Legal incentives for land grabbing and deforestation in the Brazilian Amazon

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Abstract

The paper critically examines how the Brazilian Amazon's federal and state land laws inadvertently incentivize forest destruction, illegal land occupation, and subsequent titling. It identifies five critical incentives across nine states: continuous occupation of public lands, titling of recently deforested areas, lack of commitment to environmental liability recovery, subsidized land prices fueling speculation, and inadequate land allocation procedures. Recommendations include aligning policies with deforestation reduction, charging market prices for land sales, requiring pre-titling environmental commitments, prohibiting titling for recently deforested lands, and advocating for transparent land allocation. Brazil faces a crucial moment in determining how land laws impact forest preservation and climate goals for 2030. While the 2023 government implemented measures to improve land allocation and protect public forests, impending National Congress bills threaten to undermine these efforts, perpetuating land grabbing and forest loss.

Keywords: Brazilian Amazon – Land Title – Land Laws – Deforestation – Public Forests

1. Introduction

Between 2019 and 2022, deforestation in the Amazon substantially increased, surpassing an annual rate of 10,000 km²(INPE, 2024). During this period, federal and state governments and a segment of the National Congress advocated issuing land titles to those deforesting and occupying public land as the prime strategy to identify and penalize responsible parties for forest destruction. The government estimates that the demand for land titles in the region may reach 276,000 families (Incra, 2021). However, issuing land titles to recently occupied public land would reward environmental criminals, who would become owners of the public land they had illegally invaded and deforested.

Additionally, awarding titles to recent land occupations would perpetuate a land-grabbing cycle in the Brazilian Amazon. This cycle begins with the invasion of public areas, followed by deforestation to signal land occupation. Subsequently, illegal landholders try to legalize such occupations, often lobbying for changes in land laws to facilitate title acquisition (Brito, Barreto, Brandao, et al., 2019). Revising land laws to favor land grabbers incentivizes the continuation of public land invasions and deforestation, as it raises the expectation of future changes in legislation enabling the legalization of new land occupations.

Since forest loss is the primary source of greenhouse gas emissions in Brazil, halting deforestation must become a guiding principle in the land policies implemented in the Amazon, should Brazil intend to honor its climate commitments to the Paris Agreement. Thus, incentives that promote land grabbing and forest destruction must be eliminated from land policies.

Recent studies estimate that areas between 118 million and 143 million hectares might be susceptible to continued land grabbing and deforestation in the Brazilian Amazon (Brito, Almeida, Gomes, et al., 2021; Instituto Escolhas, 2023). These areas correspond to undesignated public lands under dispute, leading to conflicts and deforestation. Part of this area (56 million hectares) is classified as undesignated public forests and has concentrated 50% of the Brazilian Amazon deforestation (Moutinho & Azevedo-Ramos, 2023). For instance, the government needs to decide if such lands will be designated for recognizing indigenous territories, as areas for protection, or for issuing land titles to landholders. However, even though the recognition of collective land rights and environmental protection have legal priority for land designation, the

Amazon's current land laws inadvertently fuel a land-grabbing cycle connected to deforestation.

The Brazilian Constitution and current legislation indicate the following priorities for allocating public land: recognition of Indigenous Lands[1], *Quilombola* territories[2] and areas occupied by traditional communities[3], creation of environmental conservation areas[4]**,** forest concessions[5], and land access for family farming[6]. Assigning public lands to medium and large private occupations without a tender can occur only when there is no overlap with priority demands and when the landholders meet the legal requirements for receiving the land title. However, despite such legal provisions, there is growing political pressure to prioritize the titling of landholders on public lands. Also, the procedures for land titling do not ensure that such land allocation priorities will be met (Brito, Almeida, Gomes, et al., 2021).

This study is an updated version from Brito, Almeida, & Gomes (2021). We assessed the primary federal law on land regularization (Law 11,952/2009) and state land laws in effect until 2023 across all nine regional states. We identified the legal requirements for awarding land titles to analyze to what extent such regulations align with policies to curb deforestation and promote compliance with environmental laws. We found five perverse incentives in federal and state land rules that stimulate the continuation of land-grabbing practices in the region. We also detected bills awaiting voting in the Brazilian National Congress that may worsen this scenario, threatening public forests if approved. Finally, we recommend aligning government actions in land administration to deforestation reduction goals.

