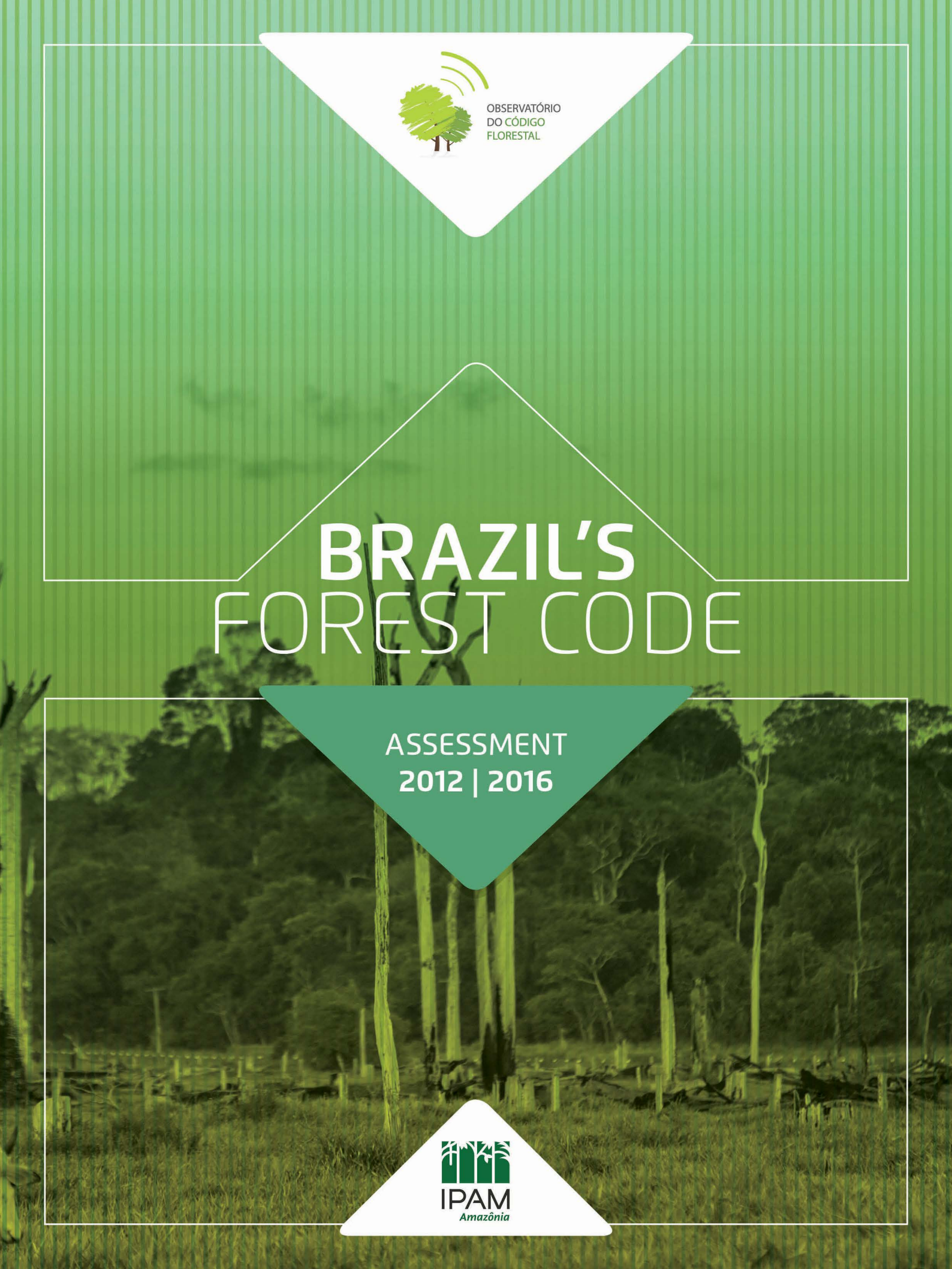


OBSERVATÓRIO DO CÓDIGO FLORESTAL

BRAZIL'S FOREST CODE

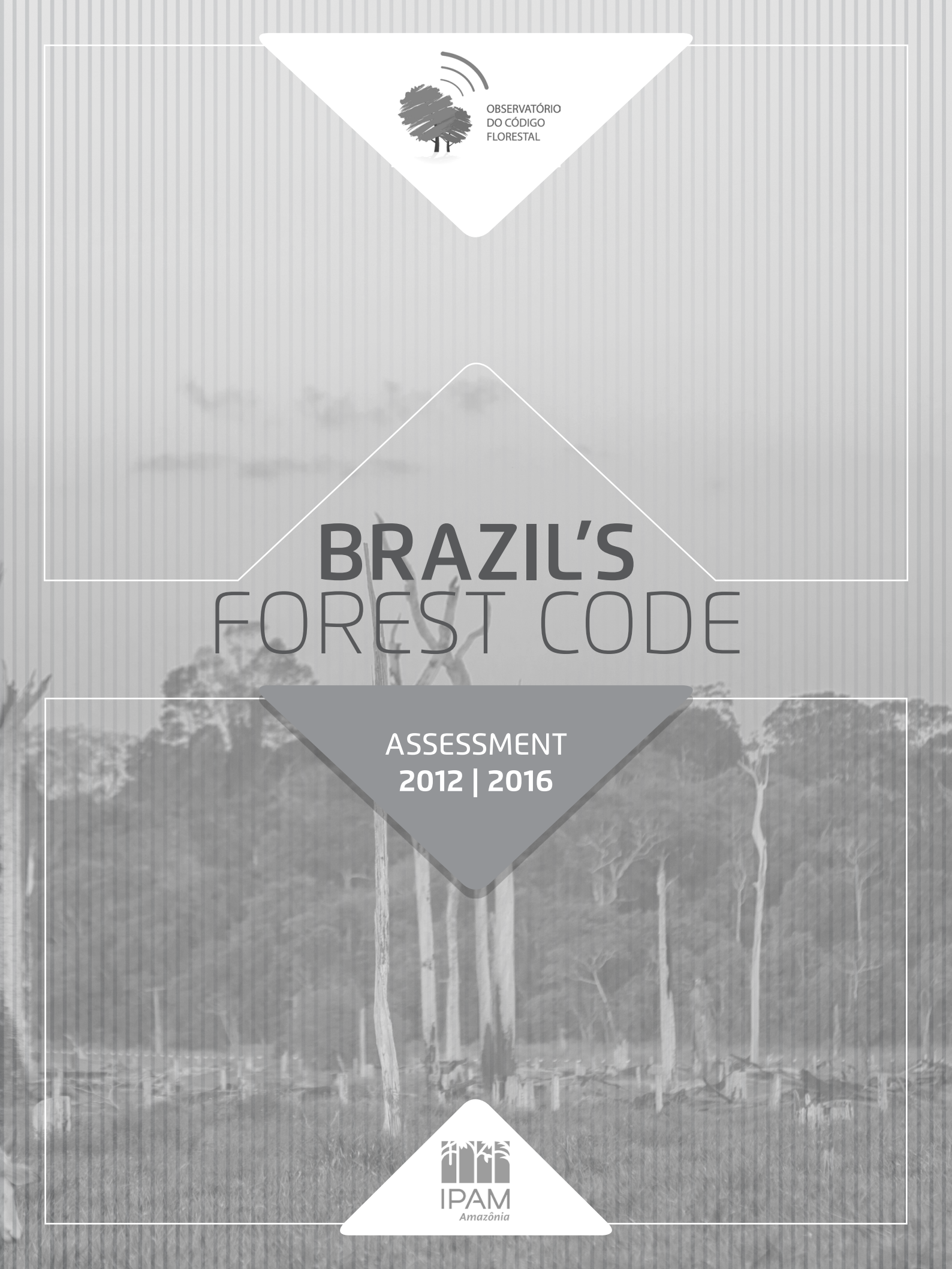
ASSESSMENT 2012 | 2016

IPAM Amazônia

OBSERVATÓRIO
DO CÓDIGO
FLORESTAL

BRAZIL'S FOREST CODE

ASSESSMENT
2012 | 2016



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The Observatório do Código Florestal (OCF), Forest Code Observatory in English, was created in May 2013 to advance social accountability over the implementation of Law #12,651/2012 (the Brazilian Forest Code) and to ensure the environmental, social and economic integrity of forests on private property. The Observatory is a network made up of 21 independent organizations, which came together with the goal of fostering the effective implementation of the Forest Code.

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FOREWORD

After almost five years, the Forest Code brought about important progress to land use regulation in rural estate properties. Amongst the examples that should be highlighted, there is the great number of properties registered in the Rural Environmental Registry (CAR) as well as the many local initiatives to foster restoration in degraded areas and the improvement of policies on economic and ecological zoning (ZEE).

Although there are reasons to celebrate, there is also an infinity of challenges ahead for Brazil to actually advance in the implementation of the Forest Code. The analysis and validation of registries remain incipient; the regulation of regularization programs is not initiated in many states or has been unfolding in a very slow pace. Moreover, the programs of economic incentives to producers that comply with the legislation are still not in place in various regions and the CAR data is not widely available to society yet, as required by the Law on Access to Public Information.

The Forest Code implementation should be regarded as a fundamental priority by the Brazilian society. In addition to creating conditions for a truly sustainable agriculture, it is only through the implementation of the mechanisms provided by the Code that Brazil will be able to meet its emission reduction goals which the country committed to at the Paris Climate Conference in 2015. Estimates say that the Code's implementation would prevent the emission of about 100 billion tons of CO_2. It is worth pointing out that more than 20 million hectares are to be restored within the national territory. This will both promote carbon sequestration and create numerous economic opportunities for the generation of jobs, income and taxes.

The Forest Code Observatory (OCF), an alliance that gathers 21 civil society organizations within the socio-environmental segment, has been putting forward to society the debate on the importance of this legislation, monitoring its implementation in the national and state levels. The OCF also develops partnerships with governments, private sector and rural producers, aiming to support projects that deal with the Code's implementation.

The next pages contain an analysis of the Forest Code's degree of implementation, since its approval in 2012. It is a sample of the work carried out by the OCF, that not only monitors the legislation's application and demands measures from the Government and private actors, but also supports and praises actions that helps society to take ownership of the Code and put it into practice. After all, one of the most important pillars of a democracy is a strong, bold, present and active civil society.

Enjoy the read!

Bruno Taitson,
Executive-Secretary to the Forest Code Observatory

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EXECUTIVE **SUMMARY**

- The Forest Code (CF for *Código Florestal*) was approved in 2012 and it is the main legal instrument for regulating land use on private rural lands in Brazil. Its core goal is to promote environmental conservation, agricultural production and socio-economic development.

- The revision of the Forest Code actively encompassed a wide set of actors from civil society, private sector, and public authorities, each of them bearing different and complementary roles. Civil society organizations promote social accountability and monitoring, while private actors shall demand transparent and efficient procedures so that they can have their custody and supply chains certified. In the public sector, the federal government manages the National System of Rural Environmental Registry (Sicar for *Sistema Nacional de Cadastro Ambiental Rural*) and publishes general guidelines through regulatory measures, as well as the state authorities implement these measures and further regulate complementary norms.

