

# The (Lack of) Control of Legal Deforestation in MATOPIBA

## Regulation and Governance of Authorizations for the Suppression of Vegetation



CLIMATE  
POLICY  
INITIATIVE



POLICY BRIEF  
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### Introduction

In Brazil, approximately 100 million hectares of native vegetation on private properties can be legally cleared,<sup>1</sup> as they do not have protection as Permanent Preservation Areas (*Áreas de Preservação Permanente* - APPs), Legal Reserves (*Reservas Legais* - RLs), or protected areas. Deforestation, even if authorized, contributes to the loss of biodiversity, ecosystem services, and increased greenhouse gas emissions, exacerbating climate change.<sup>2,3,4</sup>

In 2023, deforestation alerts in the Cerrado biome reached the highest level in the historical series of the Real-Time Deforestation Detection System (*Sistema de Detecção de Desmatamento em Tempo Real* - DETER), with a 43% increase compared to the previous year. It is estimated that more than half of deforestation in the Cerrado is legal.<sup>5,6</sup> The MATOPIBA region, composed of the states of Maranhão, Tocantins, Piauí, and Bahia, is particularly susceptible due to the country's agricultural frontier expansion, driven by soy and corn production. MATOPIBA accounted for 75% of the biome's deforestation in 2023.<sup>7</sup>

In July 2023, the Ministry of the Environment and Climate Change (*Ministério do Meio Ambiente e Mudança do Clima* - MMA), the Brazilian Association of State Environmental Entities (*Associação Brasileira de Entidades Estaduais de Meio Ambiente* - ABEMA), and the states that make up the

- 1 There is no consensus on the native vegetation area subject to legal deforestation, but some publications suggest that this value ranges from 77 to 110 million hectares. Learn more at: Freitas, Flavio L. M. et al. "Who owns the Brazilian carbon?" *Global Change Biology* 24, no. 5 (2018): 2129-2142. [bit.ly/49L6bzb](https://doi.org/10.1111/gcb.14678). Metzger, Jean Paul et al. "Why Brazil needs its Legal Reserves". *Perspectives in Ecology and Conservation* 17, no. 3 (2019): 91-103. [bit.ly/42Xc2PW](https://doi.org/10.1016/j.pec.2019.03.001). CSR/UFMG, LAGESA/UFMG and UFMG. *Panorama do Código Florestal Brasileiro*. Belo Horizonte, 2023. [bit.ly/4bENSNU](https://doi.org/10.1016/j.pec.2019.03.001).
- 2 Ometto, Jean Pierre et al. Cross-Chapter Paper 7: Tropical Forests. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, New York: Cambridge University Press, 2022. [bit.ly/3OUNLEd](https://doi.org/10.1017/9781009114107.007).
- 3 E. S. Brondizio et al., eds. *IPBES: The global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Bonn: IPBES secretariat, 2019. [bit.ly/49KGkrO](https://doi.org/10.1017/9781009114107.007).
- 4 Assunção, Juliano et al. "Estimating the spatial amplification of damage caused by degradation in the Amazon". *PNAS* 120, no. 46 (2023). [bit.ly/49Nzgdv](https://doi.org/10.1073/pnas.2301111120).
- 5 DETER is an alert system designed to support the supervision and control of deforestation and forest degradation carried out by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA) and other related agencies. Learn more at: Observação da Terra. *Deter*. nd. Access date: February 2, 2024. [bit.ly/48tW9Bz](https://doi.org/10.1073/pnas.2301111120).
- 6 MMA. *Plano de Ação para Prevenção e Controle do Desmatamento e das Queimadas no Bioma Cerrado (PPCerrado): 4ª fase (2023 a 2027)*. 2023. [bit.ly/3T5BAXJ](https://doi.org/10.1073/pnas.2301111120).
- 7 G1. *Área sob alerta de desmatamento na Amazônia cai pela metade e sobe 43% no Cerrado em 2023, aponta Inpe*. 2024. Access date: January 9, 2024. [bit.ly/3wsMw93](https://doi.org/10.1073/pnas.2301111120).

Cerrado met to discuss proposals for controlling deforestation, including strategies to combat illegal deforestation and better management of legal deforestation.<sup>8</sup>

In November 2023, the federal government published the 4<sup>th</sup> phase of the Action Plan for Prevention and Control of Deforestation in the Cerrado Biome (*Plano de Ação para Prevenção e Controle do Desmatamento no Bioma Cerrado - PPCERRADO*), which establishes the goal of zero deforestation by 2030. For PPCERRADO, zero deforestation means eliminating illegal deforestation and offsetting legal suppressions of vegetation and greenhouse gas emissions. This goal can be achieved by strengthening the implementation of the Forest Code, recovering and increasing the stock of native vegetation. According to the plan, the solutions “go beyond combating illegal deforestation, also requiring alternative measures to command and control for legal deforestation within the current legislative framework”<sup>9</sup> (as translated by the authors).

The main instrument for controlling legal deforestation is the Authorization for the Suppression of Vegetation (*Autorização de Supressão de Vegetação - ASV*). The information regarding the request and issuance of ASV is entered into the National System for the Control of the Origin of Forest Products (*Sistema Nacional de Controle da Origem de Produtos Florestais - SINAFLOR*). It is presumed, therefore, that such a system is essential for the control and monitoring of legal deforestation in the country. However, in practice, due to a series of challenges, SINAFLOR has not effectively served as a management and control tool for authorized deforestation.

**Climate Policy Initiative/Pontifical Catholic University of Rio de Janeiro (CPI/PUC-Rio) analyzed the process of requesting/issuing ASV at the federal level and in MATOPIBA with an emphasis on regulatory and governance aspects, to offer recommendations for improving the management, monitoring, and control of legal deforestation.**

8 MMA. MMA recebe Estados do Cerrado para avaliar estratégias de combate ao desmatamento. Representantes de dez Estados e da Abema participaram do encontro. 2023. Access date: January 12, 2024. [bit.ly/3SMOQqX](https://bit.ly/3SMOQqX).