2. Methods

To identify incentives for land grabbing and deforestation in the land laws applicable in the Legal Amazon, we evaluated the primary federal law on land regularization (Law 11,952/2009) and state land laws in force until 2020 in all states in the region. We updated this analysis for 2023 to include revisions in the federal Decree and Maranhão State land law. The states' rules are relevant since estimates indicate that 60% of the

[1] Article 231 of the 1988 Federal Constitution.
[2] Article 68 of the Transitional Constitutional Provisions Act.
[3] Article 4, II of Federal Law 11,284/2006 and Article 3, II of Federal Decree No. 6,040/2007.
[4] Article 225, Paragraph 5 of the Federal Constitution of 1988 and Federal Law No. 9,985/2000.
[5] Article 4, III of Federal Law 11,284/2006.
[6] Article 188 of the 1988 Federal Constitution, Federal Law No. 8,629/1993 and Article 2, Paragraph 2 and Paragraph 3 of Federal Law No. 4,504/1964.

areas without land information in the region belong to the state governments (Brito, Almeida, Gomes, et al., 2021). The remaining 40% are areas under the control of the Federal Government, which will be subject to federal rules (Brito, Almeida, Gomes, et al., 2021). For the assessment, we considered the following aspects:

- The decision-making process regarding the allocation of public lands.
- Deadline for starting an occupation in public land.
- Existence of any impediment to titling properties with recent deforestation.
- The land price charged for titling medium and large areas compared to the market value.
- Types of obligations to be fulfilled after receiving the title and their monitoring.

3. Results

We identified five perverse incentives in federal and state land rules contributing to public lands' continuing illegal occupation and deforestation. We present them below.

3.1. Land laws allow the continuation of public land occupation

In most state land laws in the Brazilian Amazon, those who occupy public land at any time are eligible to receive a land title if they fulfill other legal requirements. In these cases, the laws do not require a deadline to begin such occupations (Table 1).

In some states, the laws require a minimum time as a landholder before applying for a land title (Table 1). For example, Acre, Amazonas, and Maranhão states request five years of occupation. In Mato Grosso, the minimum term is one year if the property will be acquired through sale (areas up to 2,500 hectares) and five years if the government donates the land (areas up to 100 hectares). However, even if a minimum time is requested, the absence of a deadline for the beginning of these occupations opens the possibility of recognizing private ownership for public land occupied even in the future. Even when the legislation establishes such a deadline, as in Amapá, Pará, Rondônia, and Roraima, it is subject to modification, as happened to the federal law in 2017. That year, the National Congress revised Federal Law 11,952/2009, which extended in seven years the deadline for the beginning of occupations on federal lands eligible to receive a land title from 2004 to 2011. In another example, Roraima changed its land law in 2019, extending the occupation deadline from 2009 to 2011. Consequently, a perpetual expectation remains for legalizing recently occupied and deforested public lands.

In the federal case, there have been three lawsuits since 2017 challenging the constitutionality of the law revision and the occupation deadline change. Still, the

Supreme Court (STF) has yet to decide as of March 2024. Without such a court decision, the lobby for new modifications in the land law continues. Between December 2019 and June 2020, the Provisional Measure 910/2019 (MP 910/2019) temporarily changed the occupation deadline from 2011 to 2018. The MP/2019 expired without confirmation from the National Congress, partly due to strong civil society opposition. Even though the current deadline in federal law is still 2011, two bills awaiting voting from the National Congress as of March 2024 could open a legal loophole to allow the titling of areas occupied after 2011 (Bills 2633/2020 and 510/2021). In other words, there is intense pressure to consolidate a privatization model of public lands, including recently cleared forests.

Table 1: Minimum time or maximum deadline requirements for occupying public land for land tenure regularization in the Legal Amazon.

