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The Brazilian Amazon Timber Industry and the International Mechanisms of Timber Trade Control – Combating Illegal Logging and Associated Trade

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THE BRAZILIAN AMAZON TIMBER INDUSTRY AND THE INTERNATIONAL MECHANISMS OF
TIMBER TRADE CONTROL – COMBATING ILLEGAL LOGGING AND ASSOCIATED TRADE

Juliana Coelho Marcussi

A dissertation submitted to the faculty at Elisabeth Haub School of Law at Pace University in
partial fulfillment of the requirements for the degree of Doctor of Juridical Science in
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ABSTRACT

Juliana Coelho Marcussi: The Brazilian Amazon Timber Industry and The International Mechanisms of Timber Trade Control – Combating Illegal Logging and Associated Trade
(Under the direction of Prof. David N. Cassuto)

Illegal logging and its associated trade are one of the main causes of degradation of the Amazonian Rainforest in Brazil. They spring from several deficiencies in the regulatory and monitoring systems. The purpose of this work is to recommend mechanisms to overcome these deficiencies to eliminate illegal logging and its associated trade in the long-term and to enhance the appreciation of the standing forests and the sustainable use of their natural resources.

Chapter 1 provides an overview of the Brazilian tropical timber market's trends, and briefly describes the main stages of timber supply chain to build familiarity with the activities surrounding it. Chapter 2 presents the aspects of the Brazilian federal environmental regulatory system of timber supply chain that are essential for further analysis of illegal undertakings.

Chapter 3 provides information on the factual aspects of illegal logging and associated trade in the Amazon. It analyzes the sector's features and deficiencies and examines how effective the enforcement of the Brazilian environmental law has been to date. Chapter 4 describes the international mechanisms of timber trade control in use worldwide. It focuses on those systems that are the most effective and have beneficial impact – or potential beneficial impact if better promoted – on the Brazilian timber industry.

Finally, chapter 5 recommends a multi-faceted approach to be implemented by the Brazilian Government with the cooperation of the international community, non-profit organizations, and the private sector. It suggests strategies to promote effective international timber trade control mechanisms within the Brazilian Amazon timber industry, and to adapt effective tools provided by those mechanisms to the Brazilian environmental regulatory system. These strategies include instruments from the United States Lacey Act and the European Union Forest Law Enforcement, Governance, and Trade Action Plan, forest certification schemes, and the International Forest Regime. This work also provides recommendations to improve the efficiency of control mechanisms that are currently but poorly implemented in Brazil.

I dedicate this work to my family, Helvio, Maria Lúcia, and Laura, for their unconditional love and support.

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INTRODUCTION

The Amazonian Rainforest consists of the largest stock of native timber in Brazil. It is also one of the largest such stocks in the world and is subject to massive exploitation of its natural resources for commercial purposes. Logging, cattle raising, and agriculture are largely responsible for clearing vast forested areas in the region. Currently 70% of timber from the Amazon is illegally and unsustainably harvested.¹

Illegal deforestation in the Brazilian Amazon is a historical problem. It results in negative environmental impacts not just to flora but also to the entire ecosystem. Among other impacts, it endangers the largest reservoir of fresh water worldwide. It is also the main source of greenhouse gas emissions in the country. Despite the immensity of the Amazonian Rainforest, if illegal deforestation continues, it will result in irreversible damage to the environment and to humanity.

In addition to its environmental impacts, illegal deforestation affects traditional communities and indigenous people located in the Amazon who depend on the standing forest for their survival. These people take most of their subsistence resources from and base their economies on extractive activities. Uncontrolled logging destroys their source of income and undermines their economy. Trade of illegally sourced timber undermines competitiveness and causes massive government financial losses due to tax evasion. Therefore, there is an urgent need to discontinue illegal logging and unsustainable activities in the Amazonian Rainforest

¹ *Floresta Sem Fim [Endless Forest]*, FOLHA DE SÃO PAULO, <http://arte.folha.uol.com.br/tudo-sobre/desmatamento-zero/> (Sept. 18, 2015).

and to strengthen the sustainable use of its natural resources. The benefits of the elimination of illegal logging and associated trade would primarily be environmental preservation and conservation, but would also be felt by the local population and the country's economy.

The Brazilian Government has made efforts to tackle illegal logging and the trade of illegally sourced timber and byproducts in the Amazon region. Public policies on that subject have been implemented since the 1980s. Although some have had positive results, their overall effects were not sufficient to completely eliminate illegal logging. To date, 19% of the Brazilian Amazon has been destroyed,² and current annual deforestation levels are around 5,000Km² per year.³

Nevertheless, the Government reduced deforestation levels by 80% over the last decade.⁴ However, illegal logging levels are still far from zero, and its main causes still need to be tackled. The Government's performance monitoring logging and associated trade activities in the Amazon as well as its related law enforcement activities are deficient on both the administrative and judicial levels. Furthermore, corruption levels in Brazil are known to be high in most public sectors, and the Amazonian forest sector is no exception. Public officials are usually involved in a wide range of corrupt schemes, from falsifying environmental licenses to committing fraud in the official online system that authorizes loggers to cut trees. Moreover, irregular occupation of forested lands in the Amazon is a major contributor to illegal deforestation. The Government owns most lands in the Amazon, which are usually unoccupied. In these uninhabited lands, illegal takers often have violent disputes and engage in illegal and unsustainable clearance of the forest for commercial use.

² *Floresta Sem Fim [Endless Forest]*, FOLHA DE SÃO PAULO, <http://arte.folha.uol.com.br/tudo-sobre/desmatamento-zero/> (Sept. 18, 2015).

³ *Id.*

⁴ *Id.*

Additionally, deficiencies and complexities in Brazilian Law undermine its enforcement. The description of environmental administrative and criminal offenses related to illegal logging and associated trade have unclear and imprecise terms, sometimes lacking definitions essential to apply the law. For instance, the law fails to classify trade of illegal timber as an offense. The absence of a clear definition of illegal conducts creates loopholes in the law. Conducts harmful to the environment that should be considered illegal undertakings are disregarded due to the difficulty in classifying them as offenses. This undermines the protection of the good by not protecting it fully. Most of the time this means unpunished violators or punishment lower than merited by the gravity of the conduct.

The purpose of this work is to recommend mechanisms to overcome such deficiencies and eliminate illegal logging and its associated trade in the Brazilian Amazon. This is an ambitious goal because its target is one of the largest native forests on the planet, a place where most of timber production is illegal. Several factors encourage illegal logging and trade of illegally sourced timber in the region, making the creation of efficient solutions even more complex. Nevertheless, the elimination of illegal logging and illegal timber trade in the Amazon is not impossible, but requires a multi-faceted approach that can be adopted and implemented in the long-term.

Chapter 1 examines the historical development and current tendencies of the tropical timber market, giving special attention to Brazil's role as a major producer. Additionally, an exposition of the national tropical timber market is provided, including recent figures on production, exportation, and national consumption. Afterwards, the main stages of timber supply chain in the Amazon are briefly described. The purpose of this examination is to show where most of Brazil's timber production is consumed and the activities the supply chain

comprises. This will allow a better understanding of how illegal undertakings occur in the forestry sector.

Chapter 2 discusses the legislative history and the basic rules on preservation and sustainable use of forest resources. It comprises the Federal Constitution, the National Forest Code, the National System on Conservation Units, and the Law on Management of Public Forests. The analysis includes the laws prohibiting suppression of certain species of flora, the legal status of indigenous lands and their contribution to environmental preservation. It also examines the procedures of environmental licensing of timber industry activities, the federal and main state control systems of the origin of forest products, and the laws on land tenure regularization in the Amazon region. The chapter also presents the study of the administrative and criminal offenses related to the timber industry and their respective civil, administrative, and criminal penalties. The purpose of the chapter is to provide the legal framework necessary for further analysis of illegal undertakings.

Chapter 3 provides information on the factual aspects of illegal logging and associated trade in the Amazon. It analyzes the sector's features and deficiencies and assesses the effectiveness of the current enforcement regime. The analysis includes the historical background of utilization of natural resources, the main logging practices adopted in the region including the main illegal logging practices, their causes and effects, their impacts on Amazonian communities and the recent deforestation levels. Furthermore, the chapter evaluates the performance of the control systems of the origin of forest products, environmental licensing procedures, monitoring of timber industry activities and law enforcement over them. It also describes the main schemes of irregular occupation of rural areas and evaluates the efforts being made to regularize land tenure in the region.

In order to make the investigation of practical aspects of illegal logging and associated trade more accurate, the present work incorporates in-person interviews with professionals from the forestry sector. Representatives of the private timber sector, federal and local state environmental agencies, non-profit organizations active in the area, and local representatives of the judiciary were interviewed. The authorities were located in the city of Belém, the capital of the State of Pará because that state contains the highest levels of illegal deforestation of the Amazon region.

This work examines how illegal logging and its associated trade have been fought worldwide. Illegal logging is a challenge faced in the global timber market where timber producing countries, consumer countries, and international organizations have been taking measures to overcome it. These measures are known as international mechanisms of timber trade control. Chapter 4 describes the mechanisms that this study has identified as the most effective worldwide and as having a beneficial impact – or potential beneficial impact if better promoted – within the Brazilian timber industry. The chapter also comprises the analysis of provisions and systems contained within such mechanisms, such as the due diligence system under the EU Timber Regulation. The purpose of this analysis is to adapt such provisions to the Brazilian environmental regulatory system to improve its efficiency in tackling illegal logging and associated trade.

Among the international mechanisms are domestic regulations, economic instruments, and international law and organizations. Within domestic regulations and policies, the United States Lacey Act and the European Union Forest Law Enforcement, Governance, and Trade Action Plan are studied. Further, forest certification schemes are identified as the primary and most successful international economic instrument. International law's mechanisms examined

include the United Nations Forum on Forests, the Clean Development Mechanism and the Reduced Emissions from Degradation and Forest Deforestation, conservation of forest carbon stocks (REDD+) from the International Climate Change Regime, and the Amazon Cooperation Treaty Organization. Some of these instruments are already deployed in Brazil but may need to be fostered and improved.

Finally, chapter 5 recommends ways to tackle illegal logging and associated trade in the Amazon. These recommendations are based on the studies presented in the previous chapters and offer a multi-faceted solution to illegal logging and associated trade. First, the study recommends strategies to promote within Brazil's timber industry the international timber trade control mechanisms discussed in chapter 4. It also endorses the adaptation of systems provided by those mechanisms to the Brazilian Law, which have potential to effectively tackle illegal logging and trade of illegal timber in the Amazon. These strategies involve mechanisms provided by the United States Lacey Act and the European Union Forest Law Enforcement, Governance, and Trade Action Plan; forest certification schemes; and mechanisms from the International Forest Regime. Chapter 5 also provides recommendations to improve the efficiency of illegal logging and associated trade control mechanisms that are currently – but poorly – implemented in Brazil.

If the Brazilian Government adopts all mechanisms recommended herein with the cooperation of the international community, non-profit organizations, and the private sector, the elimination of illegal logging and associated trade in the Amazon region can be achieved. Nevertheless, positive results would occur gradually as the proposed strategies are adopted, and the final goal of zero illegal logging would be achieved only in the long-term. Further, the adoption of the suggested strategies would enhance the sustainable use of forest resources. It

would also guarantee the respect for the rule of law, the respect for communities dependent on the forests for their subsistence, the respect for the human race that depends on the forests for its survival, and above all, the respect for nature itself.

CHAPTER 1 – TIMBER INDUSTRY IN BRAZIL

a. Introduction

This chapter provides an introduction to the Brazilian timber industry, gathering descriptions of activities, utilized raw materials, final products and byproducts, market tendencies, and offers an overview of the timber sector. This initial inquiry is essential to understanding a study of logging and associated trade in the Amazon.