9 Original text: “vão além do combate ao desmatamento ilegal, necessitando também medidas alternativas ao comando e ao controle para o desmatamento legal dentro do marco legislativo vigente”. Learn more at: MMA. Plano de Ação para Prevenção e Controle do Desmatamento e das Queimadas no Bioma Cerrado (PPCerrado): 4ª fase (2023 a 2027). 2023. [bit.ly/3T5BAXJ](https://bit.ly/3T5BAXJ).

## Recommendations

### CHALLENGE

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Law no. 140/2011, which organizes the common competence among federative entities regarding environmental protection, does not clearly define the competence for issuing ASV when the conversion of native vegetation into agricultural activities is licensed by the municipal environmental agency.

### RECOMMENDATION

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**The federal executive branch should issue a normative act that expresses the original competence of state environmental agencies for issuing ASVs and, if necessary, the criteria for delegating competence to municipalities.**

### CHALLENGE

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Brazil lacks an adequate management tool for monitoring and controlling legal deforestation in the country. All ASVs issued in the country should be registered in the SINAFLOR, but in practice, the system only contains a part of all the authorizations. Additionally, states face challenges in using SINAFLOR, which impacts the integration of state ASV management databases into the federal system.

### RECOMMENDATION

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**MMA/IBAMA should improve SINAFLOR or create a new tool to effectively manage all ASVs issued in the country.**

### CHALLENGE

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Monitoring and controlling legal deforestation in MATOPIBA necessarily require access to and transparency of ASV information. However, there is no publicly available information on the totality of requested/issued ASVs. Additionally, accessible data do not indicate the area/geographical coordinates, essential information for the management of legal deforestation. It is not possible to identify if the lack of access to information lies in (i) the registration of the ASV request by the entrepreneur/technical consultant; (ii) the issuance of the ASV and its registration in SINAFLOR by the state environmental agency in charge; or (iii) the provision of information by public data platforms.

### RECOMMENDATION

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**MMA/IBAMA and states must ensure that ASV request/issuance data are complete and up to date. Additionally, this information should be available on an open website for access and use by other government agencies, financial institutions, the private sector, academia, and civil society. This will enable better management and monitoring of legal deforestation.**

## Regulation of ASV

### Forest Code

The Forest Code (Law no. 12,651/2012), which addresses the protection of native vegetation, establishes two main conservation instruments on private lands in Brazil: APPs and Legal Reserves.<sup>10</sup> Generally, the removal of vegetation in these areas is not permitted.<sup>11</sup> However, in areas not classified as APP or RL, the Forest Code allows deforestation, provided it is previously authorized by the state environmental agency and the property is registered in the Rural Environmental Registry (*Cadastro Ambiental Rural* - CAR).

#### **The ASV is the administrative procedure that authorizes deforestation in a specific area.**

Areas eligible for legal deforestation are referred to as areas for alternative land use. Vegetation is cleared to make way for other purposes, such as agriculture, industry, energy generation and transmission, mining, transportation, urban settlements, or other forms of human occupation.

Considering MATOPIBA as a region of agricultural frontier expansion, it is reasonable to presume that areas eligible for the removal of vegetation are destined for agriculture. Therefore, prior authorization from the state environmental agency is required.

To submit the ASV request to the state environmental agency, the rural property owner must provide, at a minimum, the following items in addition to the CAR:

1. The location of the property, APPs, RL, and restricted-use areas, by geographical coordinates, with at least one point tied to the property's perimeter.
2. Reforestation or forest compensation.
3. The effective and sustainable use of previously converted areas.
4. The alternative use of the area to be deforested.

The Forest Code prohibits the conversion of native vegetation for alternative land use on rural properties with abandoned areas.

Finally, the Forest Code requires the integration of data from different federative entities regarding the control of the origin of wood, charcoal, and other forest products and by-products. SINAFLOR was created for this purpose.

Since the suppression of vegetation for alternative land use can generate forest products, SINAFLOR regulations stipulate that the ASV should also be registered in the system.

<sup>10</sup> To better understand the Forest Code, see: Chiavari, Joana and Cristina L. Lopes. *Brazil's New Forest Code - Part I: How to Navigate the Complexity*. Rio de Janeiro: Climate Policy Initiative, 2015. [bit.ly/48IWGOo](https://bit.ly/48IWGOo).

<sup>11</sup> The Forest Code allows the suppression of vegetation in APP only in cases of public utility, social interest, or low environmental impact as provided for in this law.

## Law No. 140/2011

Federative entities are responsible for the environmental protection and preservation of forests, fauna, and flora. Brazilian legislation establishes a series of instruments for federative entities to exercise environmental control, among which environmental licensing stands out. Licensing is an administrative process that assesses the environmental impact of a specific activity or project, verifies its environmental viability, authorizes its construction, and allows its operation. Licenses are subject to compliance with conditions to mitigate and compensate potential environmental impacts.

Law no. 140/2011 (Law no. 140/2011) organizes the common competence among federative entities regarding environmental protection and establishes conditions for licensing and issuing ASVs by the Union, states, and municipalities.

The request/issuance of ASV can be carried out within an environmental licensing process or independently. For example, when a particular activity is exempt from environmental licensing, the entrepreneur must still request ASV if the suppression of vegetation is necessary for the activity.

According to the general rule of Law no. 140/2011, the competence to issue ASV lies with the licensing authority and stipulates that activities to be licensed or authorized must be performed by a single federative entity. In other words, if the licensing authority is IBAMA, it should also be the authority responsible for issuing ASV.

The law also establishes a list of conditions to determine when licensing will be the responsibility of the Union or municipalities, with states having the competence for licensing activities that do not fall under the jurisdiction of other federative entities.