- **Climate change:** The Forest Code has a critical role in the global climate balance as much as in the international goal to keep average global warming up to 1.5ºC. This importance stems from the fact that this legislation conserves about 87 billion tons of CO_2 through permanent preservation areas (APP for Áreas *de Proteção Permanente*) and legal reserves (RL for *Reservas Legais*). Other 18 billion tons of CO_2 are stored in Legal Reserve surpluses, which are areas that can be legally deforested. The best opportunity to protect RLs and APPs are through command and control and economic mechanisms set forth in the CF. In addition, markets have a fundamental responsibility of strengthening the CF implementation by demanding products in compliance with the legislation. As for the RL surpluses, these areas need urgent and efficient mechanisms, some from the CF, and others from market, to ensure that producers are discouraged from deforesting these areas.

- **Deforestation:** In 2016, there was a 29% increase in the annual deforestation rate, in comparison to the area deforested in 2015. This rate accounts for 7.989 km² of deforested areas in 2016. The underlying meaning of these numbers is that large deforestation activities are back, associated to illegality and disorderly occupation in the Amazon. Therefore, the Rural Environmental Registry (CAR) is a central tool for fighting the issues of illegality and disorderly occupation. The CAR will enable the identification of a great part of illegal land-use conversion and land grabbers. It will further be an efficient instrument for territorial planning. Hence, it is fundamental to strengthen the CAR as a way of implementing the Forest Code and addressing deforestation. The active and complete transparency of the information contained in Sicar as much as the engagement of companies, banks and civil society, together with the governments, are means of strengthening the CAR. This is especially important in a critical moment when deforestation and illegal agrarian production in Brazil are on the rise;

- **Status of the main instruments within the Forest Code:**

  - Rural Environmental Registry (CAR for *Cadastro Ambiental Rural*) is the instrument bearing the higher implementation rates. Until 30 September 2016, more than 3.79 million rural estate properties were registered in the system, accounting for an area of 378.5 million hectares. However, the analysis and validation

of these registries is yet very inefficient and is substantially delayed;

» The environmental regularization programs (PRA for *Programas de Regularização Ambiental*) have been regulated by only fifteen states in Brazil until 30 September 2016. Two of them are judicially suspended for being inconsistent with the federal law. Some of these regulations further lack in-depth and objective definitions, such as monitoring and verification of the recuperation plans, economic instruments for promoting restoration and precise indications on recuperation techniques that are most suitable and context-specific;

» The Economic Incentives Program (Article 41) has not been regulated or advanced upon yet, although some economic instruments are going through legislative proceedings or being developed by the Executive or even being implemented without coordination;

» The environmental reserve quotas (CRA for *Cotas de Reserva Ambiental*, Article 44) has not been regulated by the Federal Executive authorities yet, even though they are critical for the environmental regularization of consolidated and productive farms. The key for regularization is the conservation of native vegetation surpluses that could otherwise be legally deforested. The lack of this option for environmental regularization leads to juridical instability, delays in the Forest Code implementation and, consequently, allows for the legal deforestation of large areas that could be otherwise preserved;

» Other important instruments - such as the Economic and ecological zoning (ZEE for *Zoneamento Econômico-Ecológico*), the Fine Conversion Program, the National Policy on Management, Control and Prevention of Forest Fires, the Suspension of Activities in Illegally Deforested Areas, amongst others - either have had a modest and inconsistent progress or no progress at all.

» **Key issues regarding the effective implementation of the Forest Code:**

» The active transparency of all data and information concerning the Forest Code is a pivotal issue to enable civil society, academia, customers, agricultural trading companies and banks buying and financing Brazilian rural production to contribute to the immense implementation effort. Without transparency, there is no social accountability, the problems and barriers are not properly identified nor efficiently solved, and society, markets and, specifically, the credit system cannot act in a propositional manner to co-manage the implementation process. Furthermore, it conceals the activities of groups with suspicious interests related to illegal land-grabbing and deforestation;

» A coordinated and staged implementation plan to the Forest Code urgently needs to be constructed, under the federal government leadership, encompassing the effective participation of civil society, academia, private sector - productive, consumer and financing actors - as well as the state and municipal authorities;

» National and international consumer markets, financing agents and national governments that import agricultural production must demand commodity supply chains that are both free from deforestation and legal in terms of the Forest Code. These key actors need to recognize their role in inducing environmental legality. Brazil is one of the world's largest exporters of agricultural commodities, and as such it is heavily demanded to end deforestation. However, it is necessary to

end the illegality related to the lack of compliance with the Forest Code and the labor legislation in agricultural production;

» Economic and market instruments are utterly needed. This is especially true in a historical context in which producers with environmental assets - that comply or exceed the legal dispositions - are usually punished in economic matters, while producers that disregard the legal requirements are frequently praised with economic and legal rewards such as amnesties and rule changes. In addition, there is no further need to clear native vegetation for increasing agricultural production, since this can be done by vertically intensifying production on open fields that already exist.

» Amongst the 14 actions listed in this report, only two already have measures in place, and just one has a satisfactory implementation rate. See page 43 for a summary table on the Forest Code implementation.

I. INTRODUCTION

After tough public and parliamentary discussions, the Forest Code, Law No. 12,651, was approved in May 2012. By then, the new legislation was brought about as a way to update and improve the legal dispositions and instruments for conciliating economic development and protection of natural forests and other native vegetation. Although the final version of the law still raises controversies, segments of the agribusiness, private companies, and civil society - including the Observatory of the Forest Code and the Brazilian Coalition on Climate, Forests, and Agriculture - have been gathering around the effort of implementing the code.

Conversely, the mobilization in the public sector - federal, state and municipal levels - has been rather different. The federal government took on the responsibility of developing and providing the essential tools for carrying out the Rural Environmental Registry (CAR), which is the main instrument for implementing the Forest Code. In addition, the federal government indirectly finances the CAR implementation through the Amazon Fund, intermediated by state governments and non-governmental organizations. Nevertheless, the federal government still falls short in terms of interinstitutional coordination for comprehensively implementing the legal instruments. Moreover, there is no permanent forum for dialogue with civil society, state and municipal authorities regarding the Forest Code. Neither there is a coherently staged plan to put the instruments into practice. To sum up, the implementation of the Forest Code has been occurring in a discoordinated manner.

The state governments have engaged in different ways. While some of them have effectively taken their responsibilities, leading the process of implementing the instruments required by the law - especially the CAR and the Environmental Regularization Program (PRA) -, many states still need to move forward in this direction. At the municipal level, municipal agencies bear a subsidiary role, focusing on the support for the Code's implementation. Even so, there are a few praiseworthy examples of engagement and mobilization, compared to a large majority of inert and passive municipalities.

Despite these efforts, the challenge of effectively implementing the Forest Code remains a reality - even after five years since its official approval. Between legal gaps, incomplete information systems, lack of transparency, conflicting bureaucracy, delays, ambiguous competency definitions and, to some extent, lack of priority in the political agenda, the Forest Code requires greater attention from the various actors, being them governmental authorities or civil society in general.

To exacerbate this situation, the Provisional Measure (MP for *Medida Provisória*) No. 724/2016 extended to 05 May 2017 the deadlines for inscription in the CAR and for adherence to the PRA, exclusively focusing on rural properties owners or landholders that meet the condition of being small holders or rural family properties. This MP also applies for demarcated indigenous lands and other areas entitled to traditional peoples and communities that make collective use of their territory. In response to this measure, the ruralist group lobbied to include all rural properties in the extended deadline for registration. This was done through the modification of another Provisional Measure which was under congressional debate, the MP 707/2015, and set the new deadline for 31 December 2017. In addition, the MP further opened the possibility of another one-year extension through a potential decision by the Executive authority. The MP 707/2015 and its amendments were approved and sanctioned under the Law Nº. 13,295/2016.

These legislative outcomes can amplify the perception - already well-established in the rural environment - that those who follow the rules always end up hampered somehow, as new benefits are given to latecomers and historical non-compliers. In recent

decades, there have been several circumstances in which the federal and state governments, especially in the Amazon, have tried to implement environmental regularization initiatives. Most of these programs were unsuccessful and/or did not carry out the necessary efforts for implementation. This situation led to an ever-growing distrust on the public capacity to effectively enforce environmental legislation in the rural areas.

To ensure the implementation of the Forest Code, a strong engagement of the rural sector is necessary, as well as other actors related to rural production chains - from local governments, consumers, and service providers, to large commodity trading companies, financing banks, and suppliers of raw material and equipment. Only through a broad-gauged engagement will it be possible to demand necessary set of investments from state and federal governments - not only in the financial level, but primarily in the political arena - to ensure the priority of this agenda.

Hence, this document intends to assess the implementation of the Brazilian Forest Code in the last four years (2012-2016), highlighting the most relevant hindrances throughout the process. It is also aims to identify the implementation challenges that lie ahead regarding the Code, a law that has much to contribute to the achievement of Brazil's international commitments, notably within the United Nations Climate Convention.

If properly addressed, these challenges can ensure that public and private instruments for the policy implementation actually come into force. This will significantly contribute to the maintenance and restoration of natural forests and other types of native vegetation, providing legal stability to the producers and the rural populations that preserve them.

1. THE STRATEGIC IMPORTANCE OF THE FOREST CODE IN CLIMATE REGULATION

In round numbers, the Forest Code regulates the use of about 281 million hectares of native vegetation remnants that still exist in Brazilian rural estate properties. Out of this total, 69% (193 million hectares) is legally protected from deforestation in Legal Reserve and permanent preservation areas, accounting for a stock of 87 billion tons of CO_2. Other 31% (88 million hectares) are Legal Reserve surpluses that can be legally deforested. By 30 September 2016, 3.79 million rural properties and landholdings - representing a total area of 387.5 million hectares[1] (Figure 1) - were identified and registered in the CAR. Unfortunately, the Brazilian Forestry Service has not published yet the total declared area of RL and APP on its website. The Service only provides an indicative map (Figure 2).