Minimum time or maximum deadline for occupation	**AC**	**AM**	**AP**	**MA**	**MT**	**PA**	**RO**	**RR**	**TO**	**Federal**
Does not specify a time frame for one or neither form(s) of sale and donation of land	●	●		●	●	●		●	●	
Until July 2008							●			
Until December 2011			●							●
Until July 2014, for some categories						●				
Until November 2017, for sale								●		
At least one year for one or all regularization categories					●	●				
At least five years for one or all regularization categories	●	●		●	●	●				
It does not specify a minimum deadline for one or neither of the regularization categories.						●			●	

3.2. Federal and state legislations do not prohibit the titling of illegally deforested lands and areas consisting predominantly of forests

Federal or state governments have no general prohibition to issue a land title for recently deforested land. Two partial exceptions apply. First, Pará land law suspends the process of issuing the title when the claimed area had 100% forest cover by July 2014, but it was cleared after that date. Even so, there is no express prohibition on titling in this case, and the area's fate falls to a collegiate body that has not been installed as of March 2024. Second, Rondônia land law does not waive the bidding process for titling properties targeted by environmental infraction notice or embargo. However, state law does not indicate what happens to such areas, such as if the government will evict the landholders or make a bidding process to sell them. Also, there is no prohibition to issuing land titles for deforested areas when the environmental agency has not taken any enforcement measures.

In addition, no state laws prohibit the titling when most of the area is covered by forest. In the case of Pará, it is not permitted to issue land titles for areas with 100% forest cover, but such a ban does not prevent, for example, the titling of a property with 98% forest cover. The main problem in this situation is that, after receiving the title, the new owner can request authorization to legally clear up to 20% of the property, according to the Brazilian Forest Code. Thus, governments inadvertently legalize the potential for future deforestation by titling public areas with more than 80% of forest cover.

3.3. Most land laws do not demand a commitment to environmental liability recovery before titling

Most state land laws do not require landholders of areas with illegal deforestation to sign into environmental liability recovery programs before receiving the land title (Table 2). Only Acre land law requires signing, before issuing the title, an agreement to comply with the environmental law.

In federal law, the government requires signing an agreement with the environmental agency before receiving the land title if two conditions are met: property with an embargo or infraction notice issued by the environmental agency and if the requirements for obtaining the title are met based on environmental damage proven during a field inspection. For example, if illegal deforestation is the only evidence of occupation and there is no productive use in the area.

In Pará, the law requires compliance with environmental rules for receiving a land title or demands that the area must be in the process of becoming compliant. However, only some of the properties need to enter into programs to become into compliance before receiving the title: those above four fiscal modules[7] (256 hectares on average) that had 100% forest cover by July 2008, but deforested any percentage of the area without authorization by July 8, 2014. In other cases of illegal deforestation up to 2014 in state areas of Pará, the landholder is given two years after the title is issued to enter the environmental liability recovery programs.

Even though the Brazilian Forest Code requires properties with illegal deforestation to comply, either by restoring the deforested areas or offsetting this obligation in other properties (if deforestation happened as of 2008), the environmental agencies need to be faster to enforce such an obligation. For instance, in four Amazon states (Acre, Mato Grosso, Pará, and Rondônia), less than 10% of the properties with environmental liabilities confirmed by the environmental agencies had already signed agreements to comply (Lopes et al., 2023). Thus, requiring landholders with illegal deforestation to enter into environmental regularization programs before receiving the land titles would speed up securing such commitment and demand compliance, even by enforcing such commitments in courts.

Also, some land laws require environmental compliance to keep the property private and titled. Failing to comply with such rules can result in property loss. However, land agencies need to monitor this obligation so there is no real risk of losing the property due to environmental violations. For instance, the Federal Court of Auditors (TCU) pointed out that the federal government does not monitor these obligations or take back properties that do not comply with them(TCU, 2015, 2020). In 2020, the TCU revealed that more than half of the titled properties analyzed by the auditors had illegal deforestation after 2008, without the government's adoption of any sanctions(TCU, 2020). In addition, in the federal case, the legislation allows a new owner who has breached environmental rules not to lose their property if they sign an agreement to remedy the problem. In other words, the law already allows for environmental damage to occur in the future, forgiving post-titling deforestation.

