tribal Peoples Convention", from 1989, it is an attempt to guarantee the rights and customs of indigenous peoples in independent countries. Among its provisions, the Convention defends the respect to human rights, the non-discrimination of indigenous peoples, and their participation in decision-making processes that may impact their livelihood and customs.

In 2009, *quilombolas*[2] in the state of Espírito Santo were arrested and prosecuted for gathering firewood inside planted forests of the company Fibria Celulose – world leader in the production of bleached wood pulp (Torre and Camporez 2015). Local people report Fibria deforesting native vegetation for the establishment of its forest plantations inside territory claimed by the *quilombolas* (Torre and Camporez 2015). According to those affected by the company's activities, there is a pact between Fibria and the local police, in which the police chase and threaten locals who are considered dangerous by the company (Torre and Camporez 2015). In several occasions, the State Prosecution has sentenced Fibria to pay fines and reparations for the harm done to locals, but little has changed over the years.

In addition to the land conflicts caused by the use of planted forests in Brazil, the sector also faces critiques in environmental terms. The term "green desert" is often used by critics to refer to planted forests. "Green desert" derives from the understanding that planted forests in their most popular form – monoculture of exotic species – are not adequate for the conservation of biodiversity and hydric cycles. As the international coordinator of the World Rainforest Movement, Winfridus Overbeek argues, planted forests allow for little to no biodiversity in their artificial biome (Acosta 2011). A common grievance of peasants is that large-scale planted forests disrupt hydric cycles in neighboring lands, harming local communities that depend on traditional farming practices to survive (Fernandes 2017). It is no surprise that the Landless Rural Workers Movement (MST, in Portuguese) has a long history of fighting against planted forests industries and their operations in Brazil. Resistance movements organized by the MST are common in the country, and often involve the occupation of forest sites, cutting of eucalyptus seedlings, lobbying, and mass protests (Kröger 2014a; 2014b; MST 2015).

Public entities recognize that planted forests activities are permeated by these conflicts. The Brazilian Institute of Environment and Renewable Natural Resources (Ibama, in Portuguese) has indicted Veracel Celulose for the deforestation of parts of the Atlantic Forest and conservation areas, as well as environmental disruptions caused by the use of fertilizers – even though the company's plantations are approved by the Forest Stewardship Council (LAG 2018). Veracel Celulose has also

[2] Descendants of Afro-Brazilian slaves who live in *quilombo* settlements. *Quilombos* were initially established by slaves who escaped from their owners before the abolition of slavery in 1888.

been accused of poisoning the Santa Cruz river with glyphosate, bribing members of a municipal council to pass favorable laws, faking out-grower contracts, and laundering illegal money (LAG 2018). Nevertheless, despite acknowledging the controversies of planted forests expansion, the government maintains its support to the development of the sector, as it showed by approving Suzano's first genetically modified eucalyptus trees in 2015 – undeterred by the MST's occupations of the company's facilities (Nature Biotechnology 2015; MST 2015).

Nevertheless, this thesis will not focus on the conflicts caused by planted forests in Brazil. My main focus is an analysis of the Brazilian governance that permeates the context laid out so far. Instead of looking into the socio-environmental controversies connected to the sector, I set the goal of explaining the governance framework that rules over planted forests in the scenario described in this section. In the next section, I present the thesis' contribution to existing research on the topic.

1.4 Thesis rationale and empirical contributions

There is a vast literature on planted forests establishment, expansion, and use around the world. Most studies within the social sciences – the branch relevant to this thesis – have adopted a political economy perspective (see Kröger 2012; 2014a; 2016; Barr and Sayer 2012), while at times venturing within a political ecology framework (see Monceau 2006; Gerber 2011; Lyons and Westoby 2014). Nevertheless, little research has been done on the legal and institutional aspects surrounding the use of planted forests in the several contexts described by the mentioned authors.

For the Brazilian case, research on the topic is heavily steered to the political economy standpoint. Markus Kröger is certainly the most influential author in the field of the politics of Brazilian planted forests. His several works deal with the Brazilian developmental strategy and the sector's contribution (2012), the politics and contentious agency of resistance movements fighting planted forests expansion (2011; 2014a), as well as the new uses and discourses that emerged within the industry in the past decade (2016). Other authors have contributed to the understanding of Brazilian planted forests. Alves' (2007) study on cooperatives of smallholders planting forests in Brazil sheds light on the economic and ecological

issues related to out-grower schemes used by planted forests industries in the country. In a more anthropological vein, Gonçalvez (2014) highlights the poor working conditions in forest plantations in the state of Minas Gerais. None of these works, however, addresses issues of the Brazilian governance to the sector, and how those can be connected to the dominant national interests at different historical moments.

Only one in-depth study on the state-level planted forests governance has been identified. Silbernagel (2013) takes a look at the federal government's apparatus for the management of planted forests in Brazilian territory. Her thesis explores the inefficacy of Brazilian planted forests governance to increase the forest cover area in the country, while tackling issues of state capacity and administrative fragmentation that are detrimental to the success of planted forests in conservational terms. Silbernagel (2013), however, does not cover the political and economic motivations that guide the making and execution of laws and policies for planted forests in Brazil. Within this gap in knowledge, Kröger (2014a, chapter 4) touches briefly on the institutional background to planted forests in the country. His efforts to delineate the politics of planted forests in Brazil are a remarkable step toward an improved understanding of the planted forests expansion and conflicts in the country. However, neither Silbernagel nor Kröger address the legal bases of Brazilian planted forests political economy. With this thesis, I contribute to the interpretation of this context developing an analysis of the governance framework that guides Brazilian planted forests activities.

I argue that a more complete understanding of the topic in question is only possible after unveiling the interests behind its creation. This thesis' rationale is close to Gellert and Andiko's (2015) in their study of Indonesian forestry law. According to the authors, their contribution was to "add to the structural political economy perspective by examining the role of law in establishing the configurations of power in Indonesia" (Geller and Adiko 2015, 641). I share the concern that policies and legislations are often biased to address the interests of specific actors and, therefore, governance instruments purposefully prioritize certain goals to the detriment of others.

My contributions with this thesis stem from putting into dialogue these two lines of forestry research presented so far: the political economy perspective most notably represented by Kröger, and the legal-institutional standpoint, as highlighted in the works of Gellert and Andiko.

The development project adopted by Brazil in the past decades has greatly influenced the current governance for the sector, as suggested by Kröger's (2012) analysis of Brazilian new developmentalism and its relations with the industry. Building on this assumption, the argument developed throughout this thesis offers new insights on the country's approach to its natural resources – namely planted forests – as well as its interests within a wider development project. I argue that planted forests are used primarily as instruments for the creation of an internationally competitive industry, which is capable of generating foreign revenue via its exports – thus, planted forests are valued for their economic returns. This argument is in line with Kröger's (2012; 2014a) "national champions" strategy, adopted within the "neo-extractivism" that permeates Latin-American developmental path (Burchardt and Dietz 2014).

In this context, my findings can also help expand the understanding of how states shape forestry definitions and classifications to better suit their interests. As Peluso and Vandergeest (2001) initially suggest with their concept of "political forests", forest governance is often controlled by state authorities and, being so, are subject to political interests regarding the use and management of forest resources. This thesis offers additional insights into this process, by looking at how the Brazilian state has changed its definitions and classifications toward planted forests, as to better suit the interests connected to their promotion. I posit that planted forests, more so than natural forests, are easily re-defined by state authorities, often based on loose interpretations of what constitutes forests and agricultural crops.

With the emergence of the green economy, planted forests' multiple uses have been widely promoted as an opportunity to create a low-carbon economy and stimulate socio-environmental benefits (see Section 1.1 in this introduction). In his analysis, Kröger (2016) perceives this process as a "flexing" of planted forests multiple potentials, that is, the commodification of tree species for myriad of purposes within the "bio-economy", such as biofuel generation and carbon capture. This thesis offers empirical evidence to the phenomenon of "flex trees" and its close relations to

Brazilian planted forests. I argue that the current planted forests governance materializes a "narrative flexing" (Kröger 2016) around the use of planted forests as carbon sinks. While Kröger's concept offers an important analytical tool, it is necessary to demonstrate its application in practice, in order to validate its claims. This thesis does precisely that by identifying specific governance mechanisms within the Brazilian context that can be understood as tools for the promotion of "flex trees" and their multiple uses.

1.5 Purpose, research question and objectives

Based on the rationale presented in the previous section, my main objective with this thesis is to offer insights into the political economy of planted forests in Brazil through an analysis of laws and policies, seeking to unveil the interests that drive planted forests activities in the country. In the pursuit of this goal, it is possible to trace the following specific objectives, which will serve as stepping stones for the main objective:

- To delineate the government's interests and priorities toward the use of planted forests in Brazil;
- To explain how planted forests are portrayed in governance instruments;
- To explore the changes in the discourse promoting planted forests expansion.

For this, I have established the following as my research question: "How does the Brazilian government promote planted forests and their multiple uses within its federal governance?"

1.6 Outline of the thesis

After this introductory chapter, the thesis will be structured along seven chapters. In the next chapter, I present the analytical framework used to guide the analysis and synthesis of the collected data. First, I explore the Brazilian development project and its reliance on the exploitation of natural resources. I highlight how this extractive path has been shaped in the post-neoliberal decades, as well as current strategies used within this context. Next, I move on to explain the relation between national interests

and the shaping of nature to best suit those. In this section, I explore the material re-design of forest sites, as well as the politics behind forest definition and classification. Lastly, I present the emergence of the green economy, and new phenomena related to it. Drawing heavily on political economy sources, I argue that the rise of flex trees is a direct result of the discourse for green development, even though in reality it translates into new framings for old extractive practices within the North and South divide.

Chapter 3 is dedicated to explain the methodological approach adopted for the thesis, as well as the choice of the methods used to collect and categorize data. In the same chapter I discuss issues of data reliability, validity and bias considerations, also addressing the constraints and limitations connected to my methodological approach. Lastly, I explain the process for data collection, and important implications for data selection.

Starting from chapter 4 until chapter 7, I present the findings that emerge from the collected data. I start developing the thesis argument in chapter 4, where I cover the history of planted forests establishment and uses in Brazil, and the governance to the sector during the 20th century. In the same chapter I present and analyze the first pieces of governance intended to regulate planted forests, the gap in regulatory instruments and incentives during the 1990s, and expand on the industry's ability to find alternative ways to portray itself to society, investors and authorities after the 1992 Rio Summit.

Chapter 5 focuses on the analysis of planted forests governance instruments during the first half of the 2000s. In this chapter, I detail the controversies and asymmetries present in the first Brazilian forestry policy after the re-democratization, as well as the capture of Brazilian state by the interests of planted forests industries during Lula da Silva's first presidential term. This chapter is an important contribution to the understanding of the ecological framing created around planted forests and, consequently, its translation to the current regulatory environment in Brazil.

In chapter 6, I explore the new climate discourse that emerged around planted forests in Brazil after the 2009 Copenhagen Summit. By referring to Brazilian commitments in said occasion, I trace the myriad of federal policies and legislation created by the

government in order to achieve its voluntary goals. In this process, I present how the climate mitigation potential of planted forests became one of the main argumentative grounds to support the sector within Brazilian governance, despite the fact that carbon capture was never its priority.

The seventh chapter of the thesis concludes the analysis by investigating controversial developments in the Brazilian forestry governance during the 2010s. I delve into the contentiousness of the new forestry law, as well as the institutional changes that culminated in the current policy environment for planted forests: an agricultural approach seeking to maximize commercial outputs.

Finally, chapter 8 concludes this thesis by summarizing the findings, presenting this thesis contributions and limitations, and drawing final considerations about the proposed argument.

2 Analytical Framework: extractive economies, political interests and flex trees

In both the Paris Agreement and the Copenhagen Accord, Brazil proposed voluntary commitments that required the expansion of its planted forests inventory for ecological purposes – namely, the recovery of degraded lands and carbon capture. Despite its goals, planted forests in Brazil are primarily of an economic character, in which the majority of the country's stocks are composed of exotic species for industrial and commercial uses. Furthermore, these established planted forests have been linked to multiple socio-environmental conflicts, which negatively impact indigenous peoples, *quilombolas*, peasant communities, and the environment. The planted forests industries, on the other hand, seem to be thriving, returning expressive numbers for the Brazilian economy in terms of exports and GDP. In this chapter, I propose analytical and conceptual considerations that will guide my analysis of Brazilian governance for planted forests. The formulations presented in this chapter will serve as an inductive analytical framework, linking key and trending aspects of my findings to the theories and conceptualizations formulated by scholarship in the social sciences.

First, I elaborate on the political economy of natural resources utilization and developmental strategies, highlighting perspectives on the value extraction from nature to fuel modern states industrialization and socio-economic development. In this section, I analyze the interpretation that guides this thesis' view on the Brazilian developmental strategy, that is, the reliance on the revenue generated by its key industries, exporters of natural resources. Building upon this initial analytical context, I present the concept of "political forests", outlining the debates around the state's classification and use of its forests to foster national development. Next, I present recent developments on the emergence of the "green economy", and how these have impacted political actors framing of their actions, especially regarding the relation between nature and economic growth. Based on previous literature, I call into question the possibility of maintaining the latter without prejudices to the former. Lastly, I highlight the contribution of planted forests within this broader

context, and present the recent trend of “tree flexing”, that permeates the planted forests debate in Brazil. In the chapter’s final section, I summarize the proposed analytical framework.

2.1 Development and natural resources

To understand the context in which this thesis is inserted, it is fundamental to look into the Brazilian development project. The country, as the entire South American continent, has historically adopted a development model based on the extraction of natural resources (Veitmeyer 2013). Extractivism, as it has been recently denominated, depends on the commodification of nature, and its subsequent exploitation, in order to generate revenue to be invested domestically in areas considered essential for national development, such as industrial and social policies (Burchardt and Dietz 2014). For Burchardt and Dietz (2014), the project of extractivism is characterized by two key components: transnational corporations exploiting natural resources and appropriating of their profits, and the state’s preservation of a *status quo* conducive to this model in its territory. Due to the state’s active role in regulating the extraction of natural resources, as well as the channeling of revenue generated by their exports toward a developmental project, countries adopting this model became known as “developmental states”. For Gellert, developmental states built upon extractive projects are typically located in the semi-periphery of the world’s system (using Wallerstein’s [1979] concept), wherein the production and accumulation of value depends on the exploitation of their multiple natural resources, and that, ultimately, socio-economic growth is closely connected to the political legitimation of the state’s actions (Gellert 2019, 3).

In South America, including Brazil, developmentalism was widely adopted during the 20th century. However, toward the end of the century, with the popularization of the neoliberal economics, states reformulated their development projects around the Washington Consensus. Initially proposed by Williamson (1990), the Washington Consensus prescribed a different strategy to development, based on the reduction of the state, the privatization of its national companies, the bolstering of market capacities, the reduction of public spending in industrial and social policies, and the reliance on foreign investments to generate the capital needed to fuel economic

growth (Pereira 2010; Carrillo 2014). The previously active state shrunk, public goods were privatized and, most importantly, "the category of development as an overarching narrative associated with the state as a main player disappeared" (Svampa 2011, 130).

Svampa (2011) argues that this new development model created the perfect conditions for the return of the extractive strategy in the 2000s, under what she calls the "Commodities Consensus". The Commodities Consensus marks the return of the government's active role in promoting a specific project for national development, "based on the large-scale export of primary products" (Svampa 2011, 117). For Svampa (2011), the neoliberal prescriptions from the 1990s created a normative and legal environment wherein the extractive industries could thrive, offering companies the needed security for their investments and operations. That environment, tied to the global boom in commodity prices during the early 2000s, produced the perfect conditions for a new political and economic order to emerge in countries like Brazil, whose primary products exports rose almost 15% from 2003 to 2009 (Svampa 2011, 117-8).

What Svampa calls the Commodities Consensus is conceptualized by several other authors, under different names. Arsel, Hogenboom and Pellegrini (2016) attribute the origins of the "extractive imperative", as they call it, to the neoliberal failures in addressing poverty and inequality issues in the 1990s, which led to the rise of progressive governments in most Latin-American countries. These governments saw in the extraction of natural resources an opportunity to generate revenue, create jobs, and finance their social policies (Arsel et al. 2016). Applying the extractive imperative to Brazilian context, I argue that Luiz Inácio Lula da Silva's administrations (2003-2010) depict well the special role assigned to primary products exports in generating resources for social policies.

Burchardt and Dietz (2014) formulate the core of the extractive imperative as "neo-extractivism". In the post-neoliberal era, neo-extractivist states "regulate the appropriation of resources and their export by nationalising companies and raw materials, revising contracts, and increasing export duties and taxes" (Burchardt and Dietz 2014, 470). The commodification and exploitation of nature is used to fuel a progressive development project built upon national sovereignty and political

stability. The state, in this context, is able to draw legitimacy from extractive activities, for they are discursively promoted as the financers of social policies (Burchardt and Dietz 2014). The development narrative articulated by countries like Brazil is used as a positive framing for activities that often lead to adverse consequences, such as land dispossession and ecological destruction (Burchardt and Dietz 2014, 471). The progressive framing used by states to justify the perpetuation of extractivism is a fundamental part of the neo-extractivist development project (see also Gudynas 2016).

Gellert (2019) expands on the return of the developmental state in his analysis of Indonesian forestry and mining political economy. Building on Wallerstein's (1979) world-systems perspective, the author perceives semi-peripheral countries, such as Indonesia and Brazil, as locked to a development project based on the over-exploitation of their natural resources (Geller 2019, 7). The neoliberal policies promoted during the 1990s did little to change this condition, but rather legitimized resource extraction under what Gellert labels "altered state developmentalism" (Gellert 2019). The altered state developmentalism is a mixture of the traditional developmental state and adapted neoliberal market strategies. As Gellert puts it, "It retains the professed goals of industrial transformation and GDP growth but relies less on the state […] than market-based strategies to do so" (Gellert 2019, 3).

The government's control over its resources is limited to specific sectors, leaving most of the process of capital accumulation to market mechanisms. However, this is not to say that recent extractive states are neutral to the process of appropriation of nature and capital accumulation. As Burchardt and Dietz note, in extractive states "'the business of business is politics', which means that power, status, privileges and wealth primarily depend on access to the state, *which provides access to extraction rents*" (2014, 476, *emphasis added*). Examining the rule of law in Indonesia's forestry sector, Gellert and Andiko (2015) propose that the state's regulatory and legislative power is essential for the perpetuation of extractive activities in the described context. For example, the government is the responsible actor for demarcating forest land, issuing land concessions and exploitation permits, and even categorizing what is to be considered a forest (Gellert and Andiko 2015). The authors argue that the establishment of these legal provisions is always guided by the

interests of specific actors, whose purpose is to achieve some sort of power configuration (Gellert and Andiko 2015, 641). In their words, "laws and regulations are (mis)used by powerful actors for their benefit. Such actors, including state institutions, may use the law to provide ideological cover for their actions and the creations of political structures that favor the powerful" (Gellert and Andiko 2015, 644). The rule of law, thus, is far from neutral as international institutions such as the World Bank may conceive it. It becomes evident in the Indonesian forestry sector, that the law's partisanship creates undesirable outcomes for minority groups, while legitimizing the overexploitation of natural resources – after all, these are framed within the legal boundaries (Gellert and Andiko 2015, 642).

Indonesian altered developmentalism demonstrates the state's active role in guaranteeing the commodification of nature for the interests of politically and economically powerful actors. This brings us to Kröger's (2012) analysis of the political economy of planted forests in Brazil, where the appropriation of nature's value for a specific development project takes place under what he calls the "neo-mercantilist" form of capitalism. Similarly to the background proposed by others (see Svampa 2011, Burchardt and Dietz 2014, Arsel et al. 2016), Kröger marks the end of the neoliberal period in Brazil as the return of a new statist economy, wherein the government promotes increased market competitiveness of its national industries, alongside initiatives for social inclusion (Kröger 2012). The new statist model closely resembles the 20th century developmental state in Brazil, in which government institutions steered the economy toward an industrializing project. The main difference, however, is the influence of new private actors, who were able to expand their political and economic capacities due an institutional environment that favored corporative interests, established in the neoliberal era (Kröger 2012; 2014a).

Kröger (2012) proposes that the Brazilian development project in the early 2000s is built upon the "national champions" strategy, wherein the government supports key export-oriented national industries, in order to boost international competitiveness and generate increased foreign income. In his work on the politics of natural resources in Brazil, Kröger (2014a) explores how the planted forests industries have managed to form an alliance with Brazilian authorities via electoral contributions,

while the government returns the favor via legal and institutional measures that facilitate the resource exploitation in the country.

One common example of the institutional support offered to extractive activities in the forestry sector appears in the form of funding from the National Bank for Economic and Social Development (BNDES, in Portuguese). The bank played a major role in funding Brazilian developmentalist policies from 1950s until the 1980s, and has become vital within the "national champions" strategy used during Lula da Silva's administrations. One of the varied forms Brazil fosters its national champions is by using the BNDES to sponsor the private sector, via credit lines and financed mergers (Kröger 2012). As the author exemplifies, in 2008, when the global economic crisis became an obstacle to the merger of Votorantim Celulose e Papel and Aracruz Celulose – two large companies in the pulp industry – the BNDES invested the state's capital in the merger, becoming itself a joint-owner of the newly created Fibria Celulose (Kröger 2012). By fostering the establishment and operations of its national champions, the Brazilian neo-developmentalist state is able to become a stockholder in the largest export-oriented companies and, therefore, steer their decision-making processes to meet its national interests (Kröger 2012). The alliance between industry and state depends heavily on the government's capacity to support the operations of its extractive industries, in order to maximize natural resource exploitation and returns in foreign currency that, in theory, should be invested domestically (Kröger 2014a).

In summary, there are several different ways to understand the current state of extractive economies throughout the world. As presented above, there is an agreement among structuralist political economists that states in the semi-periphery of the capitalist system (e.g. Indonesia and Brazil) have sought in the extraction and exports of natural resources a way to fund their development projects. In South America, this trend gained new relevance in the post-neoliberal era, when progressive governments assigned extractive sectors the role of financing their social and industrial policies. The institutional environment created during the neoliberal years allowed for the re-emergence of this development project. Furthermore, drawing on Gellert and Andiko's (2015) observations about the rule of law in Indonesia, I highlight the argument that neo-extractivist states make use of their

political and legal competences to favor companies whose operations align with national interests. Lastly, Kröger's (2012, 2014a) analysis of the alliance between Brazilian government and the planted forests industries adds to the case of states' essential role in guaranteeing the appropriation of nature's value in modern extractive economies.

It is evident that natural resources play an important role in the development project of several modern states. As Kröger (2012; 2014a) and Gellert (2019) show, forestry practices are embraced by extractive economies, particularly in tropical countries, such as Brazil and Indonesia. In the next section I present how states' national and developmental interests have shaped forestry, highlighting how this process has led to governmental control over the definition and classification of forests. Understanding such developments, I argue, is essential to any political economic analysis of forestry activities.

2.2 National interests and the shaping of nature

Forests have historically been sources of wood products and by-products, which can be used for the development of specific sectors of the economy, such as infrastructure, housing, and transportation. In modern days, forests' importance goes beyond the mere supply of wood, extending to bioenergy generation, ecosystem services, and ecotourism. It is in the state's interest, therefore, to regulate the access, use, and management of its forest resources. To understand how government's interests have shaped forestry practices, it is essential to refer to Scott's (1998) pivotal work on the ability of modern states to order and standardize society and nature.

Scott argues that modern forestry is greatly influenced by the management model first devised in the 18th century, known as German scientific forestry. Given forestry's potential to generate revenue (via wood products and taxation), the Prussian state sought to maximize its profit by adopting standardization methods for the management of its forests (Scott 1998). The ordering of nature would guarantee the maximization of value extracted from it. For this task, the state set out the goal to demarcate and measure land classified as "forest land" (Scott 1998). The next logical

step for the optimization of forestry output was the creation of homogenous forests through intensified management techniques, prioritizing species with high commercial value (Scott 1998). In practice, this meant the planting of monocultures of productive tree species in straight lines, the clearing of the understory, and the designing of forest areas to better suit the state's exploitation needs (Scott 1998).

In an attempt to better manage nature and its resources for the accomplishment of national goals, standardization was necessary and, thus, the German scientific forestry was born. It is important to highlight Scott's (1998) contribution to the understanding of the development of forestry practices. The process described by Scott demonstrates the state capacity to shape nature according to its goals. Forests, in this context, are tools for the state's development project and, as such, they must be treated and governed in a way that maximizes their utility.

Considered by many the pinnacle of forestry management, the German forestry model would later be promoted by several actors in connection to its potential to fulfill states' developmental capacities. While colonial powers in Southeast Asia already employed the German forestry model for the appropriation of nature's value in the 19th century (Vandergeest and Peluso 2006a), the widespread legitimization of states' control over their forests came only in the 1950s and 1960s, with the FAO's influence on global forestry practices. Vandergeest and Peluso (2006b) posit that, alongside the green revolution in agricultural practices, the FAO pushed the idea of "Forestry for Development". The organization was guided by the understanding that fast economic development could stem from forestry activities, such as logging, which then would generate income to be invested in other areas – an argument similar to that used by extractive economies (Vandergeest and Peluso 2006b). The FAO promoted increased technological input into forestry practices, as well as the suppression of local agricultural practices in order to better extract "subsidies from nature" which could then be used to leverage economic development (Vandergeest and Peluso 2006b, 369).

Despite the FAO advocating that forestry development should also address the needs of local populations dependent on forests, "in practice increasing restrictions on local uses and an emphasis on increased harvesting rates meant that professional forestry became oriented toward supplying foreign and urban growth needs" (Vandergeest

and Peluso 2006b, 373). Forests became commodities for the realization of states interests, rather than spaces accessible to local communities. The FAO provided governments with techniques and policies for forestry development, all with the goal of increasing forest products exports, state revenue, and government control over the territory (Vandergeest and Peluso 2006b). State interests were conveniently met by the organization's policy recommendations and knowledge building practices. In this context, the demarcation of forest lands and the standardization of management practices allowed for the commodification of nature in the name of national interests. To better understand the political legitimization of this process, it is useful looking into Peluso and Vandergeest's (2001) formulation of "political forests".