Since the 1980s, with the production frontier expansion based on the Green Revolution's agricultural practices[2], the Amazon and the Cerrado have jointly lost 170 million hectares of native vegetation[3]. Due to its international relevance, much attention is paid to the Amazon; However, between 2009 and 2012, the Cerrado deforestation ramped up by 156%[4]. This process is linked to the new technologies for

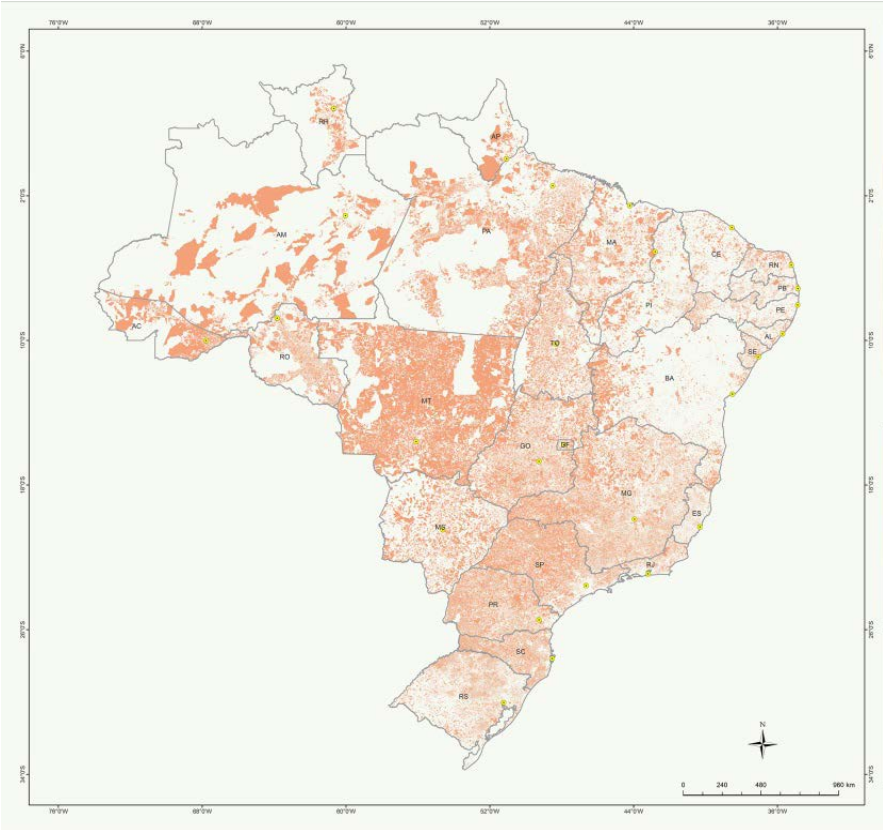
1 http://www.florestal.gov.br/cadastro-ambiental-rural/numeros-do-cadastro-ambiental-rural

2 This term refers to the invention and dissemination of new seeds, technologies, and agricultural practices, based on monoculture and agrochemical usage for agricultural production in developing countries, from the 1960s and 1970s onwards.

3 Analytical data from the research team was based on information from the Ministry of Environment (2014) and PPCerrado - Ministry of Environment (2010) available at: http://www.mma.gov.br/florestas/controle-e-prevenção-do-desmatamento/plano-de-ação-para-cerrado-–-ppcerrado.

4 Ministry of Environment (2014).

Figure 1 | Registered areas in the Rural Environmental Registry



Fonte: Brazilian Forestry Service

commodity production, the increased demand for soy and meat in the Asian markets and, paradoxically, the effort to reduce deforestation in the Amazon.

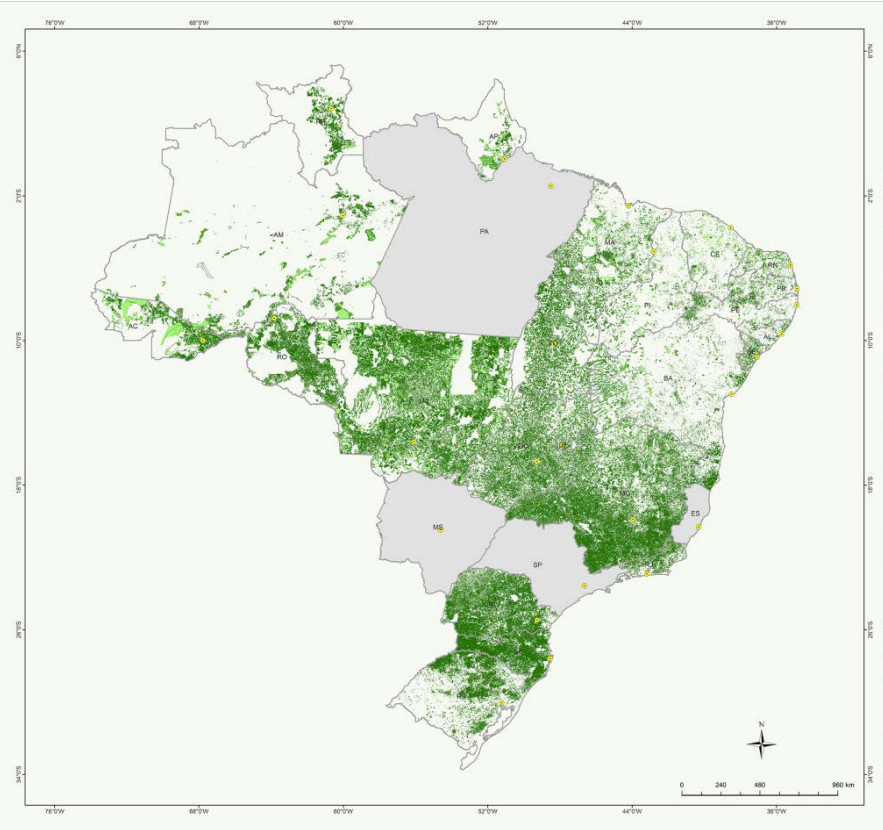
Within this worrisome scenario, the restoration of native vegetation in both biomes is one of the most important instruments bound to the implementation of the Forest Code. Studies estimate that 20 to 22 million hectares shall be recovered[5] or compensated across the country through this implementation process. This area has a territory equivalent to the entire United Kingdom, yet it represents only half of what should be restored with the former forestry legislation that was in force before 2012. The agenda of recovering biomes is part of the Brazilian contribution commitment to the new global agreement on climate change (NDC), signed in Paris during the 21st Conference of the Parties to the UN Climate Convention.

If the commitment is carried out and the official goal of recovering 15 million hectares of degraded pastures and restoring 12 million hectares of native vegetation by 2030[6] is achieved, then the national emissions of carbon dioxide and other gases with equivalent effects (CO_{2eq}) will be substantially reduced. Furthermore, the NDC can be an important auxiliary mechanism for inducing forest restoration and potentially boosting the economy based on services and goods stemming from native forests

5 Britaldo Soares-Filho et al. (2014).

6 Available at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Brazil/1/BRAZIL%20iNDC%20english%20FINAL.pdf.

Figure 2 | Permanent preservation areas and legal reserves declared in the Sicar



Fonte: Brazilian Forestry Service

restoration - such as seed and seedlings production of native species, sylvicultural treatments, amongst others.

However, the areas of remnants and the areas to be reforested in the national territory will only be clearly known with the effective implementation of the CAR and the Environmental Regularization Programs. These issues depend on the recognition of the economic and social value of the areas to be restored, the articulation of civil society and the appropriate economic and tax incentives for compliance with the forest legislation. This is a fundamental aspect in a country where almost 60% of the greenhouse gas emissions comes from deforestation, forest fires and farming activities[7]. Hence, land use change and direct land use by agriculture are today the main sources of emissions in Brazil.

According to the latest *Emissions Gap Report 2016*[8] by the United Nations Environment Program (UNEP), even in a scenario where all the promised targets in the unconditional iNDCs (mostly iNDCs from developed countries) were properly delivered, the anthropogenic activities would still emit, by 2030, 14 billion tons of CO_2 equivalent above the maximum emission level required to keep mean global warming within the 2°C limit.

For comparison purposes, if the areas of Legal Reserve surpluses - which can be legally deforested - were fully conserved, Brazil could avoid the emission

7 http://seeg.eco.br/meta-de-reducao-de-emissoes-para-2020-deve-ser-cumprida

8 https://uneplive.unep.org/media/docs/theme/13/Emissions_Gap_Report_2016.pdf

of 18 billion tons of CO_2[9]. This figure alone is larger than the amount of emissions that the world needs to reduce by 2030 for covering the emissions gap estimated by UNEP. For this to happen, effective compensation mechanisms must come into stage. This is the case of the environmental reserve quotas (CRA), defined under the Forest Code and still lacking specific regulation to enter into force. Moreover, depending on the rules adopted by state and federal governments to regulate the CRA market, environmental gains can be significantly reduced if the purchased quotas are in areas with no risk of deforestation[10].

2. ECONOMIC OPPORTUNITIES IN THE FOREST CODE

At present, Brazil and Africa are some of the few regions in the world where agricultural production areas can still expand. In Brazil, the main opportunity for expansion is located on already deforested plots in the cerrado and the Amazon, with no need to clear any natural vegetation in new areas. Furthermore, it is estimated that 82 million hectares of pasture in the national territory are degraded or underused[11]. This is an additional area of 117 million hectares which is available for expansion and would represent a 70% increase in the cultivation area in Brazil. The recovery of these lands with low or no yield at present, together with sustainable farming practices, could lead the country to reap larger harvests without deforesting not even a single extra hectare.

Box 1 | The Forest Code and the emissions in numbers

The total area of native vegetation to be restored in Brazil is estimated to range between 20 and 22 million hectares, being 78% liabilities in Legal Reserve and 22% deficits in Permanent Protection Areas[11]. From a climate change perspective, the effective implementation of the Forest Code is critical to:

i. Preserve and maintain the 87 billion tons of CO_2 already stored in permanent preservation areas and legal reserves;

ii. Sequester a substantial amount - although not fully estimated yet - of CO_2 from the atmosphere by restoring forests in about 20 to 22 million hectares of degraded areas;

iii. Develop and implement economic mechanisms and incentives capable of avoiding the emission of 18 billion tons of CO_2 stored in areas that can be legally deforested nowadays.

As a driver for this new productive dynamic, it is fundamental to link the rural credit grants to the farms' environmental regularization, as well as to promote public policies of incentives and payments for environmental services and good practices. Both instruments are already defined under the Forest Code, thus, directly depend on its implementation. Another relevant aspect is the economic opportunities unlocked by the restoration of millions of hectares in forest liabilities

9 Soares-Filho et al. (2014).

10 Raoni Rajão & Britaldo Soares-filho (2015) 'Cotas de Reserva Ambiental (CRA): potencial e viabilidade econômica do mercado no Brasil'. Ed. IGC/UFMG, and Soares-Filho, B., Rajão, R., Merry, F., Rodrigues, H., Davis, J., Lima, L., ... & Santiago, L. (2016). Brazil's Market for Trading Forest Certificates. *PloS one*, *11*(4), e0152311.

11 Manuel Claudio M. Macedo, Ademir Hugo Zimmer, Armindo Neivo Kichel, Roberto Giolo de Almeida, Alexandre Romeiro de Araújo. "Degradação de pastagens, alternativas de recuperação e renovação e formas de mitigação". Campo Grande – MS: EMBRAPA Gado de Corte. Available at: http://ainfo.cnptia.embrapa.br/ digital/bitstream/item/95462/1/Degradacao-pastagens-alternativas-recuperacao-M-Macedo-Scot.pdf

12 Britaldo Soares-Filho, Raoni Rajão, Marcia Macedo, Arnaldo Carneiro, William Costa, Michael Coe, Hermann Rodrigues, Ane Alencar (2014) 'Cracking Brazil's Forest Code'. Science, 344 (6182): 363. DOI: 10.1126/Science.1246663, 2014.

and the entire businesses and services chain that can be potentially generated by it. In this sense, the underlying idea is to reward positive environmental practices through market instruments.