The Union has the authority to license activities located or conducted in two or more states; in indigenous lands and protected areas, except in Environmental Protection Areas (*Áreas de Proteção Ambiental* - APAs), among others. The Union is also responsible for issuing ASVs in federal public forests, undesignated federal lands, or Protected Areas established by the Union.

Municipalities are responsible for licensing activities that cause or may cause environmental impact locally, according to typology defined by their respective State Environmental Councils (*Conselhos Estaduais de Meio Ambiente* - CONEMAs), considering size, pollutant potential, and nature of the activity, as well as for those located in protected areas established by the municipality. Additionally, municipalities are responsible for authorizing vegetation suppression resulting from activities licensed by them and those located in public forests and municipal protected areas.

Finally, states licensing activities not within the responsibility of the Union or municipalities, as well as those located or conducted in state protected areas. States are also competent to issue ASVs on rural properties, as long as the vegetation suppression is not a result of an activity licensed by the Union.

Regarding agricultural activities, CONEMAs may delegate licensing competence to municipalities, depending on the size and pollutant potential of the activity. In accordance with

the general rule of Law no. 140/2011, which stipulates that the entity responsible for licensing has the competence to issue the ASV, municipalities would then be responsible for authorizing vegetation suppression when requested in the licensing process.

However, Law no. 140/2011 specifies states as the federative entities in charge of issuing ASVs on rural properties, thus creating uncertainty regarding the municipal competence to issue an ASV within the licensing of agricultural activities.

The National Confederation of Municipalities (*Confederação Nacional dos Municípios - CNM*) published a technical note on this matter affirming the possibility of municipalities issuing ASVs on rural properties when responsible for the licensing of rural activity. The note emphasizes that municipal entities must verify if the rural property is registered in the CAR and comply with the requirements established by Law no. 140/2011.<sup>12</sup>

On the other hand, the Public Prosecutor Ministry of the State of Bahia (*Ministério Público do Estado da Bahia - MPBA*), through its Center for Support to Prosecutors of Environment and Urbanism (*Centro de Apoio às Promotorias de Meio Ambiente e Urbanismo*), published a technical note asserting that the competence to issue ASVs on rural properties always belongs to the state, even in cases of municipal licensing.<sup>13</sup> MPBA considers that ASVs issued by municipalities in Bahia since they do not meet the validity requirements of the administrative act, namely, the competence of the issuing authority.

Nevertheless, in practice, some municipalities in the MATOPIBA region have been issuing ASVs for the establishment of agricultural activities.<sup>14</sup> In addition to challenges surrounding the legality of granting municipal ASVs, analysis indicates problems controlling and monitoring authorizations, as will be seen later.

## **SINAFLOR - IBAMA Normative Instruction No. 21/2014**

### **Historical Background: Creation of SINAFLOR**

The 1990s were marked by high deforestation rates and illegal timber trade, such as mahogany.<sup>15</sup> Aimed at curbing this illegality and combating deforestation, the federal government created the Authorization for the Transport of Forest Products (*Autorização para Transporte de Produtos Florestais - ATPF*). ATPFs were issued by IBAMA to holders of Authorization Plans for Deforestation, Exploration, Management, and Cutting, currently called ASV. In 2002, with the need to digitize information, the Integrated System for Monitoring and Control of Forest Resources and Products (*Sistema Integrado de Monitoramento e Controle dos Recursos e Produtos Florestais - SISPROF*) was created to issue and control ATPFs.

<sup>12</sup> CNM. *Nota Técnica no. 16/2022*. 2022.

<sup>13</sup> CEAMA. *Nota Técnica no. 01/2023*. 2023. [bit.ly/49oWFC3](https://bit.ly/49oWFC3).

<sup>14</sup> MMA. *Plano de ação para prevenção e controle do desmatamento e das queimadas no bioma Cerrado (PPCerrado): 4ª fase (2023 a 2027) - versão preliminar em consulta pública*. [bit.ly/3I9K89z](https://bit.ly/3I9K89z).

<sup>15</sup> Grogan, James, Paulo Barreto, and Alberto Veríssimo. *Mogno na Amazônia Brasileira: Ecologia e Perspectivas de Manejo*. Imazon, 2015. [bit.ly/3UIWI7o](https://bit.ly/3UIWI7o).

In 2006, the Public Forest Management Law (*Lei de Gestão de Florestas Públicas* - LGPF) (Law no. 11,284/2006) marked the decentralization of forest management, transferring the authority to authorize the exploitation of forests and successional formations to the states through ASVs.<sup>16</sup>

With this new competence, state environmental agencies had to regulate the procedure for issuing authorizations to suppress vegetation and establish their own systems for the submission, analysis, and approval of ASVs.<sup>17</sup>

The 2012 Forest Code assigned IBAMA the responsibility to coordinate, inspect, and regulate the control of the origin of forest products through a national system to integrate data from federative entities. In late 2014, the National System for Controlling the Origin of Forest Products (*Sistema Nacional de Controle da Origem dos Produtos Florestais* - SINAFLOR) was created, becoming the reference system for controlling the origin of wood, charcoal, and other forest products. SINAFLOR only became operational in late 2017, and from May 2018, all vegetation suppression authorization procedures and related processes for forest activities and forest-based enterprises started to be carried out in this system or in a state system integrated with it. Thus, states that had already created their systems to meet LGFP requirements had to integrate them into the new federal system.