2.2.1 "Political forests" and state control over nature

Peluso and Vandergeest's concept of "political forests" offers an important analytical tool for the understanding of how states include forests within their governance framework and development project. "Political forests" refer to lands demarcated by the state as "forest" and, therefore, put under control of the state forestry services (Peluso and Vandergeest 2001; Vandergeest and Peluso 2006a). The concept highlights the arbitrariness of forest classification. Although the FAO (and other institutions) has a clear definition of what is to be considered as forest, ultimately, such definitions are products of interest-driven socio-political discourses. As Vandergeest and Peluso put it:

> Political forests produce and are products of particular political-ecological relations – congealed and convergent in material, ideological, discursive and institutional relations as well as claims by states or other governing bodies. Contemporary political forests are defined by the scientific, bureaucratic and institutional practices of forestry. They are usually designated, legislated, demarcated, mapped and managed by state forestry institutions … (Vandergeest and Peluso 2015, 162).

The concept captures an important feature of the commodification of nature for national interests. As long as states and international institutions see in natural resources an opportunity to advance their development projects, nature will be shaped to meet those goals. A clear example of this is found in colonial Java and Malay states, where state forest departments retained absolute control over the classification of which "kinds of species that were considered 'forest' species, as

opposed to ‘agricultural’ species” (Peluso and Vandergeest 2001, 780). Defining “forest” thus becomes an intrinsically political and administrative task, one that depends on the purposes assigned to forest resources within the development project of actors with more political leverage.

Connected to this last observation, an important contribution of the “political forests” concept relates to the power relations in forestry issues. Because the state’s institutions almost always have the upper hand in the political scenario, nature and forests are manipulated to fit the government’s interests. As Vandergeest and Peluso (2006a; 2006b) demonstrate, state control over the demarcation, management, and uses of political forests often undermine local communities’ livelihood, which is dependent on the access to forest resources now appropriated for the government’s interests. The “scientific” discourse and bureaucratic apparatus built around forestry serve as barriers to keep locals from participating in forestry debates. Gellert and Andiko (2015) also offer evidence that the classification of forest lands in Indonesia excludes poor and indigenous communities by criminalizing their access to forests resources claimed by the state and the private capital interests. In practice, therefore, political forests are instruments of state control over natural resources, being subject to arbitrary classifications necessary for the commodification of nature.

Based on the argument presented in this section, I posit that forestry activities remain central to an analysis of states whose development projects are based on the extraction of natural resources. As Scott (1998) highlights, the importance attributed to forests have led to the commodification of nature in the name of national interests – observation that serves the analytical purposes of this thesis. The Prussian re-arrangement of nature, favoring the standardized forest model, can be directly linked to current management practices in the planted forests sector, where monocultures of highly productive species are prioritized by the industry. In addition, the government’s interests toward planted forests can be equally understood from Vandergeest and Peluso’s (2006a; 2006b) perspectives on the “Forestry for Development” project promoted by the FAO. Lastly, the concept of “political forests” presented by the same authors highlights the intricacies of the appropriation of nature’s value by means of political discourse. I argue that the politics behind forest definitions can be applied to Brazilian planted forests, whose nature allows for

even more malleable classifications. Defining planted forests, I posit, is indeed a political task, heavily dependent on the interests of the political actors involved.

In the next section, I further explore the ramifications of planted forests definitions and, consequently, their assigned roles in the contemporary context. For this task, I refer to Kröger's (2016) concept of "tree flexing" and present its analytical contribution for this thesis. In order to better contextualize the emergence of this phenomenon, I firstly explore the rise of the "green economy" within development studies, as well as its shortcomings in harmonizing economic growth and environmental conservation.

2.3 Green economy: new discourses for old practices

In 2012, representatives of UN member states gathered in Rio de Janeiro for the United Nations Conference on Sustainable Development, known as Rio+20. The conference marked the adoption of the Sustainable Development Goals (SDGs) and the proposal of guidelines for policies toward a "green economy" (UN General Assembly 2012). The concept of a "green economy" is defined by the United Nations Environment Programme (UNEP) as a development strategy that promotes "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP 2010 in UNEP 2011, 16). In other words, it translates into a quest for economic growth and social development within the boundaries of ecological limits. "Green economy" highlights the United Nations' understanding that it is possible to harmonize environmental preservation, improvement in the quality of life, and a low-carbon economy without prejudice to economic returns. As stated in the 2011 UNEP report "Towards a green economy":

> The key aim for a transition to a green economy is to enable economic growth and investment while increasing environmental quality and social inclusiveness. Critical to attaining such an objective is to create the conditions for public and private investments to incorporate broader environmental and social criteria (UNEP 2011, 16).

The concept builds upon the sustainable development idea that became widespread in policy environments in the aftermath of the 1992 Rio Summit. However, "green economy" recognizes that an economy that maintains conventional practices, such as

the use of fossil fuels, is not enough to address environmental degradation and social exclusion – the report names those economies "brown economies" (UNEP 2011, 17). A truly green economy would require institutional reforms, new regulatory frameworks, and tax-based economic policies – such as the shift to sustainable sources of energy and taxing of carbon emissions (Bapna and Talberth 2011; UNEP 2011).

In practice, "green economy" has taken multiple shapes. Bergius and Buseth (2019) point to two salient trends in the quest for green development since the Rio+20 Conference. In the global North, the green economy is often equated to "technological and market-based solutions to existing industrial sectors as well as fiscal instruments in environmental governance" (Bergius and Buseth 2019, 59). In a different direction, for countries in the global South, the green economy is commonly fostered by increased environmental protection connected to the modernization of traditional resource-intensive sectors of the economy, turning them into "green sectors" (Bergius and Buseth 2019, 59). As the limits to economic growth under the current developmental paradigm become more evident, countries in the North funnel their capital and technology to profit from a "green development" in peripheral countries. The South becomes the new frontier for the expansion of capital. In their analysis of the political ecology of the green economy in Africa, Bergius and Buseth (2019) argue that this reality is materialized in the form of Northern investments in green fuels, carbon sinking activities, and low-carbon agriculture in Southern countries. For the authors, the green economy becomes a narrative that supports the continued appropriation of the periphery's natural resources by the global North's capital and technology.

According to Fairhead, Leach and Scoones (2012), the discourse promoting the greening of economies has created new opportunities for capital accumulation, particularly in the South. What makes such reality possible is the science-policy environment that turns environmental goods and services into commodities to be exploited and traded in green markets – for example, forests are now justifiably priced based on their potential to capture carbon and generate biofuels (Fairhead et al. 2012, 241). The process of marketization of nature in the name of an environmental agenda generates conflicts over the access and use of natural

resources, usually between locals and private investors – this phenomenon is what the authors denominate “green grab”. Contrary to conventional “land grabs”, green grabbing does not always involve the “wholesale alienation of land from existing claimants”, but it does include the “restructuring of rule and authority over the access, use and management of resources” (Fairhead et al. 2012, 239).

Green grabbing presents a strong analytical foundation for this thesis, but beyond it, I argue that the “economy of repair” that often drives such grabs is of particular relevance for the planted forests sector in Brazil. The economy of repair is built upon the logic that ecosystem damages caused by unlimited economic growth can be repaired via “sustainable” practices (Fairhead et al. 2012, 242). Nevertheless, what is promoted under the banner of sustainability inevitably requires further commodification of nature – e.g. forests as carbon sinks, plants as biofuels. In this process, the appropriation of nature’s value happens in two stages: first, during the original activities responsible for environmental harms, and second, when political and economic actors turn to the so-called “green economy” (or green grabs) in order to fix their previous damages (Fairhead et al. 2012, 242). Here, I highlight how the green economy has created new spaces of capital accumulation, and new forms of appropriation of nature’s value. Because of this, peripheral countries dependent on their natural resources to finance development projects are particularly prone to cases of green grab.

It is within this context of an economy of repair and new paths for capital accumulation that Lyons and Westoby (2014) analyze the case of carbon planted forests in Uganda. The authors explore the establishment of forest plantations for carbon capture in land classified as “unproductive” by policymakers and private actors (Lyons and Westoby 2014). Their findings show that, by classifying forest reserves as “degraded lands”, state policymakers have created a legal and political environment conducive to be captured by private actors’ interests, who are able gain exclusive access to those lands in order to execute their green projects (Lyons and Westoby 2014, 19). At the same time, private planted forests assigned for carbon mitigation purposes limit locals’ access to those “degraded” lands, creating problems related to food security and disconnection from cultural sites (Lyons and Westoby 2014, 20). Carbon planted forests, in the Ugandan context, exemplify practices of

green grab in the global South, wherein the green economy justifies further capital accumulation by foreign, private investors in detriment to the local population's needs.

The classification of "degraded" and "underutilized" land also seems to be a controversial issue in Cambodia, where Scheidel and Work (2018) analyze another project to use planted forests as mitigation tools. As it happens in Uganda, planted forests are used as part of a discourse that enables "green grabs". The green façade facilitates land capture by corporate actors, based on moral arguments and legal frameworks that portray planted forests as an opportunity for "green investments" in climate change mitigation and land recovery (Scheidel and Work 2018).

Scheidel and Work's (2018) study highlights two important aspects of the use of planted forests within the green economy context, which are considerably relevant for the analytical goals of this thesis. The first is the misclassification of land as "underutilized" and "degraded", which enables "green investments" such as the planting of forests on the basis of an economy of repair. Such projects disregard local uses of the products from that land for subsistence, rendering customary and cultural practices either illegal or merely inexistent in the official policymaking process (Scheidel and Work 2018) – in a similar context as that described by Lyons and Westoby. McElwee (2009) reports the same problems in her study on planted forests in Northern Vietnam, where the misclassification of bare hills as "degraded" and "valueless" resulted in land enclosure, increased marginalization of minorities, and replacement of native vegetation by exotic monocultures. The second issue pointed by Scheidel and Work (2018) is the definition of planted forests used by the UNFCCC and states when promoting those as mitigation tools available for green projects. The current method used by the UNFCCC to define "forests" overemphasizes technical vegetation aspects, such as tree cover and canopy, while ignoring socio-economic and ecosystem features that need to be provided by forests. This last consideration is particularly pertinent in light of Vandergeest and Peluso's formulations on the political interests behind forest classification.

As I have presented so far, the green economy proposes new goals for nations' socio-economic development. In theory, a development path that is not reliant on the overexploitation of environmental assets should allow for equal growth opportunities

for rich and poor countries (UNEP 2011, 17). In reality, however, the green economy exacerbated the divide between the global North and South. By justifying technological and capital investments in "green projects", the green economy ends up creating new pathways for capital accumulation and the commodification of nature, which are manifested in the form of "green grabs." Green grabs perpetuate colonial relations, wherein the North's private capital profits from the resources available in the periphery of the system (Lyons and Westoby 2014). In the green economy, however, green grabs are discursively excused as an attempt to repair a damaged environment.

2.3.1 Flex trees: reframing planted forests

The popularization of the green economy allowed for the emergence of the so-called "flex crops". As Borras et al. (2012; 2016) formulate, "flex crops" are those that can be used for multiple purposes beyond their primary use, which is generally food supply – for example, soybeans and palm oil are often employed in biofuel production. Kröger (2016) perceives the extension of this trend in the forestry sector, with the emergence of what he calls "tree flexing", that is, the use of forest resources for myriad of purposes – pulp and paper production, biofuels generation, carbon capture, and so on. Within the green economy context, commodity flexing became an opportunity to meet society's demands for agricultural products, while simultaneously "greening" other sectors of the economy. Kröger, however, sees in the new trend another pathway for the deepening of old power relations between the global North and South, one that causes socio-environmental problems rather than solving them (Kröger 2016).

In the late 2000s, as the forestry industry in the North began to face diminishing returns and increased forest control, companies set out to find paths to augment capital accumulation (Kröger 2016). Through intensified technological developments, patent innovations, and capital-intensive investments, Northern forestry actors were able to find new ways to exploit trees' "multiple-ness" in line with the recent green turn in global economy, such as the establishment of bio-refineries to convert forest biomass to biofuel (Kröger 2016). This process is marked by the use of technology and capital from Northern companies to flexing activities in the South, where tree production presents considerably faster growth rates and looser

socio-environmental regulations. As Kröger (2016, 891) notes, “the global South is mostly rendered a place for cheap-tree energy and pulp production”.

Kröger’s argument draws from Moore’s view on the commodification of nature by means of the “quantification and universalization of particular aspects of nature as ‘natural resources’ or ‘environmental services’ with value, sought to be appropriated” (Moore 2014 in Kröger 2016, 888). Drawing on Arrighi’s (1994) cyclical phases of capital accumulation, Kröger (2016) argues that (tree) flexing is a way for rich countries in the North to invest their over-accumulated capital and, doing so, increase their expected returns. In this sense, peripheral countries like Brazil and Indonesia become the frontier upon which the Northern capital expands through its “flex narratives” (Kröger 2016, 889).

Nevertheless, this is not to say that tree flexing is not executed by Southern actors. Even though capital-intensive and technological flexing is mostly carried out by Northern actors in peripheral countries, forestry companies in the global South also make use of flexing strategies to increase their profits. As Kröger puts is:

> Tree plantations (TPs) are becoming flex tree plantations (FTPs) which are primarily a flex narrative through which new and old forestry capitalists address the depletion of resources by framing TPs as ‘renewable’, ‘bio’ and ‘non-food’ commodity-flexing sources, and therefore supposedly more ethical than minerals or first-generation biofuels (Kröger 2016, 891).

The author highlights the case of Suzano Papel e Celulose, who opted for the material basis flexing. By genetically modifying its eucalyptus species to have a lower level of lignin, Suzano creates trees that are better suitable for pulp and bio-energy production (Kröger 2016, 895). Brazilian pulp company Fibria Celulose, however, followed the technology-based flexing model by adapting some of its facilities for the production of wood fuels, in a similar way as forestry companies in the global North (Kröger 2016). Both Brazilian companies found ways to exploit trees’ multiple-ness, albeit in different ways: Fibria opts for the diversification of the possible uses of planted forests, while Suzano restricts the multiple-ness of its trees by making them more apt for its desired goals.

While the abovementioned methods of tree flexing are dependent on technological innovations of some sort, another form of flexing has become available for planted

forests industries in the past decades – "narrative flexing". Kröger (2016) highlights how different actors, from industries to international institutions, enable new narratives derived from the carbon capture potential of trees. Mechanisms such as the REDD+ and the Clean Development Mechanism (CDM) portray planted forests as "carbon sinks", which allows for the commodification of forests and their subsequent trading in carbon markets (Lohmann and Hildyard 2014 in Kröger 2016).

Narrative flexing sheds light on this thesis' quest to understand the multiple uses of planted forests within Brazilian governance. This type of flexing is often utilized by industries and actors beyond those in the forestry sector. It is a common practice within the Brazilian steel industry to utilize carbon forests as raw material, and claim it as part of a "green" production chain with neutral carbon emissions. Brazilian group Plantar, for example, uses the green discourse to promote the expansion of planted forests, based on their fabricated capacity to offset emissions from their harvesting and charcoal burning (Kröger 2016; Schulze et al. 2012). Through this narrative, planted forests are flexed into the economy of repair. Narrative flexing inherently involves the planting of forests for carbon storage and the subsequent compensation for their climate mitigation services (Kröger 2016). The trick, as Kröger (2016, 903) notes, is that "the forest industry wants to portray itself as 'green' by virtue of the device of 'carbon storing' trees, although as a tree-producing industry it runs against its interests to allow trees grow as a 'carbon sink'". In this context, the discourse of trees as carbon sinks serves both as a source of funding for the establishment of carbon forests (see CDM projects), and also as a legitimizing strategy for the expansion of planted forests designated to traditional industrial purposes, rather than an actual flexing path based on carbon capture.

The analytical contribution of Kröger's flex trees formulations is evident for this thesis' objectives. As Brazilian extractive economy adapts itself to the guidelines of a green economy, the forestry industry is required to find new paths to increase and legitimize its capital accumulation. The exploitation of natural resources has to be justified in the face of a policy environment that asks for their rational use. I argue that Kröger's (2016) concept of "tree flexing" offers a new lens through which we can understand recent developments in Brazilian governance for planted forests, particularly in regards to the state's promotion of their uses. Flex trees highlight two

essential points that will be discussed along this thesis. The first is the forestry industry's constant quest for increased capital accumulation, which is materialized in the commodification of every aspect of forests. The second is the process through which the forestry industry is able to legitimize its actions, in spite of the well-established socio-environmental conflicts caused by the expansion of planted forests. The narrative flexing used by the industry – and often by states – recasts forestry activities as providers of ecosystem services, such carbon capture. Considering that Kröger's empirical data comes mainly from the Brazilian planted forests sector, my research contributes to the expanding of notions of flex trees from a legal and governance perspective, drawing on the state's use of different environmental and developmental narratives.

2.4 Final analytical considerations

The analytical contributions highlighted here will guide the analysis of the collected data, as well as my arguments in connection to it. I have structured this chapter in a way that each section addresses one of the specific objectives set in the introductory chapter.

The first specific objective defined is to delineate the government's interests and priorities toward the use of planted forests in Brazil. To help me achieve it, I have described several political economy perspectives on the use of natural resources for the completion of states' development projects. Referring to extractive economies and developmental states, I demonstrated how states use nature to pursue their national interests. Although many authors have framed this phenomenon using different terms, I highlight Kröger's (2012; 2014a) analysis of the Brazilian post-neoliberal scenario, wherein the country taps into its natural resources – i.e. planted forests – to accomplish its social goals. I employ Kröger's perspective over other perspectives due to its proximity with the object of study of this thesis: the government's interests assigned to planted forests. In addition, I emphasize Gellert and Andiko's (2015) contributions for the understanding of the rule of law (and its biases) within developmental extractive economies.

Moving on, the second specific objective centers on explaining how planted forests are portrayed in governance instruments, and why so. Drawing on Scott (1998) and

Vandergeest and Peluso (2006a; 2006b; 2015), I argue that states have historically approached forestry issues with the interest to turn its resources into development opportunities. For this, the standardization of the material aspects of forest sites, as well as the political classification and definition of forests are both fundamental aspects required to be addressed by the state. Thus, the analytical contributions presented here explore how states are able to shape, define, and commodify nature to better fit their goals.

Lastly, for the third specific objective of this thesis, I have set out the goal to explore the changes in the discourse promoting planted forests expansion. I presented the emergence of the green economy, and how it influences the path to development by tying ecological and social considerations to economic growth. However, I argue that the green economy has allowed for the rise of green projects in the global South, which ends up creating new paths for the commodification of nature. The green discourse that stems from this new approach to development legitimizes green grabs, achieving the opposite of what was initially proposed by the UNEP's "Towards a green economy". In this context, I bring the debate to the planted forests sector, drawing on Kröger's (2016) "flex trees" to explore how planted forests expansion has been promoted and legitimized in recent decades. I highlight the emergence of a green discourse that appeals to planted forests "multiple-ness" to assign myriad of potential uses to them, from biofuel generation to carbon capture. This thesis, therefore, builds upon Kröger's analytical observations and offers empirical evidence for the flexing of trees in Brazil.

In the next chapter, I present the methodological framework employed to collect, code, and analyze the data for this thesis.

3 Research methods and data collection

Having presented the analytical framework to be used for the data analysis, in this chapter I explain the choice for the methodological approach and the methods used while carrying this research. I also explore questions of reliability, validity, and some bias considerations that are pertinent to this thesis. Although the methods here presented have been deemed the most appropriate given my research questions, it is important to address constraints and limitations inherent to their use. Lastly, I describe the process of data collection, as well as the challenges and considerations related to this stage of the thesis.

3.1 Methodological approach

This research makes use of a qualitative case-study approach. The reasoning behind this choice is based on the objectives of the study, which are focused on a particular case and specific characteristics that can be drawn from it to explain wider sociopolitical phenomena. The qualitative approach is commonly employed in studies within the fields of development studies, political economy, and agrarian studies. The reasons for being so is that these areas of knowledge try to interpret social processes and, from those, unveil patterns in the behavior of political and economic actors embedded in different contexts. In this project, I attempt to trace connections between different sociopolitical processes: states' development projects; environmental and industrial policymaking processes, and the expansion of planted forests governance in Brazil. Later on, I interpret those same processes based on the analytical framework laid out in the previous chapter, trying to explain the links between these processes, to answer my guiding research question. This approach is typical of qualitative studies.

George and Bennett (2004) write about the implications of using case studies in the social sciences. The small-n associated with case studies makes for a compelling approach to check the validity of concepts of established theories, allowing for the establishment of causal relations and, consequently, further theory development (George and Bennett 2004). Of course, for those same reasons, case studies make it

difficult to generalize conclusions and are, very frequently, plagued with selection bias that supports certain research outcomes. In order to minimize these risks that may potentially undermine the value of case studies, I employ an inductive analytical framework to guide the interpretation of the collected data; this way, selection and confirmation biases are less likely to occur.

One last, but important note must be made. A qualitative approach to research does not entail a disregard for quantitative data; on the contrary, qualitative studies can be greatly supported by it. Therefore, I make use of data considered to be quantitative with the goal of contextualizing qualitative data and supporting claims made about the latter. This, however, does not give this research a quantitative nature.

3.2 Methods

The objective of this research is to shed light on the political economy of planted forests in Brazil through an analysis of laws and policies, as to highlight interests and privileges behind planted forests activities in Brazil. Thus, when dealing with national policy plans and legislation, I find it most appropriate to use document analysis as the main research method. As O'Leary (2014, 177) puts it, document analysis consists in the gathering, organizing, and interpreting of "forms of texts as a primary source of research data." These documents are given special focus as they were not produced by the researcher, as it is the case for this research. I will mostly make use of historical documents, which, for this thesis, appear in the form of government records, policy documents, legal texts, and institutional rulings.

As Bowen (2009, 29) points out, document analysis is a useful method for qualitative researches. Document analysis as a method presents several advantages when compared to other methods: less time-consuming than participant observation; high availability of data in public domain[3]; lack of obtrusiveness from external actors; and data stability and exactness (Bowen 2009, 31). However, as with every research method, it also has its disadvantages. Documents often contain insufficient information; some sources can be of difficult access, especially those dated before

[3] This, however, is a context-specific advantage, as not every scenario presents documental information freely available to the researcher. I detail the Brazilian context in section "3.5 Data collection".

computers and the internet; and document selection is highly susceptible to "selection bias" (which I will address later in this chapter). In this case, I have given serious thought to the pitfalls of relying heavily on documents. Nevertheless, given the policy and legal focus of this research, this is the most fruitful method for addressing the proposed research question.

To make up for its weaknesses, while acknowledging the opportunities and challenges of using document analysis, I follow the advice of many (Patton 1990; O'Leary 2014; Bowen 2009) and adopt a mixed-method approach to this research. In order to strengthen the validity of my findings, and mitigate the shortcomings of a single method and single investigator bias, I make use of elite interviews to complement data from document analysis.

As Richards (1996) describes, elite interviews are an important supporting method to be combined with additional data. This method allows for the researcher to explain the motivations, ideologies, and subjective perspectives of individuals of key importance to the research – something that is rarely possible to get from documents (Richards 1996). I consider this a valuable complement to the main method proposed in this thesis. Understanding the rationale of those actively involved in the processes here analyzed has its clear advantages in terms of data collection. Nevertheless, I am cautious of the risks involved in elite interviewing, such as the unrepresentativeness of my samples and the questionable reliability of the information obtained – it is often the case that interviewees might try to influence the researcher out of political and institutional purposes (Berry 2002; Aberbach and Rockman 2002; Dexter 2006).

3.3 Reliability, validity and bias considerations

Every scientific study must be assessed based on its methodological consistency. Here, I present two criteria – reliability and validity – for such evaluation, and some considerations that might influence them. Reliability refers to the capacity to yield the same results presented in the research upon subsequent trials (O'Leary 2014). For a project to be reliable, it must then make use of data that is trustworthy and standardized, and to use methods consistently for the purposes of answering the research questions (O'Leary 2014, 59). Validity, on the other hand, is a broader criterion, intended to assess if the study can in fact answer the proposed questions by

the means established by the researcher. Thus, it attempts to authenticate the truthfulness of the presented data, and the conclusions that come connected to it (O'Leary 2014, 61).

I consider this study to be sound in terms of reliability. I have been careful in selecting data from authoritative sources. As the bulk of what is analyzed consists in policy recommendations, policy plans and legislation, primary data comes entirely from official sources, ranging from international organizations such as the FAO to federal government bodies such as the Ministry of the Environment. Regarding validity issues, one could argue that this research suffers from an over-reliance on the document analysis method. I contend to that position by pointing to the nature of the research, which is strongly documental. The established research question focuses on policy and laws, thus the chosen method is a helpful tool in the toolbox (Moses and Knutsen 2012) to address the posed problem. By making use of elite interviews, I further improve the validity of this project, bringing to the analysis experts' opinions on what is being debated.

Despite being confident on the reliability and validity of this enterprise, I have to acknowledge potential biases related to the methods used throughout the research. By recognizing these, I take an important step as to circumvent additional validity issues. O'Leary (2014, 177) points to two potential sources of data misinterpretation when using document analysis. The first is the inherent partiality of every document (even official ones), and the second is the "tinted lenses" through which the researcher looks at those documents. To overcome challenges related to the first possible bias I seek in elite interviews alternative viewpoints to the documents analyzed. By talking to people close to the policy and legal debates under scrutiny, I am able to gather different perspectives on the official texts and its intentions. As for the second bias, I believe it is virtually impossible to avoid it, for, as Hale (2008) puts it, the production of knowledge is always subjective and culturally and historically contextualized.

Lastly, I must take into account the inherent subjective nature of elite interviews as a method. Data coming from this method will always be partial and carried with political and ideological motivations – including the researcher's own opinions, as the person who elaborates, guides, and interprets the interviews. It is the researcher's

responsibility to carry enough knowledge as to value the reliability of the interviewees' claims (Dexter 2006). Of course, even if the data obtained through this method were perfectly exact and impartial, there would still be a hint of bias in the selection of experts to be interviewed. I tried to manage this bias by sampling interviewees from different backgrounds (e.g. politics, industry, environmental activists) and with varied political motivations. This strategy, however, is not always successful as access to some categories of interviewees (e.g. politicians and bureaucrats) can prove to be extra challenging – something that will be addressed in the next section.