An exemplary case would be the concession of more affordable credit lines for producers that maintain native vegetation in their properties beyond the minimum required by law. Together with the CRAs, this dynamic could act as market driver for an economy that is both sustainable and profitable. In this same line of thought, labels of origin and socio-environmental responsibility certificates could become market differentials conferred to producers, regions or supply chains that fully comply with the Forest Code. Such dynamic enables a reduction in transaction costs, compared to traditional certification systems, and would probably generate larger markups to the certified products and agents - privately rewarding the collective good delivered. At the consumer end, it is paramount that companies consider the Forest Code implementation as a baseline requirement in purchases of agricultural goods from Brazilian suppliers. Consequently, the industrial and retail sectors can ensure full compliance with forestry and socio-environmental legislation in their processes.

Thus, commercial agents and foreign governments would have the forestry legislation compliance as a guarantee of legality, putting forward initial sustainability steps in the Brazilian commodity and rural products exports, without ruling out other requirements by international commitments and certifications of productive sustainability. The effective application of forest legislations can become a competitive differential in domestic and international markets, required and valued by financial institutions, exporters, carriers, warehouses, wholesalers, and retailers.

For all these reasons, the responsibility to demand the implementation of the Forest Code must be shared between private companies, society, and governments. On the one hand, it reduces the company's exposure to vulnerabilities in the application of governmental methods of command and control; On the other hand, it helps governments to effectively enforce the law.

3. ROLES AND RESPONSIBILITIES IN THE FOREST CODE IMPLEMENTATION

The Forest Code brings about new possibilities for the development and application of technical and political innovations. If proper- and effectively applied, they could lead to a greater regularity and sustainability in rural production. In this sense, five major actors have been identified: rural producers, federal government, State governments, civil society and market institutions, each of them bearing different roles and responsibilities in this process.

3.1. RURAL PRODUCERS

The inscription in the Rural Environmental Registry (CAR) is mandatory for all landowners and landholders, as a way to register the responsibilities of maintaining native vegetation in rural properties, under the regimes of Legal Reserve (RL) and permanent preservation areas (APP). In addition, the CAR is the baseline for defining the appropriate management of forest resources and land use. The CAR will further be the main instrument for the public authorities to monitor and account for areas of native vegetation, as well as to support the territorial planning measures and to guide public policies that focus on rural environments. The registry in the CAR, for instance, will allow many producers to join the environmental regularization programs (PRA); To apply for licenses or authorizations for the use of rural property (such as forest management activities, vegetal suppression, etc.); And/or to request the environmental reserve quotas (CRA). The adherence to the PRA, will require producers to

submit restoration projects for degraded or altered areas in case of environmental liabilities. These restoration projects must be implemented within the deadlines determined by the law and consigned within the terms of commitment to be signed by the farmers. From 2018 onwards, the CAR registry will be required as a prerequisite for accessing rural credit.

3.2 FEDERAL GOVERNMENT

The Federal Government is responsible for the central coordination of the implementation and management of the Sicar (National System of Rural Environmental Registry). This system is the central tool for gathering the information required by article 29 of Law No. 12,651/2012. This is necessary for the accountability of rural landowners and landholders' obligations in maintaining native vegetation and restoring it when necessary, especially in plots qualified as RLs and APPs.

Registration is required for individual landowners and landholders, traditional communities, indigenous peoples, and conservation units that make sustainable and collective use of their territories and landholdings. In such cases, the mandatory responsibility to register in the Sicar is shared by the auxiliary public agencies that support their territorial management, namely Incra (National Institute for Colonization and Agrarian Reform), FUNAI (National Indian Foundation) and ICMBio (Chico Mendes Institute for Conservation and Biodiversity), at the federal level, and the state agencies related to special beneficiaries, in the state level.

In addition to the attributions mentioned above, the federal government must generate data from Sicar and make it transparent and accessible to all society and market agents. It is also important to regularly monitor what happens within rural properties via CAR. This means that, apart from creating, implementing, analyzing, and validating the registry, it is also necessary to permanently monitor the system to prevent and punish unauthorized suppressions.

The Federal Government is also responsible for designing public policies that promote sustainability in the rural areas. Examples of these measures are the economic and fiscal instruments, the government procurement steering, the exporting policies highlighting environmentally sound products, the actions against deforestation, and the education that prioritizes social mobilization.

Article 41 of the Forest Code explicitly imposes this obligation by authorizing the Federal Executive to elaborate a program supporting and promoting the conservation of the environment. Furthermore, it encourages the adoption of technologies and good practices that combine agricultural and forestry productivity with the reduction of environmental impacts as a way of enabling ecologically sustainable development. Despite this legal provision, there is no apparent mobilization within the Federal authorities to develop such a program.

3.3. STATE GOVERNMENTS

State Governments are responsible for assessing and validating the registries, identifying liabilities and surpluses of native vegetation, and pinpointing overlaps between rural properties and protected areas within Conservation Units and Indigenous Territories - although the CAR is not aimed at solving land property issues. The states must also regulate, implement, and monitor the environmental regularization programs (PRA), whose adherence is mandatory for all properties with degraded permanent preservation areas or Legal Reserve, including deforested areas in small properties after 22 June 2008.

It is desirable for State Governments to carry out rural technical assistance focusing on the support for registration procedures and forest restoration actions, especially for family farming properties. States should further promote actions regarding models of forest restoration which bear economic interest, market opportunities for forest products that might

be integrated into restoration projects, amongst other initiatives to be developed together with the PRA. It is also a State duty to complementarily develop economic instruments and incentives for the implementation of the Forest Code.

In addition, it is crucial to implement mechanisms to monitor the legislative instruments. This is particularly important for the terms of commitment and recovery projects in degraded or altered areas, for ensuring compliance with the Forest Code's objectives - notably those related to the protection of remnants and restoration of forest liabilities.

Finally, states may supplementary regulate environmental reserve quotas (CRAs) and define context-specific criteria, provided that they are more restrictive than federal law. It is the role of the States to regulate CRAs to effectively steer the market to protect biodiversity, increase carbon stocks and strengthen other environmental services associated with native vegetation areas within the State itself.

3.4. CIVIL SOCIETY

Together with research institutions and universities, civil society has an important role in generating and disseminating information. This is particularly relevant for monitoring the implementation of instruments within the Forest Code. This can be done by either demanding data transparency and legal efficiency, or by encouraging society's engagement and collaborating with the development and implementation of initiatives to consolidate the legislation. The Forest Code Observatory (OCF for *Observatório do Código Florestal*) itself is a demonstration of the importance of mobilizing civil society organizations as a means of ensuring the effective implementation of the Code's instruments, as well as serving as a space for dialogue with different segments of society and governments.

3.5. MARKET INSTITUTIONS

It is important that market institutions begin to require compliance with the Forest Code as a pre-requisite for buying agricultural production. With increasing customer pressure to ensure the product's environmental and social legality, entrepreneurs risk harming their reputation if they do not make sure that their industry's raw material is 100% legal.

Taking the responsibility for the production chain has given manufacturers better profit margins and larger market shares. Considering the growing demands for legal and sustainable production and commercialization put forward by consumers of commodities[13], food, energy and other items, the effective compliance with the Forest Code will contribute to ensure the environmental regularity in rural production. The market can also support the implementation by testing more efficient validation alternatives.

13 Main initiatives:
CDP's Forests Program (https://www.cdp.net/en-us/programmes/pages/forests.aspx)
Consumer Goods Forum's Deforestation Resolution (http://www.theconsumergoodsforum.com/sustainability-strategic-focus/sustainability-resolutions/deforestation-resolution)
Compliance of the Forest Code by Consumers of Commodities (http://ipam.org.br/wp-content/uploads/2016/04/Cumprimento-do-Co%CC%81digo-Florestal_web.pdf)

Figura 3 | Summary of responsibilities for each actor

RURAL PRODUCERS

- Register in the CAR;
- Regularize their environmental status by adopting the PRA and implementing the requirements listed in the term of commitment.

FEDERAL GOVERNMENT

- Manage the Sicar;
- Generate data and make it available, providing transparent access for civil society and market institutions;
- Monitor reforestation and deforestation in the CAR properties;
- Define general rules for CRAs;
- Implement programs of Payment for Environmental Services and other economic instruments;
- Define guidelines for the recovery of native vegetation (e.g. Planaveg);
- Link the requirements for public credit lines and governmental procurement to the compliance with the Forest Code.

STATE GOVERNMENTS

- Evaluate and validate the CAR;
- Propose and run the PRA;
- Run the CRA;
- Implement programs of Payment for Environmental Services and other economic instruments.

CIVIL SOCIETY

- Monitor the implementation of the instruments under the Forest Code;
- Together with the scientific community, produce data to support the law implementation;
- Underpin the development and implementation of initiatives together with markets actors, producers' associations, and governmental agencies;
- Test models that bring up alternative solutions to the implementation barriers within the Forest Code.

MARKET INSTITUTIONS

- Adopt the zero-illegality standard in supply and custody chains;
- Introduce compliance with the Forest Code as a requirement for purchasing and financing.

II. CHALLENGES TO THE FOREST CODE IMPLEMENTATION IN BRAZIL

There are several challenges to the implementation of the Forest Code in Brazil and they occur in different ways depending on the region of the country. The scope of these challenges is also varied, encompassing issues that range from the political and technical spheres to the socio-economic and financial domains.

1. ISSUES RELATED TO THE RURAL ENVIRONMENTAL REGISTRY (CAR)

INSCRIPTION

LAW 12,651/2012

Art. 29. It is hereby created the Rural Environmental Registry – CAR -, under the National Environmental Information System – SINIMA -, an electronic national public registry, mandatory for all rural estate properties, with the purpose of integrating the environmental information of rural properties and landholdings to constitute a database for accounting, monitoring, deforestation combating and environmental and economic planning.

§ Paragraph 1. **The registration of the rural estate property in the CAR** shall preferably be done in the municipal or state environmental agency, which, under the terms of the regulation, **shall require the rural owner or landholder**:

i. identification of the rural owner or landholder;

ii. proof of ownership or landholding;

iii. identification of the property by means of a plant and a descriptive report, containing the indication of the geographical coordinates with at least one mooring point of the property perimeter, informing the location of the remnants of native vegetation, the permanent preservation areas, the Areas of Restricted Use, the consolidated areas and, if applicable, also of the location of the Legal Reserve.

The registration in the CAR is one of the most important tools at the government's disposal for implementing the Forest Code. Nevertheless, through the information available so far, the Sicar and the state systems in implementation did not literally applied the requirements under Article 29 for effectuating the CAR inscriptions. Any user can download their state's registration module and come to this conclusion. In many states, the system allows the completion of the registry without proof of ownership or landholding, without identification of the property through a plant and descriptive report, containing the indication of the geographical coordinates of at least one mooring point of the property's perimeter. This is to say that not even an automatic verification is done in many state systems.