Table 2: Legal requirement for committing to restore illegal deforestation before and after receiving the land title

[7] Fiscal module is a measure used to calculate size of properties in Brazil and vary per municipalities.

Requirement of a commitment to recovering environmental liabilities	AC	AM	AP	MA	MT	PA	RO	RR	TO	Federal
Does not require commitment before granting land title			●	●	●		●	●	●	●
Titling only occurs after an agreement is signed with the environmental agency.	●									
Titling only occurs after an agreement is signed with the environmental agency under limited circumstances detailed in the legislation.						●				●
Send information on liability to the environmental agency, which decides on signing an agreement.		●								
Donation or sale without bidding only if there is no notice of violation or environmental embargo in the property's name							●			
Post-titling: restore liabilities or undergo environmental regularization so as not to lose the title	●					●				
Post-titling: respecting the environmental law so as not to lose the title			●		●					●

3.4. Subsidized land prices do not ensure sustainable land use and may incentivize land-grabbing

Landholders must pay for the land title for medium and large areas, but federal and state governments charge prices significantly below market rates: between 15% and 26% of

the market value (Brito, Barreto, Brandão, et al., 2019). The difference between the government price and the market value is a hidden subsidy for the land title.

Considering the perverse incentives listed previously, medium and large occupations in public land, invaded and deforested at any time, can receive a land title without the cost of recovering environmental liabilities and with the possibility of a high profit from the subsequent sale of the land after receiving the title.

Tocantins state charges the lowest land value among the states: an average of just U$ 0.70 per hectare. However, properties of up to 320 hectares (4 fiscal modules) out of Tocantins capital pay only U$ 0.20 per hectare (Brito, Almeida, Gomes, et al., 2021). In several states, discount rates are applied on top of these values, which reduce the final price and vary according to state and federal legislation. In the federal case, if the government privatized 19.6 million hectares of unallocated public land in the Amazon at the prices charged according to the current legislation, Brazilian society would lose between U$ 16.7 and 23.8 billion, considering the prices charged in 2018 (Brito, Barreto, Brandao, et al., 2019).

Pará State decreased its land value in 2021, even though it was already below the market. The new values represent only 1.2% of the average value charged on the land market in Pará and 31% of the price charged by the federal government. Considering 1.8 million hectares of Pará state land with the possibility of receiving land titles, the new prices would represent an average reduction of 48.8 million (Brito & Gomes, 2022a).

Governments justify this low land value by arguing that titling would enable more efficient and sustainable production practices on the property (MAPA, 2020). However, there is no guarantee that these areas will be used for production or job creation or will comply with environmental rules, given the lack of monitoring of the obligations from the titled landowners. The low values are, in practice, an incentive for the continued occupation of public lands with deforestation, contributing to a land speculation market.

3.5. Land agencies' procedures do not guarantee land allocation according to legal priorities

Land agencies could eliminate all the perverse incentives listed above if they prevented the titling of areas with priority for recognizing collective land rights (such as indigenous lands) and environmental conservation. However, such governmental bodies do not ensure that these priorities are met.

In most states, land agencies are not required to consult other governmental institutions responsible for recognizing priority land allocation demands, such as the National Indigenous Foundation (Funai) and environmental agencies. Also, land agencies do not disclose information on the areas already at the stage of receiving a title, which makes it difficult for other agencies or institutions from civil society to identify risks of improper land allocation. Thus, states may issue land titles in areas that should have other designation.

In addition, states do not prohibit the recognition of private land claims in state public forests, even though the Federal Constitution establishes that lands necessary to protect the natural ecosystems are inalienable[8]. Pará State could have been an exception if it had installed its Technical Chamber for the Identification, Designation and Land Tenure Regularization of State Public Lands. A state decree from 2020 determines the creation of this committee with participation from governmental and civil society institutions, with a mission to assist the land agency in allocating state lands in alignment with sustainable development policies. However, such a committee has never been set up and has no appointed members as of March 2024.