This section presents basic definitions related to timber industry, namely ‘forestry sector’ and ‘tropical timber’. It also serves to provide information on the history and development of the timber industry and the forestry sector in Brazil since the colonial period. In addition, this chapter discourses about the current aspects of the Brazilian timber industry. It includes the industry’s role in the country’s economy, its influence in other industry sectors, and data on Brazil’s timber production, consumption, and exports. This chapter also provides a brief explanation of the stages of timber industry, from wood extraction until final consumption, including transportation and storage of timber, manufacturing of wood products, and their transformation into final products.

Finally, it presents information on forests’ dimension in Brazil and worldwide, the importance of their preservation, and deficiencies in the Brazilian timber industry that contribute to unsustainable use of forest resources, illegal logging and associated trade. Information provided in this chapter serves to show the economic trends on national consumption and exportation, and to build familiarity with all stages of timber supply chain.

This will enable a better understanding of how illegal undertakings occur in the forestry sector and how the law should be applied.

b. Definitions of terms useful for the analysis of the Brazilian timber industry and the applicable national laws

The following section provides definitions of essential terms to the analysis of timber industry and the applicable law. The expressions ‘forestry sector’ and ‘tropical timber’ are described to delimit the types of activities and products that are subject to the study of illegal logging and associated trade.

i. Definition of ‘forestry sector’ to be used in this work

When addressing the timber industry, it is important to be familiar with the concept of ‘forestry sector’, because nearly all economic activities included in it depend on the production of goods and services from forests.¹ Hence these activities are directly related to the issue of illegal deforestation, including timber industry. The definition hereby adopted is the one provided by the United Nations Food and Agriculture Organization (FAO).² According to the FAO, the forestry sector involves the commercial activities that are dependent on the production of wood fibre, as industrial roundwood, woodfuel and charcoal,

¹ Forests are defined under Brazilian Law as “dense vegetative associations, dominated by tall trees, that cover a more or less extensive area.” See Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA) Ordinance 486-P/1986, Annex I, Item 18.

² Arvydas Lebedys, *Forest Finance: Trends and Current Status of the Contribution of the Forestry Sector to National Economies*, 3 (United Nations Food and Agriculture Organization, Working Paper FSFM/ACC/07, 2004).

sawn wood and wood based panels, pulp and paper, and wooden furniture. It also includes activities such as the commercial production and processing of non-wood forest products, the subsistence use of forest products, as well as economic activities related to production of forest services.³ Therefore, one can say that the activities of the timber industry are a branch of the forestry sector.

ii. Definition of ‘tropical timber’ to be used in this work

The definition of ‘tropical timber’ is also important to the present research, since it is the main natural resource involved in the activities of timber industry in the Amazon. The International Tropical Timber Agreement established the International Tropical Timber Organization (ITTO) and the Bali Partnership Fund. It defines ‘tropical timber’ as “tropical wood for industrial uses, which grows or is produced in the countries situated between the Tropic of Cancer and the Tropic of Capricorn. The term covers logs, sawn wood, veneer sheets and plywood.”⁴ Since the Amazonian region is entirely located between the Tropics of Cancer and Capricorn, the definition provided by the International Tropical Timber Agreement suits the use of the term ‘tropical timber’ to refer to Amazon timber. Due to the diversity of wood products that are included in the Brazilian timber industry, this paper will focus on the products considered as tropical timber by ITTO, which are also the main products commercialized in Brazil.

³ Arvydas Lebedys, *Forest Finance: Trends and Current Status of the Contribution of the Forestry Sector to National Economies*, 3 (United Nations Food and Agriculture Organization, Working Paper FSFM/ACC/07, 2004).

⁴ International Tropical Timber Agreement, art. 2, Item 1, Feb. 1, 2006, U.N. Doc. TD/TIMBER.3/12.

c. Historical background of timber extraction – Deforestation as a historical and cultural problem

i. Timber extraction during colonial period

Timber exploitation in Brazil began when the territory was colonized by the Portuguese Kingdom in roughly 1500. Before that, the territory had been inhabited by indigenous people of different tribes. The tribes' needs, such as food and shelter, came from the forest's natural resources, and their utilization was exercised only with the intensity necessary for subsistence. There was no exploitation of natural resources for commercial purposes whatsoever.⁵

However, when the colonization of Brazil took place, Portuguese settlers intended to take most of the natural resources available for commercial and exportation purposes. The settlers enslaved most of indigenous people into subhuman conditions and forced them to work for the settlers' interest. Timber exploitation took place among several commercial activities during the colonial period, including agriculture, sugar cane production, and mining. At that time, timber was treated as an inexhaustible resource, a mindset that persisted through the following centuries. It was used for local people's needs, such as housing, firewood, furniture, among other uses, and also traded in the international market.⁶

⁵ See *Os Índios Isolados [The Isolated Indians]*, SURVIVAL (Apr. 1, 2014), <http://www.survivalinternational.org/povos/indios-isolados-brasil>. Until the present days there are only a few tribes that preserve their ancient way of living, with no contact with modern civilization, as for example, the Awá Tribe in the Amazon.

⁶ *História da Ocupação da Amazônia [History of the Amazon's Occupation]*, TOM DA AMAZÔNIA [AMAZON'S TON] (June 11, 2014), <http://www.tomdaamazonia.org.br/biblioteca/files/Cad.Prof-4-Historia.pdf>.

During the colonial period, most timber was destined for Portugal to be used in the expansion of the Portuguese fleet.⁷ In addition, the export of timber to other European countries, such as England, France, Spain and Italy, as well as the taxation of such exports, were important to the Portuguese economy.⁸ However, timber exploitation, regardless of its final destination, was not the only motive for deforestation of native forests during the colonial period. Rather colonization itself was the main catalyst for the clearance of forests.

The Portuguese Government realized that, in order to control a colony as vast as Brazil, it would need to organize the possession of lands by both settlers and the representatives of the Portuguese Crown. This would allow the control over taxation and frontiers. To do so, hereditary captaincies (*capitanias hereditárias*) were created. These were pieces of land that divided the country into fifteen regions from north to south, parallel to the equator, from the Atlantic coast to the interior limits established by the Treaty of Tordesillas.⁹ However, the pieces of lands were still so immense that great parts of them remained unused and unproductive. Thus, the Portuguese Kingdom applied the system of *sesmarias*, by which smaller pieces of land were donated to third parties by the owner of the hereditary captaincies, with the aim to make the lands productive.¹⁰

⁷ JOSÉ ROQUE NUNES MARQUES, DIREITO AMBIENTAL: ANÁLISE DA EXPLORAÇÃO MADEIREIRA NA AMAZÔNIA [ENVIRONMENTAL LAW: ANALYSIS OF TIMBER EXTRACTION IN THE AMAZON] 67 (LTr. ed., 1999).

⁸ For further information on timber exploitation in Brazil during colonial period see MARQUES, *supra* note 7, at 67.

⁹ See *Descobrimentos [Discoveries] VEJA NA HISTÓRIA [VEJA IN HISTORY]* (Mar. 15, 2014), <http://veja.abril.com.br/historia/descobrimento/tratado-de-tordesilhas.shtml>. The Treaty of Tordesillas was signed in June 7th, 1494, by Portugal and Spain. It provided a demarcation line of 370 leagues west of the Cape Verde Islands, granting title to the lands on the west side of the line to Spain and the lands on the east side to Portugal, which would be the coast of Brazil. Both countries were claiming the ownership of the American continent. The Treaty was signed in a period when there was little geographical knowledge about the limits of the American continent.

¹⁰ *Sesmarias*, HISTÓRIA BRASILEIRA [BRAZILIAN HISTORY] (Nov. 8, 2013) <http://www.historiabrasileira.com/brasil-colonia/sesmarias/>.

Facing the fact that both the hereditary captaincies and *sesmarias* were not successful in stimulating the increase of land productivity, the Crown terminated the system of *sesmarias* in 1822. From 1822 onward, the Portuguese Government democratized access to land for those who intended to exploit it. However, this move significantly contributed to the unbridled clearing of forests, as settlers burned large swaths of land to prepare it for cultivation.¹¹ Thus, colonization efforts themselves first initiated deforestation, what makes it a historical problem. Deforestation for colonization purposes lasted until 1850, when Law 601, the first Law of Lands, punished vegetation clearance by fire with criminal, civil and administrative sanctions.¹²

ii. Timber extraction during imperial period

Brazil became an empire in 1822 by the proclamation of its independence from Portugal. Notwithstanding the changes on the country's political structure, during the nineteenth century the agrarian structure of big land properties owned by Portuguese society remained. Crops, including coffee and sugar cane, were one of the reasons for the increase in deforestation in the country, as agricultural business was growing. Fire was commonly used for deforestation. However, the practice resulted in the impoverishment of the soil and forced farmers to clear new areas for cultivation.¹³ Deforestation was also caused by increasing demand for timber for house construction due to population growth.¹⁴

¹¹ *Sesmarias*, HISTÓRIA BRASILEIRA [BRAZILIAN HISTORY] (Nov. 8, 2013) <http://www.historiabrasileira.com/brasil-colonia/sesmarias/>.

¹² *Id.*

¹³ MARQUES, *supra* note 7, at 72.

¹⁴ *Id.*

iii. Environmental impacts of timber exploitation during colonial and imperial periods

Timber exploitation was such during the colonial and imperial periods, and with minimum legislative control,¹⁵ that today there remains only 8.5% of the Atlantic Forest, a forest that once was an immense jungle in the country's coastal region.¹⁶ One species in particular, *pau-brasil* (*Caesalpinia echinata*), for which the country was named, was so exploited for its red dye (*brasileína*) used in Europe to color textiles and paintings, that it is now an endangered species. In fact, there are records that the first law of forest protection in Brazil was the *Pau-Brasil Rules* in 1605, which required royal authorization for logging of *pau-brasil*. However, the law was enacted only after the species was already endangered.¹⁷

iv. Timber extraction during republican period

Following the Empire came the republican period, from 1889 until the present day. Scholars affirm that the most disastrous consequences for the country's forests happened during this period, primarily due to two factors. First, the improvement of technology and timber transportation by railroads contributed to an increase in logging activities. Second,

¹⁵ OSNY DUARTE PEREIRA, DIREITO FLORESTAL BRASILEIRO [BRAZILIAN FORESTRY LAW], 8 (Borsoi ed., 1950).

¹⁶ *Divulgados novos dados do Atlas dos Remanescentes Florestais da Mata Atlântica* [Disclosure of New Data on the Atlas of the Atlantic Forest Remains], INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS [INPE] [NATIONAL INSTITUTE OF SPATIAL RESEARCH] (June 4, 2013), http://www.inpe.br/noticias/noticia.php?Cod_Noticia=3299.

¹⁷ José de Castro Meira, *Origem do Direito Ambiental* [The Origin of the Environmental Law], NEWSLETTER OF LIBRARY JUSTICE OSCAR SARAIVA, Jan./June 2008, at 12.

Property Law provided landowners with absolute ownership rights over the land, which meant the absolute freedom to exploit it and what was on it.¹⁸

v. The growth of reforestation for commercial purposes

Until the 1960s, timber extraction was limited to the exploitation of native forests. Forest plantations for the purposes of timber exploitation were not popular within the forestry sector, although forest plantation had begun in 1903, when Navarro de Andrade brought the first eucalyptus seedlings to Brazil. He intended to produce wood for the construction of railroads.¹⁹ In 1945, the species *pinus* was introduced into the country.²⁰ At that time, planted forests were not common, due to their low profitability, high risks and long-term return. Most forest byproducts used to be imported, and the coal industry used timber mainly from native forests.²¹

From 1965 to 1988, the establishment of a tax incentive policy toward reforestation²² led to a significant increase in the reforested area. The objective was to increase timber production, to offer it in large and continuous scale to the steel and pulp and paper industries,

¹⁸ MARQUES, *supra* note 7, at 75.