3.4 Constraints and limitations

When it comes to challenges in the research process, the researcher is not always to be blamed for their existence, but more often than not, for his or her ability to foresee and overcome them. In this section, I present the difficulties I had expected as of the beginning of this project, and how I tried to deal with them as they came to reality.

The first challenge I found was the unavailability of certain data pieces. As Brazilian legislation and policy plans are made widely available online, I was able to gather most of the primary data via online searches in official and governmental websites. However, some pieces of legislation from before 1988 were not available in those databases, or in public archives. Although such documents are not vital for this project, analyzing them directly would greatly benefit my capacity to contextualize other available documents and analytical observations in a historical context. Given this condition, I had to resort to secondary sources in order to get an understanding of those lacking documents. Nevertheless, in order to make up for this shortcoming, I made sure to use credible and official secondary accounts to that data, for example, institutional reports written on the missing pieces of data.

Secondly, and perhaps most critically, the elite interviews turned out to be a challenging method for this project. In my attempt to triangulate and validate the document analysis, I sought the perspectives of a wide range of experts in the study's topic: politicians, appointed bureaucrats, industry representatives, academics, journalists and civil society members. While I attempted initial contact (via phone or email) with more than 60 potential interviewees, only a few were available to talk

and give me their understanding of essential matters for the project. The majority of the contacted experts did not answer to calls, or did not reply to emails. Others, however, were reluctant to agreeing to an interview even after I guaranteed that personal communication and the contents of the interviews would be anonymized. I had trouble getting responses from government officials, bureaucrats, and industry representatives. In my conversations with some informants, I was told this is not uncommon in Brazil – as I had foreseen. I was also warned that public officers often agree to be interviewed only to later call off the agreement or withdraw their consent. This proved to be true a couple of times in my research. Additionally, as one informant told me, the planted forests industry rarely speaks to academics or journalists – this informant has been trying to get the industry's opinion on important matters for more than two years with no success. Luckily, I was able to talk to three representatives of the industry, despite the difficulties.

I knew of these difficulties due to my own past experiences with Brazilian authorities and industry members. As Aberbach and Rockman (2002, 673) warn, access to officials and representatives can be the first obstacle of elite interviewing. I also expected the challenges to be aggravated by the national executive elections that coincided with the period I had for data collection. What was not anticipated was the president-elect's proposal to merge the Ministry of Environment to the Ministry of Agriculture, Livestock and Food Supply, and to classify movements for agrarian justice (e.g. MST) as terrorist organizations (Carta Capital 2018a; 2018b). One informant working for the government in development projects even advised me on the challenges I would face when trying to reach one of the previously mentioned ministries, as they were undergoing severe institutional changes (personal communication, December 14, 2018). The results of the elections ended up making agrarian and environmental matters a very contentious topic in Brazil. I attribute my difficulties regarding elite interviews to these developments in Brazilian politics, and to the long-standing distancing of the industry.

To overcome this scenario, ensure reliability of data, and preserve the validity of my conclusions I employed alternative strategies. The first was to recur to previous research on the topic in order to get statements from government officials and industry representatives. I acknowledge that data will be less precise and another

layer of subjectivity will be added to my analysis, but for the purposes of this research, I consider these hurdles a minor issue. The second strategy was using media statements from individuals of key importance for the project. This can prove to be a useful way of obtaining reliable data, since media statements are under public scrutiny and therefore less likely to be untruthful – although still partisan. Lastly, in the same way a researcher must interpret interviews and public statements, I chose to interpret the refusal of speech by government officials and the industry. I argue that by accepting to be interviewed, and later withdrawing consensus, or even by denying interviews at all, political actors hint at their position in relation to the case studied.

3.5 Data collection

Given the documental analysis proposed by this project, primary data was collected mainly from the official, issuing sources. For the past decades, Brazilian institutions make their documents and reports available online for public access. An online environment exists, wherein laws, decrees, resolutions, normative rulings, and policy plans are available for public consultation in the government's and its subsidiary bodies' websites. The right to access to such data is guaranteed by the Law 12,527, from 2011.

3.5.1 "Planted forests" definition and data implications

As already discussed (see Peluso and Vandergeest 2001; Vandergeest and Peluso 2006a; 2006b; 2015), defining "forests" is a difficult and political task. For the purposes of this study, I will use the FAO's "Forest Resources Assessment Working Paper 180", in which the organization publishes the terms and definitions for the 2015 assessment on the world's forest resources. Thus, for a body of trees to be considered a forest, it has to span for "more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use" (FAO 2012, 3). Planted forests, in turn, are defined as: "Forest[s] predominantly composed of trees established through planting and/or deliberate seeding" (FAO 2012, 8). The same document establishes a sub-category for "planted forests of introduced species", which refers to "Planted forest, where the

planted/seeded trees are predominantly of introduced species" (FAO 2012, 8). In both definitions, the word "predominantly" means that planted/seeded trees should exceed 50% of the growing stock at maturity. For the purposes of this thesis, I shall refer to "introduced species" as "exotic species", for this is the term used in Brazilian legislation.

The reasoning behind my choice for this definition, among many alternative ones, is not motivated by political or argumentative purposes, but by practicality. It is guided by this definition that countries report their national planted forests inventory to FAO, thus available data will most certainly fit into the established parameters. Furthermore, by using this definition as a working concept, I take one of the leading international authorities in the forestry sector as a stable source for document analysis. Following the FAO's standards helps in the harmonization of concepts, methodologies, guidelines, principles, and data, for it would be impossible to encompass all relevant forestry actors with their respective and multiple definitions and concepts in a single study. It is fundamental to note, however, that I am aware of the political interests behind the FAO's definitions and standards toward the forestry sector – as I highlighted in section 2.2.1 in the previous chapter.

My choice for defining forests as the FAO (2012) does also influences the process of gathering data from the Brazilian sources. In Brazil, national legal and policy instruments usually include a section for the definition of important concepts and terms used throughout the documents. When reading those, it was clear to me that planted forests are not always defined equally from one document to the others. For example, Article 2 from the Decree 8,375, establishing the "Agrarian Policy for Planted Forests", considers planted forests those "comprised primarily of trees resulting of seeding or planting, grown with economic emphasis and for commercial purposes" (Brasil 2014). However, in other legal instruments (e.g. Normative Ruling 8 and PAN), Brazil adopts a broader definition for planted forests, by recognizing their non-commercial value and emphasizing conservational features. Due to this disparity, during the reading of Brazilian laws and policies plans, I kept in mind FAO's definition of planted forests, since it encompasses every alternative definition used by Brazil.

As a consequence of these considerations, when gathering data from Brazilian legislation and policies, I left outside the analysis those documents using solely ambiguous and broad terms, such as "planting of trees", "recovery of vegetation" and "restoration of forest cover". These alternative terms can refer to something else other than planted forests as FAO defines them, for example, fruit trees and oil palm plantations, which are clearly defined as agricultural production systems – and not planted forests – under the organization's definitions (2012, 3).

3.5.2 Data selection

This study is centered in the analysis of Brazilian legislation and policy framework for planted forests. Thus, the object of interest is mostly the documental body including policies, laws, regulations, and strategic plans for the use of planted forests in Brazil. This means that is out of the research's scope to look into technical standards such as operational practices, forest management techniques, fertilizer application, thinning and pruning recommendations, strategies for soil correction, etc.

Brazilian law and policies regarding planted forests are highly atomized throughout several governmental competences. It is therefore complicated to gather every single piece of legislation that might have an impact on the planted forests sector. Due to this dispersion of relevant data, this analysis takes as a starting point previous research on the topic, as well as Brazilian submissions to the FAO regarding its legal and governance framework for forests and planted forests. A list of relevant laws and policies for analysis was adapted from Silbernagel's (2013) work on "Planted Forest Policy within the Federal Public Administration" (*A Política de Floresta Plantada na Administração Pública Federal*, in the original). From there, I gathered additional pieces of legislation listed in the Brazilian Country Report to the FAO for the "Global Forest Resources Assessment 2015". To make the body of data more complete, I searched for recent laws and policies that seemed to be of relevance for the theme of planted forests and added important findings.

It is worth mentioning that only instruments at the federal level were considered, seeing that the purpose of this research is to analyze the federal government's interests in the use of planted forests. Picking state, district, or city level instruments

would result in an unsurmountable amount of data, in many occasions divergent among themselves.

The reasoning for choosing how to include each one of the documents followed two basic questions: “Are planted forests object, directly or indirectly, of this instrument?” and “Does this instrument contribute to the understanding of the role of planted forests in Brazilian governance and national interests?” The only exception made to this was those national policies offering credit and incentives to smallholders investing in agrarian activities. Under Brazilian law, forestry activities fall under the “agricultural” category, therefore, they can be taken as instrument for those policies. However, since policies for the incentive of agricultural activities are not particularly aimed at planted forests, and knowing that the amount of resources effectively given to forestry activities by those same policies is almost negligible (Silbernagel 2013), the decision to leave them out of the analysis seems justifiable. A full list of the 25 analyzed documents is available in Appendix 1.

Lastly, some considerations are needed for the data collected from elite interviews. The seven interviewees were selected after research of their background in relation to the research objectives and the data needed. In the context of this thesis, I looked at relevant policies analyzed, and selected a few representatives involved in their making to be interviewed. Additionally, to get a different perspective on the topic, I also chose to interview industry representatives who were closely involved in the making of such policies, or who could speak for the industry in question. Lastly, I looked for engaged members of the civil society to be interviewed, keeping in mind their background as activists, journalists, and academics within the forestry sector. All interviews were recorded and transcribed (upon permission of the interviewees), and followed by written notes – with only one exception, wherein the interviewee asked not to be recorded. I made sure to anonymize every interviewee, given the contentiousness such topics have acquired in Brazil.

Following is the list of interviewees who offered data and their viewpoints for this research (see also Appendix 2). The description of their role within the planted forests context was provided by the interviewees themselves.

Public institutions	Technical advisor and member of a UNDP project for Sustainable Steel Industry in Brazil (December 14, 2018)
Forestry industry or related industries	Professional in the steel industry sector (November 28, 2018a)
	Representative of the planted forest sector (December 20, 2018a)
	Climate Change and Forestry consultant for a forestry company (December 20, 2018b)
Civil society	Journalist covering planted forests conflicts in Brazil (October 16, 2018)
	Representative of an international NGO in the forestry sector (November 9, 2018)
	Environmentalist (November 28, 2018b)

Table 1. List of Interviewees

In the next four chapters, I employ the methods and analytical framework previously described to gather, organize, and analyze the primary data of this thesis. The following chapter covers the history of planted forests governance in Brazil during the 20th century. I start with an overview of the policies and laws that popularized planted forests in the country, moving on to the beginning of the current governance framework for the sector in the 1980s, and conclude by presenting important developments coming from the industry in the 1990s.

4 Planted forests governance: an overview of the 20th century

So far, I have presented the context for this study, explained my analytical framework, as well as the methodological approach used herein. I now turn to the presentation of the data collected through the document analysis and interviewing processes and, alongside it, my analysis aimed at answering the research question that drives this research: How does the Brazilian government promote planted forests and their multiple uses within its federal governance?

For this task, however, it is useful to look back at the development of planted forests in Brazil, from the popularization of their use in the 20th century until the period pertinent to this study. In this chapter, I argue that right from the start, planted forests have been closely linked to industrial goals set by the federal government and, being so, have received strong tax and financial incentives for their commercial expansion. However, after their flourishing decades under the military regime, the sector was negatively affected by the 1980s crises, and stopped enjoying the government's support during the market reforms that began in that decade. The 1990s brought to Brazil a neoliberal approach to governance, leaving the sector on its own, which created the right incentives for the planted forests industries to reframe their activities in light of new environmental standards set in the Rio Summit.

4.1 Public support to developmental goals: planted forests and the industry

Planted forests were not widespread in Brazil before the 20th century, having their use limited to ornamental and scientific activities (Hora 2015). Only in the early 1900s, by the efforts of Edmundo de Andrade, the planting of forests – namely Eucalyptus and Pine trees – was popularized in Brazil, mainly for the purpose of supplying the railway sector's needs of raw material and fuel (Foelkel 2005). Following the beginnings of Brazilian industrial development, planted forests were introduced to Brazilian governance in the first Forest Code (1934), which required large consumers of forest products (e.g. steel mills and transportation companies) to grow their own forests to supply their activities (Bacha 2004).

The planted forests sector was further recognized in the 1950s, under Kubitschek's Target Plan. The plan established five economic areas targeted for investments in the following five years and, within the primary industry area, the paper and pulp sector – the largest user of planted forests in Brazil to date – was selected to be covered by the policy. During that decade, important companies in the wood, paper and pulp sectors were created and expanded their operations, a period which coincided with the National Economic Development Bank's (BNDE, in Portuguese)[4] first project financing planted forests (Hora 2015). At this point, the high-modernist government of Juscelino Kubitschek (1956-1961) first turned its focus to planted forests as tools for its industrializing goals. As Scott (1998) argues, standardized forests present a more manageable activity for the political and economic interests of rulers such as Kubitschek. Due to their uniformity, lack of understory, and exclusive productive nature, planted forests are ideal for commercial uses and to be used in industrial activities. Planted forests, therefore, materialize Scott's (1998) argument that (often authoritarian) states deal with nature by shaping it into an orderly and standardized source of natural resources to be used in the pursuit of national and development goals.

An analysis published by BNDES's planted forests sectoral manager, André da Hora, identified the decade of 1960s as the most important period for planted forests in terms of juridical and institutional support (Hora 2015). In 1965, the 1934 Forest Code was replaced by a new, stricter one. The 1965 Forest Code[5] kept the industry's obligations to restore forests used for their activities, but expanded requirements for the exploitation of native forests in specific regions of the country – making planted forests a more attractive option for industrial and commercial uses. The ruling from 1965 signaled the government's concerns for native forests conservation and for the increasing deforestation rates, while simultaneously pointing the industry to use planted forests as their main source of forest-based raw material.

[4] The BNDE was created by the Law 1,628, in 1952, with the goal to create and implement national policies for economic development. In its first decades of operation, the bank focused investments in the primary industry, agribusiness and energy production (BNDES n.d.). In 1982, the bank changed its name to National Economic and Social Development Bank, or BNDES, to reflect the inclusion of social concerns in its agenda (BNDES n.d.). Later in the 2000s, the BNDES also expanded its credit lines to finance sustainable activities, as it will be highlighted along the following chapters.
[5] Created by Law 4,711.

The creation of the 1966 Tax Incentive Law[6] substantiates the argument that the military government had an appreciation for the planting of forests for industrial purposes. The 1966 Law offered rebates in the yearly income tax (50% for companies and up to 100% for individuals) upon the establishment of forestation and reforestation projects approved by the Ministry of Agriculture. Note that at this moment, planted forests were within the agricultural governance framework, evoking their nature as crops meant to be harvested, rather than forests meant to be preserved. Planted forests were classified in this period according to the political views and interests that surround their establishment, that is, as agricultural crops. As Peluso and Vandergeest (2001) initially propose, the establishment of what is to be a forest, or an agricultural crop, is highly dependent on what interests the state and other influent political actors assign to it. According to Hora (2015) the goal was to create a supply of forest-based raw material for industries such as wood, steel, paper and pulp. To seal the 1960s decade for planted forests, in 1967, the BNDE passed the Resolution 276, greenlighting funding for the pulp and paper sector. The decision was an important step for the referred sector, which would progressively adapt all of its operation to use wood products exclusively from planted forests.

Planted forests also gained a special role outside the pulp and paper sector with the creation of the Steel Industry National Plan (PSN, in Portuguese), in 1976, under the Second National Development Plan (PND II, in Portuguese). The new plan for the steel industry referred back to the 1965 Forest Code and the National Program of Steel Industry and Charcoal (1970) to promote the replacement of charcoal from native forests with that from planted forests in blast furnaces (Hora 2015). Nevertheless, in spite of the PSN efforts, the forces pushing planted forests up until that moment started to lose traction in the 1970s.

In 1974, then President Emílio Médici published the Law-Decree 1,307, establishing lower tax rebates to forestation and reforestation projects – the new instrument made it that rebates would gradually lower to reach 25% in 1978. In 1988, after consecutive changes to the original 1966 Tax Incentive Law, the fiscal incentives to planted forests projects were eliminated. According to the Ministry of Environment, from 1967 until 1986, the fiscal incentives given by the government to forestation

[6] Established by the Law 5,106

and reforestation projects reached 10 billion USD, accounting for around 6.2 million hectares of planted forests (Hora 2015, 403).

4.2 An unexpected turn of events: from tax breaks to additional regulations

After almost three decades of incentives to the industrial and commercial expansion of planted forests in Brazil, the country was left with little to no governance instrument referring to the plantations. By the end of the 1980s, other than the aforementioned 1965 Forest Code, only two other legal instruments encompassed planted forests in their competences: the National Policy for the Environment and a single regulation by the National Council for the Environment (Conama, in Portuguese). These two governance pieces are still valid to this day, and greatly affect the planted forests sector in Brazil, as I will demonstrate later.

From 1981, the **National Policy for the Environment**[7,8] (PNMA, in Portuguese) established as its goals the "… conservation, improvement and restoration of the environmental quality conducive to life, seeking to ensure, in the country, the conditions for the socio-economic development, the national security interests, and the protection of dignity of human life…" (Brasil 1981, *own translation*). The policy understands that it is the government's responsibility to adopt measures that improve the rational use of the environment and its resources, given they are public goods. Therefore, it is not puzzling that the government gives incentives – via tax rebates, BNDE credit, or by other means – to the growing of planted forests, for whatever purpose it is. Based on this reasoning, the PNMA grants government institutions the power to plan and monitor natural resources use; control and zone the development of polluting and resource-intensive activities; and restore degraded areas, or areas under threat of becoming degraded (Brasil 1981). For the execution of its contents, the policy commissions several government agencies that are also allowed to legislate within their own jurisdiction, among them the newly created (by the PNMA itself) Conama and the Brazilian Institute of Environment and Renewable Natural Resources (Ibama, in Portuguese) (Brasil 1981).

[7] Created by Law 6,938.
[8] For ease of reading and emphasis, I will write in bold the first mention of the analyzed pieces of governance which are still in effect.

Initially, the PNMA might not seem to be a very influential policy in terms of economic and social development for Brazil, but that is far from true. Congressman Sarney Filho points to how the law incorporated its environmental concerns in the subsequent public policies adopted by the Brazilian government (Fiori, Lara, and Jardim 2006). Furthermore, Article 5 of the law requires that business activities operating in the country, either public or private, follow the guidelines established by the PNMA (Brasil 1981). Because of this provision, it is essential to draw attention to one particular definition from the PNMA: polluting activities. The policy considers any activity a polluting one when it

> damages the health, safety and wellbeing of the population; creates adverse conditions to social and economic activities; adversely influence the biota; affect the aesthetic or sanitary conditions of the environment; release material or energy in disagreement with the established environmental standards…[9] (Brasil 1981, *own translation*).

By this definition, and later specified in Appendix VIII, silviculture involving, for example, the economic exploitation of forest products and byproducts, as well as the introduction of exotic species is classified with a "medium degree" of polluting potential and natural resource utilization (Brasil 1981). Furthermore, pulp and paper, and steel industries are attributed a "high degree" in terms of potential harm to the environment (Brasil 1981). As consequence, the planting of forests in Brazil as well as their industrial use become subject to Article 10, which determines that operations involving polluting activities or activities that may cause any environmental harm must be previously licensed by the responsible government bodies (Brasil 1981).

This classification is, not surprisingly, seen negatively by the industries in the forestry sector. According to a representative for a company in the paper sector, this can be quite detrimental to those planting and utilizing planted forests for commercial and industrial purposes (personal communication, December 20, 2018a). The company representative argued that the licensing requirements imposed on silviculture are not the problem with the current law, but rather the classification of the activity (pulp and paper production) as "highly impacting", on par with mining and hydroelectric projects. Indeed, this may sound like an exaggeration from the PNMA's part, but looking back at the several social conflicts and environmental

[9] Article 3, Law 6,938.

transformations caused by the sector (see Section 1.3 in this thesis), the stance taken by the policymakers seems to favor a more environmentally safe approach to planted forests – deviating from the highly industrial-focused governance up until the 1980s.

In addition to the licensing requirement, under the PNMA silviculture may also be obliged to follow environmental zonings when they exist, to submit environmental impact assessment when considered necessary, and to be registered in the Federal Technical Registry for activities considered to be polluting and/or resource intensive (Brasil 1981). Effectively, the PNMA created several bureaucratic constraints for the silviculture and forestry industries in Brazil, who had expanded without much federal regulation so far. According to a climate consultant for a Brazilian forestry company, the bureaucracy involved in the planting of forests is not necessarily negative for the forest-dependent sectors (personal communication, December 20, 2018b). They argue that there should be a licensing process and even economic zoning for forestry projects, but that those should be "reasonable", as to keep a balance between the socio-environmental and economic sides of it – i.e. the requirements at issue should not become obstacles to socio-economic development (personal communication, December 20, 2018b).

Interestingly, a steel industry specialist from the same company has a slightly divergent opinion. For them, "Brazilian legislation is too bureaucratic" (personal communication, November 28, 2018a). From their perspective, imposing all these requirements for the planting of forests can be unfruitful for the development of Brazilian industries, but even worse for the advancement of the "sustainable production" of steel using planted forests charcoal (personal communication, November 28, 2018a). The diverging viewpoints between the two interviewees illustrate well the planted forests debate in Brazil: on one hand, the industry sectors dependent on planted forests advocate for looser regulations that could benefit their commercial profits, while on the other, environmental and climate-related actors support the necessary procedures for a safer development of the planted forests sector.

The second piece of normative instrument that was pertinent to planted forests in Brazil in the 1980s and still is to this day is the **Conama Regulation 01/86** on the Environmental Impact Assessment for the exploitation of wood and firewood. As

already mentioned, the Conama was created by the same law that established the PNMA, and has the role to execute and also legislate on environmental issues in Brazil. It would work as a "true environmental parliament", according Paulo Nogueira Neto, one of the proponents of the PNMA (Fiori, Lara, and Jardim 2006). As part of its mandate, the Conama can create regulations to supplement and/or specify those already included in the PNMA (Conama 1986). Regulation 01/86 sees forestry activities – silviculture included – as sources of potential physical, chemical and biological changes to the environment and, as such, these activities need to be preceded by an Environmental Impact Assessment (EIA) and a EIA Report (RIMA, in Portuguese) in order to obtain a license to operate (Conama 1986).

This regulation is relevant for the Brazilian planted forests sector due to its Article 2. In the Subsection XIV of that article, the Conama requires an EIA and a RIMA for the "economic exploitation of wood or fire-wood in areas above 100 hectares, or below that when it impacts significant areas in percentage terms or in environmental importance" (Conama 1986, *own translation*). In Subsection XVI, the Council applies the same requirements to "any activity that uses charcoal in greater quantities than 10 tons a day" (Conama 1986, *own translation*). In practice, both subsections apply primarily to the two main consumers of planted forests' products in Brazil: the pulp and paper industry, and the steel industry.

The formulation of the PNMA and Regulation 01/86 highlights a puzzling scenario for planted forests producers and users. From the 1950s until the 1980s, the federal government pushed for the expansion of planted forests in order to supply raw material for several of its "priority industries" – by means of tax incentives and public funding – as part of a developmentalist approach to socio-economic development. Throughout most of the 20th century, the Brazilian development project was proposed and carried out by a strong developmental state. The federal government was the main actor responsible for creating and financing industrial policies that, according to the developmentalist logic, would increase social wellbeing. For this purpose, the country adopted the extractivist model, based on the exploitation of its natural resources in order to generate income to be invested in the industrial sector (Veitmeyer 2013). As Gellert (2019) puts it, developmental states in the periphery typically need to succumb to extractive activities to finance their

development projects. Planted forests, in this context, had a double role for the Brazilian economy. First, they represented natural resources to be exploited and later have their wood products and byproducts exported to generate foreign revenue that would promote industrialization. Second, they were rapidly becoming the main source of raw material for several of Brazilian national industries, such as paper, pulp and steel. Simultaneously, planted forests represented both the "cause" and the "consequence" of Brazilian economic development.

In 1986, however, the country's growth plummeted almost 13% (The World Bank 2019). Strangely, given the importance of natural resources extraction for the economy, in the same year, Brazilian policymakers, almost unanimously, passed a law imposing several constraints to the industrial sector – which has historically been prioritized for its argued capacity to propel Brazilian economy forward. Indeed, as environmental lawyer Antônio Pinheiro Pedro sees it, the emergence of the PNMA was only possible due to the authoritarian nature of the government at the time (Fiori, Lara, and Jardim 2006). However, regardless of how environmentally concerned Brazil was in the 1980s, it seems counterintuitive to put barriers to the industry just when the economy needed it the most – an unexpected move from João Figueiredo's government. Contradictory developments like this will permeate the following history of Brazilian planted forests governance.

4.3 The neoliberal years: the industry's alternatives to a retracted state

A couple of years after the tax incentives to planting forests ended, and with the PNMA and the Conama already in place, Brazil adopted a new Federal Constitution in 1988. The new Magna Carta replaced the 1967 Military Constitution, and is commonly recognized as the landmark reestablishing democracy in the country, after more than two decades of military regime.

In environmental terms, the **1988 Federal Constitution** draws heavily on the PNMA Law from 1981, which to that point was the most encompassing governance instrument for environmental protection in the country, working alongside the 1964 Forest Code as the two main federal environmental regulations. In its Article 225, Subsection VII, the Constitution maintains the federal government as accountable for

the protection of "the flora and fauna, legally prohibiting activities that might put at risk their ecological functions…" (Brasil 1988, *own translation*). The text in Chapter VI, on the Environment, of the new Constitution closely resembles that of the PNMA Law. In fact, the Constitution worked to amplify the regulation for several issues, among them environmental ones. For this, it attributed to sub-national entities, such as states and municipalities, the power to create and manage new laws and taxes within their own jurisdiction, as long as those did not contradict federal legislation[10] (Brasil 1988). From then on states and municipalities could have their own governance instruments toward the forestry sector and planted forests – making a comprehensive analysis of the sector even more complicated.