This flexible interpretation of the legislation has important consequences, since the benefits associated with registration are given regardless of compliance with the legislative requirements. The mere existence of this set of benefits should be sufficient for a greater rigor in the verification, by the agencies that receive these inscriptions, of the minimum requirements listed in the first paragraph of the mentioned article. Failure to comply with these requirements - which could be identified through automatic Sicar filters - should result in the rejection of the registration. In this sense, the benefits provided by the law would be suspended until the completion of the required information.

States that are migrating datasets that existed before the Forest Code to the new system are substantial examples of such anomalies. In Mato Grosso, for instance, out of the approximately 50.000 registered inscriptions, more than 40.000 have pending documentation[14]. In Pará, the state created the provisional CAR in 2009, requiring only the personal data of the owner and the perimeter of the property, thus, most registrations carried out between 2009 and 2012 did not contain basic information on environmental attributes. This type of incompatibility is predictable and even understandable, since almost all these registrations were carried out before the current legislation was in force. For example, Mato Grosso, Pará and Rondônia already had their own registration systems since 2008. What cannot be admitted, though, is that these producers benefit from the Forest Code and access its programs without complying with the minimum requirements of the law.

The creation of data migration modules could have easily avoided this frailty and potential non-compliance with legal obligations, requiring prior completion of the minimum documentation before migrating to the new system. Therefore, by the time the CAR registration became effective, within the legal deadline, the existing data would already be in the new format and the pending rural information would be visible in the new systems. Thus, there would be no additional burden for the producers who had registered in the old state systems, as the previous information would be kept, yet the new system would not extend undue benefits as a breach in the legislation.

14 Canal Rural - http://www.canalrural.com.br/noticias/rural-noticias/mais-mil-propriedades-mato-grosso-precisam-revisar-car-54268 - accessed on 11/04/2016.

NOTIFICATION AND CANCELLATION

DECREE 7,830/2012 - Art.7o

If there is any pending or inconsistency in the information or documents declared in the CAR, the responsible body must notify the applicant, one single time, for him/her to provide additional information or to promote the correctness and adequacy of the information provided.

§ Paragraph 1. In the hypothesis of the **caput**, the applicant must make the changes within the term established by the competent environmental agency, under penalty of cancellation of its registration in the CAR.

§ Paragraph 2. Until the competent body has given notice of any pending or inconsistent information in the documents presented for the CAR registry, the inscription of the rural estate property in the CAR shall be considered effective for all purposes established by law.

The procedure to be carried out in relation to the rural properties that have pending documents is not clear yet, particularly due to the lack of full operation of Sicar's analysis module and the lack of regulation of the state PRAs. Some state regulations regarding the CAR indicate deadlines for rectifying the declared information, but it is not evident how the environmental agencies will review the pending issues.

The main risk of the potential delay in analysing the CAR and in analysing the required complements for pending cases is that the overall access to the "automatic" benefits generated by the CAR registration may create a sense of general amnesty and impunity in regard to environmental irregularities, as well as a sense of exemption from the obligation of restoring forest liabilities.

BASELINE FOR REGISTRABLE AREA

The baseline used to verify the evolution of the number of real estate properties and registrable areas to be inserted in the Sicar was defined by the federal government based on the number of agricultural settlements in the IBGE 2006 agricultural census. This reference does not depict the current reality of Brazilian states, especially in the Amazon states where the number of reported rural properties and registrable areas are very disproportionate to the contemporary situation.

In the municipalities and states where the CAR has rapidly progressed, observations estimate that the number of real estate properties in many cases is more than double of the baseline indications. Thus, it is fundamental to carry out a new agricultural census to provide a more precise picture of Brazilian rural properties. It is also necessary to integrate the public databases, such as Incra, Federal Revenue Agency, FUNAI, Brazilian Forest Service, The Superintendence of the Patrimony of the Union, amongst others.

The lack of a reliable baseline, which is adequate to the states reality, results in overestimations of the number of properties and registered areas. In states, such as Acre, the registrations have already exceeded more than 200% the baseline registrable area, and new properties are still being inscribed. Therefore, the distortions between the baseline registrable area and the registrations that the CAR has already received generates plenty of concerns and distrust about the information provided by the Brazilian Forest Service's newsletters[15]. In addition, these figures highlight the underlying land conflict in the Amazonian context. Registries overlap in various layers, probably due to the occupant's intention to use the registry as an instrument to assert possession.

Considering that territories of traditional peoples and communities, including those of collective use, as well as indigenous lands should be registered, the only non-registrable areas should be urban areas, conservation units with integral protection which are already public property, great bodies of water and vacant and unclaimed lands[16]. By these criteria, the registrable area can exceed 600 million hectares, which is much higher than the of 397.8-million hectares' area estimated by the Ministry of the Environment (MMA) and forwarded in the newsletters from the Brazilian Forest Service[17].

SIMPLIFIED REGIME FOR AGRARIAN REFORM SETTLEMENTS

NORMATIVE INSTRUCTION MMA – 002/2014

CHAPTER IV: SPECIAL SIMPLIFIED REGIMES IN THE CAR

Section I

On Agrarian Reform Settlements

Article 52 - It will be a responsibility of the competent land agency to register of the settlements of Agrarian Reform in the CAR.

Article 53 - The registration of Agrarian Reform settlements in the Rural Environmental Registry shall be done initially by means of registration of its perimeter and later by means of the individualization of lots, when applicable, without prejudice to other information provided for in Chapter III of this Normative Instruction.

§ Paragraph 1 - Upon registration of the perimeter, the land agency will inform, through a digital

15 The Brazilian Forest Service's newsletters are synthetic reports on the SIicar data. They can be accesses at: http://www.florestal.gov.br/cadastro-ambiental-rural/numeros-do-cadastro-ambiental-rural

16 Only in the Legal Amazon, there is about 71 million hectares as public lands (state and federal) that are vacant of unclaimed (Brazilian Forest Service).

17 Brazilian Forest Service – CAR – Newsletter - February 2016.

spreadsheet, the list of beneficiaries of the agrarian reform settlement that is registered in the CAR.

§ Paragraph 2 - Upon the individual registration of the lots contained in the Agrarian Reform settlements, the settlers may count on the support of the competent land agency to proceed the respective registrations in the CAR, under the terms of art. 8th of Decree No. 7,830/2012.

§ Paragraph 3 - For the registration of Agrarian Reform settlements in the Rural Environmental Registry, it shall be preferably used the application for rural settlements of agrarian reform to be made available by the Ministry of Environment.

§ Paragraph 4 - The list of beneficiaries of the settlement may suffer alterations, inclusions and exclusions within the CAR and the incompleteness of the list will not prevent the inclusion of the settlement in the system.

...

Article 56 - When environmental liabilities in settlements are identified, regarding the Legal Reserve, Permanent Preservation and Restricted Use areas, compliance with the provisions of Law No. 12,651, of 2012, will be made through adherence to the PRA.

§ Paragraph 1 - The competent land agency shall be jointly incumbent, together with the settlers, to meet the provisions of the *caput* when the Legal Reserve areas in the agrarian reform settlements projects are collective.

§ Paragraph 2 - When the Legal Reserve area is located inside the lot, the settler must, with the support of the competent land agency, comply with the provisions of the *caput*.

Article 57 - For the regularization of the liability referred to in the previous article, the signing of the term of commitment with the competent environmental body for the adherence to the PRA shall be jointly done by the beneficiary and the competent land authority.

The institution of a simplified regime for registering the agrarian reform settlements does not have legal provision. The use of normative instructions from the MMA to create such a simplified regime enhances legal uncertainty, given that the nature of the normative instructions is restricted to the disciplining of internal administrative acts within the MMA. Thus, a normative instruction would not have the legitimacy to create or modify administrative instruments in the absence or in disagreement with the proper legal provision.

Apart from the legal instability risks, especially for family farmers, the simplified registration, that only considers the perimeters of the settlements, leads to a demobilization of the responsible agencies in terms of registration and support to the beneficiaries of the agrarian reform - who may be uncovered by the benefits and obligations stemming from the CAR and the PRA.

Although the apparent intention of creating a simplified CAR regime for agrarian reform settlements has been to ensure compliance with the registration deadline, this process could lead to an excessive delay in the adherence of the agrarian reform beneficiaries to the PRA, consequently delaying the beginning of the recovery of forest liabilities.

2. ISSUES RELATED TO THE PERMANENT PRESERVATION AREAS (APPs)

CONTINUITY OF PRODUCTIVE ACTIVITIES

LAW 12,651/2012

Article 61-A - In the permanent preservation areas, the continuity of agroforestry activities, ecotourism and rural tourism is exclusively authorized in rural areas consolidated until 22 July 2008.

§ Paragraph 15 - From the date of publication of this Law and until the end of the period of adherence to the PRA referred to in §2 of article 59, the **continuity of the activities carried out** in the areas covered by the *caput* is allowed, and should be informed in the CAR for monitoring purposes, **requiring the adoption of soil and water conservation measures.**

It is not clear what means can be used to meet the requirement of continuity of productive activities, especially because of the incomplete information declared in the CAR. Although paragraph 15 indicates that the productive activities being carried out in the consolidated areas should be informed in the CAR, there is no specific field for the insertion of this type of information in the Sicar.

3. ISSUES RELATED TO ENVIRONMENTAL RESERVE QUOTAS (CRAs)

REGULATION AND OPERATIONALIZATION

LAW 12,651/2012

Article 44. The Environmental Reserve Quota (CRA) is hereby established, as a nominative title representative of an area with native vegetation, existing or in the process of recovery:

i. under the system of environmental servitude, instituted in accordance to article 9o-A of Law 6,938, as of 31 August 1981;

ii. corresponding to the Legal Reserve area instituted voluntarily on the vegetation that exceeds the required percentages by article 12 of this Law;

iii. protected as a Private Reserve of Natural Heritage - RPPN, according to article 21 of Law 9,985 of 18 July 2000;

iv. existing in rural property located inside Conservation Unit of public domain that has not yet been expropriated.

§ Paragraph 1. The issuance of CRA shall be made upon the owner's request, after inclusion of the property in the CAR and the issuance of evidential report by the environmental agency itself or by an accredited entity, being assured the control of the competent federal agency of Sisnama, in the form of an act of the Chief of Executive.

§ Paragraph 2. The CRA cannot be issued based on native vegetation located in the RPPN area established by overlapping the Legal Reserve of the property.

§ Paragraph 4. It can be instituted a CRA of the native vegetation that integrates the Legal Reserve of the properties referred to in item V of art. 3 of this Law.

Although it is publicly known that the federal government is elaborating a proposal on the regulation of the Environmental Reserve Quotes (CRA), there is no provision for its edition, let alone the creation of the administrative and operational instruments necessary for the effective operationalization of the CRA.