¹⁹ *As Florestas Plantadas [The Planted Forests]*, SISTEMA NACIONAL DE INFORMAÇÕES FLORESTAIS [SNIF] [NATIONAL SYSTEM OF FOREST INFORMATION] (Apr. 9, 2014), <http://www.florestal.gov.br/snif/recursos-florestais/as-florestas-plantadas>.

²⁰ *Id.*

²¹ Sebastião Renato Valverde, *Características do Mercado da Madeira de Reflorestamento no Brasil [Features of the Reforestation Timber Market in Brazil]*, CIFLORESTAS, www.ciflorestas.com.br (Mar. 18, 2014).

²² For further information regarding the tax incentive policy to reforestation in the Amazon region, see SUDAM, REGULAMENTO PARA CONCESSÃO DE INCENTIVOS FINANCEIROS E FISCAIS EM FAVOR DE EMPREENDIMENTOS LOCALIZADOS NA AMAZÔNIA LEGAL [REGULATION ON THE CONCESSION OF TAX AND FINANCIAL INCENTIVES IN FAVOR OF BUSINESSES LOCATED IN THE LEGAL AMAZON] (Sudam, 1978); See also BANCO DE CRÉDITO DA AMAZÔNIA, INVESTIMENTOS PRIVILEGIADOS NA AMAZÔNIA [PRIVILEGED INVESTMENTS IN THE AMAZON] (1965).

transforming the country into an exporter of such products.²³ The tax incentive was scaled back after 1988 due to the economic crisis the country was facing. Nevertheless, as resources from native forests became scarcer, the timber industry moved its focus to the south of Brazil, to exploit planted southern paran pine (*araucaria angustifolia*) forests. Throughout the postwar period, paran pine was intensively harvested to meet domestic and export demands. As a result, paran pine dominated wood exports during the 1970s, and the forestry sector began to have a greater emphasis on the Brazilian economy.²⁴

More recently, the development of the forestry sector based on planted forests in Brazil is widespread. The reason is not only conducive market conditions, but also the stimulation provided by the growing pressure of local, national and international civil-society organizations for the adoption of sustainable measures by the sector. Pressure has especially focused on the Amazon Rainforest owing to its global significance for biodiversity conservation and climate change mitigation.

Thus, the history of how deforestation began shows that the uncontrolled exploitation of timber resources is a historical and cultural problem. It also shows that timber market has grown in the last decades, transforming the country into one of the greatest timber producers worldwide, as it will be explored in the following section.

²³ Steven W. Stone, *Timber Extraction in the Brazilian Amazon: Trends in International and Domestic Market* 19 (Cornell Univ. Dep't of Agric., Resource, and Managerial Econ., Working Paper 95-3, 1995).

²⁴ *Id.*

d. Current aspects of the Brazilian timber market

The timber industry currently generates roughly 4% of Brazil's GDP (gross domestic product).²⁵ The industry's growth has been stimulated mainly by local demand for timber, as well as the global markets' demand for forest products, especially pulp and paper, panel products and biofuel feedstock.²⁶ Consequently, Brazil, as well as South America in general, have become a destination for investments by both regional and global pulp and paper producers and North American investors, including timber investment management organizations (TIMOs).²⁷ The timber industry also provides raw material to several other productive sectors, including energy, construction, furniture manufacturing, and others.²⁸ The development of timber industry over the last decades has transformed the country into one of the largest producers of tropical timber in the world.²⁹ The following sections will briefly describe Brazil's role as a global timber producer and exporter, as well as analyze trends of local consumption, to identify the main origin and final destination of Brazilian tropical timber. This will allow the examination of whether mechanisms to tackle illegal logging should focus on national market, exports or both.

²⁵ UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION [FAO], *FAO no Brasil; Memória de Cooperação Técnica [FAO in Brazil - Technical Cooperation Record]* 15.

²⁶ *Id.*

²⁷ *Id.*

²⁸ FAO, *State of the World's Forests 2009* 38 (2009), <http://www.fao.org/docrep/011/i0350e/i0350e00.HTM>.

²⁹ International Tropical Timber Organization [ITTO], *Annual Review and Assessment of the World Timber Situation 2012, Fig. 2.1*, 9 (2012).

i. Main timber species and products at the Brazilian market

In the timber market, wood is classified into two categories: softwood (coniferous) and hardwood (non-coniferous). Most Brazilian native trees are classified as hardwood, such as sucupira (*Bowdichia nitida*), ipê (*Tabebuia spp.*), mahogany (*mogno*, *Swietenia macrophylla*), andiroba (*Carapa guianensis*), cedar (*cedro*, *Cedrella spp.*, *Cedrela fissilis*), jatobá (*Hymenaea spp.*, *Hymenaea courbaril*), pau-brasil (*Caesalpinia echinata*), jacarandá-da-bahia (*Dalbergia nigra*), and others. There is also one hardwood exotic species massively used in Brazilian timber industry, the eucalyptus (*Eucalyptus spp.*).³⁰ The native coniferous trees most used in the national industry are the paraná pine (*pinheiro-do-paraná*, *Araucaria angustifolia*) and the exotic pine (*pinus*).³¹

Aside from the classification of trees themselves, the forest products are named and defined according to the way they are cut, the stage of production the wood is found, and the desired final product. This work will consider the following wood products: roundwood, sawn wood, veneer, and plywood,³² which are the most common to the Brazilian timber industry.³³ The classification of timber products is important for a better understanding of data on timber

³⁰ *Esclarecimento técnico sobre a tradução de termos em inglês para o português [Technical Clarifications on the Translation of English terms into Portuguese]*, REVISTA DA MADEIRA [TIMBER MAGAZINE] (109th ed. Dec. 2007), http://www.remade.com.br/br/revistadamadeira_materia.php?num=1193&subject=E%20Mais&title=Esclarecimento%20t%C3%A9cnico%20sobre%20a%20tradu%C3%A7%C3%A3o%20de%20termos%20em%20ingl%C3%AAs%20para%20o%20portugu%C3%AAs%3Cb%3E%3C/b%3E.

³¹ *Id.*

³² Roundwood (*madeira em tora*) is defined as wood felled or otherwise harvested and removed, comprising all wood obtained from removals, that is to say, the quantities removed from forests and from trees outside the forest, including wood recovered from natural, felling and logging losses. Sawnwood (*madeira serrada*) consists of wood that has been produced from roundwood, either by sawing lengthways or by a profile-chipping process and that exceeds 6mm in thickness. Plywood (*madeira compensada*) is a panel consisting of an assembly of veneer sheets bonded together with the direction of the grain in alternate plies generally at right angles. Veneer sheets (*madeira laminada*) are thin sheets of wood of uniform thickness, not exceeding 6mm, rotary cut, sliced or sawn. See FAOSTAT, *Forest Products Definitions*, <http://faostat.fao.org/site/626/default.aspx#ancor>.

³³ ITTO, *supra* note 29, at 29.

production provided in the following section and, therefore, knowledge of types of products that are illegally sourced and traded in Brazil.

ii. Brazil as one of the main timber-producing countries in the world

The ITTO Review and Assessment of the World Timber Situation provides data on the production and trade in tropical forest products and the status of tropical forests in ITTO member countries (including Brazil). It also provides an overview of statistics on production and trade in all timber products in such countries.³⁴ According to the Review, Brazil has high levels of unofficial industrial roundwood production that is not computed by ITTO Review,³⁵ which might account for the illegally harvested portion of the country's production. Even so, Brazil is ranked as one of the major tropical timber producers worldwide.

Regarding domestic tropical roundwood (logs) production, Brazil had the second largest worldwide production during the years 2010, 2011 and 2012, just behind Indonesia.³⁶ It has been the world's main producer of sawn wood since 1989.³⁷ Brazil was also the fifth largest producer of tropical veneer in 2012, behind Malaysia, China, Indonesia, and Côte d'Ivoire, and the biggest producer in the Latin America/Caribbean region.³⁸ It was further the

³⁴ The base year for analysis is 2012, which is the latest analysis published by ITTO. Data provided by ITTO in its Review is based on information given by the country members in their responses to the 2012 Joint Forestry Sector Questionnaire. *See* ITTO, *supra* note 29, at (v).

³⁵ *Id.* at 9.

³⁶ *Id.* at 9, Fig.2.1.

³⁷ Liniker Fernandes da Silva et al., *Análise do mercado mundial de madeiras tropicais [Analysis of the Tropical Timber Global Market]*, (REVISTA DE POLÍTICA AGRÍCOLA [AGRICULTURAL POLICY MAGAZINE], 49 (July/Aug./Sept. 2012). *See also* ITTO, *supra* note 29, at 15, Fig. 2.5.

³⁸ ITTO, *supra* note 29, at 18.

fifth largest tropical plywood producer in 2012, behind China, Malaysia, Indonesia, and India.³⁹

iii. Brazil as a secondary timber exporter and the main consumer of national production

Brazil is not among the main exporters of tropical timber products,⁴⁰ even being one of the main timber producers in the world, except for sawn wood. Still, Brazil's sawn wood exports (around 500,000 m³ in 2012) are significantly lower than the country's production (around 16,000,000 m³ in 2012). This is evidence that, although Brazil occupies the world's leadership of tropical timber production, its products are mainly for domestic consumption.

Regarding consumption, Indonesia is the world's largest consumer of roundwood, followed by Brazil (30,000,000 m³ consumed in 2012).⁴¹ Sawnwood consumption ranking was led by Brazil with a consumption volume of around 15,000,000 m³ in 2012, expressively higher than most other countries which varied from 2,500,000 m³ to 6,000,000 m³.⁴² As per consumption of tropical veneer and plywood, Brazil was not among the group of main consumers.⁴³ Timber consumption in Brazil has remained stable at a relatively high level since 2009, supported by strong sawn timber demand in the growing construction sector.⁴⁴

Since Brazil is one of the largest producers of tropical timber in the world, but not one of the main exporters, almost all of the tropical timber produced is designated for local

³⁹ ITTO, *supra* note 29, at 21, Fig. 2.13.

⁴⁰ Read roundwood, sawn wood, veneer, and plywood.

⁴¹ ITTO, *supra* note 29, at 11, Fig. 2.2.

⁴² *Id.* at 15, Fig. 2.6.

⁴³ *Id.* at 19, Fig. 2.10; *Id.* at 22, Fig. 2.14.

⁴⁴ *Id.* at 15.

consumption.⁴⁵ This is due to the significant size of the domestic market, which consumed more than 95% of national production in 2011.⁴⁶ 17% of tropical timber harvested in the Brazilian Amazon goes to the State of São Paulo, the major consumer in the country, where most of it is utilized in civil construction.⁴⁷ Hence, strategies to combat illegal logging and associated trade should focus on the largest portion of the Brazilian timber market, namely the national consumption (mostly in the State of São Paulo) of tropical hardwood harvested in the Amazon.

Nevertheless, exports have considerable influence on the timber industry in Brazil. During the period between 1971 and 1992 wood products were between 1.7% and 5.3% of total value of exports in Brazil according to data provided by FAO.⁴⁸ In more recent years, ITTO has indicated that Brazil's exports have plunged, although there were signs of recovery in 2011 when exports rose one-third on the previous year to reach 892,000 m³. In 2011, Brazil's major markets were the United States of America, South Africa, Spain, France and China.⁴⁹ However, in 2011 and 2012, the continued strengthening of the Brazilian currency relative to the U.S. dollar negatively impacted Brazil's exports to the United States of America.⁵⁰

With regard to timber species exported from Brazil, the majority of exported wood represents a small parcel of tropical timber species found in the country. Among the main

⁴⁵ ITTO, *supra* note 29, at 75.