### Registration of Vegetation Suppression Activity: UAS and ASV Modules

SINAFLOR was created by the Forest Code to control the origin of forest products and by-products, focusing on forest exploitation activities rather than alternative land use. However, IBAMA Normative Instruction no. 21/2014, which regulates SINAFLOR, defines forest exploitation very broadly as an activity aimed at exploiting native forests and successor formations through Sustainable Forest Management Plans and other **activities involving forest exploitation, such as vegetation suppression for alternative land use and works subject to environmental licensing.**

According to IBAMA Instruction no. 21/2014, requests for vegetation suppression must be registered in SINAFLOR by the entrepreneur/producer or their technical representative. The interested party must fill in all the necessary information in the system to support the analysis and respective approval by the state environmental agency in charge, following the procedure established in the SINAFLOR manual.<sup>18</sup>

When, in addition to promoting vegetation suppression, the entrepreneur also uses or commercializes a forest product—wood, firewood, charcoal, others—the vegetation suppression activity must be registered in the “Alternative Land Use Module (*Módulo Uso Alternativo do Solo* - UAS)”, as is common in agricultural activities. When the entrepreneur only promotes vegetation suppression and does not use forest material, the activity's registration must be carried out in the “Authorization to Suppress Vegetation Module

<sup>16</sup> The original wording of Law no. 4,771/1965 (Forest Code) stated in its Article 19 that the exploitation of forests and successional formations, both in the public and private domains, would depend on prior approval from IBAMA. The LGFP amended this article, stating that the exploitation of forests and successional formations, both in the public and private domains, will depend on prior approval from the state agency responsible for the National Environment System (*Sistema Nacional do Meio Ambiente* - SISNAMA), as well as the adoption of techniques for management, exploitation, forest replacement, and handling compatible with the various ecosystems formed by the tree cover. Learn more at: Law no. 4,771, September 15, 1965. [bit.ly/42LFHLP](http://bit.ly/42LFHLP).

<sup>17</sup> dos Santos, Nathali G. “Gestão Florestal Descentralizada: uma análise do processo nos estados de Mato Grosso e Pará.” Master’s thesis, Universidade de Brasília, 2011. [bit.ly/4bM9JTG](http://bit.ly/4bM9JTG).

<sup>18</sup> IBAMA. *Manual Sinaflor* - 7. 2018. [bit.ly/3SOI0JI](http://bit.ly/3SOI0JI).

(*Módulo Autorização de Supressão de Vegetação - ASV*)”, which is usually the case for infrastructure projects. IBAMA Normative Instruction no. 21/2014 created this distinction, although the Forest Code designates ASV as the authorization for any vegetation suppression, and all activities are considered alternative land use.

According to IBAMA, all authorizations for vegetation suppression must be registered in SINAFLOR, regardless of the use or non-use of forest products.<sup>19</sup> However, analysis found some state agencies do not register authorizations for vegetation suppression for agricultural activities, without the use of forest products, in SINAFLOR. Furthermore, ASVs granted by municipalities are also not registered in SINAFLOR, even though there is regulatory provision for it,<sup>20</sup> and often they are not even reported to state environmental agencies. **This failure to register ASVs poses a challenge for the control and monitoring of legal deforestation, which ends up being underreported.**

## Regulation of ASV in MATOPIBA

Procedural norms related to the request/issuance of ASV vary according to each state environmental agency. Researchers from CPI/PUC-Rio mapped and analyzed the requirements for requesting ASV imposed by environmental agencies in MATOPIBA, as well as those outlined by federal legislation and the SINAFLOR manual.

Considering that ASV information should be included in SINAFLOR, it makes sense for state norms to require, at a minimum, the necessary information for filling in the data system. However, this is not necessarily what happens. Table 1 (appendix) presents an aggregate of the requirements outlined in the legislation of MATOPIBA states, the SINAFLOR manual and IBAMA Normative Instruction no. 21/2014. The SINAFLOR manual has different requirements for registering requests for vegetation suppression in the UAS module and the ASV module; the table considers only the requirements for the UAS module.

In general, states request more information than necessary for registration in SINAFLOR, and each state has its peculiarities. The SINAFLOR manual requires two conditions: characterization of biotic factors and project description; however, only Tocantins requires these conditions for ASV issuance.

Despite the Forest Code providing compensatory and mitigating measures for threatened species of flora or fauna, only Piauí requires more detailed information, such as a survey of endangered or migratory species, endemic species, and methods for scaring off and rescuing. Tocantins only asks for information about species immune to cutting.

Bahia and Maranhão unnecessarily require some of the same information already included in CAR, such as the area of remaining native vegetation, the area of liability of legal reserve, and the consolidated rural area. Bahia also requests that the entrepreneur declare how the socioeconomic and environmental use of the suppressed product will be carried out, with an emphasis on the use of woody material.

<sup>19</sup> Workshop “Diálogos sobre Sinaflor,” organized by CPI/PUC-Rio in Rio de Janeiro in November 21, 2023.

<sup>20</sup> Normative Instruction no. 3, January 23, 2020. [bit.ly/42WmbfB](https://bit.ly/42WmbfB).



IBAMA introduces two interesting requirements not provided for in state regulations or the SINAFLOR manual, namely: saving plant germplasm to compose a germplasm bank and surveying epiphytes, aerial plants that indicate an advanced level of forest biodiversity and that could be reused in reforestation projects.

States could, but end up not, requesting the collection of seedlings, saplings, and newly germinated plants before vegetation suppression activities. Seedlings represent the next life cycle of plant species and could be used in reforestation/forest compensation activities to ensure the continuity of the species.