The major risk stemming from the existence of an instrument for regularizing forest liabilities is its use for delaying the adherence to the PRAs or to postpone the compliance with the obligations to recover or offset these liabilities, as the landowners may justify their lack of action through the absence of proper regulation.

Furthermore,the CRA is expected to turn into an important instrument for the conservation of unprotected forest remnants, which today would be exposed to the risk of legal deforestation. With CRAs, these areas would be protected for the duration of the contract.

It is critical to reduce the delays in the application and regulation of new forest legislation by the Federal and State governments (CRA and forest fire prevention at federal and PRA levels, suppression and replacement of natural vegetation at the state level).

The CRA regulation, through non-bureaucratic and user-friendly implementation standards, is vital to unlock the full operation of the PRA. In the absence of such a regulation, producers with environmental liabilities may delay the compliance with their obligations, justifying the postponing with the impossibility to access the potential benefits that CRA should provide.

4. ISSUES RELATED TO THE ENVIRONMENTAL REGULARIZATION PROGRAMS (PRA)

LEGAL GROUNDS

In several Brazilian states, PRAs are not fully regulated yet, and in many others, the general rules have already been published through laws or decrees, but the necessary managerial instruments to operate the programs are not in place. This is true even for the PRA module within the Sicar.

In some states, the PRAs have become a way to extend undue benefits to landowners with legal liabilities. This reality not only contradicts the law but also the Federal Constitution, generating significant setbacks, lawsuits and legal suspension of the normative rules issued by state authorities. Therefore, it is necessary for the federal government to coordinate and guide the regulation of the PRAs throughout the states, for avoiding the risks of throwbacks, judicialization and suspension of rules.

EDITION OF GENERAL RULES

LAW 12,651/2012

Article 59. The Federal Government, the States and the Federal District shall, within a period of one year from the date of publication of this Law, extendable once for an equal period by an act of the Chief of Executive, implement environmental regularization programs (PRA) of rural properties and landholdings, with the purpose of adapting them to the terms of this Chapter.

§ Paragraph 1. In the regulation of PRAs, the Federal Government shall establish**, within 180**

> **(one hundred and eighty) days**, from the date of publication of this Law, without prejudice to the period defined in the caput for general norms, being incumbent upon the States and the Federal District the further detailing through the edition of specific norms, regarding territorial, climatic, historical, cultural, economic and social peculiarities.
>
> Paragraph 2. **The registration of the rural estate property in the CAR is a mandatory condition for joining the PRA**, and this adherence must be requested by the interested party within one year, counted from the implementation referred to in the caput, which may be extended one time only, for another one year period, by act of the Chief of Executive.
>
> DECREE No. 8,235/2014
>
> Article 1. This Decree establishes general norms complementary to the Environmental Regulation Programs (PRA) of the States and the Federal District, which is dealt with in Decree No. 7,830, dated 17 October 2012, and establishes the **Mais Ambiente Brasil Program**[18].

In a clearly inappropriate perspective, the Federal Government considered the issuance of dDecree No. 7,830/2012 as a fulfillment of the deadline established in article 59 of this Law. However, the edition of Decree No. 8,235/2014 explained that the general norms necessary for the states to prepare their PRAs did not appear in the first decree, therefore, required complementary rules.

These required norms were only issued in 2014, by the end of the deadline for the Federal Government and the States to have already implemented the PRAs. The delay was caused by disagreements between environmental and agribusiness interests, especially in regards to the concept of rural estate property and the assessment of fines that were not covered by the benefits of the new legislation. In the state level, in July 2016, after another four years, only 15 states have regulated their PRAs - and two of them are suspended clearly failing to meet the established deadline.

18 In a direct translation, *More Environment Brazil Program*

RULES FOR RESTORATION AND ECONOMIC USE

> **LAW 12,651/2012**
>
> Article 18 The restoration of Legal Reserve areas can be done by intercalating native and exotic species in an agroforestry system, observing the following parameters:
>
> i. The cultivation of exotic species should be combined with native species that occur regionally, and
>
> ii. The area restored with exotic species may not exceed fifty percent of the total area to be recovered.
>
> Sole paragraph: The owner or landholder of a rural property that chooses to recover the Legal Reserve through the intercalated cultivation of exotic species will have the right to economic use.

There is a great diversity of procedures in regard to this topic within the PRAs that were already approved or are being discussed. Several states have not thoroughly detailed the parameters that shall guide the restorations, let alone clarifying the right to pursue economic activities within these areas.

The main problem stemming from this fact is that, in the absence of clear regulation, there is plenty of legal uncertainty in terms of the possible restoration models and the usufruct of the right to economic use within the areas under restoration. Especially in the case of family farming, which must restore the irregularly deforested areas after 22 June 2008, the

clear definition of the possibilities of economic use is decisive for enabling the feasibility of large scale restoration.

MECHANISMS FOR MONITORING IMPLEMENTATION

LAW 12,651/2012

Article 73. The central and executing agencies of Sisnama will create and implement, with the participation of state agencies, sustainability indicators, to be published semi-annually, for assessing the evolution of the components in the system covered by the provisions of this Law.

Article 75. The PRAs established by the Federal Government, the States and the Federal District should include a mechanism to monitor their implementation, taking into account the national objectives and targets for forests, especially through the implementation of the instruments provided for in this Law, the registry inscription of owners and landholders of rural properties, the progress in the regularization of rural properties and landholdings, the level of regularity on the use of forest raw material and the control and prevention of forest fires.

Some PRAs defined in the states provide mechanisms for monitoring its implementation, but no public information is available on the comprehensive set of requirements that the Law establishes. Virtually none of the state PRAs mention the level of regularity on the use of forest raw material and the control of forest fires.

It is not clear yet how the monitoring of compliance with the PRAs, the public access to implementation data, or the progress of the environmental regularization of rural properties and landholdings will be carried out. The PRA and the monitoring modules of Sicar shall fill this gap. There is no public information on any initiative to design the indicators cited in the Law.

5. ISSUES RELATED TO THE NATIONAL SYSTEM OF RURAL ENVIRONMENTAL REGISTRY (SICAR)

OPERATIONAL STRUCTURE

The development of the National System of Rural Environmental Registry (Sicar), with all the necessary modules for the system's full operation, has been more delayed than anyone could expect. At present, the analysis module remains in the initial stages of operation and adjustments. The module on information monitoring and transparency was launched on 29 November 2016. Although the launch was a great step forward, critical information for social accountability, for the Public Prosecutor Office and for the companies' supply chains monitoring were not made public yet – such as the producer's name and Identification Number. This weakens the Code's implementation, as the Rural Environmental Registry (CAR) is the main tool in the legislation and is the gateway to the adherence to Environmental Regularization Programs (PRAs), whose implementation needs to be monitored.

In addition, the low quality of the information provided generated a fragile database. This process was eroded by the perception that the information is merely "declaratory" and did not require an immediate proof of veracity, due to the "sketch" option to directly draw the property's characteristics at the registry application. Certainly, enhanced efforts will be necessary for the state agencies to analyze and validate this information, increasing the risk of delays in the fulfillment of the legal obligations by the rural producers.

Another issue stems from the fact that the infrastructure within state environmental agencies

did not keep pace with the growth in the services demanded by the new Forest Code. With a few exceptions, the structure of state bodies is insufficient to meet the demands generated by the creation of the CAR and the PRAs. The low number of public employees dedicated to these activities, the lack of financial resources to meet the rural demands and the scarce infrastructure are the main obstacles in ensuring the implementation of these instruments.

The adoption of the PRAs id done through the formalization of the terms of commitment and, in most cases, through the submission of recovery plans for degraded areas. This will generate an immense volume of administrative processes to be monitored by environmental agencies. Only with a strong investment in technology, capacity-building and infrastructure improvement will it be possible to ensure full compliance with the legislation.

Therefore, it is critical to increase the capacities and to build partnerships between state and municipal governments for the realization and validation of the Rural Environmental Registry so that the environmental liabilities in rural properties can be fully recovered. Other substantial aspects in this process are the acceleration of the structuring and integration of Sicar and the completion of the modules that remain under development (analysis, monitoring and transparency).

An increased involvement of municipalities, with a broader definition of their role and scope of action, can be an alternative to strengthen the institutional capacity regarding the immense effort of validating the registries in Sicar. It can also contribute to the promotion and to the monitoring of liabilities restoration, as well as to the follow-up of legal obligations (terms of commitment and recovery plans for degraded areas).

TRANSPARENCY AND ACCESS TO PUBLIC DATA

Normative Instruction MMA – 002/2014

Article 12 - The **public data** to be made available by Sicar, dealt with in item V of article 3 of Decree No. 1,830/2012, **will be limited to**:

i. the property's CAR registration number;

ii. the municipality;

iii. the Federation Unit;

iv. the property area;

v. the area of native vegetation remnants;

vi. the Legal Reserve area;

vii. the permanent preservation areas;

viii. the consolidated use areas;

ix. the restricted use areas;

x. the administrative servitude areas;

xi. the compensation areas; and

xii. the registry status of the rural estate property in the CAR.

§ Paragraph 1 - The information listed in this article will be provided by the **rendering of a report**.

§ Paragraph 2 - Information regarding notifications is restricted to rural owners and landholders.

§ Paragraph 3 - The information that concerns real estate registry offices, financial institutions and sectoral entities will be made available **upon specific request to the System operator**, respecting the information of restricted nature.

Public access to environmental information is granted by the Law on Access to Public Information (12,527 / 2011). The Forest Code itself in its article 29 further determines the public character of the information registered in the CAR. Therefore, limitations on the availability of Sicar public data through the issuance of a normative instruction from the Ministry of the Environment is an action of clear confrontation with the legislation in force at present.

In this sense, it is important to ensure wide public access to information about the Code's implementation, especially regarding the CAR and the PRAs. The transparency of the information regarding environmental accountability is a principle enshrined in environmental legislations since the National Environmental Policy Act of 1981. This principle was reinforced by the Federal Constitution of 1988 through its chapter on individual and collective rights and duties. This chapter determines that obstacles to the access of procedural information in public management shall be restricted only by legislative means. The Forest Code reaffirmed the public nature of the information provided in the CAR registration.

Federal agencies such as Incra[19], and state agencies, for example, in Pará and Mato Grosso, have made available in the past or still make available at present the vector information containing land and environmental data on rural estate properties. Imposing restrictions on public access to Sicar data through a Normative Instruction from the Ministry of the Environment - a tool restrictedly designed to manage administrative procedures within the Ministry itself - is explicitly improper and bear no legal provision.

It is important to acknowledge the great progress brought about by the disclosure of Sicar vector data, made public on 29 November 2016. However, this information remains incomplete, as there is no information regarding the identification of the person who registered the area in the system.

19 The Incra publicly provide information from the Sistema de Gestão Fundiária (SIGEF, meaning *Land Management System*) at the website: acervofundiario.Incra.gov.br.