⁴⁶ *Id.* at (v).

⁴⁷ SÉRGIO ADEODATO ET AL., *WOOD: FROM THE FOREST TO THE CONSUMER* 103 (FGV RAE, 1st ed., 2011).

⁴⁸ Stone, *supra* note 23, at 11.

⁴⁹ ITTO, *supra* note 29, at 18.

⁵⁰ *Id.* at 20.

exported species are mahogany, ipê, cedar, pau-marfim, canafístula, and guaiuvira.⁵¹ Nevertheless, timber exports from Brazil should also be subject to illegal logging and associated trade control, even being a small portion of the country's production. The elimination of illegalities in the supply chain of exports raises Brazil's credibility in the international market and stimulates participants of national market to comply with the law to raise their competitiveness.

e. Stages of timber supply chain

The following paragraphs briefly explain the stages of timber supply chain in Brazil. These include the harvest of wood, its transport and storage during and between the production phases, lumber production and its transformation into final products, and lastly the general aspects of final consumption. Special focus is given to supply chain stages of native wood, since the majority of wood production in the Amazonian region derives from exploitation of native forests. This brief explanation is useful for a better understanding of the proposals to be made on how illegal logging and associated trade could be tackled. This is because environmental regulation applicable to these stages will be analyzed along this study, as well as the illegalities that occur along the supply chain.

⁵¹ Humberto Angelo et al., *Madeiras Tropicais: Análise Econômica das Principais Espécies Florestais Exportadas* [*Tropical Timber: Economic Analysis of the Main Exported Forest Species*], 31 ACTA AMAZONICA 231, 238 (2001).

i. Timber extraction from planted forests and native forests

The first stage of production is the extraction of wood, either from native forests or planted forests. When it comes to planted forests for timber extraction, the land is usually owned by loggers, sawmills or other manufacturers of wood products.⁵² Planted forests are usually located in regions where deforestation already took place in the past, such as the region of the Atlantic Forest, mainly in the states of São Paulo, Paraná, Santa Catarina, Rio Grande do Sul, Minas Gerais, and Bahia.⁵³ Currently, planted forests represent nearly 50% of timber market, including 100% of the raw material used in pulp and paper industries.⁵⁴

Logging activities in native forests may be located on either private or public lands, but nearly all wood production is located in private forests.⁵⁵ However, the situation has been changing since 2006, when the Federal Government enacted the Law on Management of Public Forests for Sustainable Production.⁵⁶ The law opens up national forests in the Amazon for logging concessions aimed at encouraging sustainable management and helping to avoid illegal occupation and logging.

Illegal logging is more common in native forests than planted forests. Most illegal logging occurs in the Amazon region, where there is a higher concentration of native trees of high economic value.⁵⁷ Besides, the Amazon is the biggest concentration of native forests in

⁵² *Quais são e onde estão os atores envolvidos na cadeia da madeira tropical amazônica?* [What are and where are the players of the Amazonian tropical timber supply chain?], HOW STUFF WORKS (June 10, 2014), <http://empresasefinancas.hsw.uol.com.br/industria-da-madeira4.htm>.

⁵³ *As Florestas Plantadas*, *supra* note 19.

⁵⁴ *Id.*

⁵⁵ FAO, *supra* note 28, at 36.

⁵⁶ Federal Law 11.284/2006 (Braz.). See more on that matter at chapter 2, section e.

⁵⁷ See more on that matter at chapter 3, section b, i.

the country, and a significant proportion of it consists of public forests that are not utilized by the Government and commonly illegally occupied by loggers.⁵⁸

ii. Transportation and storage of timber

The timber industry involves transportation of wood and wood products during the industrial process. Timber must be brought from forests to sawmills, wood products must be taken from sawmills to industries that will transform them into byproducts, which in turn will be taken to stores and places accessible to consumers. Most of the time transportation is hampered by factors such as bad road conditions, unpaved roads, weather conditions, or difficult access to remote forests.⁵⁹ Thus, despite the fact that road transport is the most common and most utilized freight transport in Brazil, timber transportation is also usually made by waterways, depending on the location and destination.⁶⁰ In more developed states where roads are in better conditions and forests are easily accessible, such as São Paulo, Santa Catarina, and Rio Grande do Sul, timber transportation is mainly executed by road.⁶¹

Aside from the constant presence of transportation in all stages of timber industry, storage of timber is also necessary throughout the production process, from the wood's extraction until it is delivered to the ultimate consumer. Raw timber is usually stored before its transformation into wood products, which are also stored prior to being transformed into byproducts. Both timber and byproducts are stored while they are waiting to be transported to their next destination within the industrial process. Final byproducts are stored in retail

⁵⁸ See more on that matter at Chapter 2, section d, v, 1.

⁵⁹ See HOW STUFF WORKS, *supra* note 52.

⁶⁰ *Id.*

⁶¹ *Id.*

warehouses before they are carried to stores or to ultimate consumers directly. Timber extracted in the Amazon region is usually stored in outdoor places before being directed to sawmills, because it is cut in dense forests where the construction of warehouses is impracticable.

Transport and storage of timber and byproducts are phases of the supply chain susceptible to illegalities. The law requires timber and byproducts to be constantly accompanied by documents emitted by public officials stating the legality of the products' source.⁶² However, fraud is common.⁶³

iii. Manufacture of wood products and transformation into final byproducts

After logging, the extracted timber is either introduced into the marketplace as roundwood, or sent to sawmills or plywood/veneer mills. Sawmills form the primary process of timber industry in the country, where logs are transformed into boards, clapboards, planks, beams and rafters. After the completion of the primary production process in sawmills and plywood/veneer mills, the wood products are sold to lumber yards where the secondary process begins.⁶⁴

The secondary process of wood production consists of the manufacture of final byproducts, made from sawn wood, plywood, or veneer. In the case of sawn wood, or lumber, final products are processed in lumber yards. They pass through drying and finishing processes, and where jointers are used to make laminate flooring, decks, baseboards, miter

⁶² See more on that matter at chapter 2, section i.

⁶³ Interview with Rodolfo Gadelha, Director of the Environmental Monitoring Office of the State of Pará's Environmental Agency [SEMA], in Belém, Brazil (Jan., 2015).

⁶⁴ SÉRGIO ADEODATO ET AL., *supra* note 47, at 37.

joints, panels, doors, parquets, windows, ceilings, and other products for furniture-making and civil construction.⁶⁵ Illegal undertakings are also common at this stage. Falsification of environmental licenses of sawmills and lumber yards, as well as the issuance of fraudulent licenses by corrupt public officers are usual in the Amazon region.⁶⁶

iv. Consumption of timber and byproducts

The final stage of timber industry is consumption. The main uses for timber include civil construction, furniture manufacturing, the pulp and paper industry, the coal industry, and wooden pallet manufacturing, as well as other minor uses. In civil construction, wood products and byproducts are used in residential and commercial buildings, as well as in bridges, overpasses, and other infrastructure. Furniture manufacturing uses lumber and its residues, woodblocks, boards, and plywood sheets. Lastly, a considerable amount of timber, mainly from planted forests, is designated for the production of pallets, which are transport structures widely used in almost every industry sector for the supporting of goods in their carriage and storage.⁶⁷

⁶⁵ SÉRGIO ADEODATO ET AL., *supra* note 47, at 37.

⁶⁶ Interview with Hugo Américo Schaedler, Superintendent of IBAMA in the State of Pará, in Belém, Brazil (Jan., 2015). See more on that matter at chapter 3, section e, iii.

⁶⁷ See HOW STUFF WORKS, *supra* note 52.

f. Dimension of forests in Brazil and worldwide, and the importance of their preservation

The area currently covered by forests worldwide is quite large. According to the FAO, the latest estimate of the world's total forest area is more than 4 billion hectares,⁶⁸ corresponding to about 30% of total land area or an average of 6.0 ha per capita of human population. 61.67% of Brazil's landmass consisted of forest in 2009.⁶⁹ Recent estimates provided by the Brazilian Forest Service (*Serviço Florestal Brasileiro* - SFB), show that in 2012 Brazil possessed 516,586,045 ha of forests -- 509,803,545 ha of native forests (around 98.6%) and 7,005,125 ha of planted forests.⁷⁰ Such areas are not only significant in size, but also in their importance to society and ecosystem balance.

The preservation and sustainable use of forests and their natural resources contributes to the protection of local biodiversity, flora, fauna, water resources, as well as the mitigation of climate change and the increase of air quality, among other environmental components.⁷¹ When it comes to Latin American forests, FAO estimates show that ten countries have more than 1000 different tree species. But at the same time, the region also leads the world in the number of tree species considered endangered or vulnerable to extinction.⁷² Thus, the need for preservation and sustainable use of forest resources in Brazil as a Latin American country is of

⁶⁸ Hectares [hereinafter referred to as *ha*].

⁶⁹ FAO, *Statistical Yearbook 2013 World Food and Agriculture* 204 (2013), [hereinafter *FAO Statistical Yearbook*].

⁷⁰ *Conhecendo sobre Florestas [Knowing about Forests]*, SERVIÇO FLORESTAL BRASILEIRO [SFB] [BRAZILIAN FOREST SERVICE] (Feb. 10, 2014), <http://www.florestal.gov.br/snif/recursos-florestais/conhecendo-sobre-florestas>.

⁷¹ See also *Seattle Audubon Soc. v. Evans*, 771 F. Supp. 1081, 1088 (W.D. Wash. 1991) (“The old growth forest sustains a biological community far richer than those of managed forests or tree farms... The most significant implication from our new knowledge regarding old-growth forest ecology is that logging these forests destroys not just trees, but a complex, distinctive, and unique ecosystem....”).

⁷² FAO, *supra* note 28, at 40.

crucial importance, since a higher concentration of species and vulnerable ecosystems are at stake.

In addition, the conservation of forests and maintenance of standing forests stimulate local job creation. Their sustainable use may generate additional employment on a long-term basis, create real and durable assets, and help revitalize the lives of millions of poor people in rural areas.⁷³ Forests also play a fundamental role as home to indigenous and traditional communities, because local family agricultural production may exploit the forest through forest management. Forests are also closely related to cultural rituals and are the social environment of local communities. However, despite the unquestionable relevance of forests and their natural resources to environmental balance and human survival, their unsustainable use and unbridled degradation continues.

Forested areas worldwide are still victims of massive deforestation, as a consequence of land-cover change into pasture, crops, and cities. However, the FAO has some encouraging news, noting that land-cover changes have shown a continuous slowdown. There has been a steady growth of protected areas, and deforestation has decreased from an estimated 16 million ha per year in the 1990s to about 13 million ha per year over the last decade.⁷⁴ As for land-cover changes in Latin America, experts believe that deforestation in the region is unlikely to decline in the near future. Countries are taking advantage of the expanding global demand for primary products to pursue a path of rapid development. This has resulted in the exploitation of forest products without considering sustainable measures. As a result, the FAO acknowledges the urgent need for mechanisms that effectively refrain deforestation,⁷⁵ such as

⁷³ FAO, *supra* note 28, at 40.

⁷⁴ FAO Statistical Yearbook, *supra* note 69, at 204.

⁷⁵ FAO, *supra* note 28, at 40.

policies and regulations that will preserve and provide reasonable utilization of forests and their resources. This is the goal of the present work regarding the Brazilian Amazon.

g. Deficiencies in the Brazilian timber industry that contribute to unsustainable use of forest resources, illegal logging and associated trade

Shortcomings can be identified in all stages of timber industry that may cause serious consequences for society and environmental degradation. For instance, one may point to flaws in timber extraction methods, such as the scarce adoption of reduced-impact logging due to lack of financial incentives. The sector also lacks interest in the process of certification of forests, due to the procedure's high costs and absence of a price premium.⁷⁶ Other shortcomings are common, such as logging, transport and timber processing without necessary permits.⁷⁷ The corruption of public monitoring agencies and violation of third parties' rights, such as indigenous people, are also deterrents to sustainable logging, as it will be discussed later in the paper.⁷⁸

If such deficiencies are fixed, illegal logging and associated trade can be eliminated from the Amazonian timber sector. This could be achieved in the long-term, with the adoption of a multi-faceted approach and the efforts from the Government, the sector's operators, society, and non-profit organizations.