## **Governance of ASV**

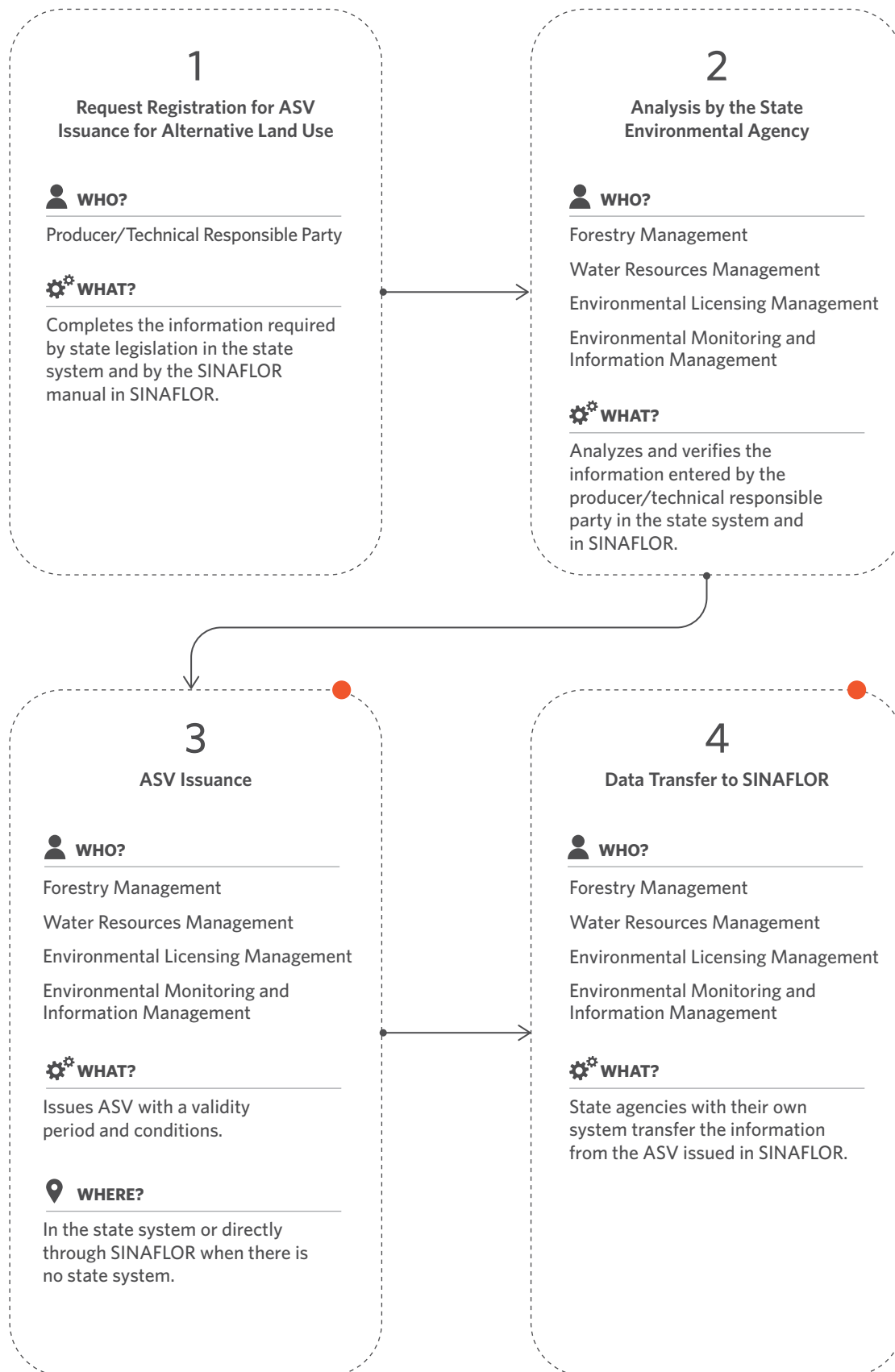
The process of requesting and issuing ASVs involves various stakeholders and relies on technical and operational resources. Effective governance of legal deforestation also depends on access to and transparency of information about granted ASVs.

## **Procedure for Requesting and Issuing ASVs**

The issuance of ASVs can vary according to the procedures established by each state environmental agency. In general terms, the flow for requesting and issuing ASVs follows the steps below.

First, the entrepreneur or technical manager fills in the information in the state system and in SINAFLOR. Next, the state environmental agency in charge analyzes the information and reviews the documentation submitted and, if necessary, may ask for additional information and clarifications. If all the information is correct, the state environmental agency issues the ASV, determining the validity period and the conditions, if needed. Finally, when the state does not use SINAFLOR as its ASV management system, the state agency needs to register the information from the ASV issued in its own system in the federal system, along with all future changes, such as deadline extensions (Figure 1).

**Figure 1.** Steps for ASV Issuance



● Supervizing bodies responsible for "who" varies, according to the state.

Source: CPI/PUC-Rio, 2024

## SINAFLOR as an ASV Management Platform

Since the 1990s, the purpose of ASVs has always been the control of forest products, from their origin, transportation, and destination, and SINAFLOR has continued operation with the same purpose. However, the dynamics and purpose of deforestation have taken different forms, surpassing the boundaries of the Amazon and the illegal timber trade, resulting in an increase in deforestation rates in the Cerrado biome, including and especially, authorized deforestation.

SINAFLOR could be used as a source of information for the development of strategies to control and reduce deforestation. The ASV data registered in the system should indicate the georeferenced location and size of legally converted areas; thus, deforestation that occurs in non-registered areas is presumptively illegal. In addition, ASVs should indicate the purpose of vegetation suppression, which helps understand which activities demand more area for alternative land use. Finally, as provided for in the legislation but not yet implemented, reforestation/forest compensation activities should also be registered in SINAFLOR, which could guide strategies to achieve the goal of net zero deforestation, outlined in plans to prevent and combat deforestation, such as the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (*Plano de Ação para Prevenção e Controle do Desmatamento na Amazônia Legal – PPCDAM*) and PPCERRADO.

However, SINAFLOR does not have information on all ASVs issued in the country, as some states do not consider it necessary to register authorizations that do not use forest products, as is the case in Bahia. Many ASV registrations have incomplete or incorrect data, hindering access to quality information. In addition, the system lacks adequate mechanisms for accessing data, such as reports, maps, and dashboards. Finally, the system is not yet integrated with other databases, such as the National Rural Environmental Registry System (*Sistema Nacional de Cadastro Ambiental Rural - SICAR*) and land database, essential information for deforestation monitoring and control.

**Therefore, Brazil does not have a tool that consolidates authorizations for vegetation suppression that enables the control of legal deforestation.**

At a state level, on the other hand, there are initiatives that can serve as examples for improving SINAFLOR to become a monitoring and control system legal deforestation.