6. ISSUES RELATED TO THE INTERACTION WITH OTHER PUBLIC POLICIES

PUBLIC AND PRIVATE INCENTIVES

It is essential to create instruments for encouraging compliance with the forest legislation. These instruments should be able to ensure a continuous process of inducing sustainability, while discouraging delays or attempts to circumvent the law. There is no definition yet on the public economic incentives that could support the implementation of the law, particularly where there is greater deforestation trends.

A simple economic incentive that could reap significant benefits is to reduce the transaction cost of meeting legal obligations. In other words, the rural producer currently spends a lot of time and resources to fulfill the set of procedures necessary to maintain its environmental, fiscal and sanitary regularity. Simplifying procedures, eliminating or replacing inefficient instruments, and extending the use of CAR as a basis for integrating public services can generate immense advantages and savings to the producers.

Another simple kind of incentive is to facilitate credit granting for products with proven environmental regularity through the CAR. A step in this direction is exemplified by the legal provision to block access to rural credit for properties not registered in the CAR from 2017 onwards. This is one of the economic inducing mechanisms provided by the Forest Code. Beyond this measure, another potential driver is the elaboration of positive lists gathering regularized rural properties in terms of forestry legislation

This could ensure simplified access and additional benefits to credit risk analysis, thus, benefiting the fully regularized properties.

An alternative is to promote sectoral agreements to enforce compliance with the Forest Code in Supply Chains. As much as credit access, market access is a powerful tool for driving and encouraging compliance with the forest legislation. As in the case of bovine meat chains in the Amazon region, the engagement of large commodity consumers, processing industry and retail markets through large supermarket chain, is a promising way to ensure a supply structure free of illegal deforestation or environmental irregularity.

Another option is the dissemination of the Environmental State Tax (ICMS) in all states, with a tax distribution methodology that favours forest restoration. The environmental ICMS was originally created to compensate and reward municipalities for keeping native vegetation in protected areas - whether conservation units or indigenous lands. It has an enormous potential to be an instrument of engagement for municipalities to implement the Forest Code, especially in terms of restoration of degraded areas. The initiative of the state of Pará, which included additional criteria such as the CAR area in the municipality, indicates a potentially promising path for the use of this legal instrument[20].

In this sense, the Mais Ambiente Brasil Program, foreseen in the Forest Code and "instituted" by the Decree No. 8,235/2014, has not yet been put in place. The program is expected to be the basis for a broad range of instruments for support and incentive to the full compliance with forestry legislation. Discussed in several bills in Congress, the elaboration of a national policy on environmental services should be a perfect complement to the operation of the Mais Ambiente Brasil Program. Unfortunately, neither initiative has been effective.

20 Mais informações sobre o ICMS Ecológico do Pará em: http://www.icmsecologico.org.br/

The efficient application of the Rural Territorial Tax (ITR for *Imposto Territorial Rural*) aims to fulfill its original role of curbing land speculation and the resulting deforestation, as well as stimulating increased productivity in the already deforested areas. For this purpose, it is necessary to update the ITR calculation basis and to make use the available resources - such as CAR, Prodes and TerraClass/Inpe - to identify misconducts.

A case study in Pará estimated that the potential tax collection per hectare from ITR could be up to 133 times greater than the current level only by adopting the procedures above mentioned - which would certainly make it unfeasible to maintain many unproductive lands[21]. Thus, the municipalization of the collection of the ITR through an agreement between the Federal Revenue Agency and the municipalities is an opportunity to be explored, bearing the potential to increase tax efficiency and enlarge the municipal revenue. Silva & Barreto (2014) observed that 21 municipalities in Pará, in partnership with the Federal Revenue Agency, have doubled the tax collection both in absolute terms as in relative terms, per hectare of areas available for agricultural and livestock production.

ECOLOGICAL AND ECONOMIC ZONING (ZEE)

LAW 12,651/2012

Article 13. When indicated by the Ecological and economic zoning - State ZEE -, carried out according to a unified methodology, the federal public authority may:

i. reduce, exclusively for purposes of regularization, by restoration, regeneration or compensation of the Legal Reserve in properties with consolidated

21 Silva, D; e Barreto, P. 2014. O potencial do Imposto Territorial Rural contra o desmatamento especulativo na Amazônia. 48p. Belém/PA: Imazon. Available at: http://imazon.org.br/publicacoes/o-potencial-do-imposto-teritorial-rural-contra-o-desmatamento-especulativo-na-amazonia/#updateOnce

rural area, in a forest area located within the Legal Amazon, for up to 50% (fifty percent) of the property, excluding priority areas for conservation of biodiversity and water resources or ecological corridors;

ii. increase the areas of Legal Reserve by up to 50% (fifty percent) of the percentages provided for in this Law, to comply with national biodiversity protection or greenhouse gas emissions reduction targets.

§ Paragraph 1. In the case provided for in item I of the *caput*, the owner or landholder of rural property who maintains a Legal Reserve preserved and registered in an area larger than the percentages required in the subsection may institute environmental servitude on the surplus area, pursuant to Law No. 6,938, of 31 August 1981, and Environmental Reserve Quota.

§ Paragraph 2. States that have not elaborated their Ecological-Economic Zones - ZEEs - according to the unified methodology established in the federal norm, will have a period of 5 (five) years, from the date of publication of this Law, for their elaboration and approval.

The Amazon states have the largest potential to implement the rules outlined in the ZEEs legislation, mostly due to the expected "benefits" and to the great attention usually drawn to the region by the Brazilian society and the international community. The main objective of this instrument is to organize, in a coherent and encompassing manner, the decisions of public and private agents regarding plans, programs, projects and activities that directly or indirectly use natural resources, ensuring the full conservation of both capital and ecosystem services.

The ZEE is an instrument of the National Environmental Policy, regulated by the Decree No.4,297/2002. It is an instrument of territorial management to steer the implementation of public and private plans, works and activities. The ZEE establishes measures and standards for environmental protection, ensuring environmental quality, water and soil resources and biodiversity conservation to achieve sustainable development and to improve the population's living standards. Amongst the Brazilian states, Acre and Rondônia have already completed the ZEE in a 1: 250,000 scale and they have been approved by CONAMA (The National Council for the Environment) for the entire territorial area, while Pará had only parcels of the state territory approved (Pará - West of Pará - BR-163, BR 230 and Calha Norte).

Mato Grosso also approved its ZEE in the State Legislative Assembly, under State Law No. 9,523/2011, and submitted it to CONAMA for approval. Nevertheless, the council did not approve the ZEE legislation due to several inconsistencies with the criteria defined in Federal Decree No. 4,297/2002 and in the Methodological Guidelines for Brazilian ZEEs. Meanwhile, the State Public Prosecution filed a public civil action at the State Court TJ-MT, which led to the suspension of the ZEE law and its dispositions. At present, the ZEE is being revised by the state executive authorities (SEMA and SEPLAN).

The state of Amazonas has developed the ZZE for the Purus Basin, but its approval in the federal level is still being negotiated. The states of Bahia, Espírito Santo, Minas Gerais, Rio Grande do Norte and Santa Catarina elaborated their ZEEs in a 1: 250,000 scale. However, these ZEEs are not approved yet either for lack of submission to the national authority or for other technical or methodological unmet criteria. The other Brazilian states are still in the process of developing the ZEEs at different implementation stages. Yet, the overall observed trend is the absence of political will to elaborate ZEEs in these states.

In the Legal Amazon states, the implementation of the ZEE as established in the Forest Code allow for two different interpretations:

a. it increases the regularized areas of agricultural and livestock production, as it accepts a 50% reduction in the Legal Reserve areas, with the exclusive aim to regularize the environmental status of rural estate properties;

b. it poses the risk of enabling the expansion of areas that can be legally deforested in the Amazon. Considering Paragraph 5 from Article 12, after hearing the State Environmental Council, the state authorities may reduce to 50% (fifty percent) the Legal Reserve areas, if and only the state has its ZEE approved and more than 65% of its territory occupied by conservation units of public domain and/or indigenous territories. This means that states like Amapá (which already has around 75% of protected areas in conservation units or indigenous lands), Roraima, Pará, Amazonas and Acre - and especially those in the Amazon region - would meet the criteria for reducing their legal reserves from 80% to 50% by increasing their percentages of protected areas, not only for regularization purposes, but also for forest conversion.

It should be noted that these criteria (the elaboration and approval of the ZEE) to reduce the Legal Reserve is linked to two other conditions: the regularization of Conservation Units and the homologation of indigenous lands. With the recently published Sicar data, it will be possible to measure how much future deforestation it would mean if these states complied with the Legal Reserve reduction criteria - but it would surely mean about millions of hectares.

In other Brazilian regions, there seems not to be significant motivation to elaborate the ZEE, even considering the deadline established by the Forest Code. The lack of sanctions or other benefits associated with the implementation of this device is an element that further hinders compliance with this instrument.

POST-2008 ILLEGAL DEFORESTATION AND SUSPENSION OF ACTIVITIES

LAW 12,651/2012

Article 17. The Legal Reserve must be conserved with a native vegetation cover by the rural estate property's owner, landholder, or occupant in whatever capacity, being an individual or legal entity, in the public or private spheres.

§ Paragraph 3. It is mandatory the **immediate suspension of activities in Legal Reserve areas irregularly deforested after 22 July 2008**.

§ Paragraph 4. Without disregarding the applicable administrative, civil and criminal sanctions, the process of **recovery of the Legal Reserve shall be initiated within a period of up to two (2) years as of the date of publication of this Law** in the areas referred to in Paragraph 3 of this article. This process must be completed within the deadlines established by the Environmental Regularization Program (PRA), which is dealt with in article 59.

Apparently, no measures were taken by either the states or the Union to ensure compliance with Article 17, as well as there is no evidence of any increase in penalties applied due to this legal requirement.

For a greater compliance with the obligation set forth in this article, a proactive stand by the public authorities is necessary to verify which illegally deforested areas of legal reserve are being actively used after the law came into force. Yet, if we consider the frailty of the environmental agencies in terms of physical, technological and human resources structure, it is highly unlikely that these agencies are indeed able to carry out this verification.

By integrating CAR data with deforestation data provided by remote sensing systems (for instance,

PRODES[22] and Terra Class[23]), it would be possible to dramatically reduce the costs of monitoring and issuing infraction notices. Still, there is no evidence so far that the states and the federal government have been using these instruments in a way to strengthen environmental governance.

The opportunity to perform an effective verification already exists, despite the problems in the CAR, such as the lack of validation. It is already possible to compare environmental and land use features by using historical information and image overlapping. In this case, the potential problem is that, without effective measures, the environmental damage in these areas will go on until the environmental state agencies develop the capacity to process all the registries, a process that may take years.

DEFORESTATION EMBARGOES

LAW 12,651/2012

Article 51. The competent environmental agency, when informed of deforestation activities not in compliance with the provisions of this Law, shall suspend the work or activity that led to the alternative use of the soil, as an administrative measure aimed at curbing the continuity of the environmental damage, allowing for the regeneration of the environment and the recovery of the degraded area.

§ Paragraph 2. The responsible environmental agency shall make publicly available the information about properties under embargo, disclosing it also through the worldwide web.