⁷⁶ See BUSINESS DICTIONARY, <http://www.businessdictionary.com/definition/price-premium.html#ixzz2k4xRBmrw> (Jan. 21, 2014) ("Price Premium: The marketing practice of selling an elite product at a cost level above that of its competition in order to make it appeal to more exclusive and wealthy consumers. A business producing a high end good or service might add a price premium to its advertised cost in order to attract more affluent customers that can afford to pay more for what they think will be a higher quality item.").

⁷⁷ FAO, *supra* note 28, at 36.

⁷⁸ See chapter 3 on that matter.

h. Conclusion

The intention of this first chapter was to provide basic knowledge on factual aspects of timber industry and its behavior in Brazil. It allowed the understanding of players, activities, and market trends involved, which will later assist in identifying flaws in timber regulation and law enforcement. First, definitions of the terms ‘forestry sector’ and ‘tropical timber’ were provided to delimit the types of areas, activities and products that are subject to the study of illegal logging and associated trade.

When analyzing the historical background of timber exploitation, it was noted that utilization of natural resources for commercial purposes began during the colonization period by Portugal in the sixteenth century. Not only was timber extraction for commerce the reason for deforestation, but it was colonizers who first introduced the practice. During the imperial and republican periods, deforestation and unbridled exploitation of forests increased and lasts until today, being a historical and cultural problem.

The extraction of timber from planted forests became common in the forestry sector only in the 1960s as a result of the implementation of a tax incentive policy toward reforestation, which continued to grow over the years. Today, together with the massive exploitation of immense areas of native forests, planted-forest extraction makes Brazil one of the greatest wood producers worldwide.

It was shown that the timber industry in Brazil is 4% of the country’s GDP. The segment is also essential for the provision of resources to several other productive sectors, such as the use of charcoal as energy fuel in plants, the use of timber in the building industry,

and furniture manufacturing. Today, Brazil is one of the largest producers of tropical timber in the world. Nevertheless, the country is considered a secondary timber exporter, meaning that the country's production is mainly for domestic consumption. This is due to the significant size of the domestic market. Although the volume and range of exported species is not so vast, timber exports have a considerable influence on the timber industry in Brazil. The United States of America, South Africa, China, and some European countries such as Spain and France are the main importers of Brazilian tropical timber.

Therefore, the strategies to combat illegal logging and associated trade to be proposed in this work will focus on the largest portion of the Brazilian timber market, which is domestic production. The recommendations will also contribute to the regularization of Brazil's timber sector generally. Mechanisms to tackle illegalities in the supply chain of exports will also be proposed. These measures will raise Brazil's credibility in the international market and inspire participants in the national market to comply with the law and thereby raise their competitiveness.

The present chapter brought a brief explanation of the stages of timber supply chain, namely harvest of wood, its transport and storage during and between the production phases, lumber production, its transformation into final products, and final consumption. The examination of such stages enables a better understanding of the proposals to be made on how illegal logging and associated trade could be tackled. This is because illegalities are common in the phases of harvesting, transport, storage, and manufacturing, and take different forms in each of them.

Brazilian forests occupy more than 60% of the country's territory. Their preservation and sustainable use is essential for the protection of local biodiversity, water resources, as well

as the mitigation of climate change and the increase of air quality, among other environmental components. Forests are also socially, economically, and culturally relevant. However, levels of illegal deforestation are alarming. Thus, there is an urgent need for mechanisms that effectively reduce deforestation.

When it comes to timber industry, shortcomings can be identified in all its stages that lead to the current high levels of illegal logging. For example, scarce adoption of sustainable forest management, activities held without necessary permits, corruption of monitoring environmental agencies, and violation of third parties' rights as indigenous people are some of the sector's deficiencies that should be overcome. They should be fixed to gradually tackle illegal logging and associated trade, especially in the Amazon, until its total elimination. The purpose of this work is to suggest mechanisms that will overcome such deficiencies, with the adoption of a multi-faceted approach and efforts from the Government, the sector's operators, society, and non-profit organizations.

CHAPTER 2 – FEDERAL ENVIRONMENTAL REGULATORY SYSTEM OF TIMBER SUPPLY CHAIN IN BRAZIL – RELEVANT ASPECTS

a. Introduction

After the initial overview in chapter 1 of the Brazilian timber industry's main features, the next step must be an analysis of the relevant environmental laws. This chapter presents the main environmental principles, statutes and regulations applicable to the timber industry. This is necessary to provide the legal framework for further analysis of illegal undertakings, as well as to propose possible adjustments and improvements in the regulatory system.

Initially, the chapter provides the historical evolution of the federal regulatory system on forests and the evolution of Environmental Constitutional Law, to provide some background on how the creation of Forestry Law occurred. Further, the content of the Federal Constitution regarding environmental protection and conservation is examined, as it is the primary law within Brazilian Law.

The chapter will then focus on those laws most relevant to the analysis of commercial activities regarding the timber industry in the Amazon region, namely the Forest Code, the laws on the prohibition of suppression of certain species of flora, the National System of Conservation Units, the Federal Law on Management of Public Forests, and the liability rules for environmental damage and violation of Environmental Law. This includes the classification of administrative infractions and criminal offenses against the native flora, and

the respective applicable sanctions. Furthermore, the special protection delivered by law to Indigenous Lands is included, due to the high concentration of indigenous peoples in the Amazon.

The chapter provides a study of laws on environmental licensing procedures to which activities of timber supply chain are subject, and the federal and state control systems of the origin of native forest products. Since the State of São Paulo is the largest consumer of tropical timber originating from the Amazon, special attention is given to the parallel control and certification systems implemented by the State's Government. Finally, relevant aspects of land tenure regularization in the Legal Amazon¹ are highlighted, as it is one of the most common causes of illegal logging activities in the region.

¹ See *O que é a Amazônia Legal* [What is the Legal Amazon], O ECO (Sept. 10, 2015), <http://www.oeco.org.br/dicionario-ambiental/28783-o-que-e-a-amazonia-legal/>. Legal Amazon is a concept created by the Federal Government to delimit the Amazon region for economic and social development purposes. Boundaries were defined according to sociopolitical necessities, having no relation with the Amazon biome area. The Legal Amazon is formed by the States of Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima, Tocantins, and part of the State of Maranhão, corresponding to an area of 5.2million Km², equivalent to 61% of the Brazilian territory. Its population density is low, equal to 12.4% of national population, although it is home for 55.9% of indigenous population.

b. Historical evolution of the federal regulatory system on forests and how it became a system of high environmental protection values

i. Forestry Law during the colonial, imperial and republican periods – Disregard with forests’ environmental value, and the law’s sole purpose to preserve forest resources for their economic value

Concern about legal protection of forests began during the colonial period when the Portuguese Kingdom, by enacting a law in 1605, created the concept of “extractive reserve” of *pau-brasil* (placing the forests under the Kingdom’s control).² In 1797, the Court issued letters declaring some specific *capitanias hereditárias* and all the vegetation within them as the Royalty’s property. It intended to guarantee potential profits from logging and timber commercialization.³

On July 11, 1799, the Portuguese Queen Maria established the first rules for cutting trees in Brazil, with detailed methods for harvest, processing, and transportation of timber. For the first time, cutting trees without proper license would be punished by charging a fine and deporting offenders from the city.⁴ In 1802, the last rules enacted by the Portuguese Court regarding forest matters in Brazil were passed. The laws regulated the Regiment of Mines and

² RAUL MIGUEL FREITAS DE OLIVEIRA, CONCESSÃO FLORESTAL: EXPLORAÇÃO SUSTENTÁVEL DE FLORESTAS PÚBLICAS POR PARTICULAR [FOREST CONCESSION: SUSTAINABLE UTILIZATION OF PUBLIC FORESTS BY PRIVATE PARTIES] 41 (J. H. Mizuno, 2013).

³ JOSÉ ROQUE NUNES MARQUES, DIREITO AMBIENTAL: ANÁLISE DA EXPLORAÇÃO MADEIREIRA NA AMAZÔNIA [ENVIRONMENTAL LAW: ANALYSIS OF TIMBER EXTRACTION IN THE AMAZON] 93 (LTr. ed., 1999).

⁴ *Id.*

Metal Establishments, which also regulated the tree cutting for mining operations. The norm required a written order to follow the sale of timber by private parties, and also to allow fires.⁵

Later during the imperial period, the Federal Constitution of 1824 -- the first one in Brazil -- did not establish any kind of protection of flora. Nevertheless, in 1827 a federal statute was enacted which named the local “justice of peace” to monitor the use of forest resources. In 1830, the Criminal Code was amended to include illegal logging activities as crimes.⁶ But the silence of federal law with regard to environmental protection and conservation remained, even with the birth of the second Federal Constitution in 1891. The 1891 Constitution lasted until the Revolution in 1930.

The development of Forestry Law during the colonial, imperial and republican periods thus demonstrates that utilization of forest resources was subject to certain limitations and conservation requirements. Nonetheless, the law’s main purpose was to control forest utilization levels due to their economic value, not their environmental value.⁷ Regulations for preservation purposes were first enacted only in the 1900s.

ii. The protection of forests for their environmental value by Forestry Law – the first Federal Forest Code

Until 1930, the interest behind the enactment of forestry laws was mainly economic growth. Environmental protection and preservation was only secondary concern, and sometimes irrelevant entirely. However, many states took the initiative and enacted their own

⁵ MARQUES, *supra* note 3, at 93.

⁶ OLIVEIRA, *supra* note 2, at 44.

⁷ *Id.* at 43.

state forestry law. For example, some states created their own forest services, such as the State of Bahia in 1905 and the State of Paraná in 1907.⁸

In 1934, the first federal law in Brazil to provide rules specifically considering the use of forest resources for their environmental value was enacted.⁹ Federal Decree 23.973/1934 was the first Federal Forest Code. It is considered a law advanced for its time. It included several restrictions on the use of private property during a period when private owners' sovereignty over their estates was guaranteed by the Federal Constitution and Private Law.¹⁰ The Forest Code of 1934 was the first time when forests were acknowledged as goods of public interest. It improved environmental protection in Brazil by requiring the preservation of a quarter of a private property filled with forest, and licenses for exploitation of areas near lakes and rivers. On the other hand, the Code did not specify the location or type of vegetation to be preserved and also permitted the destruction of heterogeneous forests to be replaced by homogeneous forests.¹¹ The law also established areas to be conserved and the exploitation of public forests, the latter being excluded from the subsequent Forest Code. However, such adopted measures were not effective in solving the deforestation problem, as deforestation continued to increase after 1934.¹²

⁸ OLIVEIRA, *supra* note 2, at 44.

⁹ Scholars affirm that the Government's concern in establishing rules for the preservation of flora was stimulated by deforestation resultant from the coffee production and cattle raising at that time. *See* Elaine Oliveira Praes, *Código Florestal Brasileiro: Evolução Histórica e Discussões Atuais sobre o Novo Código Florestal [Brazilian Forest Code: Historical Evolution and Current Discussions about the New Forest Code]* 3 (VI Colóquio Internacional "Educação e Contemporaneidade", 2012).

¹⁰ JURACI PEREZ MAGALHÃES, *EVOLUÇÃO DO DIREITO AMBIENTAL NO BRASIL [EVOLUTION OF ENVIRONMENTAL LAW IN BRAZIL]* (Juarez de Oliveira, 2002).