For the industries using planted forests, this created new opportunities for expansion. Some states have looser regulations than others (sometimes purposefully to attract investments), thus a new strategy became available to forestry companies: moving their operations or their forest stands to states where the requirements and monitoring were less strict. In an interview, a consultant in the forestry sector pointed out that this was clearly noticeable in the state of Minas Gerais (personal communication, December 20, 2018b). Historically, the state had the largest area of planted forests in the country – mostly to supply the needs from the steel industry located there. Nevertheless, this is expected to change as planted forests expand quickly in the state of Mato Grosso do Sul, due to easier bureaucratic procedures for the planting and harvesting of planted forests (personal communication, December 20, 2018b). Another industry specialist from the state of Minas Gerais sees the attribution of legislative powers to states in terms of forestry regulations as troublesome (personal communication, November 28, 2018a). In their perspective, some states end up creating unnecessary rules for the harvesting of forests, which increases the costs imposed to forestry companies, as it is the case with a double-licensing procedure existent in the state of Minas Gerais (personal communication, November 28, 2018a). Once again, the industry is challenged with a body of environmental regulations that was not present in the decades of its establishment and expansion.

[10] Articles 21, 23 and 23.

Another important development brought by the 1988 Constitution was the inclusion of forestry activities within the agricultural framework for policy planning[11] (Brasil 1988). This decision is odd, considering the strong influence from the PNMA's environmentally cautious approach toward the expansion of planted forests. If the country was concerned about the regularization of polluting and resource-intensive activities, as it gave clear signals it was, one would expect that the new Constitution would delegate forestry activities to the environmental policy framework. Moreover, given the long-standing worries with the deforestation of the Amazon and Atlantic Forest – which served as argument for the 1966 Tax Incentive Law – it is certainly contradictory putting forests on the same policy framework as, for example, soy crops and cattle farming. The only reasonable interpretation for this, in light of the history of the forestry sector in Brazil, would be that the seemingly pro-environment stance taken since the 1981 PNMA was only to be carried out to the extent that it did not affect the country's growth. By including forestry in its agricultural policy framework, Brazil indicates that resource-intensive land use activities are still a priority in developmental terms, and that sectors like pulp and paper should be contemplated in future policy developments. While it is difficult to support such a decision from an environmental perspective, the Constitution's provisions on forestry are understandable from an economic standpoint – after all, Brazil had always been dependent on its agricultural and extractive activities to fuel its development project.

After the new Constitution was established, the planted forests sector in Brazil went through almost a decade without being subject to any other governance instrument. By the end of the 1980s, and early 1990s, Brazilian economy was facing difficulties in terms of public and external debt, as well as high inflation. In order to solve the situation, the government adopted pro-market, deregulating measures. As one informant points out, the Brazilian state was being "dismantled" during the 1990s, so policies and incentives for the planting of forests were non-existent (personal communication, November 9, 2018). According to a consultant from the sector, the lack of regulation and incentives made it difficult to plant forests, as they require high initial investments and present returns only in the medium to long-term (personal communication, December 20, 2018b). Several companies – including the biggest actors behind the expansion of planted forests in Brazil – sought out new

[11] Article 187, Paragraph 1.

ways to finance and secure planted raw material stock (personal communication, December 20, 2018b). Two possible solutions emerged from the gap in planted forests governance during the 1990s: new uses and discourses, and new certification processes tied to those.

After recurrent conflicts caused by the expansion of planted forests during its initial years (see Kröger 2012; 2014a), the businesses using planted forests products – i.e. pulp and paper companies – realized the need to address socio-environmental issues that often tainted the sector's image (personal communication, November 28, 2018b). Following the 1992 United Nations Conference on Environment and Development (also known as Earth Summit, or Rio Summit), and the creation of the international certification scheme Forest Stewardship Council (FSC), the planted forests industries started to push for the certification of their forest stands, based on the argument that they were compliant with all of FSC's socio-environmental principles (personal communication, December 20, 2018a). By getting their forests certified, the industry not only had a competitive advantage over users of non-certified wood, but also aggregated value to their products. The FSC, therefore, gave the planted forests sector in Brazil a status closer to that of natural forests, moving away from the agricultural nature highlighted by Brazilian Constitution. The certification of plantation inventories belonging to the industry effectively reframed planted forests activities in Brazil, portraying them as compliant with ideals promoted in the Rio Summit, such as environmental conservation, respect to indigenous peoples, and even biodiversity preservation.

Another strategy used by the planted forests sector in Brazil during the governance gap in the 1990s was the adoption of new discursive practices to promote planted forests. As a consultant working with carbon forests in Brazil explains, beyond value-adding certification schemes, some companies also sought new forms of investment in order to expand their forest stocks (personal communication, December 20, 2018b). One viable option was using the 1997 Kyoto Protocol and its Clean Development Mechanism to establish agreements with, for example, the World Bank in exchange for carbon credits (personal communication, December 20, 2018b). Planted forests adopted the "carbon sink" discourse to finance their expansion and management in Brazil, particularly in the 1990s when the government

stopped directly funding the industry. This strategy would later be adopted by public institutions in order to justify and increase their funding for planted forests policies. It is important to highlight the resemblance between the 1990s carbon discourses used by Brazilian planted forests industries to Kröger's (2016) formulations on tree flexing. While Kröger's observations refer to consequences of the "bioeconomy" that emerged in the 2010s, the planted forests second strategy can easily be understood under his concept of "narrative flexing". The promotion of planted forests as "carbon sinks" allows for the commodification of the carbon stored in them, and their subsequent trading in carbon markets. As Kröger (2016, 903) notes, carbon capture is not the final goal of planted forests, but a mere narrative created to support and finance their main purpose: industrial uses. It is interesting to note how, already in the 1990s, Brazilian planted forest industries used discursive strategies that would only be popularized and conceptualized more than a decade later.

The Rio Summit, the FSC certification, and the 1997 Kyoto Protocol were fundamental for the continuity of planted forest-based economic activities in Brazil during the 1990s governance gap. During that time, planted forests kept their industrial and commercial value, but, importantly, were legitimized as environmentally friendly (by the FSC) and as carbon mitigation tools (via CDM). By means of an effective discursive strategy, or "narrative flexing", planted forests industries were able to reframe their activities, masking historical socio-environmental contradictions. Moreover, the discourse behind their new potential uses would later become widespread in Brazilian governance and in international debates. Critics of the sector, however, understand these developments as forestry companies' struggle not to lose legitimacy in face of severe socio-environmental disruptions caused by their activities (personal communication, November 9, 2018). According to the representative of an international forestry NGO, the 1990s were marked by the "green wash" of the planted forests sector in Brazil (personal communication, November 9, 2018).

The next development in planted forests governance comes in 1997, once again from the Conama. **Regulation 237/97** revises some of the provisions of the original 1981 PNMA Law regarding the criteria for environmental licensing for silviculture activities. Following the same reasoning behind the original law, the regulation

intends to keep the requirements for forestry-dependent operations, while simultaneously restructuring the licensing procedures for a quicker and more efficient process (Conama 1997). For example, Article 12, Paragraph 2 allows for "a single environmental licensing procedure for small projects and activities … or for those composing developmental plans previously approved by the competent governmental entity" (Conama 1997, 4). In other words, the forest-based sectors can now rely on public developmental plans to speed up and cheapen their licensing process. The provision solidifies the argument that planted forests industries are closely connected to the government's developmental and industrial goals. More importantly, the new regulation also acknowledges the possibility of using planted forests for something other than industrial needs, and briefly incentivizes that in Article 12, Paragraph 3:

> It must be established criteria for speeding and simplifying procedures for the environmental licensing of activities and projects which implement voluntary plans and programs of environmental management, seeking the continuous improvement of the environmental performance (Conama 1997, 4).

Despite the advances in terms of efficiency of the licensing processes, the wood, pulp and paper industries, as well as any other activity involving the economic use of wood, firewood and forest byproducts (including the introduction of exotic and genetically modified species) remain listed as potential causes of environmental damage (Conama 1997). For Brazilian governance, planted forests were still considered a source of raw material for industrial needs, but simultaneously an environmental risk to be managed. This was about to change in the 2000s.

5 The return of public incentives: ecological framing and flexible regulations

In the previous chapter, I covered the history of Brazilian governance for planted forests. From the early uses for industrial needs in the 20th century, to the tax incentives and policy frameworks created during the military government, planted forests have historically taken the role of supplying raw material for industry – in particular steel, paper and pulp. Only with the PNMA in 1981 did planted forests acquire relevance in environmental terms, albeit not a positive one. By classifying them as a potentially harmful activity, the PNMA and the later Conama regulations made planted forests in Brazil subject to several bureaucratic requirements. Despite the sector's struggle to modernize itself – in the eyes of the industry – or to "green wash" its activities – from the perspective of its critics – Brazilian governance instruments kept their cautiousness toward the planting of forests. However, the federal government position started to change in 2000, with the creation of the National Forest Program (PNF, in Portuguese).

In this chapter, I will explain how Brazilian planted forests governance developed in the first half of the 2000s. The evolution of regulatory devices in this period is heavily influenced by the demands of the industry, which are initially embraced by the National Forest Program, and further addressed throughout Lula's first government. During the 1990s, government policies and regulations for the sector were scarce, which required the industries to reframe their activities as environmentally safe and climate friendly. Nevertheless, the early 2000s marked the return of state incentives to the expansion of plantation areas, as well as the creation of a flexible regulatory environment for planted forests industrial activities. I argue that this context is influenced by the new framings attached to planted forests, which were then incorporated and formalized within Brazilian governance for the sector. Furthermore, in this chapter I present evidence that an alliance between the state, under Lula's administration, and the industry, guided governance development toward optimal regulatory conditions for the thriving of commercial planted forests.

5.1 The PNF: a biased debate with asymmetrical outcomes

The National Forest Program was created in 2000 by the **Decree 3,420**, with the goals of promoting a more sustainable use of native and planted forests, fostering reforestation activities, and the development of forest-based industries and their domestic and international markets[12] (Brasil 2000). Some new trends start to emerge with the PNF. Firstly, alongside the aforementioned objectives, the decree also attributes to the Program the responsibility to support economic and social initiatives coming from forest-dependent communities, in order to improve their livelihoods[13] (Brasil 2000). Moreover, a stronger focus is given to environmental issues connected to the forestry sector, such as the prevention of wildfires, the valorization of socio-environmental services produced by forests, and the conservation of biodiversity and forest ecosystems[14] (Brasil 2000). Planted forests, thus, within the PNF, start to integrate an environmental framework coordinated by the Ministry of the Environment[15], albeit grouped with native forests, wherein their importance goes beyond the mere supply of industrial forest products, but rather expands toward socio-environmental issues such as livelihood improvement and biodiversity conservation.

As environmental issues became more relevant in the aftermath of the 1997 Kyoto Protocol, planted forests were cast by the government within an environmental framework, contrary to the previous decades of governance when they were taken as an agricultural supply of raw material. Developments like this highlight the politics behind forestry classifications. While economic growth was the imperative, from the 1950s until at least the 1990s, planted forests were understood differently than natural forests. Their goal was exactly the opposite of the purposes assigned to natural forests – demonstrating the government's interests in exploiting their commercial and industrial potential. However, as the world's attention increasingly turned toward environmental conservation, planted forests were reframed within Brazilian governance as simply another type of forest that could even be grouped

[12] Article 2, Subsections I, II and VII.
[13] Article 2, Subsection IV.
[14] Article 2, Subsections V, IX and X.
[15] Article 3.

with naturally occurring ones. The political interests, at this time, favored a more ecological definition, rather than an economic one. As Vandergeest and Peluso (2006a; 2006b; 2015) argue, the state elaborates forestry classifications based on its goals for it, so those can be easily reformulated once the state's priorities change. Gellert and Andiko (2015) report similar events in the Indonesian palm oil sector, where the Ministry of Forestry classified palm plantations as tree crops in order to preside over their exploitation.

One last essential outcome from the Decree 3,420 is the establishment of the National Commission of Forests[16] (Conaflor, in Portuguese). The Conaflor is important as it seeks to decentralize the execution of policies related to the forestry sector and, ultimately, allow for all interested actors from different sectors of society to participate[17] (Brasil 2000). This could allow communities negatively impacted by, for example, the expansion of planted forests to speak up and participate in the policymaking process. The Conaflor has the responsibility to propose development projects and research toward the planting and management of forests in order to increase the institutional cohesion among different policies, and increase public awareness on the topic[18] (Brasil 2000). The Commission serves as an entity for the harmonization of forestry policies with other existing policy frameworks in Brazil, but also, most importantly, as a forum for the participation and representation of society as a whole in the making and execution of said policies. As provisioned by Article 4-C, the Conaflor must be composed of representatives from the Ministry of the Environment, from each of the other Brazilian ministries and relevant environmental entities, from several civil society organizations – including NGOs, social movements, indigenous communities, and academia – and also from the industry (Brasil 2000). This decentralized nature should lead to a more inclusive forestry policymaking, as opposed to historic top-down policy developments in the sector. In other words, the Conaflor should work to curb conflicts related to land and forestry activities, as well as foster the participation of locals in the quest for sustainable development.

[16] Article 4.
[17] Article 4, Subsection I.
[18] Article 4, Subsections III and VI.

Moving on to an analysis of the **National Forest Program**, the document opens with a message from then President José Sarney Costa, highlighting the lack of regulation for sustainable exploitation of Brazilian forests, while drawing special attention to the debates on sustainable development introduced by the Rio Summit and the Agenda 21 (MMA 2000, 9). Sarney Costa acknowledged the fundamental role of forestry activities for Brazilian economic development in terms of export revenue, job creation, and tax income – with particular focus on the modern, high value-added planted forests products (MMA 2000, 9). His message strengthens my argument that planted forests are ultimately tied to the country's industrial development, as most natural resources are. The then president widened his presentation message by bringing up new issues connected to the forestry sector, such as respect for traditional peoples' cultures and values, and the responsibility to harmonize the different interests from several actors in an attempt to stick to its sustainable development commitments (MMA 2000, 10). Here, Sarney Costa adds a new discourse around the forestry sector, pointing out its importance to indigenous rights and participation, but not deviating from those developmental and economic goals that have been historically connected to the sector. It is useful to remind that the PNF comes out shortly after the 1997 Kyoto Protocol, signed by Brazil in 1998, wherein the topic of sustainable development is, at least discursively, a priority for states.

Having those participatory premises in mind, the creation of the PNF followed a public consultation process involving over 600 institutions from several sectors of society (MMA 2000). According to the Program's text, the main demands brought up were: the simplification of normative instruments, the decentralization of the management of forest incentives, the creation of credit and funding lines compatible with the maturation period of planted forests projects, better research and technical assistance for forestry activities, and a more stable legislation for the forestry sector (MMA 2000, 16). Despite the high number of actors participating in the public consultation, the nature of the highlighted demands seemed to reflect those of one specific group in the forestry debate: the industry. Certainly, indigenous communities and traditional people have not advocated for the increase of incentives for planted forests expansion, let alone better credit lines for those. The initial signal from the Decree 3,420 was that planted and native forests would gain more socio-environmental importance, mainly by attempting to harmonize different interests

connected to those. Nonetheless, the PNF prioritized demands of economic nature[19], while downplaying actions for environmental and social concerns.

In conversation with a representative for an international NGO in the forestry sector, they argued that in the referred consultation process, the demands from those critical of the expansion of planted forests were neglected by the government, favoring the industry and even environmental organizations supporting planted forests (personal communication, November 9, 2018). The informant still notes that at the time when the PNF was created, environmentalists advocating for more restrictions to planted forests expansion expected the government to address the forestry issue with a focus on "forests, but they ended up talking too much about plantations" (personal communication, November 9, 2018). For them, the main reason for this skewed debate and, consequently, biased policy was that the people in charge of important forestry institutions in the country, including the Ministry of the Environment, were the same people working for the forestry industry and its correlates (personal communication, November 9, 2018). The informant's contributions converge with a scenario Kröger had noted when analyzing the politics of planted forests in Brazil:

> Commodity corporations operate with the Brazilian state through a relationship that could be characterized as embedded autonomy by corporations or, in many cases, even state capture by crony capitalism. In this institutional interaction setting, it is easy for the industry to utilize lobbying to reach its goals (Kröger 2014a, 97).

Therefore, despite the apparent shift in focus presented in the Decree 3,420 (from industrial uses to socio-environmental ones), the PNF turned out to be another pro-industry piece of governance to the planted forests sector. This focus becomes clear along the document itself.

The PNF lays out the history of planted forests in Brazil, drawing attention to the reforestation programs and tax incentives from the 1960s until the 1980s, and highlighting the achievements of the pulp and paper sector in technological and competitive terms, as well as in alleviating the pressure on native forests (MMA 2000, 20). The Program then argues that, in light of the successes from the past, the

[19] Despite the industrial use preceding other considerations, there are still those within the industry who believe the PNF should have been more generous in terms of offering better logistical and fiscal conditions for the development of the planted forest sector (personal communication, December 20, 2018b).

government should resume incentives for the planting of forests via long-term credit lines, as to restore the balance of supply and demand for wood, disrupted in the 1990s (MMA 2000, 20). By addressing its domestic demand for forest raw material and increasing exports of sustainable wood, planted forests could both address limitations of the forestry industries, and make the country's economy more sustainable, putting Brazil in a better global position in economic and environmental terms (MMA 2000, 23). The goal is to expand the planted forest inventory by 630,000 hectares/year, mainly by supporting medium- and smallholders with technical and financial assistance to increase productivity, as well as creating regional zones of development based on planted forests and their production chains (MMA 2000, 26; 34). In addition, and once again catering to the industry's long-standing demands, the PNF adopts measures to

> Simplify the legal and administrative procedures for the planting, harvesting, transportation, processing and trading of forests products and by-products, originated from reforestation forests, putting planted forestry in the same level as agricultural crops (MMA 2000, 26).

An attempt to equate planted forests to other agricultural plantations is cited by the PNF, but only in 2014 would Brazilian governance formalize the sector as a truly agricultural one. For now, planted forests still benefitted from being considered "forests", rather than crops, despite being legally included in the agricultural policy framework. Once again, the politics behind forest classification match planted forests' flexible nature and multiple uses.

It is necessary to make one last consideration about the PNF. The Program is the first forestry policy announced after the 1997 Kyoto Protocol. As such, it is a pioneer in including climatic considerations for the forestry sector. Albeit not on par with the industrial uses proposed along its text, the PNF cites the Rio Summit, the Agenda 21, and the Clean Development Mechanism (CDM) as possible bases for planted forests expansion in the country (MMA 2000). The PNF contemplates that payments for carbon capture and other environmental services – for example, via CDM – could finance the expansion and management of planted forests in altered lands (MMA 2000, 35). The FAO is also listed by the document as a possible source of funding for the execution of its contents (MMA 2000, 42). The Program marks the beginning of a trend that will continue until this day in Brazilian governance for the sector: the

use of the climate argument to justify further expansions of the planted forest inventory. The "narrative flexing" started by the planted forest industry itself in the late 1990s was officially incorporated into the governance of the sector and would, in the following years, be increasingly legitimized by the government.

5.2 Lula's first term: the capture of the state by the planted forests industry

In 2003, three years after the release of the PNF, Luiz Inácio Lula da Silva began his first mandate as Brazilian president. Lula da Silva is one of the founders of the left-leaning Workers' Party (PT, in Portuguese). His political position gave rise to hope among environmentalists and activists in favor of indigenous rights in Brazil that the social agenda historically defended by the PT would help their cause, including with conflicts involving planted forest companies, such as Aracruz Celulose (personal communication, November 9, 2018). However, evidence quickly showed that such hope was ill-founded. This was highlighted in an interview with a representative of a forest-related NGO. In their view, the new government made clear – right from the start – their commitment to the planted forests industries, frustrating those negatively impacted by conflicts with the sector (personal communication, November 9, 2018). According to the informant, one of the first delegations of businesspeople to visit the new president was from the planted forests industries, in order to negotiate the government's support to the sector. The first administration of Lula da Silva marked the return of the government's direct incentive to planted forests expansion, specifically for industrial and commercial purposes via the BNDES, in an attempt to create big national companies with international competitive capacity (personal communication, November 9, 2018). While developmentalist strategies were adopted to push planted forests forward during the latter half of the 20th century, the strategy reported by the informant is typical of the new developmentalist discourse that will guide Brazilian political economy during the 2000s. As Kröger (2012) pointed out, Brazilian government had particular interests in strengthening its "national champions" to better compete internationally, which would in turn increase foreign income to be invested in the Worker's Party social policies. Supporting the planted forests sector was, therefore, part of Lula's development project.

The first planted forests governance instrument created under Lula's presidency was the **Action Plan for Deforestation Prevention and Control in the Legal Amazon** (PPCDAm, in Portuguese), in 2004. The policy was to be implemented in four phases, and was conceived out of the government's developmental approach to the Amazon region, which was "based on social inclusion with respect to cultural diversity, dynamic and competitive economic activities and the sustainable use of natural resources, [and] keeping ecological balance" (Brasil 2004, 7, *own translation*). The main goal of the policy is to reduce illegal deforestation in the Legal Amazon region utilizing sustainable alternative sources of forest-based raw material – e.g. managed native forests or planted forests – and, alongside it, foster the development of the region based on these environmentally sustainable activities (Brasil 2004, 7). Following the trend initiated by the PNF, the PPCDAm seeks not only to reduce illegal deforestation, but also to promote "a better use of already deforested areas on sustainable bases, encompassing technological innovations, such as the grasslands management, agroforestry systems, ecological agriculture and recovery of degraded lands" (Brasil 2004, 18, *own translation*). Furthermore, in line with the Worker's Party political agenda, social considerations were also attached to the expected benefits:

> … valorization of the forest for conservation of biodiversity, forest management of wood and non-wood products, and environmental services purposes, as the basis for a new regional development model, seeking the improvement of quality of life of local populations with the reduction in social inequalities, economic competitiveness and environmental sustainability… (Brasil 2004, 18, *own translation*).

Therefore, with the PPCDAm, Brazilian authorities sought to use forest resources to leverage the improvement of social conditions in the Amazon region. The government's intentions to harmonize forestry activities and improvement of social wellbeing bring to mind the ideal of "Forestry for Development" promoted by the FAO in the latter half of the 20th century.

Actions in the first phase of the PPCDAm (2004-2008) are divided into three thematic lines: spatial and agrarian planning; monitoring and control; and the promotion of sustainable productive activities. Planted forests are encompassed solely by the third line, which indicates a more "production guided" role attributed to them by the PPCDAm. According to the PPCDAm text, the proposals related to the

promotion of sustainable productive activities aim to incentivize – via fiscal and credit instruments – "economic efficiency and sustainability of areas already deforested", as well as "job creation and income generation in activities of recovery of altered areas" (Brasil 2004, 25, *own translation*). For this, the PPCDAm expects agricultural policies in the Amazon to work with medium- and smallholders in order to increase their productivity in deforested and abandoned areas, which would help in the processes of environmental restoration, job creation, and income generation (Brasil 2004). Since planted forests have been included in the agricultural policy framework by the 1988 Constitution, their role in this process is to integrate activities like commercial reforestation and agroforestry systems for the recovery of areas of mandatory vegetation cover, such as Legal Reserves and Permanent Preservation Areas (Brasil 2004, 25). For this, technical and economic incentives are to be available for forestry projects (Brasil 2004, 26).

Lastly, still in the third axis of the PPCDAm's first phase, planted forests are expected to contribute heavily to the development of sustainable production chains of the wood, furniture, and steel industries (Brasil 2004, 41). For this goal, the PPCDAm foresees an investment of around 185,000 USD[20] (Brasil 2004, 41). Referring back to the "goals of job and income creation, regional productive development, training and social inclusion", reforestation projects are to supply sustainable raw material for the furniture industry, as well as charcoal for the steel industry and producers of pig iron in the Carajás region (Brasil 2004, 139; 141).

A brief note is important on the efforts to incorporate planted forests to the pig iron production in Carajás. According to a member of the monitoring committee for the UNDP Sustainable Steel Industry project in Brazil, the Carajás pig iron production center is the main driver of deforestation in the region, precisely because of their lack of planted forests stock to use as raw material (personal communication, December 14, 2018). Since pig iron production in the Carajás center is done mostly by small, heterogeneous and independent producers, their activities are difficult to monitor and often make use of illegal wood from deforestation. Data from 2017 shows that the planted forests inventory owned by independent producers of pig iron in Brazil is only enough to supply around 10% of their activities (personal communication,

[20] Official figure is 725,362 BRL. Currency rate as per May 1, 2019 (1 USD = 3.92 BRL). Figures not adjusted to monetary correction.

December 14, 2018). Seeking to address this lack of sustainable raw material for their activities, the informant argued for the expansion of the planted forests area in the country, as an alternative to wood from deforestation. The "flexible-ness" of planted forests makes it easy to promote their expansion for varied activities, while casting those against it as perpetrators of illegal deforestation. However, as Kröger (2016) posits, this inter-industry merging of the benefits of planted forests is nothing but another form of "narrative flexing" to legitimize and promote planted forests.

The following phases of the PPCDAm showed no major change in content from the initial phase. The second phase (2009-2011) maintained the actions and goals for the furniture and steel industries' production chains, and prescribed research on the economic use of planted forests in altered lands within the Amazon (Brasil 2009, 135; 159; 161). The third phase (2012-2015) connected the policy to the National Policy for Climate Change (from 2009), promoting planted forests as an important mitigation tool due to their capacity to reduce pressure on native forests in the Amazon – limiting, thus, emissions related to land use change (MMA 2013, 33; 46). It is interesting to notice the connection of the PPCDAm to climatic issues in its third phase, which was released shortly after Brazilian voluntary commitments to the Copenhagen Accord, in 2009. Once again, as with the PNF in 2000, topics that are relevant in international debates are brought into Brazilian governance for planted forests. The wide range of areas – economic, social and environmental – encompassed by planted forests' multiple-ness makes it easy to incorporate them in various forms of legislation and policies created by the authorities.

Although this "wild card" nature of planted forests can result in positive outcomes, it is essential to be aware of the ties between Brazilian government and the planted forests industry. In a context wherein the government perceived planted forests industries as "national champions" for its socio-economic policies, the multiple-ness of planted forests becomes a risky tool for developmental strategies. The flexible-ness of planted forests allows the government/industry alliance to promote their use in virtually any context. I argue that this is less of a case of pure tree flexing, and more of a "discourse flexing", to push policies supporting planted forests. It is known that planted forests expansion can lead to land dispossession, disruption of traditional livelihoods, and even deforestation. Thus it should not be difficult to see the risks of

promoting a "potentially harming" activity within one of the least monitored areas of the country, home to the world's largest biodiversity, and numerous indigenous communities. Yet, by flexing the discourse around planted forests governance, the government insists in promoting them in such non-optimal contexts.