In the state of Mato Grosso, it is possible to visualize deforestation features interactively through the Geoportal SEMA/MT.<sup>21</sup> These deforestation data include relevant information, such as the deforested area, the name of the enterprise, the type of authorization, and the purpose of deforestation. In Minas Gerais, it is possible to interactively visualize legal deforestation data within Areas Authorized for Environmental Intervention.<sup>22</sup> Finally, in Goiás, it is possible to consult the environmental bulletins of various forest management activities, including ASVs, through the Environmental Transparency Portal on the *Ipê Portal*.

<sup>21</sup> SEMA/MT. *Geoportal*. nd. Access date: January 16, 2024. [bit.ly/3tiwdKE](https://bit.ly/3tiwdKE).

<sup>22</sup> SISEMA/MG. *Infraestrutura de dados espaciais – IDE*. nd. Access date: January 16, 2024. [bit.ly/49gCiad](https://bit.ly/49gCiad).

## Challenges of Using SINAFLOR by Cerrado States

The Forest Code determines the integration of state systems with SINAFLOR, but in practice, there are several challenges in using SINAFLOR.

Integration, the act or effect of integrating, is the “incorporation of an element into a set” (as translated by the authors).<sup>23</sup> Therefore, it is understood that the integration of systems would result in a single system fed by state environmental agencies—in the case of issuing ASV for alternative land use on rural properties—and managed by IBAMA.

However, what happens is the coexistence of state systems and SINAFLOR, with a routine of transferring data from one system to the other, doubling the work. Among the Cerrado states, only Piauí does not have its own system but intends to create a state system because it understands that SINAFLOR does not meet its specificities.

The main challenges reported by Cerrado states are:

### Lack of Standardization of Requirements for ASV Application

In all Cerrado states, except Piauí, ASVs are registered in two systems—the state system and SINAFLOR. However, the systems require their own information, and there is no standardization of requirements for ASV application. This presents a significant integration challenge because the information is not exactly the same.

### Lack of Standardization in the Nomenclature of Plant Species

Both state systems and SINAFLOR require the scientific and common names of the vegetation species to be removed. However, the SINAFLOR database is primarily composed of species more prevalent in the Amazon and does not encompass all species from other biomes. Additionally, the common names for the same species vary significantly from state to state. When transferring ASV data from the state system to SINAFLOR, state agencies struggle to complete the registration, as there is no correspondence between Cerrado species and the SINAFLOR database.

### Renewal of ASV Validity Period

State regulations determine the validity period of ASVs, ranging from one to three years, which can be renewed at least once. However, SINAFLOR does not allow the renewal of the ASV validity period, and when this happens, the state environmental agency needs to create a new ASV registration.

### Rigid Interface

SINAFLOR has a “rigid interface”, meaning it does not allow the editing of registered data. Thus, if the information provided is incorrect, it either remains that way or has to be reregistered, generating a time cost for the state.

<sup>23</sup> Original text: “*incorporação de um elemento num conjunto*”. Learn more at: HOUAISS. *Integração*. nd. Access date: January 15, 2024. [bit.ly/44jGbZD](https://bit.ly/44jGbZD).

## Access and Transparency of ASV Data in MATOPIBA

The Cerrado, more specifically, the states of MATOPIBA are particularly vulnerable to legal deforestation due to the expansion of agricultural frontiers driven by soy and corn production, combined with a higher percentage of areas legally subject to deforestation.<sup>24</sup> It is necessary, therefore, to consider strategies to reduce deforestation and compensate for the forest loss resulting from these suppressions.

Monitoring and controlling legal deforestation necessarily involve access to ASV information. However, accessing data on ASV requests and issuances in MATOPIBA is a significant problem.

State ASV databases are not public, and states do not provide data when requested via the Brazilian Law on Access to Public Information (Law no. 12,567/2011).<sup>25</sup> In states where ASVs are published in the Official State Gazette (*Diário Oficial do Estado* - DOE), access to the data depends on daily consultation of the DOE. An alternative is access via federal platforms. Although SINAFLOR does not provide public access to system data, there are two other federal platforms that also compile ASV data: the Brazilian Open Data Portal<sup>26</sup> and the Environmental Information Geospatial Analysis and Monitoring Platform (*Plataforma de Análise e Monitoramento Geoespacial da Informação Ambiental* - PAMGIA).<sup>27</sup> PAMGIA data is updated through September 2021, and even then, the downloaded files are empty. Thus, the only possibility is to access data from the Brazilian Open Data Portal, last updated in 2022.

### Analysis of ASV Request Data in MATOPIBA on the Brazilian Open Data Portal

CPI/PUC-Rio has determined that third party analysis of ASV requests for monitoring and controlling deforestation faces several challenges. First, the ASV request data available on Open Data may not necessarily be the data provided by entrepreneurs/technical experts to state systems and SINAFLOR. The platform may store more data than what is made available to the public. Second, since the system contains ASV requests, it is impossible to tell if they were granted and under which conditions, the size of the authorized deforestation area, the execution deadline, and any eventual conditionalities. Third, the platform may be incomplete because ASV requests not linked to the use of forest products may not be registered in SINAFLOR and, consequently, are not available on Open Data.

Researchers identified 1,738 ASV requests for alternative land use in MATOPIBA between 2017 and 2021. The researchers evaluated ASV requests based on the following criteria:

- CAR number
- State and municipality
- Geographic coordinates (latitude and longitude)
- Requested area for vegetation suppression
- Estimate of the forest volume to be suppressed
- Scientific names of forest species to be suppressed

<sup>24</sup> Law no. 12,651, Art. 12, May 25, 2012. [bit.ly/3FP8kNZ](https://bit.ly/3FP8kNZ).

<sup>25</sup> Researchers from CPI/PUC-Rio directly requested information from the environmental agencies of the MATOPIBA states and through the Brazilian Law on Access to Public Information, regarding ASVs issued for alternative land use. None of the states provided the data.