¹¹ OLIVEIRA, *supra* note 2, at 45.

¹² *Id.* at 45.

iii. The improvement of Forestry Law toward environmental protection and conservation

During the 1960s, environmental movements grew stronger. In 1965, the new Forest Code, Federal Law 4.771/1965, revoked the Forest Code of 1934,¹³ changing the purpose toward regulating the use of natural resources in private properties. It did so by implementing instruments for environmental protection and conservation. It created the Areas of Permanent Preservation (*Áreas de Preservação Permanente – APP*) and the Areas of Legal Reserve (*Áreas de Reserva Legal - ARL*), which will be examined in greater detail further in this work.¹⁴

Federal Law 4.771/1965 had been subject to several revisions due to difficulties in its implementation, as well as disagreements between the rural and environmentalist factions. In 2012, a new version of the Forest Code was enacted, Federal Law 12.651. The scope and main instruments (including APPs and ARLs) of the Forest Code from 1965 were incorporated by the current Forest Code.

Over time, other laws and instruments were created aiming to regulate the use of natural resources and preservation of the environment, resulting in one of the most sophisticated environmental legal systems worldwide. Among such instruments are the National Policy of the Environment,¹⁵ the National System of Conservation Units,¹⁶ the Law

¹³ Praes, *supra* note 9, at 3.

¹⁴ See sections d, i, 1 and 2, on that matter.

¹⁵ Lei No. 6.938, de 31 de Agosto de 1981, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 02.09.1981 (Braz.).

¹⁶ Lei No. 9.985, de 18 de Julho de 2000, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 19.07.2000 (Braz.).

of Environmental Crimes,¹⁷ and Federal Decree 6.514/2008,¹⁸ which regulates administrative environmental infractions.

iv. Illegal deforestation as a historical and cultural problem due to lack of regulation in the past

This introduction to the historical evolution of the federal regulatory system on forests shows that the law did not regulate the use of forest resources for environmental preservation until some decades ago. Uncontrolled deforestation was allowed for hundreds of years. Although the law currently in force establishes requirements for the sustainable utilization of forest resources, its enforcement is deficient because deforestation has become integrated into culture. Thus, mechanisms for the elimination of illegal deforestation must focus on law enforcement. The following sections will examine the law that should be enforced in order to eliminate illegal deforestation associated with the Amazon timber industry.

¹⁷ Lei No. 9.605, de 12 de Fevereiro de 1998, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 13.02.1998 (Braz.).

¹⁸ Decreto No. 6.514, de 22 de Julho de 2008, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 23.07.2008 (Braz.).

c. Constitutional requirements for environmental protection and sustainable use of natural resources

i. Assurance of people's right to an ecologically balanced environment, and the exercise of Government and community's duty to defend and preserve the environment

The Federal Constitution of 1988 chapter VI – Environment (*Do Meio Ambiente*) provides the basis for Environmental Law. Before then, no other constitution had set provisions on environmental quality.¹⁹ Through Article 225, the Constitution entitles all citizens to “an ecologically balanced environment”,²⁰ considering it as an “asset of common use and essential to a healthy quality of life.” It establishes that “both the Government and the community shall have the duty to defend and preserve the environment for present and future generations.”²¹ The right to an ecologically balanced environment is part of the so called *common rights* (or *diffuse rights*), defined as those trans-individual rights of indivisible nature. Common rights are entitled to indeterminate people, connected by circumstances of fate.²²

The classification of an ecologically balanced environment as an asset essential to a healthy life means that protection of life is the final purpose of environmental protection.

¹⁹ MICHAEL BOTHE ET AL., AMAZONIA AND SIBERIA: LEGAL ASPECTS OF THE PRESERVATION OF THE ENVIRONMENT AND DEVELOPMENT IN THE LAST OPEN SPACES, Roberto dos Santos Vieira, *Brazilian Environmental Law Relating to Amazonia* 112 (Graham & Trotman, 1993).

²⁰ By *ecologically balanced environment*, the Federal Constitution refers to the harmony in relations and interactions between the environmental elements. See JOSÉ AFONSO DA SILVA, DIREITO AMBIENTAL CONSTITUCIONAL [CONSTITUTIONAL ENVIRONMENTAL LAW] 92 (Malheiros, 2013).

²¹ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 225 (Braz.) (“All have the right to an ecologically balanced environment, which is an asset of common use and essential to a healthy quality of life, and both the Government and the community shall have the duty to defend and preserve it for present and future generations.”)

²² Federal Law 8.078/1990, art. 81 [Brazilian Code of Consumer Defense and Protection].

Therefore, the rights and duties established in Article 225 become an instrument to fulfill the constitutional fundamental rights of human dignity (Article 1, III), and the right to life (Article 5).²³

The Federal Constitution provides the instruments to be used by the Public Administration to ensure the right to an ecologically balanced environment. It includes:

- the conservation and recovery of species and ecosystems;²⁴
- the establishment of specially protected areas and the prohibition of deforestation and alterations in case it undermines their integrity that justifies their protection;
- the requirement of Environmental Impact Assessment (*Estudo Prévio de Impacto Ambiental*) for the installation of plants and activities potentially harmful to the environment, as well as the control of such activities; and
- the protection of fauna and flora.²⁵

²³ JOSÉ ROQUE NUNES MARQUES, AS IMPLICAÇÕES JURÍDICO-AMBIENTAIS DA EXPLORAÇÃO MADEIREIRA NA AMAZÔNIA [THE LEGAL ENVIRONMENTAL IMPLICATIONS OF TIMBER EXPLOITATION IN THE AMAZON] 162 (1996).

²⁴ SILVA, *supra* note 20, at 56.

²⁵ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 225 (Braz.) (“(...)Paragraph 1. In order to ensure the effectiveness of this right, it is incumbent upon the Government to:
I – preserve and restore the essential ecological processes and provide for the ecological treatment of species and ecosystems;
II – preserve the diversity and integrity of the genetic patrimony of the country and to control entities engaged in research and manipulation of genetic material;
III – define, in all units of the Federation, territorial spaces and their components which are to receive special protection, any alterations and suppressions being allowed only by means of law, and any use which may harm the integrity of the attributes which justify their protection being forbidden;
IV – demand, in the manner prescribed by law, for the installation of works and activities which may potentially cause significant degradation of the environment, a prior environmental impact study, which shall be made public;
V – control the production, sale and use of techniques, methods or substances which represent a risk to life, the quality of life and the environment;
VI – promote environment education in all school levels and public awareness of the need to preserve the environment;
VII – protect fauna and flora, with prohibition, in the manner prescribed by law, of all practices which represent a risk to their ecological function, cause the extinction of species or subject animals to cruelty. (...)”).

In order to eliminate illegal logging, the rights and principles above mentioned should be fully respected by both timber industry operators and the Government. Likewise, the constitutional instruments for environmental preservation should be fully implemented by the Government. However, such constitutional rules are not always followed. The right to an ecologically balanced environment is disrespected when natural resources are unsustainably and illegally exploited.²⁶

ii. Respect for constitutional environmental principles – The sustainable development principle

The content of Article 225 is based on principles set by the Nations Conference on the Human Environment (1972 Stockholm Declaration).²⁷ The principle of sustainable development is one of such principles. It has been broadly discussed and defined by several international instruments besides the Stockholm Declaration, such as the Rio Declaration on Environment and Development. Our Common Future, from the United Nations World Commission on Environment and Development, defines sustainable development as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.²⁸ The balance between the three pillars of sustainable development must always be respected: economic growth, social progress, and ecological balance.²⁹

²⁶ Chapter 3 will examine illegal practices in timber industry.

²⁷ SILVA, *supra* note 20, at 62.

²⁸ World Commission on Environment and Development, OUR COMMON FUTURE 41, <http://www.un-documents.net/our-common-future.pdf>.

²⁹ WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT [WBCSD] (Mar. 10, 2016), <http://www.wbcsd.ch/>.

In Article 225 of the Constitution, the principle of sustainable development is represented by the duty of the Government and community to defend and preserve the environment for present and future generations. Furthermore, Article 225 carries some other main principles of Environmental Law: the right to a healthy and ecologically balanced environment; the polluter-pays principle; the prevention principle; and the precautionary principle. However, there are impediments to the full implementation of such principles within activities of timber supply chain that should be overcome in order to eliminate illegal undertakings. The study of these impediments and recommendations on how to succeed in implementing the sustainable development principle will be further discussed at chapter 5.³⁰

iii. Respect for the common right to an ecologically balanced environment by landowners when exercising the social function of rural property

The use of natural resources has also been included among the citizens' fundamental rights guaranteed by the Federal Constitution in Article 5 through the right of property (Item XXII), by which everyone has the right to make use of their own goods. This right is limited by the determination, through the same article, that property shall observe its social function (Item XXIII). In this sense, compliance with a private property's social function means the satisfaction of common interests above the satisfaction of the owner's private interests.³¹ According to Antônio Herman de Vasconcellos e Benjamin, "function would be the activity having as final purpose the defense of others' interest, featured by its global relevance,

³⁰ Chapter 5, section c, i, discourses on the difficulties in implementing the sustainable development principle within the timber industry, and how such difficulties should be overcome.

³¹ MARQUES, *supra* note 3, at 162.

regime's homogeneity and manifestation through a duty/power".³² The Federal Constitution asserts the social function of a rural property is met when some specific requisites are fulfilled, among which is the adequate use of natural resources and the preservation of the environment.³³

Therefore, the utilization of natural resources within private properties and environmental preservation may coexist under the law. Landowners shall respect the common right to an ecologically balanced environment when exploiting natural resources within private properties, as well as within public properties.³⁴

iv. Respect for Specially Protected Areas and the Amazon Rainforest as a national patrimony

Constitutional Law provides the basis for the creation of the so-called Specially Protected Areas. According to Article 225, Paragraph 1, III, certain territorial spaces and their components shall receive special protection, due to their ecological value and immediate need for protection. This is done to assure that their use does not cause major harm to the environment.³⁵ The Government is responsible to delimitate these areas. Alteration and deforestation of Specially Protected Areas shall be authorized by law.³⁶

³² MARQUES, *supra* note 3, at 162 (quoting Antônio Herman de Vasconcellos e Benjamin, *Função Ambiental, Dano Ambiental – Prevenção, Reparação e Repressão* 28).

³³ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 186 (Braz.) (The social function is met when the rural property complies simultaneously with, according to the criteria and standards prescribed by law, the following requirements:

(...)

II – adequate use of available natural resources and preservation of the environment; (...)).

³⁴ MARQUES, *supra* note 3, at 175.

³⁵ SILVA, *supra* note 20, at 55.

³⁶ OLIVEIRA, *supra* note 2, at 68.

Furthermore, the Constitution considers the Amazon Rainforest a national patrimony,³⁷ meaning that the forest is an environmental asset of interest not only to those in the region where the forest is located, but also to the entire nation. Thus, any intervention in such areas needs the permission of federal, state or regional public agencies.³⁸

The Specially Protected Areas most common in the Amazon are Conservation Units, Areas of Legal Reserve, and Areas of Permanent Preservation, regulated by infra-constitutional law.³⁹ The Government must assure these areas' delimitations and utilization rules are respected. Nevertheless, illegal logging within them is still very usual in the Amazon.⁴⁰

v. The requirement of environmental preservation of indigenous and unoccupied lands

The Constitution also gives special treatment to environmental resources located within lands traditionally occupied by indigenous people, which shall be preserved for their well being and physical and cultural reproduction.⁴¹ It furthermore declares public unoccupied

³⁷ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 225 (Braz.) ((...))
“Paragraph 4. The Brazilian Amazonian Forest, the Atlantic Forest, the Serra do Mar, the Pantanal Mato-Grossense and the coastal zone are part of the national patrimony, and they shall be used, as provided by law, under conditions which ensure the preservation of the environment, therein included the use of mineral resources. (...)”).