The fourth and current phase of the PPCDAm (2016-2020) shows no relevant changes for the governance of planted forests in comparison to the previous ones.

Following the first governance mechanism involving planted forests created under Lula's administration, the alliance between the government and the planted forests industry started to show results with a new ruling. The **Normative Ruling 8**, passed in 2004 by the then Minister of the Environment, Marina Silva, was an important step for the producers and users of planted forests products in Brazil. The ruling establishes that planted forests (native or exotic) grown in areas of agricultural use, or in altered, underused, and abandoned lands are exempt from the presentation of projects, and also from technical monitoring[21] (MMA 2004). In addition, producers of native planted forests are obliged to notify the Ibama upon harvesting and/or trading of their products, while producer of exotic planted forests species (e.g. eucalyptus and pine tree, the standard for the industry) are exempt from the presentation of logging information[22] (MMA 2004). The Normative Ruling 8 addresses long-standing demands from the industries using planted forests products, which pushed for the simplification of the harvesting and trading administrative processes. The ruling by Marina Silva makes it easier to use planted forests as sources of forest-based raw material – likely in an attempt to reduce pressure on native forests, but also in a move to please the industries dependent on planted forests' products.

A representative for an international forestry NGO was critical of the Lula's administration, in specific the Ministry of the Environment, for their yielding and catering to the industry's demands so easily (personal communication, November 9, 2018). In their opinion, the government accepted too many of the requests made by the planted forest business, while ignoring those of NGOs and activists fighting against the sector's expansion. Marina Silva, as reported, "did not want to

[21] Article 1.
[22] Articles 2 and 5, respectively.

understand" the issue of plantations and how they may negatively affect local communities, indigenous peoples, and the biodiversity (personal communication, November 9, 2018). Policy developments like this further strengthen the argument that Brazilian socio-environmental concerns go only as far as they do not interfere with activities important for the country's economic growth, as perceived by large business and the government. In fact, when the country's "national champions" are responsible for socio-environmental degradation, their operations are justified in name of development goals. There seems to be a convenient disregard for topics that are detrimental to the progress of companies deemed as essential for the economy – as it happens with the several conflicts involving peasants, indigenous peoples, and Brazilian pulp and paper companies.

5.2.1 PAN, an alternative approach to planted forests expansion

Historically, as already argued, Brazilian forestry governance has been quite contradictory. As pointed by the PPCDAm, the sector is permeated by "a series of shortcomings and historical contradictions in the set of public policies" that should regulate it (Brasil 2004, 16). For the planted forests sector, the scenario is not different, as it becomes evident with the **National Action Program to Combat Desertification and Mitigate the Effects of Drought** (PAN, in Portuguese), created in 2005, by the Ministry of the Environment.

Up until the release of the PAN, planted forests had been strongly promoted by public policies for their commercial advantages, but also framed as effective tools to recover degraded and unproductive areas, by means of forestation/reforestation projects. The tax incentives to reforestation projects before 1988, the 2000 PNF, and the 2004 PPCDAm mention planted forests' environmental importance as part of the justification for their expansion in Brazil. The potential to improve soil rehabilitation and watershed protection where no other crop can grow is a strong argument for their use in the referred areas (Carnus et al. 2006; Evans 2009; Garlipp and Foelkel 2009). The industry replicate the claim, arguing that planted forests can effectively protect watersheds and secure the water demands from entire communities when good practices are followed for their management (personal communication, November 28, 2018a). The 2005 PAN, however, goes against almost all these claims and

arguments, and warns about the risks of using certain types of planted forests for the mentioned goals.

As hinted in its name, the PAN's goal is to fight the effects of drought, especially in the Northeastern region of Brazil, and avoid the desertification of areas under threat. For this, it identifies areas undergoing desertification process and focuses strategic actions to prevent further damage. Nevertheless, a common factor shared by many of these areas susceptible to desertification (ASDs, in Portuguese) is the presence of forest plantations – particularly, eucalyptus monocultures. The PAN points to how eucalyptus stands in the state of Espírito Santo have caused "the destruction of natural vegetation" to supply "raw material to the paper and pulp industry" (MMA 2005, 27, *own translation*). Similar conditions are found in the sub-humid and semi-arid regions of the state of Maranhão, and also in the state of Minas Gerais, where eucalyptus planted forests replace native vegetation (MMA 2005, 27; 30). In other words, for the PAN, exotic planted forests in the form of monoculture stands are detrimental to the environmental and ecosystem conditions of the land – opposing many of the previous (and future) governance pieces for the sector[23].

Alongside the prevention of desertification in the ASDs, the PAN also aims to create alternatives that are conducive to sustainable development in those areas, by means of fostering the "development of productive activities compatible to the preservation, conservation and sustainable management of the natural resources" (MMA 2005, 85). One of the activities of particular relevance for planted forests is the creation of energetic forests, in order to be used as alternative charcoal source for the steel industry (MMA 2005, 113). In a development similar to the 2004 PPCDAm and to the 1976 PSN, planted forests under the PAN should be used in reforestation projects with industrial goals. Nevertheless, instead of planting monocultures of exotic species – e.g. eucalyptus – the Program promotes the use of native species. As stated in the document, what is being promoted is

> … a copy of the original biome, with trees, shrubs and herbs, obtained by planting diversified native seedlings – in the beginning of the monsoon

[23] Note how the regions highlighted by the PAN (i.e. Maranhão, Espírito Santo and Minas Gerais) coincide with regions where land-related conflicts are abundant (Torre and Camporez 2015; Souza and Overbeek 2013). It is undeniable that the environmental disruptions caused by planted forests – and their impacts to local communities' livelihoods – are connected to these conflicts. Therefore, it is not far-fetched to link policies promoting planted forests in sub-optimal contexts to the same conflicts.

> season, in the Caatinga, without fixed spacing, making use of the original tree cover as a protection (MMA 2005, 113, *own translation*).

This management process would be carried until the site became a forest, "which would then be rationally exploited for fire-wood and charcoal, guaranteeing the biome's sustainability" (MMA 2005, 114, *own translation*). The PAN puts forward a model for planted forests different from the homogenous monoculture plantations reported by Scott (1998) and widely used in Brazil, one that makes use of native species for its intended goals, respecting the natural biome of the region, as well as its socio-environmental context. This position stems from the commitment to the Kyoto Protocol, to the Convention on Biological Diversity (CBD), and to the United Nations Convention to Combat Desertification (UNCCD), which in a joint workshop in Viterbo, Italy, advocated against the use of monoculture planted forests for reforestation/afforestation projects (MMA 2005, 171-2).

In sum, the PAN promotes planted forests for industrial, energetic purposes just like most of Brazilian governance instruments. The novelty brought by the referred policy is the rejection of monocultures of exotic species, in particular eucalyptus plantations. From this position, the PAN adopts a different stance on planted forests, based on the promotion of native species, in an attempt to mimic the original biome where those are being established. A contextual approach like this would certainly result in safer environmental outcomes, avoiding, for example, problems like species replacement and the disruption of the local fauna habitat. It is also worth arguing that the planted forests model proposed by the PAN could indirectly support locals' livelihoods, as the simulation of native forests would still allow for subsistence and cultural uses of the land by traditional peoples. The PAN model, then, presents progressive ideas, for which forestry practices should strive in an attempt to create a development model based on equal access to forests and their products, as well as the conservation of native biodiversity.

5.2.2 Regulating planted forests: a commercial approach

In 2006, another piece of governance including planted forests was created. The Law 11,284, or **Public Forests Management Law**, regulates the management of public

forests[24] – native and planted – for the promotion of biodiversity conservation, natural resource preservation, developmental needs and, following the already pointed trend, sustainable development[25] (Brasil 2006a). In order to promote these goals, the referred document foresees the management of public forests, as well as the creation of two new governance devices: the National Fund for Forestry Development (FNDF, in Portuguese), and the Brazilian Forestry Service (SFB) (Brasil 2006a).

By creating rules for the management of public forests, the Law 11,284 intends to foster a more rational and efficient use of forestry resources. At the same time, it seeks to contribute to the livelihoods of local communities who depend on the access to those forests, promoting thus local sustainable development and an "incentive to increase value added of forest products and services, as well as of the industrial diversity, the technological development, the use and training of local entrepreneurs and regional workforce"[26] (Brasil 2006a, *own translation*). For these purposes, public forests must be designated for concession to local actors and communities, in accordance to the National Conservation Units System[27], the 1988 Constitution, and the National Program for Agrarian Reform[28] (Brasil 2006a). One particular detail is worthy of mention about the concession of public forests: as Article 14 contemplates, "… forest concession will have as a goal the exploitation of forest products and services…" (Brasil 2006a, *own translation*). Despite the pro-environment stance taken by the referred law, public forests are not exclusively for conservational purposes – they must be utilized as sources of regional development. With these conditions in mind, Article 19 excludes foreign companies from the competition process for concession, and Article 33 includes special concession lots for disfavored actors, in order to guarantee equality in the process (Brasil 2006a). Both articles are important mechanisms to keep forest concessions from becoming another form of "land grab" by politically and economically powerful foreign actors.

[24] Public forests are one of the several forest categories created under the National Conservation Units System, Law 9,985 from 2000.
[25] Article 2.
[26] Article 2, Subsections II, III and IV.
[27] Law 9,985.
[28] Articles 4 and 6.

In practice, however, the scenario is different. Kröger (2018) describes how the logging schemes created to meet the objectives of the law ended up having perverse consequences for indigenous communities and for the biodiversity. In his study in the National Forest *Tapajós*, Kröger notes that local leaders, government officials, and NGO representatives were satisfied with the flow of money generated by the forest concessions and, in particular, its FSC-certified logging schemes for the exploitation of wood resources (Kröger 2018). However, indigenous people protested against such schemes, with claims that the exploitation of wood within the designated areas negatively impacted their quality of life, "which values trees over logging" (Kröger 2018, 9). Logging causes the tree canopy to thin, while the understory thickens, rendering the forest "unusable for traditional uses" (Kröger 2018, 3). In addition, there are complaints about poor distribution of the revenue created, income concentration within a few influent leaders, and even an increase in illegal wood extraction, since such wood can be claimed as FSC-certified (Kröger 2018). In light of these considerations, some analysts see these forest concessions as a "hidden land grabbing", in which logging for timber becomes the main purpose of the forest, forcing locals to change the ways they use it (Kröger 2018, 3).

The Public Forests Management Law also limits the use of public forests for trading of carbon credits[29] (Brasil 2006a). In fact, it forbids the trading of credits generated by natural forests, and promotes the trade of those from reforestation projects in degraded lands – that is, planted forests[30] (Brasil 2006a). This provision sheds light on the Brazilian interest of using planted forests as carbon sinks and, as such, instruments of carbon trading mechanisms. In a scenario wherein Brazilian intentions were purely focused on the mitigation of carbon emissions, any type of forest would be considered apt for the trading of carbon credits. The limitations established by the referred article are in place to restrict the trading to those credits generated by planted forests, excluding natural forests from the process. Considering that one of the arguments underlying public funding of planted forests' expansion is precisely their carbon capture potential, it is not surprising that Paragraph 2 establishes this limitation. In an institutional and legal environment wherein only planted forests can be used for paid carbon capture, it is evident that investors will channel their funds to

[29] Article 16, Subsection VI.
[30] Article 16, Subsection VI, Paragraph 2.

those, and not to the conservation of natural forests. Paragraph 2 effectively indicates the government's support to the sector. Moreover, it formalizes the "narrative flexing" around planted forests as carbons sinks.

The referred law also marks the creation of the National Fund for Forest Development (FNDF), with financial nature, and the goal to invest in technological innovation, technical assistance for forestry activities, and the recovery of degraded lands using solely native species[31] (Brasil 2006a). Interestingly, the FNDF handles the issue of degraded lands using only native species, similarly to the model proposed by the 2005 PAN. Although this provision does not become widespread in future governance developments, it is still important to be highlighted, since, once again, it evinces incongruities among the existing legal apparatus for planted forests.

Lastly, the creation of the Brazilian Forestry Service (SFB) follows the historical path of public institutions supporting forestry activities for the production of wood and non-wood products, as well as guiding forestry production to meet society's demand[32] (Brasil 2006a). The SFB does not offer any additional insights into Brazilian governance for planted forests other than the interest to maintain a "sustainable forestry production" (Brasil 2006a, *own translation*).

In 2006, reinforcing this commitment to more sustainable forestry practices, the **Decree 5,975** is released to further regulate the 1965 Forest Code's terms for forest exploitation. The most important instrument introduced by said decree is the Sustainable Forest Management Plan (PMFS, in Portuguese), under responsibility of the National System for the Environment (SISNAMA). The PMFS, according to the legal text, is a "technical document that contains the guidelines and procedures for the management of the forest, seeking to reap economic, social and environmental benefits"[33] (Brasil 2006b, *own translation*). In other words, any activity involving the exploitation of forestry resources will require a PMFS approved by the SISNAMA, which then grants the environmental license for the execution of sustainable forest management.

[31] Article 41.
[32] Articles 54 and 55.
[33] Article 2, Single Paragraph.

Alongside the PMFS, another requirement document is created by the Decree 5,975 – the Sustainable Supply Plan (Brasil 2006b). In Article 12, the Decree builds upon dispositions of the 1965 Forest Code, setting thresholds to the large-scale use of forest-based raw material in industrial operations. According to the new ruling, companies using quantities superior to those established by the article must present a Sustainable Supply Plan containing information such as the origin of the forest-based raw material and contracts of out-grower schemes with third-parties[34] (Brasil 2006b).

The creation of additional administrative requirements for forest exploitation might seem to go against the interests of the planted forests industries, which were at that time enjoying the benefits of an alliance with Lula's government. However, further look into the Decree 5,975 demonstrates that the privileges given to the sector were kept despite the PMFS and the Sustainable Supply Plan. In Article 9, Subsection II, planted forests located outside areas of Legal Reserve – e.g. forest plantations for commercial use – are exempt from the PMFS, allowing for the exploitation of their products without the need to observe the same technical standards required for natural forests (Brasil 2006b). Moreover, Article 11 demands that companies use forest-based raw material obtained either from PMFS-approved managed forests, natural vegetation suppressed upon authorization, or planted forests, which are once again promoted for industrial purposes (Brasil 2006b). Companies using forest products from the aforementioned sources are also exempt from carrying out forest replacement[35] (Brasil 2006b). All these privileges given to planted forests industries serve as evidence to the argument that Brazilian government is more interested in facilitating capital accumulation from forestry activities – e.g. via increased outputs – than actually regulating their environmental impacts. These findings further support the argument of a government/industry alliance in the context of a "national champions" strategy.

Two weeks after the publishing of Decree 5,975, the Ministry of the Environment published the **Normative Ruling 6**, establishing parameters for the compliance with the new requirements, in particular the PMFS and Sustainable Supply Plan (MMA 2006a). The Ministry of the Environment's ruling can be understood within the institutional context pointed earlier. In a scenario where the government holds an

[34] Article 12.
[35] Article 15.

alliance with the planted forests sector, and the Minister of the Environment is unwilling to hear the concerns of environmentalists and social movements, it is not surprising that Brazilian governance for planted forests ended favoring the interests of the industry, with minimal licensing requirements and exemptions from the presentation of environmental documents.

The PMFS and the Sustainable Supply Plan may be considered important instruments for the monitoring and control of forestry activities, but the planted forests sector enjoys substantial benefits and exemptions. These produce a flexible regulatory environment for their activities, allowing the industries to maximize their profit with little administrative and environmental requirements. In 2006, the Ministry of the Environment together with the Ibama had already passed the **Normative Ruling 112**, exempting the transportation and storage of planted forests products from the presentation of the Forest Origin Document (MMA 2006b). In another occasion, the Ministry of the Environment passed the **Normative Ruling 3** exempting the planting, harvesting and trading of planted forests species from the presentation of an official project and technical visit from specialized authorities (MMA 2009). On one hand, the rulings can be interpreted as an administrative incentive to the use of planted forests over natural ones, representing an attempt to curb illegal deforestation and promote a more sustainable supply chain. As licensing and other legal requirements in Brazil are often costly and time-consuming, by making planted forests exempt from some of those demands the government encourages the industry to use these as their main supply of wood products. On the other hand, what I argue is that these regulations are attempts to benefit businesses using planted forests as raw material for their activities, such as the pulp and paper, and the steel industries, due to their importance to Brazilian developmental strategies.

Judging by the regulatory environment created in 2006, it is reasonable to assume that planted forests have considerable advantages to become the main source of raw material for industrial operations. Establishing a reason for the loosening of regulations to planted forests in 2006, however, is not an easy task. It is possible to attribute the exemptions and benefits to an attempt to boost domestic production of goods dependent on planted forests, such as paper, pulp and steel. In a period when

the global economy was experiencing the so-called "commodity boom" (O'Neil et al. 2012; Veitmeyer 2013; Wilson 2015), the government may have tried to ease the industries' domestic operations in order to better compete internationally and generate extra revenue from their exports. This explanation would be in line with the "national champions" strategy, based on the support to key industries and their export-oriented activities, as formulated by Kröger (2012).

Another possible explanation for the governance developments from 2006 is the presidential election happening during that year. It is possible, albeit difficult to prove, that the concessions given to the planted forests businesses were an effort to secure their support during Lula da Silva's electoral campaign. During Lula's first electoral campaign in 2002, industries dependent on planted forests offered PT substantial financial support. Giants from the steel industry, such as Brazilian Steel Institute, Brazilian Metallurgy and Mining Company, Sibra, and Gerdau donated, together, almost 1 million USD to his campaign, while pulp and paper companies contributed with around 120,000 USD[36] (Transparência Brasil 2013a; TSE 2019a). As Lula's first mandate approached its end, the government and its institutions may have loosened the regulations for planted forests in order to keep their alliance with the sector for the next four years. In the 2006 presidential election, Lula's committee also received donations from the "national champions" in the steel industry, such as Gerdau, National Steel Company, and Caemi (later merged with Vale), amounting to around 1.8 million USD (Transparência Brasil 2013b). Companies in the pulp and paper sector also contributed – Suzano Pulp and Paper, for example, donated almost 40,000 USD to Lula's campaign[37] (TSE 2019b).

This second hypothesis of election contributions is supported by Claessens et al.'s (2008, 554; 555) findings that "contributions help shape policy on a corporate-specific basis" and that "bank financing of firms that made more contributions to (elected) federal deputies increased more relative to other firms in the four years following each election". As Kröger (2014a) notes, this is particularly the case in

[36, 36] Currency rate as per May 1, 2019 (1 USD = 3.92 BRL). Figures not adjusted to monetary correction. Kröger (2014a) presents less conservative numbers, but as the author himself explains, "… the official election campaign statistics should not be trusted too much, being based on the candidate's own explanations of their election financing, so that many do not even give full details and some give none at all. Furthermore, it is easy to falsify any receipt in Brazil or circulate money by *caixa dois* and other corruption measures" (Kröger 2014a, 108).

Brazil, where politicians often control how public and private banks invest their resources. Naturally, speculations of the type are almost impossible to be corroborated, but are still important for they offer new insights into developments that follow a historical trend, despite appearing incoherent with the Worker's Party public agenda.

6 The climate discourse: framing planted forests as carbon sinks

In 2006 there was an important turn for planted forests governance in Brazil. Despite the creation of several licensing mechanisms and regulations to the planting, trading, transportation, and storage of forestry products, planted forests were left outside most of them, exempt from bureaucratic procedures such as the PMFS, the Forest Origin Document, and even the obligation to replace forest cover upon their use. Up until that point, planted forests in Brazil had been promoted for two main purposes. The first and paramount goal was economic development, resulting from commercial uses and export revenue generated by planted forests industries. The second purpose appeared under the banner of sustainability, in which planted forests were frequently portrayed as "green" sources of raw material. Within this last framing, plantations were said to reduce illegal deforestation of native forests, increase recovery of degraded lands and, occasionally, assist in local development strategies. In 2009, however, the ecological discourse supporting the expansion planted forests gained greater prominence than before, in particular, their climate mitigation potential.

In the chapter to follow, I will discuss how planted forests acquired their climatic importance within Brazilian governance after 2009. It is possible to trace the beginning of the climate discourse to the 2000 PNF, heavily influenced by the Kyoto Protocol, but I argue that it was only after the 2009 Copenhagen Summit that planted forests were effectively incorporated as carbon sinks in Brazilian governance. This climate framing, as will be presented, is extensively used in the sectoral plans for climate mitigation, in an attempt to create a green economy for the country. I argue, however, that the "narrative flexing" connected to planted forests represents an innovative path to incentivize the expansion of plantation areas within Brazilian governance. My findings converge to Kröger's (2014b, 2016) proposition that the climate argument is used to give planted forests a "moral high ground" in terms of their commercial use, while keeping their historical contradictions and socio-environmental conflicts at bay.

6.1 The Copenhagen Summit and Brazilian commitments

While the regulatory environment until 2006 was influenced by different sectoral interests and development views, the changes in planted forests governance started in 2009 present close connections with specific events, namely, the 2009 United Nations Climate Change Conference (hereafter Copenhagen Summit, or COP 15). During COP 15 Brazil pledged to reduce its greenhouse gas emissions in 36.1–38.9% by 2020 compared to business as usual. On January 29, 2010, the country presented its Nationally Appropriate Mitigation Actions (NAMAs) to the UNFCCC secretariat. Those were the country's voluntary pledges in accordance to Article 5 of the Accord. The proposed NAMAs are: (a) reduction of Amazon deforestation; (b) reduction of Cerrado deforestation; (c) Restoration of grazing land; (d) integrated crop-livestock system; (e) no-till farming; (f) biological N2 fixation; (g) energy efficiency; (h) increase the use of biofuels; (i) increase in energy supply by hydroelectric power plants; (j) alternative energy sources; and (k) replace coal from deforestation used in the iron and steel industries for coal from planted forests (Brasil 2010). The four main sectors targeted by Brazilian pledges would contribute to emissions reduction in the following proportions: land use, land-use change, and forestry, 24.7%; agricultural activities, 4.9-6.1%; energy, 6.1-7.7%; and iron and steel industry, 0.3-0.4% (Gurgel and Paltsev 2012, 9).

Domestically, however, the pledges proposed in Copenhagen were being discussed since 2008 (Viola 2010). In December 2009, soon after COP 15 and before submitting its letter to Annex II, the Brazilian government launched its **National Policy for Climate Change** (PNMC, in Portuguese) via Law 12,187. The PNMC is the main legal instrument for climate change mitigation and adaptation in Brazil, establishing principles and goals that must be followed by any other public policy[38] (Brasil 2009a). The law takes into account that climate mitigation actions should be taken whenever there is "reasonable consensus among scientific and technical means"[39] to do so (Brasil 2009a, *own translation*). The provision contemplates that the PNMC should foster the "anthropic removal of greenhouse gases in the national

[38] Article 11.
[39] Article 3.

territory by carbon sinks"[40], as well as the "consolidation and expansion of the legally protected areas and the incentive to reforestation and reconstitution of the tree cover in degraded areas"[41] (Brasil 2009, *own translation*).

While focusing primarily on climate change, the PNMC also acknowledges the need for a more sustainable approach to socio-economic development. The law stipulates the harmonization of needs from different sectors of society, in an attempt to equally share the costs of climate mitigation, without prejudice to socio-economic growth and, simultaneously, reducing social inequalities and poverty[42] (Brasil 2009a). From this excerpt, it is evident that the PNMC proposes the creation of a "green economy", that is, the maintenance of economic growth with consideration to environmental and social issues. However, as I have presented in the analytical framework for this thesis, this green economy fails to deliver its promises. In peripheral countries, the guidelines from the green economy are limited to an attempt to modernize resource-intensive activities, turning them into "green sectors" (Bergius and Buseth 2019). In Brazil, the scenario is not different, as it will become clear in the following section.

The PNMC contribution to the governance of planted forests in Brazil appears in a subtle way. Its creational law defines carbon sink (*sumidouro*, in the original) as any "process, activity or mechanism which removes a greenhouse gas, an aerosol, or a precursor of a greenhouse gas from the atmosphere"[43] (Brasil 2009a, *own translation*). By this definition, planted forests can be understood as carbon sinks and, therefore, are tools to be used in the Brazilian quest for climate mitigation. In addition to planted forests' framing as carbon sinks, they also fit the country's interest to increase projects of reforestation and recovery of degraded lands. Once again, the ecological promises of planted forests put them in a privileged position within Brazilian governance, wherein climate mitigation activities – such as the planting of forests – are to be supported via economic and policy instruments, in order to create more sustainable production and consumption standards[44] (Brasil 2009a). This flexible-ness is what allows planted forests in Brazil to benefit from governmental support even when their uses are not explicitly mentioned.

[40] Article 4, Subsection IV.
[41] Article 4, Subsection VII.
[42] Articles 3 and 4.
[43] Article 2, Subsection 9.
[44] Article 5.

To achieve its goal, the PNMC prescribes the use of fiscal measures to stimulate reduction and capture of GHG; specific credit lines of public and private finance agents; economic and financial mechanisms regarding climate mitigation and adaptation under the UNFCCC and Kyoto Protocol; the National Fund for Climate Change; and other federal policies, such as the PPCDAm[45] (Brasil 2009a). These mechanisms bring to mind the fiscal and credit incentives to the expansion of planted forests during the latter half of the 20th century, but now with a new argument supporting them: climate action.