Although the legislation clearly provides for the environmental agencies to apply embargoes on activities in areas that were deforested in disagreement with the Law, there is no evidence of any increase in the number of embargoes after the Law was published or after the rise in the number of CAR registries. The following conclusions can be drawn from these observations:

a. The human resources, technological and physical structures of the environmental agencies are not adequate nor sufficient to receive, process, monitor and respond the illegal deforestation denounces that may have occurred in native vegetation areas. For the same reason, there is no apparent methodology, system or monitoring tools that allow for the supervision of the restricted use of embargoed areas or the regeneration and recovery of degraded areas;

b. Although the information on the properties registered in Sicar require analysis and validation, the low number of embargoes indicates that the information inserted in the registries are not being used to prevent the continuation of environmental damages, as defined by the legislation;

c. In addition, the few existing embargoes should be made publicly available by the OEMAS. Buying companies, banks and society in general should be able to access this information and use it as purchasing or financing requirements.

The delays in the use of CAR information results in the increase of environmental damage while the Sicar analysis module is being developed and implemented and state regularization programs are being elaborated and put into action.

22 http://www.obt.inpe.br/prodes/index.php

23 http://www.inpe.br/cra/projetos_pesquisas/dados_terraclass.php

FINE CONVERSION PROGRAM

LAW 12,651/2012

Article 42. The Federal Government will implement a fine conversion program defined in art. 50 of Decree No. 6,514, dated 22 July 2008, focusing on rural estate properties, regarding fines related to deforestation activities in areas where the suppression was not formerly prohibited, that were promoted without authorization or license before 22 July 2008.

DECREE 8,235/2014

Article. 22. A joint act of the Ministers for the Environment, Agrarian Development, Agriculture, Livestock and Food Supply and the General Advocacy of the Federal Government shall, **within one year** from the date of publication of this Decree, regulate the **fine conversion program** applied to deforestations that occurred in areas where the suppression of vegetation was not forbidden, as referred to in art. 42 of Law No. 12,651, of 2012.

Sole Paragraph: The fulfillment of the obligations established in the program may result, in the manner disciplined by the joint act set forth in the **caput**, in the conversion of the fine applied to the hypotheses set forth in art. 3, **caput**, subsection I, art. 139, art. 140 and art. 141 of Decree No. 6,514 of 22 July 2008.

The deadline established by the Decree No. 8,235/2014, which regulated the provisions of Article 42 of the Law, was not complied with and there is no public information if the fine conversion program is being designed. The main concern in this scenario is that the non-regulation of this article delays the adherence to the PRAs. It further delays the signing of terms of commitment by the rural producers who have incurred in the infraction defined by the Law. This barrier, generated by the non-regulation of the article, hinders the recovery process of environmental liabilities.

Another relevant aspect is that the fine conversion program, regarding federal infractions and fines, would be operated by IBAMA, but the operationalization of the term of commitment signing as well as other administrative acts associated with the PRAs will be operated by the states OEMAs. In this sense, an extensive cooperation between the agencies will be necessary, which may represent a risk to the effective implementation of the instrument, given the history of miscommunications and institutional cooperation obstacles.

NATIONAL POLICY ON MANAGEMENT, CONTROL AND PREVENTION OF FOREST FIRES

LAW 12,651/2012

Article 40. The Federal Government shall establish a National Policy on Management, Control and Prevention of Forest Fires.

§ Paragraph 1. The Policy mentioned in this article should provide tools for the analysis of the impacts of forest fire on climate change and land use change, ecosystem conservation, public health and fauna, to support strategic plans for forest fire prevention.

§ Paragraph 2. The Policy mentioned in this article should observe scenarios of climate change and potential increases in the risk of forest fires.

There is no public information on any initiative by the federal authorities to elaborate the policy cited by this Law. The lack public engagement in designing this policy directly interferes in the definition of important aspects for this matter, for example, who is responsible for the strategic action plans for preventing and combating forest fires - Federal Government, States or Municipalities.

Currently, there are two instruments, in the biome scale, that deal with fire control and fire prevention - the PPCDAM for Amazonia, the PPCerrado for the Cerrado - as well as a federal initiative, restricted to conservation units, the PrevFogo (National Center and System for Prevention and Control of Forest Fires). However, it is important to state that none of these instruments and initiatives meet the requirements listed in the Law.

There is a clear need to move forward in the formulation of this policy, especially through the establishment of connections with climate change and greenhouse gas emissions. Still, it is fundamental for this National Policy on Management, Control and Prevention of Forest Fires to be comprehensive, considering the initiatives already implemented by the states. In its formulation and implementation, it should also encompass states, municipalities and civil society, so that it reflects the realities and characteristics of the different regions of Brazil.

Another relevant aspect is that since 2004, after the implementation of the deforestation monitoring system in Amazon, the dynamics and patterns of illegal deforestation have completely changed in the region. Up to 2004, the predominating pattern was the deforestation of large areas, with a shallow cut of native vegetation within short periods - seeking to avoid the risk of flagrant identification by IBAMA or the state agency, which was the main form of prevention and combat of deforestation by then. From 2004 onwards, the occurrence of shallow cutting in large areas has been drastically reduced and turned into a pattern of small deforestation or gradual degradation in areas adjacent to the open fields - the so-called *puxadinho* in Portuguese.

In the new dynamics of deforestation, forest fires are a substantial part of the *modus operandi* of environmental illegality. The fires play the role of degrading the forest and ensuring the gradual occupation of these areas with productive activities, especially livestock. For these reasons, the implementation of the National Policy on Management, Control and Prevention of Forest Fires should be understood as a central element in a new approach for preventing and combating illegal logging and deforestation, particularly in the Amazon region.

Figure 4 | Summary table on the implementation of the Brazilian Forest Code

Topic	Relevance	Implementation Status	Actions Taken	Competence
Legend	Less relevant More relevant	Satisfactory Intermediate Unsatisfactory	Yes No	Federal Government States
1. Law 12,651/2016 Art. 13 - Economic and ecological zoning				States
2. Law 12,651/2016 Art. 17 - Suspension of activities in deforested legal reserves – post-2008 deforestation				Federal Government; States
3. Law 12,651/2016 Art. 40 - National Policy on Management, Control and Prevention of Forest Fires				Federal Government; States
4. Law 12,651/2016 Art. 42 - Fine Conversion Program				Federal Government
5. Law 12,651/2016 Art. 51 - Embargo of work or activity by deforestation				Federal Government; States
6. Law 12,651/2016 Art. 29 - Rural Environmental Registry - Inscription				Federal Government; States
7. Decree 7.830/2012 Art. 7 - CAR - notification and cancellation				States
8. Lei 12,651/2016 Art. 59 – - PRA – atraso na edição de normas gerais				Federal Government; States
9. Law 12,651/2016 Art. 75 - PRA - transparency mechanisms				States

CONTINUES >

Topic	Relevance	Implementation Status	Actions Taken	Competence
Legend	Less relevant More relevant	Satisfactory Intermediate Unsatisfactory	Yes No	Federal Government States
10. Law 12,651/2016 Art. 18 - PRA – Rules for restoration and economic activities				States
11. Law 12,651/2016 Art. 61-A - Consolidated areas in permanent protection areas – continuity of productive activities				States
12. Law 12,651/2016 Art. 44 - CRA - Environmenta Reserve Quotas				Federal Government
13. Normative Instruction-MMA 002/2014 Art. 12 - Restriction in public access to Sicar data				Federal Government; States
14. Normative Instruction-MMA 002/2014 Art. 12 - Simplified CAR regime for agrarian reform settlements				Federal Government

III. CONCLUSIONS

The Forest Code is a legislation created to protect Brazilian native vegetation in rural settlements, and to promote sustainable development in the national territory. The Code was formulated from the debate between diverse perspectives on development, with the participation of various actors who advocated for very different interests. From the congregation of all these points of view, the legislation has been synthesized, contemplating different social, economic, and environmental issues related to nature conservation and productive activities, without fully satisfying any of the main opposing views.

After the stage of managing conflicting ideas, there was a minimum social pact between rural and environmental sectors that agree upon the idea that the Forest Code must be effectively implemented. Various institutions and actors have different responsibilities in the implementation of the Code, but the leadership role within the process rests with the public authorities. After five years since the approval of the forest legislation, federal and state governments have not yet fulfilled their roles in a consistent manner, especially in view of the urgent need to implement the Code and its instruments. There are inefficiencies, misunderstandings, and significant delays in the process. However, numerous opportunities remain at the disposal of the public sector and society to advance in the implementation of this important legislation.

The Rural Environmental Registry, which is the first measure required by the Code for an effective implementation, has been facing several problems. The extension of the deadline generated legal insecurity, the lack of support for the registries of family farming has hampered the overall progress, and the processes of analysis and validation of registries by the states remains slow and unclear.

Another serious problem with the implementation of the Code is the refusal of the public sector to release data that should be publicly accessible. In spite of the CAR data that was made public on 29 November 2016, the lack of complete transparency in the Sicar database hinders social accountability, usage of CAR information by companies and banks to verify their production chains, and the diagnosis of how to improve the system in the future, apart from being a violation to the legal dispositions under the Law on Access to Public Information (Law No. 12,527/2012). This, once again, facilitates the situation of those owners who do not fully comply with the legal provisions and who bet that the Code will never be implemented. In addition, without due monitoring, it is not possible to identify failures and correct the process, which undermines and delays the full implementation of the code.

Yet, the disclosure of Sicar vector data by the Federal Government in 29 November 2016 is praiseworthy. Hence, a substantial progress was made in regards to the CAR implementation. This progress shall be complete when the identification data of those who have registered their areas also become publicly available.

This circumstance ends up benefiting many rural landowners with environmental liabilities and conveys the feeling that the government is not capable of implementing what it intends to. Thus, actors who aim to profit from deforestation take advantage of legal gaps and bureaucratic incoherence to postpone the fulfillment of their duties regarding environmental protection. This context contributes not only to the partial implementation of the Forest Code, but also obstructs the compliance with international agreements to which Brazil is committed to.

The absence of proper regulation on important instruments is undoubtedly one of the most substantial issues in the implementation of the code. For example, the lack of regulations on Environmental reserve quotas prevents the conservation of Legal Reserve

surpluses and, consequently, blocks an attractive option for regularization of environmental liabilities. A similar impairment arises from the lack of regulation on the economic instruments listed in Article 41, as well as the lack of regulation of the Environmental Regularization Program by many states.

Finally, it is essential for the Federal Government, together with the State authorities, municipalities, civil society, and market institutions, to develop a coordinated and staged implementation plan for the Forest Code, which enables full transparency of data and information related to the process. Only with an objective guideline will it be possible to solve the current legal uncertainty that permeates the rural environment. It is necessary to have clear messages, planning, transparency, economic and market instruments, and social participation so that Brazil can accomplish this enormous challenge of implementing the Forest Code, achieving absolute - legal and illegal - zero deforestation, recovering environmental liabilities, and reaching a climate balance.

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