³⁸ Susana Camargo Vieira, *Cooperação internacional para o desenvolvimento sustentável da Amazônia brasileira: o papel do Direito* [International Cooperation for the sustainable development of the Brazilian Amazon: the role of Law] 168 (1999) (unpublished dissertation, on file with USP).

³⁹ Section d, i and iii, of this chapter examines the regulation of Specially Protected Areas.

⁴⁰ See chapter 3, section d, on that matter.

⁴¹ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 231 (Braz.) (“Indians shall have their social organization, customs, languages, creeds and traditions recognized, as well as their original rights to the lands they traditionally occupy, it being incumbent upon the union to demarcate them, protect and ensure respect for all of their property.

lands (*terras devolutas*) as essential to the preservation of the environment as property of the Union.⁴² However, guaranteeing protection of these areas in the Amazon is problematic due to difficulties in accessing and monitoring them. This inaccessibility makes them more vulnerable to invasion and illegal activities, including logging.⁴³

vi. Exercise of Government's duty to protect the environment

With regard to the Public Government's duty to preserve the environment, the Federal Constitution provides detailed rules of jurisdiction for environmental matters.⁴⁴ Article 23, VI and VII, asserts the protection of the environment as a "material common jurisdiction"⁴⁵ of Federal, States, Municipal Governments, and the Federal District.⁴⁶ This means all levels of government have the duty and power to "protect the environment and to fight pollution in any of its forms" and "to preserve the forests, fauna, and flora".⁴⁷

Paragraph 1. Lands traditionally occupied by indians are those on which they live on a permanent basis, those used for their productive activities, those indispensable to the preservation of the environmental resources necessary for their well-being and for their physical and cultural reproduction, according to their uses, customs and traditions. (...)

⁴² CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 20 (Braz.) ("The following are property of the Union: (...)

II – the unoccupied lands essential to the defense of the boundaries, the fortifications and military constructions, the federal routes of communication and the preservation of the environment, as defined by law; (...)

⁴³ See more on illegal logging in Indigenous Lands and unoccupied lands at chapter 3, sections d, e, f, and j.

⁴⁴ SILVA, *supra* note 20, at 75.

⁴⁵ Material common jurisdiction consists of the Government's power to provide services related to the matters listed in Article 23 of the Federal Constitution. All members of Public Administration equally share such power. See SILVA, *supra* note 20, at 80.

⁴⁶ The Federal District is one of the 27 Brazilian federation units, in which Brasília, the country's capital, is located.

⁴⁷ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 23 (Braz.) ("The Union, the States, the Federal District and the municipalities, in common, have the power:

(...)

VI – to protect the environment and to fight pollution in any of its forms;

VII – to preserve the forests, fauna and flora;

(...)

With respect to jurisdiction to legislate on environmental matters, including forest resources, the Constitution grants such power to Federal and State Governments, as well as the Federal District.⁴⁸ It includes a *concurrent legislative jurisdiction*, where the Federal Government establishes general rules,⁴⁹ and States and Federal District are entitled to supplement and complement such rules and enact more specific laws. State and Federal District rules shall always be in compliance with the content of the federal law, specially the constitutional provisions and the limits imposed by them.⁵⁰ The jurisdiction shall respect the rules of independence and harmony between the powers of the Union, as established in Article 2 of the Constitution.⁵¹ The Constitution grants municipalities the *supplementary legislative jurisdiction*, through which they may legislate on matters of local interest, supplementing

⁴⁸ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 24 (Braz.) (“The Union, the States and the Federal District have the power to legislate concurrently on:

(...)

VI – forests, hunting, fishing, fauna, preservation of nature, defense of the soil and natural resources, protection of the environment and control of pollution;

VII – protection of the historic, cultural and artistic heritage, as well as of assets of touristic interest and landscapes of outstanding beauty;

VIII – liability for damages to the environment, to consumers, to assets and rights of artistic, aesthetic, historical, and touristic value, as well as to remarkable landscapes;

(...)

Paragraph 1. Within the scope of concurrent legislation, the competence of the union shall be limited to the establishment of general rules.

Paragraph 2. The competence of the union to legislate upon general rules does not exclude the supplementary competence of the states.

Paragraph 3. If there is no federal law on general rules, the states shall exercise full legislative competence to provide for their peculiarities.

Paragraph 4. The supervenience of a federal law over general rules suspends the effectiveness of a state law to the extent that the two are contrary.”).

⁴⁹ General rules must be restricted to principles and guidelines to be followed by state and municipal legislators. They must not discuss details or decide on all points regarding the legislated matter; be uniform rules applicable to all situations; refer to fundamental matters; respect states and municipalities autonomy; and must not be rules of direct applicability. *See* MARQUES, *supra* note 3, at 203 (quoting Diogo de Figueiredo Moreira Neto, *COMPETÊNCIA CONCORRENTE LIMITADA. O PROBLEMA DE CONCEITUAÇÃO DE NORMAS GERAIS [LIMITED CONCURRENT JURISDICTION. THE PROBLEM IN DEFINING THE GENERAL RULES]* 131, n. 100, *Revista de Informação Legislativa*).

⁵⁰ José Roque Nunes Marques classifies such jurisdiction as limited jurisdiction. *See* MARQUES, *supra* note 3, at 197.

⁵¹ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 2 (Braz.) (“The Legislative, the Executive and the Judicial, independent and harmonious among themselves, are the powers of the Union.”).

federal and state norms.⁵² All states, Federal District, and municipalities are subordinated to federal law, while state laws are mandatory within their respective states and municipalities.

Federal, state, and municipal authorities should exercise their jurisdiction with their best commitment and intentions. If most municipalities and states made the use of such power to promote sustainable use of natural resources as a priority, more positive results to environmental conservation could have been seen.⁵³ However, Brazil's territory, specially the Amazonian region, presents an opposite reality. Most states and municipalities do not have the infrastructure or the proper capacity to effectively implement the constitutional principles and the applicable environmental norms.⁵⁴

vii. The importance of acknowledging constitutional requirements of environmental protection and sustainable use of natural resources for the creation of mechanisms to tackle illegal logging and associated trade in the Amazon

The Federal Constitution establishes the rights and duties of citizens and the Public Power with respect to the protection and sustainable use of the environment. They serve as the principles to be followed by infra-constitutional legislation and any other instruments created to combat illegal logging and its associated trade. Hence, the acknowledgement of the

⁵² CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 30 (Braz.) (“The municipalities have the power to:

I – legislate upon matters of local interest;

II – supplement federal and state legislations where pertinent;

(...)

VIII – promote, wherever pertinent, adequate territorial ordaining, by means of planning and control of use, apportionment and occupation of the urban soil; (...”).

⁵³ BOTHE ET AL., *supra* note 19, at 118.

⁵⁴ See more on that matter at chapter 3, section h.

Constitution's content is fundamental in the creation of mechanisms to promote the sustainable use of forest resources and to tackle illegal logging. The next step is the analysis of the federal environmental regulatory system currently in force, so as to permit the identification of its most effective instruments, deficiencies, and opportunities for improvement.

d. Requirements of environmental protection and sustainable utilization of natural resources under the federal environmental regulatory system on forests applicable to timber industry

i. The legal requirements and instruments of the Forest Code applicable to the Amazon's timber industry

Federal Law 12.651, of May 25, 2012 (the Forest Code) establishes basic forestry rules and has the nature of general law. It regulates the establishment and maintenance of Specially Protected Areas, activities of forest utilization, control of forest resources' origin and supply, and prevention and control of forest fires.⁵⁵ It is the principal environmental law applicable to activities related to timber supply chain. The next paragraphs will present the main legal requirements and instruments established by the Code in that regard.

1. Prohibition of logging at Areas of Permanent Preservation

⁵⁵ Forest Code, art. 1 (Braz.).

The Forest Code establishes the so-called Areas of Permanent Preservation (*Áreas de Preservação Permanente* - APPs). They consist in protected areas, forested or not, rural or urban, with the environmental function to preserve water resources, landscape, geological stability, and biodiversity. APPs facilitate the genetic flow of fauna and flora, protect the soil, and ensure human well-being.⁵⁶ They are defined according to their location as provided by the Forest Code, regardless whether in private or public estates. The following areas shall be declared as APPs:

- areas next to natural water courses;
- areas around natural lakes and ponds, artificial reservoirs, springs and perennial waterholes;
- slopes, or part of them, with a gradient greater than 45°;
- sandbanks, mangroves, and borders of plateaus;
- areas on the top of hills, heights, mountains and ridges;
- areas higher than 1800 meters; and
- areas near swamps (*veredas*).⁵⁷

APPs originate from the natural condition of a specific area.⁵⁸ As explained by José Afonso da Silva, to identify an area as an APP does not mean a restriction imposed by the Public Government. Instead, APPs are classified as such according to their natural characteristics.⁵⁹ Moreover, APPs possess the effect *erga omnes*,⁶⁰ that is, the entire society shall recognize their existence.⁶¹

⁵⁶ Forest Code, art. 3 §II (Braz.); *Id.* arts. 4-9.

⁵⁷ Forest Code, art. 4 (Braz.). APPs may also be created by an act of President of Brazil, governors, and mayors if they are considered to be of social interest. See *Id.* art. 6).

⁵⁸ SILVA, *supra* note 20, at 187.

⁵⁹ *Id.* at 188.

As a rule, vegetation within APPs shall not be suppressed and it is the landowner or possessor's responsibilities to make sure they are preserved. In case of APPs deforestation, the landowner or possessor shall provide for its reforestation.⁶² Suppression of vegetation in APPs is allowed in cases of public utility, social interest, and low environmental impact, subject to previous authorization by the competent state environmental agency.⁶³ This might include sustainable agroforestry management held in small family rural properties, as long as such activities do not undermine the area's vegetation and environmental function.⁶⁴

2. Logging at Areas of Legal Reserve subject to sustainable forest management previously authorized by the competent authority

The Forest Code establishes a restriction on a landowner's property rights by requiring the maintenance of a determined area filled with native vegetation, the so-called Area of Legal Reserve (*Área de Reserva Legal - ARL*). This is without prejudice to the maintenance of APPs.⁶⁵ ARLs are intended to assure the sustainable economic use of natural resources within the rural property. They assist conservation and rehabilitation of ecological processes,

⁶⁰ *Erga omnes* rights or obligations are owed toward all.

⁶¹ The current Forest Code, in Article 4, anticipates the existence of APPs in urban areas.

⁶² This is a *propter rem* obligation. It is determined by the ownership or possession over a thing.

⁶³ Forest Code, art. 8 (Braz.). The activities classified as public utility, social interests, and low environmental impact are listed in Article 3, sections VIII, IX, and X of the Forest Code, and regulated by CONAMA Resolution 369/2006.

⁶⁴ Although APPs were originally created for preservation purposes, the Forest Code authorizes the continuance of agroforestry activities, cattle raising, ecotourism and tourism in APPs in cases where they are considered as rural consolidated areas (Forest Code, Article 61-A). Rural consolidated areas are areas where human occupation preexists July 22, 2008, including edifications, improvements, or agroforestry activities (Forest Code, Article 3, IV). Reforestation of such areas is not required, but activities held within them shall be subject to a Program of Environmental Regularization (*Programa de Regularização Ambiental - PRA*) (Forest Code, art. 61-A ¶ 11).