It is important to highlight the inclusion of the **National Fund for Climate Change** (FNMC, in Portuguese) within the instruments supporting the PNMC. The Fund was created by Law 12,114, as the COP 15 was taking place in Copenhagen. The FNMC is, primarily, a source of financial support connected to the Ministry of the Environment, seeking to guarantee funding for projects of climate mitigation and adaptation[46] (Brasil 2009b). According to the FNMC text, projects to be contemplated by its resources must strive for the reduction of GHG emissions, creation of sustainable production chains, decrease of deforestation, carbon capture, and recovery of degraded lands[47] (Brasil 2009b). Since the discourse supporting planted forests conveniently fits all of these goals, the FNMC can be an effective mechanism for the funding of planted forests expansion in Brazil – a clear case of planted forests profiting from their "flexible-ness". This observation becomes even more interesting considering that the Fund's main financial agent is the BNDES, which was also behind the expansion of the sector from the 1960s until the 1980s[48] (Brasil 2009b). While in the earlier period the bank's operations were justified by the need to foster the development of the national industry, now its funding to the planted forests industries reflects the incorporation of the widespread narrative flexing in Brazilian governance. Of course, this is not to say that the reasons for said support are not the same as they were six decades ago. The analysis of the FNMC's funding priorities sheds light on the government's direct support to the planted forests sector. The novelty, however, is the direct link that can be made between

[45] Article 6.
[46] Article 2.
[47] Article 5, Paragraph 4.
[48] Article 7.

planted forests and climate mitigation, which offers an important moral justification for the sector's expansion.

Returning now to the PNMC, one last provision of particular relevance for this research is the Single Paragraph of Article 11. According to the law, a future executive decree shall create sectoral plans for the mitigation and adaptation to climate change, in order to guide the Brazilian economy to a low-carbon path (Brasil 2009a). These sectoral plans would work in tandem with the PNMC striving to achieve the voluntary goals set in the COP 15 and recognized by Law 12,187 (Brasil 2009a). Accordingly, in December, 2010, the government approved **Decree 7,390** to regulate the PNMC and define the sectoral plans that would work towards the COP 15 commitments.

According to the decree, the sectoral plans for the transformation of Brazilian economy into a low-carbon one are: the Action Plan for the Control and Prevention of Deforestation in the Amazon (PPCDAm); the Action Plan for the Control and Prevention of Deforestation and Wildfires in the Cerrado (PPCerrado, in Portuguese); the Decennial Expansion Plan for Electricity (PDE, in Portuguese); the Plan for a Low-Carbon Agriculture (ABC Plan, in Portuguese); and the Plan for the Reduction of Emissions from the Steel Industry[49] (Brasil 2010). With the exception of the PDE, all of these sectoral plans attribute, in one way or another, a role to planted forests in climate mitigation actions. I have already presented the importance and uses of planted forests within the PPCDAm and, in the following sections, I will analyze the three relevant sectoral plans striving for a low-carbon economy.

6.2 The sectoral plans: commercial expansion under the banner of climate mitigation

The first of the sectoral plans to be created following the PNMC was the **Action Plan for the Control and Prevention of Deforestation and Wildfires in the Cerrado**, in 2010. The plan was only published in 2011, by the Ministry of the Environment. The Cerrado biome is the world's richest savannah, with around 5% of the world's biodiversity (MMA 2011, 7). Its biophysical characteristics are attractive

[49] Article 3.

for several anthropic activities, such as agriculture, cattle raising, and charcoal production (MMA 2011). For these reasons, the biome lost almost 50% of its natural vegetation cover until 2008, with the worst deforestation hotspots being in the state of Minas Gerais and Mato Grosso do Sul (MMA 2011, 7). Coincidently, both states are currently the first and third, respectively, in area of planted forests (Ibá 2017).

The PPCerrado builds upon the PNMC and especially on the Brazilian commitments during the COP 15. On that occasion, the country voluntarily decided to curb illegal deforestation in the Amazon – task delegated to the already existent PPCDAm – and in the Cerrado.

The PPCerrado is divided into three lines of action. The first is control and monitoring, in which the biome's health and greenhouse gas emissions are tracked (MMA 2011). The second is protected areas and spatial planning, in which land use is managed in order to create a more sustainable occupation of the biome and also to protect indigenous territory (MMA 2011). The last axis of the PPCerrado, and the most important for the planted forests sector, is the promotion of sustainable activities (MMA 2011). Similarly to the PPCDAm, the PPCerrado aims for the transformation of the current development model widespread within the biome – based on deforestation and conventional farming practices – into a more sustainable approach – based on the protection of vegetation cover, diversified economic activities, and respect to local costumes (MMA 2011, 11).

Third line of action of the PPCerrado demonstrates the plan's relevance for the governance of planted forests. The main actions to be taken under the "promotion of sustainable activities" category are: creation of credit lines for the recovery of 8 million hectares of degraded land and conservation areas; expansion of 3.2 million hectares of energetic planted forests (i.e. for charcoal) to be used by the steel industry; and the increase in constitutional funds financing reforestation projects carried by the steel industry (MMA 2011, 12). In the same way as the PPCDAm, the PPCerrado strongly promotes planted forests for industrial purposes, in an attempt at "greening" the industries that drive a large share of the illegal deforestation in the

biome[50]. With these actions, the PPCerrado expects not only to reduce deforestation in the biome by 40% until 2020, but also to foster more sustainable forestry practices, and the consumption of charcoal from planted sources by the pig iron industry (MMA 2011, 12). The plan fits well within the green economy discourse that emerges around the same time of its release. Planted forests are taken as the "sustainable" link between environmental concerns and the need to transform the steel industry into a "green sector". I highlight how this understanding perpetuates the trend in peripheral countries that promotes the green economy as some sort of "rectification" of non-green sectors, as described by Bergius and Buseth (2019).

Out of the three thematic lines of the PPCerrado, the "promotion of sustainable productive activities" is the one with most funding, floating around 55 million USD[51] for the first phase of the plan (MMA 2011). While the resource allocation of the PPCerrado itself already signals the priority of the plan, its text only strengthens any hypothesis about its focus. The PPCerrado's concern with the steel industry is so evident that its content could be easily incorporated into the sectoral plan for the steel industry. Highlighting the importance of the steel industry for the Brazilian economy as well as its non-compliance to environmental regulations[52], the PPCerrado emphasizes the need to create new paths to address the shortage of planted charcoal in the country (MMA 2011, 54). In fact, at times the plan reads as a handbook on how to add value to Brazilian steel, incentivizing the industry to comply with socio-environmental standards. For the PPCerrado, Brazilian international competitiveness depends on addressing the loss of biodiversity and high carbon emissions caused by illegal deforestation, and this can only be done via the expansion of the planted forest stock available for industrial uses (MMA 2011, 55). In other words, the plan tries to harmonize the ecological benefits from planting forests to recover degraded land, and the industrial benefits reaped from using planted wood in steel mills – in reality, however, this is highly improbable.

[50] According to the official text of the PPCerrado, in 2005, almost 50% of the charcoal produced in the country came from native vegetation (MMA 2011, 7). The steel industry is the main user of charcoal in Brazil.
[51] Official figure is 218,453,108.64 BRL. Currency rate as per May 1, 2019 (1 USD = 3.92 BRL). Figures not adjusted to monetary correction.
[52] Brazilian steel industry can be divided into three subsectors: integrated steel mills, iron alloy production plants, and independent producers of pig iron. Out of the three subsectors, the one with largest areas of planted forests is the integrated steel mill subsector, and the one responsible for most of illegal deforestation is the pig iron subsector (personal communication, December 14, 2018).

The analysis of the PPCerrado so far has centered on its initial phase, which lasted from 2010 until 2011. In its publication for the second stage (2014 to 2015), the plan highlights some improvement in Brazilian production of charcoal: in 2011, around 75% of all charcoal produced in the country originated from planted forests, a 50% increase since 2005 (MMA 2014, 32). While the number cannot be equated to a drop in deforestation rates, it shows that planted forests for energetic purposes have increased their output over time. The text released for the second phase of the PPCerrado also emphasizes that companies connected to the Brazil Steel Institute made the commitment to fully supply themselves with their own planted forests by 2016 (MMA 2014, 33). Regardless of the success in terms of land recovery or carbon capture, it is undeniable that the industrial uses assigned to planted forests have generated prosperous results following the release of the first phase of the PPCerrado. To incentivize the continuity of such progress, the second stage of the plan increased the resources for its third thematic axis to 133 million USD[53] (MMA 2011, 79).

Turning turn to its last phase, from 2016 to 2020 – the deadline for the compliance with the COP 15 commitments – the third phase of the PPCerrado presents a new thematic axis to support the expansion of planted forests in the biome, called Economic and Normative Instruments. This fourth line of action opens new credit lines backing the planting of forests, facilitating new funding initiatives coming from the financial markets toward sustainable productive sectors – e.g. steel industry using planted forests (MMA 2016, 13). Fiscal incentives and so-called "green titles" would generate such funding incentives (MMA 2016, 13). Another important development proposed by the third edition of the PPCerrado is connected to the Sustainable Supply Plan (created by the Decree 5,975). The PPCerrado commissions the Ministry of the Environment to promote planted forests as the exclusive source of raw material in those activities currently required to present the Sustainable Supply Plan, as opposed to other native sources of forest products (MMA 2016, 41). In practice, this would establish planted forests as the sole source of large-scale industrial raw material in Brazil – an even stronger position for the sector, considering the country's reliance on forest-based raw material. Whereas the industry and the planted

[53] Official figure is 521,369,800.62 BRL. Currency rate as per May 1, 2019 (1 USD = 3.92 BRL). Figures not adjusted to monetary correction.

forest sector see such development with good eyes, environmentalists and local communities oppose the proposition.

In sum, the PPCerrado represents an additional push for the planted forests sector to expand their industrial and commercial uses, even though the argumentative line backing such expansion is based on environmental and climatic reasons. The plan is a useful object for analysis, as it evidences the discursive techniques that permeate Brazilian governance framework for planted forests. This narrative framing embodies the flexible-ness of planted forests, which, through careful articulation by the government and the industry, are able to find their way into Brazilian policies for climate mitigation.

Working together with the PPCerrado, the **Plan for a Low-Carbon Agriculture** (ABC Plan, in Portuguese) depicts well the government's long-standing ability to promote planted forests for industrial purposes under a variety of "green banners". The ABC Plan was approved in 2011, but only released in 2012 by the Ministry of Agriculture, Livestock and Supply (hereafter Ministry of Agriculture). Its primary goal is to create the conditions for the development of a low-carbon economy within the Brazilian farming sector, fostering mitigation and adaptation activities that would lead to a more efficient use of natural resources and improved livelihood for rural communities (MAPA 2012, 12; 38). The policy itself is structured along seven programs: recovery of degraded lands; crop-livestock-forestry integration systems and agroforestry systems; no-tillage systems; biological nitrogen fixation; planted forests; animal waste treatment; and adaptation to climate change (MAPA 2012, 21). Each of the programs presents specific lines of action, funding, and assistance connected to their goals for the year of 2020.

Based on the country's commitments to the UNFCCC, Earth Summit, and NAMAs, the ABC Plan brings the notion of a green economy to Brazilian farming sector:

> The incorporation of sustainability to the economic processes allows for a new step, solidifying and spreading concepts of the new model called Green Economy. This model will represent, for several sectors, the implementation of processes guided by productivity and efficiency in terms of energy use and in all stages of the production chain, including the use of raw material, the half-life of products, and the disposal and recycling processes (MAPA 2012, 34, *own translation*).

In the plan's understanding, thus, a green economy would be one in which productive activities such as farming and steel production make efficient and rational use of natural resources, as to preserve those and rural communities from the impacts of climate change. In the same way as the PPCerrado, the ABC Plan follows the green economy ideal by overemphasizing "productivity and efficiency" in the quest for "greening" polluting and carbon-intensive sectors. Nevertheless, it is important to focus on the ABC Plan's attempt to create a low-carbon economy for land-use change activities, because the plan's contribution to the governance of planted forests stems from this objective.

Under the ABC Plan's goals, planted forests are to be used primarily in an economic way, with other benefits being a side-effect. According to its text, economic planted forests should contemplate four specific objectives: offer long-term income for family farmers; increase the supply of industrial and energetic wood; reduce pressure on native forests; and capture carbon from the atmosphere (MAPA 2012, 122). The end result from the ABC Plan actions is to expand the area of planted forests in the country by 3 million hectares, which should be designated for the production of fiber, pulp, and wood (MAPA 2012, 126). Within the green economy proposed by the ABC Plan, planted forests are flexed into a narrative that portrays their expansion as beneficial for social and climatic questions. Planted forests are able to not only generate income from their products, but also aid in the "greening" of the industrial sector.

What makes the ABC Plan interesting is the assumption that by simply expanding the planted forest inventory, farming and industrial activities would become more sustainable and low-carbon. Naturally, promoting planted forests as the main source of industrial raw material could lead to environmental and climatic benefits, but a large area of plantations does not automatically translate into sustainable productive chains. Assumptions of this kind contribute to the perpetuation of a green economy that is based on the understanding that simple and small changes in the production line will offset the negative effects of capital appropriation and nature commodification in name of the consumption needs of capitalism – which are ultimately endless, while natural resources are not.

Based on this flawed assumption, the ABC Plan goes on to highlight the importance of financial instruments in its quest for planted forests expansion. The plan considers the lack of adequate funding mechanisms and economic incentives as one of the main challenges to planted forests expansion in Brazil, alongside normative and judicial uncertainties regarding the exploitation of forest species (MAPA 2012, 123). By identifying financial and technical aspects as hindrances to the further development of the planted forests sector, the ABC Plan ends up restricting its proposed actions to solve this perceived problem. Consequently, instead of finding ways to employ planted forests in a truly effective manner to reach the COP 15 goals – e.g. planting native forest species in conservation areas – the ABC Plan limits itself to creating credit lines[54] and offering technical assistance to medium- and smallholders willing to invest in industrial reforestation projects (MAPA 2012).

Nevertheless, in the same way that larger areas of planted forests do not correspond to more sustainable production chains, the existence of credit for family farmers does not necessarily translate to livelihood improvements via long-term income. As one representative of the industry pointed out, sometimes millions of dollars made available by the BNDES are left untouched due to lack of access by medium- and smallholders (personal communication, December 20, 2018a). Despite the apparent good intentions in terms of social development shown by the government in the ABC Plan, its proposed actions are not enough to achieve the expected goals. Brazilian policymaking for the planted forests sector presents important socio-environmental goals, but fails to materialize them in practice (personal communication, December 20, 2018a). This failure leaves behind an entire institutional apparatus that could be used to promote social development and environmental conservation, but instead is appropriated by those actors with sufficient economic and political power to access the resources made available by, for example, the ABC Plan.

It is important to notice the influence of the Brazilian Association of Planted Forest Producers (Abraf, in Portuguese) during the making of the ABC Plan (and other related policies for the sector). The Abraf used to be a conglomerate of the biggest companies in the planted forest sector, which in 2014 merged with three other

[54] The planted forest thematic axis foresees the investment of 2.3 billion USD (official figure is 9 billion BRL), obtained from the BNDES, the National Treasure and even the CDM (MAPA 2012, 66; 69).

associations within the forestry sector to form the Brazilian Tree Industry (Ibá, in Portuguese). The Abraf, and now the Ibá, has been an important actor during the development of planted forests policy in Brazil, leading seminars and workshops to promote debates on forestry topics, as well as maintaining close relations to congressmen (Ibá 2019a). Internationally, the Ibá represents the interests of the sector as observer member in the UNFCCC, and in meetings of other international entities connected to the planted forests sector and its industries (Ibá 2019b). While the entity should be primarily a representative for the sector within the political and economic arenas, the Abraf/Ibá does much more than that. For example, the Abraf was responsible for the gathering and publishing of all data on planted forests contained in the Brazilian forestry reports submitted to the FAO since 2005. Considering the strong influence of the Abraf/Ibá on Brazilian governance for planted forests, the ABC Plan's emphatic financial support to industrial planted forests illustrates another move to benefit the sector via public policies and institutions.

Moreover, the ABC Plan signals an important change that starts to happen in Brazilian governance for planted forests. Since the 1990s until the publishing of the plan, planted forests had been under the responsibility of the Ministry of the Environment. The Ministry of Agriculture, however, manages the ABC Plan. The Ministry of Agriculture competences over planted forests hint at future developments in the governance for planted forests that will be approached later on.

The last sectoral plan of relevance to planted forests governance is the **Plan for the Reduction of Emissions from the Steel Industry**, or simply Steel Industry Plan. The plan was commissioned by Decree 7,390, from 2010, but at the time of the process of data collection for this research, no official plan had actually been announced by Brazilian authorities. The long wait for the sectoral plan is not surprising, given the tardiness of Brazilian policymaking for non-urgent issues. However, with less than a year to the 2020 deadline set in the PNMC and the NAMAs, it is likely that the plan will never be officially released for analysis.

The Steel Industry Plan aims to reduce carbon emissions associated with deforestation of native forests for the production of charcoal for the steel industry, creating a low-carbon context that should increase the industry's competitiveness

internationally (MDIC 2018). The plan is supposed to be executed by the Ministry of Development, Industry and Foreign Trade (MDIC, in Portuguese), and consists of two main set of actions. The first is the replacement of native forests' wood for planted wood in the industry's operations; and the second is related to improvements in the process of converting wood to charcoal, as to decrease methane emissions (MDIC 2018, 1).

The Steel Industry Plan's contribution for the governance of planted forests is not surprising: it promotes the expansion of industrial planted forests by around 2 million hectares until 2020, in order to supply the industry (MDIC 2018, 2). As usual, the plan intends to achieve its goals via increased credit volumes for reforestation projects, as well as the diversification of funding sources for planted forests (MDIC 2018, 3). The plan lists Investment Funds in Forest Participation (FIP-Florestais, in Portuguese) as potential sources of funding for large-scale forest plantations, and the BNDES and other ministries as credit agents for smallholders (MDIC 2018, 3). In addition, the Steel Industry Plan foresees the creation of CDM projects in partnership with the private sector to cover the expenses of the planting (MDIC 2018, 2). To achieve the target in the period between 2011 and 2020, it will require an investment of roughly 3 billion USD[55] (MDIC 2018, 4).

In spite of the Steel Industry Plan not having an official text yet, it is already clear that planted forests are once again promoted for their potential to alleviate pressure on native forests and, consequently, should be used as the main source of industrial raw material for the steel industry. This cyclical argument of environmental benefits derived from industrial uses of planted forests is widespread in Brazilian governance for the sector, and highlights the narrative flexing connected to planted forests. As Kröger (2016) argues, the link between planted forests and the steel industry emerges as part of "inter-industry interests" in the green economy, or as he calls it, "bio-economy". As countries start to demand new environmental standards for their imports – e.g. steel – flex trees and their accompanying narratives become even more valuable commodities. The green economy, thus, creates the need for the flexing of trees, even though some forms of it were already in place since the early 2000s. The Steel Industry Plan brings nothing new in terms of governance, but rather solidifies

[55] Official figure is 12 billion BRL. Currency rate as per May 1, 2019 (1 USD = 3.92 BRL). Figures not adjusted to monetary correction.

the stance taken by the government since the 1976 PSN: planted forests are primarily a source of raw material. Other arguments used to promote planted forests – e.g. carbon sinks, income source for rural communities – are rarely enough on their own to justify the use of planted forests within the existent governance framework. Whereas planted forest could be used for socio-environmental purposes alone, Brazilian governance attributes some sort of industrial or commercial aspect to their expansion.

7 The 2010s: institutional changes and new directions for planted forests

The governance for planted forests in Brazil is scattered. There is no single instrument to regulate their planting, harvesting, and trading, let alone to dictate their intended uses in the country. Part of the reason for this scattering of laws, decrees, and normative rulings can be attributed to the nature of planted forests themselves – and to the government's political and economic interests connected to their definitions. As mentioned, planted forests are sometimes grouped with regular, natural forests, but at times their characteristics puts them closer to agricultural crops. Before the approval of the 1988 Constitution, planted forests were primarily a source of forest-based raw material for the industry, set as so to minimize pressure on native forests and to maintain a steady supply of wood and fiber. The 1988 Constitution, however, put the sector within the framework of agricultural policies – a questionable decision, given that every piece of regulation to planted forests until the 2010s was proposed and executed by the Ministry of the Environment, and not the Ministry of Agriculture. Nevertheless, after the ABC Plan was released, planted forests started to be gradually incorporated into the Ministry of Agriculture's policy design. Following that, a new law was released in 2012 in an attempt to organize and harmonize the dispersed forestry governance in Brazil – including the planted forests sector. The 2010s mark the reorientation of the Brazilian governance to planted forests, setting clearer goals and expectation for the sector.

In this chapter, I will present the developments that brought planted forests closer to agricultural crops within Brazilian governance. Starting with the 2012 Forest Code, planted forests' economic uses are once again prioritized and incentivized through the reaffirmation of a flexible regulatory framework. I argue, however, that the 2014 ministerial shift is what marked the government's definitive endorsement of planted forests as sources of raw material, over other possible purposes. Placing the sector under the competences of the Ministry of Agriculture represents, on one hand, an extended commercial support via agricultural policies and credit lines, but on the other, a step away from pursuing planted forests' potential socio-environmental

benefits. I posit that, through a well-crafted discursive strategy, the planted forests industry is able to enjoy the benefits of a government that emphatically supports its "national champions", while simultaneously portraying itself as part of the new "green economy".

7.1 Rewarded crimes: planted forests as economic rectification

In 2012, after a heated debate involving the Congress, environmentalists, and the private sector, the Law 12,651 was approved, known as the **New Forest Code**, or 2012 Forestry Law. The law replaces the 1965 Forest Code, and attempts to compile several diffuse regulations concerning the forestry sector and other environmental provisions into a single, overarching legal instrument. According to its text:

> This law establishes general norms in regards to the protection of vegetation, Permanent Preservation Areas and areas of Legal Reserve; forestry exploitation; the supply of forest-based raw material; the control of forest products origins and the control and prevention of forest fires, and provides economic and financial instruments for the fulfillment of its goals[56] (Brasil 2012, *own translation*).

From the summary provided by Article 1, the New Forest Code seems like just another legal instrument for the regulation of forestry activities, in the same way the 1934 and 1965 Forest Codes were. The law was initially proposed in 1999, but its congressional debate dragged through more than a decade due to disagreements between the rural caucus and other representatives (Orenstein 2017). At the time of its publishing, however, environmentalists and indigenous activists strongly criticized some of its provisions. The final text of the New Forest Code ended up favoring the demands from the rural caucus and the industries dependent on forest-based raw material. The main critiques raised by environmentalists center on the softening of environmental requirements regarding conservation areas, and also at the amnesty given to deforestation crimes perpetrated until 2008 (Orenstein 2017).

For the planted forests sector, the 2012 Forest Code did not represent as much of a change in governance or controversy as it did to natural forests. Because planted forests are not considered "natural vegetation", they have historically been left

[56] Article 1.

outside the conservation zones of Permanent Preservation Areas and Legal Reserves. The new law, however, allows for the use of planted species for the restoration of vegetation within the aforementioned zones[57] (Brasil 2012). Whereas planted forests will be considered for the calculations of forest cover recovery, it is recommended that native species are used to do so[58], and it is mandatory that exotic species do not exceed 50% of the planted area, and are interplanted with native species[59] (Brasil 2012).

With the 2012 Forest Code, therefore, planted forests gain ground in terms of conservational uses, although the regulatory development allowed for the new law should not be celebrated. The reason is that the article promoting planted forests for restoration of Legal Reserves does so in order to pardon rural landowners who, by 2008, were not in compliance with environmental protection laws[60] (Brasil 2012). The permission to plant forest species, thus, is a way to avoid punishing those who had the area of Legal Reserve smaller than the recommended by the 1965 Forest Code. Paragraph 4 of the same article determines that "the proprietors or landowners who opt to restore the Legal Reserve in the terms proposed by Paragraph 2 and 3 will be granted the right to exploit it economically, in the terms of this Law" (Brasil 2012, *own translation*). In other words, not only the 2012 Forest Code gives amnesty to rural landowners who would otherwise be considered criminals, it also offers them the possibility of profiting from their non-compliance. Considering the history of planted forests in Brazil, it is not surprising to see that the New Forest Code went for an "economically viable" approach to the sector.

In addition to allowing planted forests to be used (and exploited) in conservation areas, the New Forest Code also strengthens many of the existing regulations of the sector. This is the case for the exemption of presenting the PMFS[61]; the promotion of planted forests for industrial operations and the exemption of forest replacement derived from those[62]; and the reiteration of the use of planted wood in steel industry

[57] Article 61-A, Paragraph 13, Subsections I, II and III and Article 66, Paragraph 3, Subsections I and II.
[58] Article 26, Paragraph 3.
[59] Article 61-A, Paragraph 13, Subsection IV and Article 66, Paragraph 3, Subsections I and II.
[60] Article 66, Subsection I.
[61] Article 32.
[62] Article 33.

operations to obtain the Sustainable Supply Plan[63] (Brasil 2012). Lastly, the New Forest Code greenlights the planting of native and exotic species without the need of previous authorization, as well as the exploitation of fire-wood and forest products from planted sources outside areas of conservation[64] (Brasil 2012). Overall, the 2012 Forest Code consolidates the loose regulatory environment to planted forests that had been created by the Ministry of the Environment and the federal government in the previous decade.

It becomes evident with the 2012 law that the governance for planted forests changed dramatically since the 1981 PNMA, wherein forestry activities were classified as potentially harmful to the environment. The planted forests' legal and institutional frameworks were molded to benefit the industry, as if the federal government was optimizing the conditions for the expansion of its national champions' capital. The alliance formed in 2003 between the planted forests industries and Lula's government was certainly fruitful along the 2010s, culminating in the reaffirmation of the conceded benefits in the text of 2012 Forest Code.

7.2 The 2014 ministerial shift: new productive paths for planted forests

Two years after the New Forest Code was approved, a new decree was created in connection to it. The **Decree 8,375** defines the principles and goals for the agricultural policy for planted forests in Brazil, encompassing the production, processing, and trading of their products, by-products, and services[65] (Brasil 2014). For the purposes of an agricultural policy, planted forests were defined as "forests predominantly composed by trees resulting from seeding or planting, grown with economic emphasis and commercial ends"[66] (Brasil 2014, *own translation*). This definition manifests a new approach to planted forests that would start to be widespread in the future years of Brazilian governance for the sector – that is, treating planted forests as a commercial agricultural crop.

[63] Article 34, Paragraph 4.
[64] Article 35.
[65] Article 1.
[66] Article 2.