At the federal level, in 2013, the government created the Technical Chamber for Designating and Regularizing Federal Public Lands in the Brazilian Amazon (CTD for its Portuguese acronym), with a consultation process among different federal agencies to decide on the designation of the lands. However, as of 2018, this committee had allocated 8.5 million hectares for land regularization overlapping with public federal forests, a decision prohibited according to the federal land law from 2009 (Brito & Gomes, 2022b).

Law 11952/2009 prohibits the titling of landholding in public forests, but the decree regulating CTD's land allocation process enabled such a decision. According to the original text of Decree 10,592/2020, if the agencies with priority for land allocation did not indicate interest in the areas, the land would be designated for land regularization as default. In 2023, the federal government revised this decree and corrected such illegality[9]. Now, the ruling reaffirms the text of Law 11952/2009 and lists the options the CTD may choose on how to allocate public forests: creation and land regularization of conservation units, demarcation and land regularization of indigenous lands, demarcation and land regularization of quilombola territories, demarcation and land

[8] Article 225, Paragraph 5 of the Brazilian Federal Constitution from 1988.
[9] Revision of Decree 10592/2020 through Decree 11688/2023.

regularization of territories of other traditional peoples and communities, concessions (Law 11284/2006) and other forms of allocation compatible with the sustainable management of public forests.

4. Discussion and recommendations

According to the five perverse incentives identified in this study, the land laws in force in the Amazon reflect a view that public land is available for occupation and illegal deforestation, which is a stimulus for continued invasions of undesignated public forests. Thus, supporting land titling in the current model or modifying the rules to make it even easier will have harmful effects, such as encouraging new illegal occupations and deforestation on these public lands in the coming years. It will also contribute to the region's continuing agrarian conflicts and legal insecurity.

Apart from existing laws, two bills in the National Congress may further enable the legalization of recently occupied and illegally deforested public lands, posing a risk to ongoing efforts in Brazil to reduce deforestation. Bills 2633/2020 and 510/2021 propose selling public land through tender when the landholder does not comply with the legal requirements for titling, as long as there is no public or social interest in the area. If approved, this change could be applied, for instance, to occupations made after the deadline for federal land occupations, which is currently 2011. Thus, recent or even future public lands illegally invaded would be legalized.

In addition, other bills intend to transfer federal lands to states, so state land agencies would be in charge of assessing land claims according to each state law. For example, Bill 1199/2023 concerns federal lands in Tocantins, and Bill 5461/2019 applies to all states in Brazil. Given the differences among states' land law requirements regarding titling and the existing perverse incentives presented in this study, such bills must be carefully assessed to avoid legalizing land-grabbing practices.

The existing demand for issuing land titles in the Amazon region must be carefully assessed to separate legitimate land claims that comply with legal requirements from recent speculative land occupations. The latter should be denied, and the governments (federal or state) must take control of such areas and designate them for appropriate use.

Based on this study, we present the following recommendations, especially at the state level, to align land policies and deforestation reduction:

i) All state land laws need to determine a deadline for occupying public land that can be titled. In addition, we recommend that state constitutions prohibit the alteration of such time frames.

ii) To encourage sustainable production on titled properties, federal and state governments should adopt two measures: i) charge land prices compatible with the market values and ii) if the payment is made in installments, grant discounts on annual installments if the properties comply with the Forest Code.
iii) Prohibiting the titling of properties with recent deforestation.
iv) Demanding commitment to restore illegally deforested areas before titling and penalizing post-titling non-compliance. Land agencies need to develop mechanisms with environmental agencies to monitor the forest cover of titled properties and act in case of non-compliance.
v) All states need to establish procedures to consult about land allocation with other agencies that recognize priority land claims to prevent the undue privatization of these territories. Moreover, states must disclose information about land claims under evaluation and titles already issued to enable monitoring of external bodies (such as audit courts and public prosecutors) and civil society institutions.

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