<sup>26</sup> Brasil. *Portal Brasileiro de Dados Abertos*. nd. Access date: January 15, 2024. [bit.ly/4bPOLUa](https://bit.ly/4bPOLUa).

<sup>27</sup> IBAMA. *Pamgia*. nd. Access date: January 15, 2024. [bit.ly/4bK7CQd](https://bit.ly/4bK7CQd).

In 93% of ASV requests, it was possible to identify the CAR number and the state, and in 95%, the municipality of the rural property. However, Open Data does not provide geographic coordinates for any ASV requests, nor the requested areas for vegetation suppression, which are essential for monitoring and controlling legal deforestation.

It was also impossible to obtain information about the estimated forest volume or the scientific names of the forest species, which are important for monitoring and controlling compensation for legal deforestation through reforestation.

Due to limitations in accessing ASV data, it is challenging to determine if the lack of information lies in the registration of the ASV request by the entrepreneur/technical consultant; the issuance of ASV and its registration in SINAFLOR by the state environmental agency in charge, or the provision of information by public data platforms.

## Appendix

Comparative table of legal requirements for ASV in MATOPIBA.

**Table 1.** Requirements for ASV Request at the Federal Level and in MATOPIBA

Class	Subclass	IBAMA <sup>1</sup>	SINAFLOR <sup>2</sup>	Maranhão <sup>3</sup>	Tocantins <sup>4</sup>	Piauí <sup>5</sup>	Bahia <sup>6</sup>
	Requires Different Information from Rural Properties Larger and Smaller than Four Fiscal Modules	✗	✗	✗	✓	✗	✗
	Requires Different Information Depending on the ASV Area	✗	✗	✓	✓	✓	✗
Property's Information	Detailed Sketch of Access to the Project/Area of Suppression	✗	✓	✓	✓	✓	✗
	Map	✗	✗	✓	✓	✗	✗
	Rural Property Denomination	✗	✗	✓	✓	✓	✓
	Rural Property Location	✗	✗	✓	✓	✗	✓
	Geographical Coordinates of Headquarters/Project	✗	✗	✓	✓	✗	✗
	Rural Property Municipality	✗	✗	✗	✓	✓	✗
	Main Economic Activity	✗	✗	✓	✗	✗	✗
	Access Coordinates	✗	✗	✗	✗	✗	✗
	Preliminary Environmental License	✗	✗	✓	✓	✓	✓
	Preliminary License	✗	✗	✗	✓	✗	✗
	Fiscal Modules	✗	✗	✓	✗	✗	✗
	Confronting Boundaries	✗	✗	✓	✗	✗	✗
	Proximity to Protected Area or Indigenous Land	✗	✗	✓	✗	✗	✗
	Registration Number/INCRA Code/Property Deed	✗	✗	✓	✓	✓	✓
	Title Deed Regularity Certificate	✗	✗	✗	✗	✓	✗
	Full Certificate of the Property	✗	✗	✗	✓	✓	✓
	Land Use Ownership Title	✗	✗	✓	✗	✗	✗
	Final and Unappealable Judicial Sentence	✗	✗	✓	✗	✗	✗
	Payment Proof	✗	✗	✓	✓	✓	✓
	Environmental License	✗	✗	✓	✗	✗	✓
Proof of Legal Reserve Regularity, When Applicable	✗	✗	✗	✗	✗	✓	
Proof of Lawful Possession	✗	✓	✓	✓	✗	✓	

Table 1 continues in the next page.

Class	Subclass	IBAMA <sup>1</sup>	SINAFLOR <sup>2</sup>	Maranhão <sup>3</sup>	Tocantins <sup>4</sup>	Piauí <sup>5</sup>	Bahia <sup>6</sup>
Owner's Information	Individuals/Firms	✓	✓	✓	✓	✓	✓
	Owner's Personal Information	✗	✓	✓	✗	✓	✓
	Entrepreneur's Information	✗	✓	✓	✗	✓	✓
Technician's Information	Identification of the Responsible Technician	✓	✓	✓	✗	✓	✓
	Technical Responsibility Certificate (ART) and Federal Technical Registry (CTF) by the Technician Responsible for Maps and other Technical Documents	✓	✓	✓	✓	✓	✓
Land Use Data (in Numbers)	Total Area of Permanent Preservation Areas (APPs)	✓	✗	✓	✓	✓	✗
	Consolidated Area of APP	✗	✗	✓	✓	✗	✗
	Degraded Area of APP	✗	✗	✓	✗	✗	✗
	Total Legal Reserve Area	✗	✗	✓	✓	✓	✗
	Conserved Legal Reserve	✗	✗	✓	✗	✗	✗
	Legal Reserve Deficit	✗	✗	✓	✗	✗	✗
	Compensated Legal Reserve	✗	✗	✓	✗	✗	✗
	Remaining Native Vegetation	✗	✗	✓	✓	✓	✗
	Hydrography	✗	✗	✓	✗	✗	✗
	Environmental Servitudes	✗	✗	✗	✗	✗	✗
	Total Area of Alternative Use with Purpose Description	✗	✓	✓	✓	✓	✓
	Consolidated Rural Area	✗	✗	✓	✗	✗	✗
	Set-aside Area	✗	✗	✓	✗	✗	✗
	Abandoned Area	✗	✗	✓	✗	✗	✗
	Infrastructure Area	✗	✗	✓	✗	✗	✗
Administrative Servitude Area	✗	✗	✓	✗	✓	✗	
Projects for The Regularization of Degraded and Altered Areas (PRADA)	✗	✗	✗	✗	✗	✗	

Table 1 continues in the next page.