Despite briefly mentioning the climate mitigation discourse, the decree establishes the production of forest products as the main principle guiding future policies for the sector, in an attempt to foster social and economic development[67] (Brasil 2014). Under the agricultural policy proposed by the decree, five goals are assigned to planted forests in Brazil:

> increase the production and productivity of planted forests; promote the use of the productive capacity of planted forests' economic goods and services; contribute to minimize pressure on native forests; improve the income and the quality of life in the countryside, especially for small and medium-size rural properties; and stimulate the linkage between rural producers and agroindustries that use wood as raw material[68] (Brasil 2014, *own translation*).

The priority given to planted forests by the new decree is noticeably centered on their productive capacity as well as industrial uses. The focus is not new, but what make these provisions special are their transparent objectives in regards to increased productivity and commercial uses of planted forest products. To solidify said goals, the Ministry of Agriculture has the responsibility to create a policy plan that encompasses all the provisions made in the decree into a single, harmonized policy at the federal level, which is initially entitled National Plan for the Development of Planted Forests[69] (PNDF, in Portuguese) (Brasil 2014). An agricultural policy for planted forests in the style of the proposed PNDF finally aligns the sector with the 1988 Constitution, where forestry activities are put under the agricultural policy framework. Therefore, starting from 2014, planted forests become the responsibility of the Ministry of Agriculture, which will coordinate and integrate their use to other policies[70] – thus leaving the Ministry of the Environment who had regulated the sector since the 1990s (Brasil 2014).

The shift in the coordination of planted forests policy in 2014 was controversial. Whereas some – especially industry representatives – see the Ministry of Agriculture as more capable of guiding the sector to a more efficient and sustainable path, others – environmentalists and activists – were critical of the decision. The ministerial transfer will bring a more "entrepreneurial" management to planted forests, taking them as commodities to be traded in order to supply the industry without pressuring

[67] Article 3.
[68] Article 4.
[69] Article 7.
[70] Articles 6 and 7.

native forests (personal communication, December 14, 2018). As one informant described, the Ministry of Agriculture will change the "fundamentalist" conservationism that was, according to them, widespread in the Ministry of the Environment (personal communication, December 14, 2018). For a consultant of the industry, bringing the sector into the Ministry of Agriculture's framework is something to be celebrated, since it shows recognition for the agricultural nature of planted forests, as well as their inherent economic value, and not only environmental benefits (personal communication, December 20, 2018b). According to them, planted forests are meant to be planted and harvested for a specific purpose, as any other agricultural crop, therefore they should be recognized as such (personal communication, December 20, 2018b). The informant adds, however, that the ministerial shift should not result in a complete deregulation of the sector, which must still be subject to environmental standards.

Considering planted forests as a purely agricultural activity, however, misses important aspects of their production system, which could potentially undermine the argumentative grounds for their narrative flexing. For example, most agricultural crops have a rotation cycle of less than a year, while planted forests – e.g. eucalyptus – stay on the ground for at least six years, which allows for less-intensive soil and nutrient management techniques that benefit the environment (personal communication, December 20, 2018a). According to a representative of the sector, another fundamental ecological advantage of planted forests is ignored when equating those to agricultural crops: their climate mitigation potential (personal communication, December 20, 2018a). Soy, corn, and wheat crops are rarely sought for their carbon capture potential, while planted forests have relied on that argument for more than a decade within Brazilian governance. By moving the sector to the Ministry of Agriculture's administration, planted forests' environmental and mitigation potential will most definitely be dwarfed by the commercial agenda predominant in that ministry (personal communication, November 28, 2018b). If the preference for an economic approach to planted forests was not already clear from the provisions set by Decree 8,375, the ministerial transfer definitively marked the change in Brazilian governance for the sector.

The whole process was perceived as prejudicial for both the environment and populations in conflict with planted forests industries. As the representative for an international forestry NGO sees it, the shift to the Ministry of Agriculture was a calculated move from the industry's part (personal communication, November 9, 2018). In their understanding, the industries took advantage of the ambiguous nature of planted forests to reap the benefits from both governance periods. During those years when the FAO, the UNFCCC, and the government praised planted forests for their environmental potentials, the sector portrayed itself as a business providing "ecosystem services", in order to receive subsidies and incentives for their planting operations (personal communication, November 9, 2018). However, as soon as the sector realized the benefits from being classified as an agricultural activity – e.g. easier licensing mechanisms, higher funding, and stronger public policies – it aligned its actions to fit the Ministry of Agriculture's policy framework, that is, one of support to Brazilian agribusiness (personal communication, November 9, 2018).

In summary, the effective framing of their activities allows the planted forests industries to navigate Brazilian governance environment in ways that maximize their benefits (and profits), while maintaining the green façade that was built over the years. In this context, the ministerial transfer highlights the historical priority set for planted forests in Brazil: supply of raw material for industrial needs. Albeit a decisive stance from the government, the Decree 8,375 does not disallow the use of planted forests for environmental or even social development goals. In fact, even before the PNDF commissioned by the decree was created, another piece of environmental governance was released for the forestry sector, including planted forests.

7.3 Planted forests: fuel for the green economy

In 2015, Brazil submitted its Intended Nationally Determined Contributions (INDCs) to stay within the 2ºC temperature goal established in the Paris Agreement (2015). In the document submitted to the UNFCCC, under the category of emissions from land-use change and forests, the country committed to strive to implement its 2012 Forest Code at all administrative levels, as well as "restoring and reforesting 12 million hectares of forests by 2030, for multiple purposes" (Brazil 2015). In order to

officially incorporate the commitment to its domestic legislation, in 2017 then President Michel Temer approved the Decree 9,073. A few months prior to that, however, Brazilian policymakers had already published the first governance instrument for the forestry sector aiming to achieve the goals under the submitted INDCs.

The Decree 8,972 was published in early 2017 and established the creation of the **National Policy for the Recovery of Native Vegetation** (Proveg, in Portuguese). The new policy has as its main goals the "recovery or forests and other native vegetation", as well as the strengthening of "environmental regularization in Brazilian rural properties according to the Law 12,651 [the New Forest Code], from May 25, 2012, in a total area of, at least, twelve million hectares, by December 31, 2030"[71] (Brasil 2017, *own translation*). The Proveg, thus, comes to tie the implementation of the actions already contemplated in the 2012 Forest Code, to the fulfillment of the commitments taken in Paris, in 2015. Based on the general guidelines of climate mitigation; soil and hydric resources conservation; recovery of ecosystem services, Permanent Preservation Areas and Legal Reserves; and the fostering of recovery of native vegetation for economic and social uses[72], the Proveg commissions to an interministerial ordinance the creation of the **National Plan for the Recovery of Native Vegetation**[73] (Planaveg, in Portuguese) (Brasil 2017).

The Planaveg was published in 2017 as the result of a partnership between the Ministry of Environment, the German Federal Minister for the Environment, Nature Conservation, and Nuclear Safety, the International Climate Initiative, and the German Corporation for International Cooperation, with funding from the German development bank KfW (MMA 2017). Following the directives given by the Decree 8,972, the Ministries of the Environment and of Agriculture, as well as the Civil Office of the Presidency, initially drafted the Planaveg in 2013 and released the first version to public consultation involving government entities, research institutions, NGOs, and the private sector – including one of Brazilian largest companies in the pulp and paper sector, Fibria (MMA 2017, 11). After considering the suggestions made during the process, the final version of the plan decided on the goals to:

[71] Article 2.
[72] Article 4.
[73] Article 5.

> Widen and strengthen public policies, financial incentives, markets, recovery technologies, farming good practices and other required measures to the recovery of native vegetation, in special with Permanent Preservation Areas and Legal Reserve, but also in degraded areas and those with low agricultural productivity (MMA 2017, 11).

Despite being under the responsibility of the Ministry of the Environment, the Planaveg is not an isolated environmental policy. It stems from climatic commitments, but it finds its roots in the 2012 Forest Code, and is to be complemented by several other public policies, such as the sectoral plans established by the Decree 7,390 (MMA 2017). In practice, this connection with public policies is an attempt to create a "green economy" based on the recovery of native vegetation (MMA 2017, 30). Doing so would generate benefits in economic (e.g. creation of new jobs, establishment of a sustainable production chain), social (e.g. poverty reduction, social inclusion, food safety) and ecological terms (e.g. soil and water preservation, biodiversity conservation) (MMA 2017, 28).

In this "green economy" context, the significance of the Planaveg to the planted forests governance is closely linked to Brazilian commitments under the Paris Agreement. The INDC aiming to achieve the recovery of 12 million hectares of native vegetation until 2030 requires that Permanent Preservation Areas and Legal Reserves are targeted for restoration (MMA 2017, 21). By recovering areas designated for conservation, the Planaveg can achieve the Paris Agreement goal, and also promote a stronger compliance to the New Forest Code. In other words, while the plan is primarily a tool for climate mitigation via land use and forestry activities, it follows the 2012 Forest Code provisions to do so – that means that planted forests are an available instrument for the recovery of conservation areas, and will thus receive financial and technical support from the government (MMA 2017, 13).

The Planaveg, however, acknowledges that the recovery of native vegetation would be best achieved – ecologically and economically – via natural regeneration processes, without anthropic interventions (MMA 2017, 47). Nevertheless, because some areas of degraded land present very little natural reminiscent vegetation, combined with poor soil, the recovery of native vegetation must be done by the planting of seeds and seedlings (MMA 2017, 47). For this, the plan offers special focus to the provision of seeds and seedlings of native species, as well as the structuring of tree nurseries in order to improve the efficiency and efficacy of the

process (MMA 2017). Within this scenario it is important to note that while the goal of the Planaveg is to achieve the restoration of *native* vegetation, it allows for "the mixing of native and exotic species of economic interest", for this "may cover the costs of recovery for the environmental compliance of properties in accordance to the Law 12.651/12 [the New Forest Code]" (MMA 2017, 49, *own translation*). In practice, this means that the planting of exotic tree species for economic goals is advised.

The decision to promote exotic planted forests for economic purposes is based on a publication by the FAO-sponsored journal, "Unasylva". The justification proposed by the Planaveg uses Brancalion et al.'s (2012) research to support the establishment of an "ecosystem recovery economy":

> For example, the harvesting of some species with economic value in the first years of the recovery process can generate short-term revenue, aiding rural landowners to cover implementation expenses and, also, allowing for the re-coverage of the area by other native species (with or without economic purposes) in the planting over time (MMA 2017, 49, *own translation*)

Thus, the Planaveg proposes to connect its environmental and climatic goals to an idealized economic potential behind an economy based on "ecosystem recovery", or a "green economy". Nonetheless, whereas the Planaveg attributes ecological functions to the planting of native species within this new economy, it signals that exotic planted forests are not in the same category as their native counterparts and, therefore, should not be promoted on the same grounds. Exotic planted forests, in this context, are valued for their capacity to generate additional income for landowners seeking to adjust their properties to the legal requirements of the 2012 Forest Code.

This particular consideration made by the Planaveg allows for two important analytical observations. First, by attributing different functions to different types of planted forests, the Planaveg confirms the political nature of forest classification and definition, as proposed by Peluso and Vandergeest (2001). The concept of "political forests" is materialized in the varied ways states govern and use their forests. Exotic planted forests being assigned for revenue generation denotes the government's prioritization of their economic role within the Brazilian context, while native

planted forests being assigned for conservational purposes sheds light onto the expectations attached to native species.

The second analytical observation has to do with the role of exotic planted forests in the process of creating a "green economy" in Brazil. In the previous chapter I argued that federal authorities had first signaled their intentions to "green" Brazilian industrial and farming sectors with the PNMC and its subsequent sectoral plans. Planted forests role in the process would be to supply "sustainable" raw material, while contributing with ecological benefits, such as land recovery and carbon capture. With the Planaveg, federal authorities make it clear that the role of planted forests in the new "green economy" is financial in nature, attracting economic resources required for the development of sustainable production chains and for the restoration of conservational areas. By doing so, it becomes explicit that the primary purpose assigned to planted forests in Brazil is the generation of revenue, calling into question the ecological framing made possible by the flexible-ness of planted forests.

The distinction made to how native and exotic species are to be used is important, for it solidifies the new conceptualization of planted forests promoted by the Decree 8,375 (establishing the creation of a national agricultural policy for the sector). Planted forests have been treated as a homogenous vegetation type through the history of Brazilian environmental governance, with few exceptions (e.g. PAN). In the Planaveg, after the publishing of the Decree 8,375 the governance to the sector acquired subtleties that hint at interests connected to planted forests expansion in the country. For example, since planted forests are now officially within the agricultural policy framework, the Ministry of the Environment, in the Planaveg, openly advises their use as an agricultural crop for income generation. However, because the sector is now presided by the Ministry of Agriculture, the Planaveg refrains from going into details about how to implement the proposed uses for planted forests – indicating only that the plan will work in tandem with other policies and ministries.

In summary, the Planaveg is created with climate mitigation goals, but ends up as another mechanism to fully implement existent rulings, such as the 2012 Forest Code. Regarding planted forests, the plan embodies the new approach dictated by the 2014 decree which determines the ministerial transfer of the sector. It recognizes that the planting of forests can be an effective technique for bringing about ecological and

climatic benefits, but limits said activity to native species within conservation and degraded areas. Most importantly, the Planaveg openly promotes exotic planted forests for their economic potential, and in doing so it sheds light upon the political nature of forest definitions and the interests connected to it, as well as the ecological narrative that promotes planted forests as part of the "green economy".

7.4 Forests as agriculture: the institutionalization of old practices

The last document to be analyzed in this thesis is the **National Plan for the Development of Planted Forests** (Plantar Florestas or PNDF, in Portuguese). The plan was commissioned to the Ministry of Agriculture in 2014 by the Decree 8,375, and officially published four years later, in late 2018. Despite the fact that the plan is still in its early stages, the PNDF is currently the most important piece of governance within Brazilian legal and policy framework regarding the planted forests sector.

The Plantar Florestas opens with a letter by the then Minister of Agriculture, Blairo Maggi. It is useful to highlight Maggi's leadership in the ministry, due to his history in Brazilian politics. During both of Lula's mandates, Maggi was the governor of the state of Mato Grosso – known for its strong agribusiness – and later, in 2011, became senator for the same state. Maggi was considered by most the leader of the rural caucus in the senate, a position of private interest since his family's company, Amaggi Group, is the world's largest private soy producer (The Economist 2006). The minister was appointed by Michel Temer in 2016, a decision that caused concern among environmentalists throughout the country. Agricultural and farming activities are historically the main drivers of Brazilian deforestation, particularly within the Amazon region, where soybean production is often linked to loss in natural tree cover (Azevedo-Ramos 2008). Therefore, having the "leader" of Brazilian agribusiness as the chief of one of the country's most influential ministries certainly causes worries to those working for the conservationist cause. Not only that, Maggi's stance on the topic of deforestation is quite controversial, to say the least:

> "To me, a 40 percent increase in deforestation doesn't mean anything at all, and I don't feel the slightest guilt over what we are doing here … We're talking about an area larger than Europe that has barely been touched, so there is nothing at all to get worried about" (Rohter 2003).

Despite being in favor of deforestation in the name of agribusiness, and even reported as involved in the Paradise Papers scandal (ICIJ 2019), Maggi kept his position as Minister of Agriculture until the end of Michel Temer's term, in 2017. One of his last acts as minister was the approval of the PNDF, which, as expected, treats the planted forests sector as an agricultural commodity.

In his opening message, Maggi recalls the second half of the 20th century, when planted forests rapidly expanded in area, and attributes it to the fact that back then the sector was within the Ministry of Agriculture's responsibilities (MAPA 2018, 5). Given the importance of planted forests for the Brazilian economy and the country's natural productivity advantage in the field, Maggi sees a good opportunity to use the PNDF to boost the sector's international competitiveness (MAPA 2018, 5). In order to achieve his notion of success, the minister argues for a better business environment for planted forests, with adequate investment opportunities, as well as the recognition of their economic, social and environmental capacities – and it is precisely this that the Plantar Florestas intends to achieve (MAPA 2018, 5).

As proposed in the Agricultural Policy for Planted Forests, from 2014, the PNDF is to be coordinated by the Ministry of Agriculture and, therefore, does not preside over the planting of tree species for the recovery of Permanent Preservation Areas and Legal Reserves (MAPA 2018, 9). The plan's objective is to "… define lines of action to all actors in the sector, in a way that planted forests create job and income, and also contribute for the human development and environmental quality in the Brazilian countryside" (MAPA 2018, 9, *own translation*). For this, the PNDF's text is divided into two sections: the diagnosis of the planted forests sector in Brazil, and the strategy and actions taken by the policy itself to reach its delineated goals.

While a diagnosis of the sector's challenges and opportunities is not the scope of this research, it is useful to note some points regarding the sector's governance brought up by the PNDF. The plan strongly supports the ministerial shift that happened in 2014, perceiving the new policy environment as more beneficial for the full harnessing of planted forests commercial potential – the same position articulated by representatives of the industry (MAPA 2018). However, in spite of that, it recognizes that the current institutional apparatus of the Ministry of Agriculture is not ideal for the sector, as it lacks a proper structure to accommodate its needs (MAPA 2018, 17).

The Sectoral Chamber of the Production Chains is the only locus within the ministry working with planted forests, thus the plan recommends the establishment of a new department to deal with forestry matters (MAPA 2018, 17). As an environmentalist noted, planted forests are "lost" within the structure of the Ministry of Agriculture (personal communication, November 28, 2018b).

Furthermore, the PNDF is critical of several legal matters connected to forestry activities. The plan challenges the 1981 PNMA and the Conama Regulation 237/97 that categorize silviculture activities as potentially harmful to the environment (MAPA 2018, 23-4). According to the plan's text, putting forest plantations on the same level as mining activities is a serious legal contradiction, given that Brazil included planted forests as an instrument for environmental recovery in the Paris Agreement and in the PNMC (MAPA 2018, 24). Furthermore, from a position similar to the one defended by the forestry industries, the PNDF perceives existing requirements imposed on the sector – e.g. environmental licensing, pesticides and agrochemical regulations – as detrimental to planted forests full potential in economic and productive terms (MAPA 2018). The plan proposes the simplification of administrative and bureaucratic procedures, in order to cheapen and speed up activities dependent on planted forests (MAPA 2018). On the same argumentative line, it opposes the 2006 ruling that prohibits foreign companies to buy or rent land in Brazil – for the PNDF, the decision limits foreign direct investments that could generate revenue for the country (MAPA 2018, 22). It becomes evident with the PNDF that the Ministry of Agriculture shares with the industry the same complaints about the legal difficulties imposed by Brazilian bureaucracy. By setting out to solve those, the state acts as a facilitator to increased capital accumulation by the planted forests industry.

Moving on to an analysis of the PNDF's objectives and actions, the catering to the industry's needs finds within the Ministry of Agriculture an optimal policy framework. The PNDF defines its vision based on two main points:

> 1. A favorable environment for business, with legal certainty for investments in planted forests, starting from the raw material supplier until the final consumer;
> 2. A planted forests sector nationally renowned for its socioeconomic importance and, especially, its positive effects on the environment, the

> preservation of native forests and the mitigation of greenhouse gases (MAPA 2018, 31).

Applying these core purposes, the Plantar Florestas sets as its primary goal the expansion of commercial planted forests in 2 million hectares, by 2030 – a 20% increase upon the current area (MAPA 2018, 31). To achieve the goal, it contemplates the creation of 12 National Forestry Objectives (ONFs, in Portuguese), with their respective Indicative Actions (AIs, in Portuguese).

The first ONF is connected to the institutional environment for planted forests in Brazil. Its AIs are mainly toward to the improvement of the governance structure within the Ministry of Agriculture and within Brazilian public policies (MAPA 2018, 33). The PNDF considers that a strong legal and judicial framework for land use matters is required, both at the national and state levels (MAPA 2018, 33). The second ONF encourages the simplification of the forestry protection bureaucratic system. The objective intends to take action to speed up procedures such as pest risk analysis, importing of pest control instruments, and pesticides registry (MAPA 2018, 33). This specific ONF highlights the current understanding of planted forests as an agricultural crop, which should be exploited for its high productivity as any other commodity would. It is interesting to notice how far planted forests have departed from their previous "forest" nature, in instruments like the PNF and PPCDAm. If natural forests are already political in nature, planted forests appear to be even more susceptible to political discourses and interests.

The third ONF supports the improvement of databases and information on Brazilian planted forests. By creating a national inventory of planted forests, based on satellite mapping and geolocation, the government would be able to improve the registry of rural producers and consumers dealing with raw material from planted source (MAPA 2018, 33-4). This is an important attempt to regulate the expansion of the sector within the legalities of environmental regulations – signaling that the government is still concerned about the consequences of an unregulated expansion of planted forests. The fourth ONF promotes the training of workforce and dissemination of knowledge within the planted forests sector. This is to be done via public and private technical assistance to silviculture, as well as a partnership with the Brazilian Forestry Service to improve technical standards and models utilized in

the recovery of those areas of Legal Reserve designated for economic production (MAPA 2018, 34).

The fifth ONF is, once again, of special interest to the industry, for it centers on the attraction of private investments, and adaptation of public credit lines to the specificities of the sector (MAPA 2018). The actions under this goal are meant to remodel financing conditions under the ABC Plan to fit planted forests long-term returns, as well as to promote reforestation activities within other agricultural policies, as a strategy for scale gains in terms of funding (MAPA 2018, 35). Still under the fifth ONF, the PNDF proposes the creation of policies that incentivize long-term forestry investments from foreign companies, overlooking the legal limitations to their operations (MAPA 2018, 35). In connection to this provision, the plan intends to pressure the Congress to facilitate land acquisition by foreign-owned Brazilian companies[74] (MAPA 2018, 35). Here an interesting situation emerges. In 2006, under Lula's government, the approval of the Public Forests Management Law meant that foreign companies could not participate in forestry concessions in Brazilian territory (Brasil 2006). The PNDF, however, understands provisions like that of the 2006 law as a limiting factor to investment in planted forests (MAPA 2018, 22). Michel Temer's Plantar Florestas depicts a more "entrepreneurial", market-oriented approach adopted toward planted forests, contrasting the public agendas of Lula and Temer. Despite Lula's administrations marking the return of direct state support to planted forests expansion, compared to earlier governments, the ex-president had a strong commitment to avoid land grabs in indigenous territory (Kröger and Lalander 2016, 692). Temer, however, departs greatly from the social agenda of the Worker's Party, and given the provisions made by the PNDF, it is possible to foresee green grabs in connection to the expansion of planted forests in Brazil in the near future.

Lastly, with the fifth ONF the PNDF also seeks to ensure that carbon capture by planted forests is appropriately paid at the national and international level (MAPA 2018, 35). The move is clearly part of the long-standing narrative flexing of planted forests, in order to receive funds from its "captured carbon", and to finance

[74] In the original text, the phrase used for such activities is "*fazer gestão junto ao Poder Legislativo*", which literally translates as "to manage the Legislative Power". In Portuguese, the original phrase reads like a euphemism for "lobbying", hence the chosen interpretation.

plantation projects. As noted, the ONF connected to the financial aspects of planted forests contemplates a myriad of assigned actions to be implemented, in particular regarding the attraction of foreign capital, which evinces the country's strong interest in planted forests' capacity to generate revenue via increased exports, foreign direct investment, or carbon markets.

The sixth ONF promotes the investment on research and development of planted forests and their products, assigning important role to the Embrapa, in connection to the private sector (MAPA 2018, 35-6). The actions provisioned by the PNDF are mostly directed at the genetic improving of planted forests, making them more suitable for specific industrial purposes, such as pulp production and energy generation (MAPA 2018, 35). Here it is essential to highlight the flexing path Brazilian authorities intend to pursue. As Kröger (2016) formulates, genetically modifying tree species to better serve specific purposes represents a form of tree flexing based on process to "de-multiply" their material basis. While companies in the global North invest in technology-based flexing, the development of GMOs by Brazilian companies marks the state's approach to tree flexing, one that exacerbates the commodification of nature for capital accumulation, and that deepens the structural divide between North and South.

ONF seven is a puzzling one. Said ONF dictates the "increase in demand for forest products", through government promotion of the use wood and other forest products, for example, in the construction industry (MAPA 2018, 36; 37). Despite planted forests being a more sustainable source of raw material than native forests, promoting higher degrees of consumption is a contradictory argument to be made in the quest for sustainability. It indicates, however, that the PNDF understands economic growth as compatible with environmental protection, as long as the technologies and materials used are considered "green", or sustainable. Once again, it is important to mention how this is a flawed assumption. In a society where demand for forest products is ever-growing, it becomes impossible to address it in a sustainable way. Even if the entire wood production in Brazil came from highly efficient, genetically-modified planted species, there would still be issues related to lack of biodiversity in plantation sites, loss of natural habitat of native species, and even social conflicts caused by such expansion of planted forests area. Endless

consumption, common to capitalist dynamics, cannot be offset, let alone harmonized with socio-environmental preservation.

Still under the ONF seven, the PNDF provisions the creation of payment mechanisms for ecosystem services, as well as for carbon capture (MAPA 2018, 36-7). The plan foresees actions to include forest biomass in the energy auction promoted by the federal government, in an attempt to increase the share of energy from planted forests in the country's energetic matrix (MAPA 2018, 37). Once more, the government seeks to include a flexing path in the objectives of the PNDF. Introducing forest biomass as a source of bio-energy to be pursued guarantees the further expansion of planted forests in Brazilian territory, while simultaneously creating new mechanisms to legitimize plantations within the legal and policy framework presented so far. The green energy discourse could, in addition, be used to justify potential socio-environmental conflicts caused by such expansion, as it is often the case with green projects.

ONFs eight and nine follow the same action course as the second ONF, envisaging the simplification of licensing procedures, as well as a lighter tax burden to the planted forests sector (MAPA 2018). The actions proposed by both ONFs seek to put the sector on the same administrative and bureaucratic level as other agricultural activities, including the removal from the list of activities potentially harmful to the environment (MAPA 2018, 37). This last AI, in special, is very important for the sector, which has gained a bad reputation over the years. As the PNDF puts it:

> … the ingrained discourse that plantations are green deserts, regardless of being araucaria, acacia, angico, pine or eucalyptus plantations, must be changed within society (MAPA 2018, 26).