Class	Subclass	IBAMA <sup>1</sup>	SINAFLO <sup>2</sup>	Maranhão <sup>3</sup>	Tocantins <sup>4</sup>	Piauí <sup>5</sup>	Bahia <sup>6</sup>
Land Use Data (Shapefile Format)	Property's Polygon	✗	✓	✓	✓	✓	✗
	Hydrography	✗	✗	✓	✗	✗	✗
	APP Area	✗	✗	✓	✗	✓	✓
	Legal Reserve Area	✗	✗	✓	✗	✓	✓
	Remaining Native Vegetation	✗	✗	✗	✗	✗	✓
	Environmental Servitudes	✗	✗	✗	✗	✗	✗
	Total Area of Alternative Use with Purpose Description	✗	✓	✓	✗	✓	✓
	Consolidated Rural Area	✗	✗	✗	✗	✓	✗
	Set-aside Area	✗	✗	✗	✗	✗	✗
	Abandoned Area	✗	✗	✗	✗	✗	✗
	Infrastructure Area	✗	✗	✗	✗	✗	✗
	Restricted Use Area	✗	✗	✓	✗	✗	✗
	Administrative Servitude Area	✗	✗	✗	✗	✗	✗
CAR	CAR Number	✗	✓	✓	✓	✓	✓

Table 1 continues in the next page.

Class	Subclass	IBAMA <sup>1</sup>	SINAFLOR <sup>2</sup>	Maranhão <sup>3</sup>	Tocantins <sup>4</sup>	Piauí <sup>5</sup>	Bahia <sup>6</sup>
Deforestation Project's Information	Purpose	✓	✓	✓	✓	✓	✓
	Area (in Numbers)	✗	✗	✓	✓	✓	✗
	Volume of Forest Raw Material - MPF (by Type)	✗	✓	✓	✓	✓	✓
	Volume of MPF to be Commercialized (by Type)	✗	✓	✓	✓	✗	✗
	Volume of MPF to be Used on the Property (by Type)	✗	✓	✓	✓	✗	✗
	Volume of MPF to be Donated (by Type)	✗	✓	✓	✓	✗	✗
	Spatial Area	✓	✓	✓	✓	✓	✓
	Registration in SINAFLOR	✗	✓	✓	✗	✓	✗
	Installation of Environmental License for the Activity	✗	✓	✗	✓	✓	✗
	Declaration of Public Utility or Social Interest	✗	✗	✗	✗	✓	✓
	Declaration of Socioeconomic and Environmental Utilization of the Removed Product	✗	✗	✗	✗	✗	✓
	Execution Schedule	✗	✓	✗	✗	✓	✓
	Physical, Biotic, and Socioeconomic Mitigation Measures	✗	✗	✗	✓	✓	✗
	Description of Environmental Impacts	✗	✗	✗	✓	✓	✗
	Characterization of Biotic Factors	✗	✓	✗	✓	✗	✗
	Germplasm Bank	✓	✗	✗	✗	✗	✗
	Epiphyte Collection	✓	✗	✗	✗	✗	✗
Seedling Collection*	✗	✗	✗	✗	✗	✗	
Characterization of Abiotic Factors	✗	✓	✗	✓	✓	✗	
Forest Inventory/ Forest Characterization/ Forest Exploration Project	Volume Metrics	✗	✓	✓	✓	✓	✓
	Forest Sampling Methodology (Random, Transect, etc.)	✓	✓	✓	✓	✓	✓
	Sampling Error	✗	✓	✓	✓	✗	✓
	Species List (Scientific and Common Names)	✓	✓	✓	✓	✓	✓
	Characterization of Phytophysiology	✓	✗	✗	✓	✓	✓
	Sampling Areas of Spatial Data (Shapefile or Matrix) for Project/Inventory/Characterization	✓	✓	✗	✓	✓	✗
	Endangered and Endemic Species (Scientific/Common Name)	✓	✗	✗	✗	✓	✗
	Species Immune to Cutting	✗	✗	✗	✓	✗	✗
	Project Description	✗	✓	✗	✓	✗	✗
	Classification of the Tree Trunks to be Removed	✗	✗	✗	✓	✗	✓

\* This requirement is not present in the mapped legislation, but it is important for learning about reforestation/forest compensation strategies.

Class	Subclass	IBAMA <sup>1</sup>	SINAFLO <sup>2</sup>	Maranhão <sup>3</sup>	Tocantins <sup>4</sup>	Piauí <sup>5</sup>	Bahia <sup>6</sup>
Reforestation or Forest Compensation		✗	✗	✓	✗	✓	✗
Fauna Survey Note: Condition of the ASV	Survey of Endangered or Migratory Species	✗	✗	✗	✗	✓	✗
	Impact Mitigation and Compensation Measures	✗	✗	✗	✗	✓	✗
	Escape Corridor	✗	✗	✗	✗	✓	✗
	Deterrence and Rescue Method	✗	✗	✗	✗	✓	✗
Environmental Licensing	ASV Linked to Environmental Licensing	✓	✗	✓	✓	✗	✗
Technical Inspection by the Environmental Agency	Clarification on the Submitted Data	✗	✗	✓	✓	✓	✓

#### Notes

- 1 Normative Instruction no. 6, April 7, 2009. [bit.ly/3I5kO4K](https://bit.ly/3I5kO4K)
- 2 Normative Instruction no. 21, December 24, 2014. [bit.ly/42MMwfU](https://bit.ly/42MMwfU). SINAFLO Manual. [bit.ly/3wr8fOq](https://bit.ly/3wr8fOq).
- 3 SEMA Ordinance no. 380, July 27, 2023. [bit.ly/3QONNpt](https://bit.ly/3QONNpt)
- 4 NATURATINS Ordinance no. 44, January 25, 2017. [bit.ly/3uLjcdl](https://bit.ly/3uLjcdl).
- 5 SEMAR Normative Instruction no. 05, June 1, 2020. [bit.ly/3T9kNDg](https://bit.ly/3T9kNDg).
- 5 INEMA Ordinance no. 11.292, February 13, 2016. [bit.ly/3TbwdGE](https://bit.ly/3TbwdGE).

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