With the referred AI, the Brazilian government explicitly attempts to rework the public discourse around planted forests. The action addresses a long-standing concern of the private sector, which strives for a better public image of planted forests (personal communication, December 20, 2018a). Notably, by reframing planted forests activities, the government is able to contest one of the main argumentative lines of environmentalists and activists opposing the expansion of the planted forests inventory. This represents a political move seeking to guarantee the interests of the state/industry, since in reality planted forests will remain with the

same conditions that gave them the reputation of “green deserts”. Relatedly, the tenth ONF proposes the intensification of communication and promotion of planted forests and their products, via public campaigns, workshops, technical and scientific events (MAPA 2018, 37-8).

Whereas ONF ten is achievable within the PNDF’s scope, the eleventh ONF is outside the responsibility of the Ministry of Agriculture, but still represents an important progress for the forestry industries. The referred ONF asks for joint actions with the responsible entities to improve road and harbor infrastructure, in order to progress the conditions for the export of agroforestry products (MAPA 2018, 38). One of the mentioned actions refers to the creation of export corridors, linking regions with large areas of forest plantations to harbors, in an attempt to improve the logistics of distribution (MAPA 2018, 38). The proposed measure is regarded highly among professionals from the industry, who see in it a strong indicator of the government’s support to the sector (personal communication, December 20, 2018b).

Lastly, the twelfth ONF focuses on increasing the share of wood biomass in the country’s energetic matrix. For this, it expects the inclusion of forest biomass in public auctions, incentives to the installation of thermoelectric plants (especially in micro- and mini-scales), as well as the creation of a National Program for the Support of Forest Biomass (MAPA 2018, 38). These measures would tie the sector to the Decennial Expansion Plan for Electricity (PDE), making planted forests connected to every sectoral plan established in the Decree 7,390. As already argued for ONF seven, the move can be understood as a flexing path to the further legitimization of planted forests within the Brazilian context.

The budget for the PNDF execution is to be included in the 2016-2019 Pluriannual Plan (PPA, in Portuguese), in connection to the resources designated to the ABC Plan, and to the expansion of biomass production from agroforestry sources (MAPA 2018, 43).

To conclude, the PNDF is currently the main piece of governance to the Brazilian planted forests industries. Its creation follows the 2014 decree that established the guidelines for an agricultural policy for planted forests, as well as transferred the governing responsibility from the Ministry of the Environment to the Ministry of

Agriculture. Within the new policy framework, planted forests are treated as a regular agricultural commodity, much like soy or corn – and the PNDF serves to ensure that the sector can fully enjoy the benefits derived from this political classification. The Plantar Florestas adopts a commercial logic behind its proposed objectives and actions, an attempt to stimulate the sector's domestic growth and international competitiveness. Measures such as the simplification of administrative and licensing procedures, the lobbying for the Congress approval of land purchase by foreign companies, and the adaptation of Brazilian transportation infrastructure are clear signals that planted forests are now prioritized for their productive outcomes. This, however, does not entail the complete abandonment of the socio-environmental and climatic benefits that planted forests might generate, which still serve as a positive framing to give legitimacy to the sector. In fact, commercial and industrial interests take advantage of these moral justifications to portray the sector as part of a "green economy" transformation, which for some is a genuine attempt to improve socio-environmental standards, but that in reality is closer to a "greening" of the sector, happening since the 1990s.

8 Conclusion

Under the 2009 Copenhagen Accord and the 2015 Paris Agreement, Brazil set voluntary commitments for climate mitigation, especially concerning its land use and forestry activities. On both occasions, the planting of forests was highlighted as an essential tool to achieve the country's goals. According to Brazilian authorities and international institutions, planted forests could contribute to climate mitigation by capturing carbon from the atmosphere and providing "sustainable" forest resources that would minimize the pressure on natural forests. In addition to the climatic benefits, planted forests were promoted for their potential to recover land classified as "degraded", and also to generate income for rural communities, thus improving their livelihoods. Following the international voluntary commitments, the country quickly passed myriad of additional forestry laws to guarantee its compliance with the accords. In 2018, the most comprehensive policy on planted forests was released by the Brazilian government – the PNDF. The policy, however, did not reflect those commitments taken in 2009 and 2015. While planted forests were initially praised for their ecological and social benefits, the new piece of governance failed in fostering those, favoring a more economic and commercial approach. This thesis is embedded in the goal of explaining this apparent contradiction.

Using an extensive document analysis and elite interviews, I conducted a qualitative case-study of Brazilian planted forests governance in order to answer the question: How does the Brazilian government promote planted forests and their multiple uses within its federal governance? My objective with this thesis is to explain how the state perceives the importance of planted forests within its national interests and, consequently, how it encourages their expansion and use in its territory. In doing so, I contribute to the existing literature on the political economy of planted forests, albeit from a different perspective: through an analysis of Brazilian legal and policy frameworks that encompass the establishment, expansion, and use of planted forests.

8.1 Overview and synthesis

The argument made by this thesis begins from the observation of contradictory developments in Brazilian planted forests governance. On one hand, planted forests

are promoted as a green economy panacea to socio-environmental obstacles in Brazil's quest for national development; on the other hand, the uses of planted forests in Brazil are not in line with how they are portrayed by the government. In order to understand this disparity, I begin with a brief overview of the history and governance to planted forests during the 20th century. During the first half of that century, Brazilian authorities understood planted forests primarily as a source of raw material that would avoid further deforestation of native forests. Because of this view, planted forests were promoted as a mandatory source of wood-based raw material for industries using it in large scales, such as steel, paper and pulp. During Kubitschek's term, the high-modernist interests of the Brazilian state became salient and, as Scott (1998) points out, the government pushed for the simplification and commodification of nature to best suit its goals. Planted forests thus represented the apex in terms of forest management for commercial needs. In that context, planted forests started being actively supported by the state via the BNDE. I argued that this marked the beginning of the direct endorsement of Brazilian federal authorities to the industrial uses of planted forests, based on their higher productivity rates and easiness of management – moving beyond simple concerns with deforestation.

In the 1960s, the Tax Incentive Law was approved, and gave considerable tax breaks to companies and individuals who carried out the planting of forests for industrial and commercial purposes. The law was responsible for the flourishing of planted forests in the country, marking the establishment of 6.2 million hectares of plantations (Hora 2015). While the tax breaks were in place, planted forests industries such as steel, paper and pulp also prospered and acquired considerable importance in the Brazilian economy, domestically and internationally. Accordingly, the government started targeting those sectors with public funding and, in the process, planted forests were further promoted for their industrial potential. At that point, I posit, planted forests had been established as more than mere alternatives to forest resources from natural sources; they had become essential to the key industries fueling the rapid growth during the military regime.

In the mid-1980s, however, the tax incentives were eliminated due to economic difficulties. In addition, the first piece of governance to the sector that remains valid to this day was created: the PNMA. The PNMA was an obstacle to planted forests

activities in the country, for it classifies them as potentially harmful to the environment and, as such, creates additional administrative and bureaucratic requirements. The termination of the state's direct support to planted forests industries, added to the creation of the PNMA represented a two-fold risk for the capital accumulation of the companies in the sector. As forest plantations projects require large amounts of initial investment, upon the termination of the government's funding, the industry had to find new ways to finance its activities in the country. I highlighted the two solutions employed by planted forests companies during the 1990s: forest certification, and narrative flexing.

In the aftermath of the 1992 Rio Summit, the Brazilian planted forests sector pushed for the certification of its plantations under the FSC guidelines. By having their forest inventory FSC-approved, the industry could portray its activities as environmentally-friendly and dispute the "harmful" classification attributed by the PNMA. While the FSC certification solved part of the industry's problems, the issue of funding remained an obstacle to the sector's expansion. The solution found by the industry was to create a new narrative around planted forests that would support investments in new projects. After the Kyoto Protocol and the CDM acknowledged the importance of forests for carbon capture, the industry quickly adapted this discourse to frame planted forests as "carbon sinks" and, therefore, obtain funding from a varied of "climate concerned" sources. However, planted forests are rarely used for sinking purposes, but rather, this narrative flexing is articulated to capture investments for plantations that are meant to be used in traditional, commercial ways. Thus, by the end of the 1990s, Brazilian planted forests industries had been able to reframe their activities as both environmentally correct and climate concerned. This narrative flexing path created by the industry would later be adopted by national authorities in the governance for the sector.

In the early 2000s, upon the publishing of the PNF, the new framing carefully designed by the planted forest industry in the 1990s was firstly incorporated to Brazilian forestry governance. Still catering to the economic interests of the industry, the PNF portrayed planted forests activities as essential tools in the quest for the rehabilitation of degraded lands and recovery of the soil – sometimes even equating them to natural forests. However, it was only with Lula's first government that the

ecological framing was fully formalized within Brazilian planted forests governance. This process began in 2003, when Lula's government and the planted forest industries formed an alliance, wherein the state would guarantee optimal conditions for the industries' operations, while the latter would in turn increase state revenue from their exports. The alliance was spread within the government's institutions, including the Ministry of the Environment, where it found fertile grounds to further legitimize the sector. From then on, planted forests were promoted not only for their commercial outputs, but also for their potential to recover environmental assets (e.g. soil and hydric resources), as well as improving the livelihood of rural communities – thus, being discursively in line with the Worker's Party agenda.

This narrative allowed for the loosening of the regulatory requirements for the industrial use of planted forests, which further supported companies in the steel, paper and pulp businesses. Via several normative rulings, the Ministry of the Environment acted as the main facilitator of the industry's activities, exempting planted forests from several environmental licensing requirements, and effectively promoting them as the sole source of industrial raw material in Brazil. As Gellert and Andiko (2015) posit, the rule of law is permeated by the interests of those involved in its making; for Brazilian planted forests case, this meant the state authorities and the industry.

In my analysis, I demonstrated that Lula's government marked the return of direct support to planted forests expansion for commercial uses, with little consideration to the socio-environmental contexts where it takes place. My findings show that the state/industry alliance had been fruitful in terms of optimizing the regulatory conditions for planted forests industrial and commercial uses. Despite opposition from environmentalists and indigenous groups, Lula's first term set out the basis for a governance framework that allowed for increased industrial output and larger exports revenue to fuel its social programs, without prejudice to the ecological framing around planted forests.

In 2009, following the Copenhagen Accord, Brazil declared its voluntary commitments for climate mitigation and adaptation, in which planted forests were given special role in guaranteeing the recovery of degraded land and the capture of carbon within the country's NAMAs. In order to translate the international

commitments to national legislation, the PNMC was approved and, to guarantee the execution of its contents, several sectoral plans were created. I argued that, in these sectoral plans, the narrative flexing – as created by the industry in the 1990s – achieved its peak in terms of framing the discourse around planted forests in Brazilian governance. The PPCerrado, the ABC Plan, and the Steel Industry Plan promoted planted forests industrial uses, while utilizing their ecological and climatic benefits as justifications for doing so. With the sectoral plans, the state envisioned the creation of a green economy, based on the transformation of resource-intensive activities, such as farming and steel production, into low-carbon ones. Planted forests role, in this context, was to provide "sustainable" raw material for industrial operations, while avoiding further deforestation and capturing carbon from the atmosphere.

Despite the promises of the green economy, however, it becomes clear that Brazilian authorities turn polluting and carbon-intensive sectors into "green sectors", as most peripheral countries internalize the guidelines of the green economy (see also Bergius and Buseth 2019). The greening of production chains is to be achieved through so-called green projects, such as alternative farming practices and planting of carbon forests. In reality, however, Brazilian planted forests governance makes use of the green economy to further promote planted forests for industrial uses – for example, as sustainable raw material in steel mills. This narrative flexing promising ecological gains is used as a discursive tactic to legitimize the expansion of the sector. The funding of the BNDES to planted forests activities, as well as to the national planted forests industries highlights the government's close interest in increasing commercial output and revenue. As Kröger (2012) posits, the "carbon sink" narrative underlines the inter-industry interests involved in the expansion of planted forests. The policy developments following the 2009 Copenhagen Accord outline the climatic discourse associated with planted forests within Brazilian governance, while also creating additional institutional and economic mechanisms to support their industrial uses in the country.

After the "climate focus" in the late 2000s, planted forests governance went through important changes in the 2010s. Initially, in 2012, with the approval of the New Forest Code, planted forests gained, for the first time, a place in the country's

conservational zones. Whereas this could signal a new approach to the sector, focused on environmental uses rather than industrial, the result was far from it. Planted forests were included in the New Forest Code as an economic rectification of environmental crimes committed until 2008. In other words, rural landowners non-compliant with environmental regulations could establish planted forests to make up for their previous misconduct. The economic exploitation of the resources obtained from those plantations would, therefore, serve as an incentive to comply with the law; or as I see it, a profitable activity to forgive lawbreakers.

As if the provisions of the New Forest Code were not enough, in 2014 planted forests governance faced a major turning point. After almost three decades being governed by the Ministry of the Environment, planted forests would then become subject to the Ministry of Agriculture. In my argument, I pointed out how the ministerial shift represented a new approach to the planting of forests. While the Ministry of the Environment historically framed planted forests as a type of "forest", the Ministry of Agriculture shows a more entrepreneurial attitude toward the sector, looking at it as another "agricultural commodity" to be exploited for commercial purposes. The ministerial shift evinces the politics behind forest definition. As Peluso and Vandergeest (2001) initially propose, forestry definitions and classifications are susceptible to be changed according to the political interests of those in power. By moving the planted forests governance to a ministry that is historically in charge of the Brazilian agribusiness, the state signals its interests in prioritizing the agricultural output offered by planted forests, rather than their ecosystem services. Planted forests abandon the "forest" nature assigned by the Ministry of the Environment, to become an "agricultural crop" within the Ministry of Agriculture.

In the following years, planted forests governance developments followed the trend set by the 2014 decree. In the Proveg and the Planaveg, planted forests are promoted solely for their capacity to generate income, and not for their supposed socio-environmental potential. As I demonstrated, the agricultural definition assigned to planted forests in 2014 was reaffirmed by both documents. The Proveg and Planaveg push for the use of planted forests in order to generate capital for the establishment of an "ecosystem recovery economy". In other words, planted forests were relegated to

a “funding” function within the authorities’ plans to create a green economy in Brazil.

The 2012 Forest Code, the Proveg, and the Planaveg highlight the government’s interest in planted forests economic returns, which have become increasingly more blatant in recent years. Nevertheless, only in late 2018 were planted forests definitively taken as agricultural crops to be exploited for the country’s economic profit. With the publishing of the PNDF, the Brazilian state set out new goals for the sector, most of them with a heavily commercial focus. In my argument, I traced the influence of the then Minister of Agriculture, Blairo Maggi, in supporting the country’s agribusiness, regardless of the socio-environmental risks caused by the reckless expansion of plantations. It becomes evident that, within the Ministry of Agriculture, planted forests will be prioritized for their commercial outputs, like any other commodity. The PNDF manifests the long-standing national interests connected to the use of planted forests: an increased international competitiveness of national keys industries, as to generate foreign revenue for the state.

This “national champions” strategy, as Kröger (2012) puts it, is based on the rationale that the state is responsible for fostering the exploitation of its national resources, so that key industries can engage in international trade, and generate foreign income to be used for the national development project. Within this logic, I argued that Brazilian state effectively created a loose regulatory environment – via its laws and policies – that facilitates the capital accumulation by the planted forests industries, which have been considered a priority since the 1950s. Therefore, it is not surprising that, through most of the recent history, planted forests have been promoted for their industrial and commercial uses, despite the narrative flexing and green framing assigned to them. The PNDF solidifies my argument, openly promoting commercial planted forests, and addressing precisely the demands from the industry, such as simplified bureaucracy, better financial incentives for the sector, and the re-working of the critical discourse around planted forests. In addition, the PNDF created new paths for the flexing of planted forests – such as bio-fuel generation and GMOs – in order to expand the possibilities of capital accumulation by the industry.

In conclusion, the PNDF summarizes the current governance for planted forests in Brazil. The plan's ultimate purpose is the fostering of economic activities involving planted forests and, therefore, the increased profit of the industry. Nevertheless, despite openly favoring the "crop" nature of planted forests, the PNDF does not abandon the narrative flexing crafted during the 1990s and solidified during the Worker's Party's ruling. Under the PNDF, planted forests still maintain their ecological and climate promises to bring about a green economy – despite being in blatant contradiction with the aforementioned goals.

These contradictions, as I have argued, are an inherent part of Brazilian planted forests governance. They exist because the state maintains a discourse that purposefully promotes planted forests for ends that are not in accordance to its primary interests. Therefore, the final answer to the research question guiding this thesis is: the Brazilian state discursively promotes planted forests for their capacity to offer sustainable raw material to the industry, recover environmental assets, capture carbon, and improve the livelihoods of rural populations. Nevertheless, the government's narrative is not effectively translated into the governance for the sector. In my analysis, I showed that laws, decrees, rulings, and policies overemphasize industrial and commercial uses of planted forests, only recurring to their socio-environmental potential to justify their promotion in virtually any possible context. This happens because the Brazilian state perceives in its natural resources a way to finance its economic growth, even though in reality, evidence has shown that commercial forest plantations have led to the deterioration of socio-environmental conditions. Thus, planted forests governance is conducive not to conservational and social uses, but rather to economic goals.

8.2 Empirical contributions and theoretical convergences

As demonstrated, this thesis offers empirical contributions to the understanding of forestry debates in peripheral, extractive countries, wherein the state assumes the responsibility of guiding the national development project. Brazilian planted forests governance makes it clear that, in order to fulfill its developmental goals, the federal government seeks to facilitate the operations of key industries – such as the paper,

pulp and steel – via a favorable regulatory framework and policy plans that incentivize their operations. Through a systematic and in-depth exploration of laws, decrees, rulings and policies from an historical perspective, this research has shown how these legal and institutional contexts are heavily influenced by the interests of those involved in its making – that is, the federal government and the planted forest industries. Concomitantly, this research demonstrates the political nature of forest definition and classification. The findings presented in this thesis corroborate the claims that state authorities freely alter the status of "forests" based on their assigned function within national goals. For planted forests, this is even more prominent, since their crop-like nature allows for an alternative understanding as "agricultural crops". Brazilian planted forests governance therefore support the "political forests" argument by using multiple definitions of planted forests to legitimatize specific goals in the several contexts wherein they are used.

In addition, the argument proposed also evinces the "tree flexing" phenomenon in Brazil. The findings are a substantial empirical contribution to the claims that planted forests are increasingly used for multiple purposes other than wood resources, such as energy production and carbon capture. In the Brazilian case, "narrative flexing" is particularly prominent within the green economy discourse adopted by state authorities, which is highlighted by the formalization of flexing paths within the country's policy and legal frameworks. While planted forests benefit from an environmental framing forged by the industry in the 1990s, the alliance formed with the state during Lula's administrations guaranteed the incorporation of the green discourse into official documents that guide the governance for the sector.

This last point converges with existing literature on the alliance between the planted forests industry and the federal government, marked by the presence of key personalities from the industry in leading roles within state institutions responsible for the making of policies and regulations for the sector (Kröger 2012; 2014a). Kröger also points out the preferential treatment given by the state to the planted forests sector, which enjoys benefits such as direct government funding via BNDES, in order to strengthen key industries (or "national champions"). My findings show that, in governance terms, this is translated into a loose regulatory framework for industrial and commercial uses of planted forests, as well as the inadvertent

promotion of those in several contexts, regardless of their suitability. This scenario, as argued, is only possible because Brazilian authorities still perceive in the country's natural resources a valuable source of foreign revenue to fuel its development project.

The findings presented in this thesis go along those of Gellert and Andiko (2015) on the rule of law in Indonesian forestry sector. Brazilian planted forests governance evinces a policymaking process that clearly favors specific actors and their interests – namely, the industrial elite. While social welfare and ecological benefits are used as part of the framing of planted forests in official documents, the actual provisions in those are carefully designed to concede administrative, bureaucratic, and financial privileges to the industries dependent on planted forests' output.

The abovementioned socio-environmental considerations are embedded in planted forests governance within the context of a green economy, which state authorities intend to achieve by reducing carbon emissions from its carbon-intensive sectors. For this purpose, planted forests have been attributed the goals to provide sustainable wood resources and to capture carbon from the atmosphere, creating the conditions for low-carbon industrial activities. My observations resonate with those of Bergius and Buseth (2019), who argue that the green economy takes different forms in the global South than it does in countries of the global North. For the authors, activities capable of "greening" resource-intensive sectors are the main instruments of the green economy in peripheral countries. As I have demonstrated, Brazilian authorities employ planted forests precisely in those tasks – i.e. carbon sinking projects, low-carbon agriculture, and bioenergy. The findings presented in this thesis corroborate the argument that countries like Brazil are relegated to the "frontier" of the green economy imperatives.

8.3 Shortcomings and future research

Despite the substantial findings and arguments presented in this thesis offering important empirical contributions to the existing literature on planted forests, it is important to be aware of the limitations and shortcomings of this thesis. As Silbernagel (2013) notes, planted forests governance is very dispersed within Brazilian legal and institutional apparatus. This means that planted forests are

contemplated by myriad different governing bodies, and their respective internal decision-making processes. In addition, because the 1988 Constitution designated forestry matters to be addressed within the agricultural policy framework, planted forests could be indirectly governed by a vast amount of laws and policies regarding other agrarian issues, such as land tenure and economic zonings. In practice, collecting all the pieces of governance that might *indirectly* affect the planted forests sector is a virtually impossible task, given the limited time and resources available for the execution of this project. I recognize that leaving the broader agrarian policy framework outside the analysis could be considered detrimental to my argument, as planted forests establishment and expansion is inherently permeated by these matters. Nevertheless, I see no alternative given the operational constraints involved in this type of enterprise, as well as the scope delimited for this thesis.

Having considered these limitations, I would like to present a few potential paths for future research on the topic. First, in order to address the abovementioned shortcomings, an essential step toward a more complete understanding of the political economy of planted forests in Brazil would be an analysis of the aspects related to the land tenure and land use in the country. It is widely acknowledged the land dispossession is the most common cause of conflicts related to planted forests activities, therefore exploring the governance for agricultural uses of the land is important toward the resolution of these conflicts. Second, future researchers could build upon the findings presented in this thesis to explore the topic from a closer perspective, focusing their efforts on local contexts, rather than at the national level. States like Minas Gerais and, more recently, Mato Grosso do Sul attract many of Brazilian planted forests companies due to their favorable conditions for business. A study on the laws and rulings of these states could expand, corroborate, or contradict my arguments.

Lastly, since this thesis has focused on the planted forests governance of a peripheral state, future research could explore the same topic in Northern countries, as to highlight similarities and differences regarding the legal approaches taken by different states. Much of my argument is based on the fact that Brazilian state is dependent on the exploitation of natural resources to carry out its development project. Countries in the global North, on the other hand, typically present a capital-

intensive development strategy, less reliant on the commodification of nature within their own territories. I believe studies on the planted forests governance in those nations would generate different results – particularly in regards to the role of the green economy in the uses of planted forests.

8.4 Final considerations

The unravelling of socio-environmental conflicts caused by the reckless exploitation of natural resources is certainly worth the academic effort. However, understanding the commodification of nature that often leads to those conflicts in the global South requires a deeper look into the processes and interests that lie behind it. As Gellert (2019) wisely notes, the political economy of extractive developmental states is inherently dependent on the state's capacity to justify its action before its domestic constituencies and the international society. This thesis is an effort to explore the legal aspects that legitimize Brazilian federal governance over its planted forests, starting from the understanding that, as a peripheral country, Brazil perceives its nature as a source of riches and growth, to be exploited for the national interest.

In order to have a clear picture of the political economy of planted forests in the country, I have proposed an explanation for the motives of Brazilian authorities in adopting a governance framework that extensively privileges industrial uses of planted forests. While the country does not hide its economic interests toward the sector and its industries, it tries to create a green façade to their promotion, framing planted forests as ecologically beneficial and socially concerned. Nevertheless, the reality revealed by my analysis is that socio-environmental arguments for planted forests uses are rarely materialized in the provisions of the law. Brazilian state maintains its extractive interests, creating a governance framework that incentivizes the imprudent expansion of planted forests in every possible context, for the sake of the support to its key industries and their increased foreign returns. In a so-called quest for a green economy, the government is tied to the terms of a long-standing alliance, built upon a development project rooted deeply in the country's colonial past. The result is the inadvertent promotion of planted forests for the benefit of the industry, with no real consideration for the social and ecological consequences of their use and expansion. As such, Brazilian planted forests governance becomes one

additional cause for the recurrent conflicts in the country – albeit, officially legitimized within the government's green discourse.

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Appendix

APPENDIX 1 – LIST OF ANALYZED DOCUMENTS (BY PRESENTATION ORDER)

- National Policy for the Environment (1981)
- Conama Regulation 01/86 (1986)
- Federal Constitution (1988)
- Conama Regulation 237/97 (1997)
- Decree 3,420 (2000)
- National Forest Program (2000)
- Action Plan for Deforestation Prevention and Control in the Legal Amazon (2004) - Three phases analyzed
- Normative Ruling 8 (2004)
- National Action Program to Combat Desertification and Mitigate the Effects of Drought (2005)
- Public Forests Management Law, or Law 11,284 (2006)
- Decree 5,975 (2006)
- Normative Ruling 6 (2006)
- Normative Ruling 112 (2006)
- Normative Ruling 3 (2009)
- National Policy for Climate Change, or Law 12,187 (2009)
- National Fund for Climate Change, or Law 12,114 (2009)
- Decree 7,390 (2010)

- Action Plan for the Control and Prevention of Deforestation and Wildfires in the Cerrado (2010)
- Plan for a Low-Carbon Agriculture (2012)
- Plan for the Reduction of Emissions from the Steel Industry (only Executive Summary available, 2018)
- Forest Code, or Law 12,651 (2012)
- Decree 8,375 (2014)
- National Policy for the Recovery of Native Vegetation, or Decree 8,972 (2017)
- National Plan for the Recovery of Native Vegetation (2017)
- National Plan for the Development of Planted Forests (2018)

APPENDIX 2 – LIST OF INTERVIEWEES AND DATE OF INTERVIEW

- Journalist covering planted forests conflicts in Brazil (October 16, 2018)
- Representative of an international NGO in the forestry sector (November 9, 2018)
- Environmentalist (November 28, 2018)
- Professional in the steel industry sector (November 28, 2018)
- Technical advisor and member of a UNDP project for Sustainable Steel Industry in Brazil (December 14, 2018)
- Professional in the steel industry sector (December 20, 2018)
- Climate Change and Forestry consultant for a forestry company (December 20, 2018)