⁶⁵ SILVA, *supra* note 20, at 198.

promote biodiversity conservation, and serve as shelter for wild fauna and native flora.⁶⁶ They are delimited in accordance with a minimum percentage of the property's total area, based on location and vegetation type. According to Article 12 of the Forest Code, the percentages are first based on the division of regions into the Legal Amazon and the rest of Brazil's territory.⁶⁷ When it comes to rural properties located within the Legal Amazon, the percentages of ARL are: (i) 80% for properties located in forest areas; (ii) 30% for properties located in the *cerrado* area (savannah); and (iii) 20% for properties located in the area of *campos gerais* (grasslands).⁶⁸

ARLs may be utilized under sustainable management only.⁶⁹ Sustainable forest management is defined within the law⁷⁰ as the management of forests aiming economic, social, and environmental benefits, respecting the mechanisms for ecosystem maintenance.⁷¹ It involves the use of multiple wood species, multiple non-timber products and byproducts, as

⁶⁶ Forest Code, arts. 3 § III.

⁶⁷ ARL is not required in case the area is used for the implementation of infrastructure useful for public services. For example, in case of water supply and sewage treatment, or for energy generation and supply from hydropower, railroads, and highways. *Id.* art. 12 §§ 6-8.

⁶⁸ The Forest Code provides two exceptional cases where the requirement of an ARL equivalent to 80% of the property's forested area may be reduced to 50%. Such cases are: (i) when more than 50% of the municipality's area is declared as Conservation Units of public ownership and by Indigenous Lands duly acknowledged; or (ii) when more than 65% of the state's area is declared as Conservation Units of public ownership and occupied by Indigenous Lands duly acknowledged. In the last case, the State shall have an economic-ecological zoning plan duly approved. Forest Code, art. 12 §§ 4, 5.

⁶⁹ According to the Forest Code, Article 3 § VII, sustainable management activities consist in the management of natural vegetation for the achievement of economic, social and environmental benefits, respecting the mechanisms of ecosystem maintenance.

⁷⁰ Federal Law 11.284/2006, art. 3 § VI.

⁷¹ The concept of sustainable forest management originated from private transnational regulation. In Strasbourg in 1990, representatives of around 40 European countries held the Ministerial Conference on the Protection of Forests in Europe, where it was discussed the need for greater protection and conservation of forest areas. A second meeting was held in 1993, the Helsinki Process, in which it was agreed upon the first definition of sustainable forest management. The definition is translated by the Resolution H1: General Guidelines for the Sustainable Management of Forests in Europe, paragraph D: "The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems." See ROWENA MAGUIRE, GLOBAL FOREST GOVERNANCE: LEGAL CONCEPTS AND POLICY TRENDS 73 (Edward Elgar ed., 2013).

well as the use of other forest goods and services.⁷² A Sustainable Forest Management Plan shall be previously approved by the competent public body.⁷³ In case of forest exploitation for internal consumption without commercial purpose, techniques of selective exploitation shall be adopted. For commercial forest exploitation, sustainable management techniques shall be adopted.⁷⁴ However, no activity shall be held within ARLs that have been illegally deforested after July 22, 2008.⁷⁵

APPs and ARLs are both subject to a high level of protection. For such reason, these are areas with a high concentration of the most valuable trees found in the Amazon region and one of the main targets of illegal loggers. Therefore, the enforcement of rules and monitoring of these areas are fundamental for tackling illegal logging. In that regard, the Forest Code has brought a new instrument, known as the Rural Environmental Register, under which the maintenance of APPs and ARLs are verified by the public authorities.

3. Rural Environmental Register as a deforestation control mechanism

Areas of Permanent Preservation and Areas of Legal Reserve, as well as every other information regarding a rural property, are registered by the landowner at the Rural Environmental Register (*Cadastro Ambiental Rural – CAR*). The CAR consists of an

⁷² Forest goods are timber and non-timber products originated from activities of sustainable forest management (Federal Law 11.284/2006, art. 3 § III (Braz)). Forest services are tourism and other acts or benefits from forest management and conservation, not classified as forest products (*Id.* art. 3 § IV).

⁷³ Forest Code, art. 17 (Braz.).

⁷⁴ Forest Code, arts. 20, 23 (Braz.).

⁷⁵ Forest Code, art. 17 ¶ 3 (Braz.). The collection of non-timber forest products in ARLs, such as fruits, leaves, and seeds is also allowed, as long as ripening periods and collection volumes are observed and sustainable techniques are practiced, *See also Id.* art 21.

electronic public registry that federal, state, and municipal authorities use to monitor and control deforestation.⁷⁶ The landowner inserts information regarding the rural property in the online system, including the land's area, and portions of APP and ARL. This serves to inform the competent public authorities about the property's environmental conditions. The Government then has the responsibility to check the veracity of the information provided. Registration of rural property at CAR is an obligation of every landowner, and is a requisite for licensing or registering any economic activity intended for the property. It is also a requirement for farm loans and any other transactions regarding the land.

4. Utilization of forests for commercial purposes subject to environmental licensing and sustainable forest management

Forest utilization for commercial purposes in private or public native forests is subject to the issuance of a proper license called a Forest Environmental License (*Licença Ambiental Florestal - LAF*). A LAF is required for utilization of areas inside or outside Areas of Legal Reserve. Licensing is subject to the approval of a Sustainable Forest Management Plan (*Plano de Manejo Florestal Sustentável - PMFS*) that provides utilization, reforestation and management techniques compatible with the ecosystems of the area.⁷⁷

Sustainable Forest Management Plans are not required for suppression of vegetation for the alternative use of the land, and exploitation of planted forests located outside Areas of

⁷⁶ Forest Code, art. 29 (Braz.).

⁷⁷ Forest Code, art. 31 (Braz.).

Permanent Preservation and Areas of Legal Reserve.⁷⁸ It is not necessary for forest utilization with no commercial purposes within small, familiar, or traditional communities' rural properties.⁷⁹ In the case of sustainable forest management for commercial timber extraction within ARLs in small and familiar rural properties, a simplified authorization by the competent environmental body is required.⁸⁰

5. Suppression of native vegetation for alternative use of the land permitted only with reforestation or compensation of the suppressed vegetation

Aside from the possibility of using native forests, the legal system allows the suppression of native vegetation for the alternative use of the land. Native vegetation may be replaced by activities such as agriculture, cattle raising, industries, power generation, mining, transport, urban settlement, and other forms of human occupation.⁸¹ Areas of Permanent Preservation and Areas of Legal Reserve shall not be suppressed for alternative use.⁸² The law requires the reforestation of the suppressed vegetation, or its compensation in another location, so long as it occurs within the same state. The species must also preferably be native to the same biome where deforestation took place. Other requirements to proceed are the

⁷⁸ Regulation of suppression of vegetation for the alternative use of the land will be further discussed in section d, i, 5.

⁷⁹ Forest Code, art. 32 (Braz.).

⁸⁰ Forest Code, art. 57 (Braz.).

⁸¹ Forest Code, arts. 26, 33 ¶ 4 (Braz.).

⁸² Forest Code, art. 3 § VI (Braz.).

registration of the land at CAR and a previous authorization from the federal, state, or municipal competent body.⁸³

The suppression of vegetation within APPs and ARLs is allowed in small properties and familiar rural properties, with maximum area of 4 fiscal modules.⁸⁴ These are lands utilized by familiar workers, including the rural settlements by families demanding agrarian reform.⁸⁵ The property shall be registered before CAR, and the suppression activities shall be informed to the competent environmental agency. The suppression is only permitted for the exercise of the so called eventual and low environmental impact activities. These include opening paths and bridges to give access to the property, ecotourism, building fences, and executing community and familiar sustainable forest management.⁸⁶

In remote areas such as the Amazon Rainforest, the clear cutting of native forests for the alternative use of the land without compliance with the legal requirements is common. As it will be discussed in chapter 3, it is estimated that most of tropical timber harvested in the region is illegally sourced. They are commonly cut without proper authorization and compensation measures, and the area is used for agriculture or pasture afterwards.⁸⁷

⁸³ Forest Code, art. 26 (Braz.). When it comes to cutting planted native species in such areas, there is no need for previous authorization, as long as the requirements of plantation or reforestation mentioned above were fulfilled. *Id.* art. 35 ¶ 3.

⁸⁴ Federal Law 11.326/2006, art. 3 § I (Braz.). The area equivalent to one fiscal module is set by Special Instruction/INCRA/20/1980, based on the municipality where the property is located. For example, 1 fiscal module in Belém, State of Pará, is equivalent to 5 ha.

⁸⁵ Forest Code, art. 3 § V.

⁸⁶ Forest Code, arts. 52, 3 § X.

⁸⁷ See chapter 3, section d, iv, for information on illegal logging practices.

6. Obstacles to full compliance with the provisions of the Forest Code applicable to timber industry

Through the provisions of the Forest Code, Forestry Law is based in the principle that native forests must be kept as they were created by nature, allowing for alternative use only in some specific cases well-defined in the law.⁸⁸ The law requires the commercial utilization of native forests to be held through sustainable management only. As discussed in chapter 5, sustainable forest management is the most profitable and sustainable method of timber extraction in native forests. Its promotion is one of the solutions to be proposed to tackle illegal logging.⁸⁹

Nevertheless, there are obstacles to the full enforcement of the provisions of the Forest Code presented herein. Such obstacles are responsible for the high levels of illegally sourced timber in the Amazon. Irregular occupation and uncontrolled deforestation are historical problems, and non-compliance with the law is a cultural tendency in the forestry sector. Moreover, deficient public monitoring of activities related to the timber industry is an encouragement to non-compliance. High levels of impunity and recidivism at the administrative and judicial systems have the same impact. Additionally, the competitive disadvantage of legally sourced timber in comparison with illegal timber is another encouragement to illegal logging. These impediments to full enforcement of the Forest Code and other laws applicable to the Amazon timber industry will be described in chapter 3. Recommendations on how to overcome such obstacles will be presented in chapter 5.

⁸⁸ PAULO DE BESSA ANTUNES, COMENTÁRIOS AO NOVO CÓDIGO FLORESTAL [COMMENTS ON THE NEW FOREST CODE] 219 (Atlas, 2014).

⁸⁹ See chapter 5, section c, iv, 2.

ii. Prohibited suppression of endangered species and species necessary to traditional populations' subsistence in native forests

The Forest Code determines the power of federal, state, and municipal Public Administrations to prohibit or limit the suppression of species of flora that are rare, endemic, endangered, or necessary to traditional populations' subsistence. They may also protect a specific tree from being cut due to its location, rareness, beauty, or condition as a provider of seeds.⁹⁰

Some laws regulate the utilization of some of the most popular and endangered species within timber market. For instance, Federal Decree 5.975/2006 prohibits exploitation of the species castanheira ("*Betholeria excelsa*") and species seringueira ("*Hevea spp*") in natural, primitive and regenerated forests.⁹¹ Moreover, except in the case of sustainable forest management, Federal Decree 6.472/2008 permanently prohibits the suppression of trees of mahogany ("*Swietenia Macrophylla King*"). Suppression of mahogany is prohibited in native, primitive, and regenerated forests, including in areas where suppression of vegetation is authorized.

Ordinance 83-N/1991, issued by the Brazilian Institute of the Environment and Renewable Natural Resources (*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis* - IBAMA), prohibits the suppression and exploitation of the following species:

⁹⁰ Forest Code, art. 70 (Braz.).

⁹¹ Federal Decree 5.975/2006, art. 29 (Braz.).

aroeira do sertão (“*Astronium urundeuva*”), aroeira das baraúnas (“*Melanoxylon brauna*” and “*Schinopsis brasiliensis*”), and aroeira do gonçalo alves (“*Astronium fraxinifolium*”). Their suppression is prohibited in the so-called primary forests, which present dense vegetation. Extraction is only allowed in damaged secondary forests or in the *cerrado* (savannah), if subject to a Sustainable Forest Management Plan duly approved by IBAMA.

In December 2014, the Ministry of the Environment provided a more comprehensive instrument of protection for certain species of flora by issuing Ordinance 443/2014, which contains the Official National List of Endangered Species of Flora. It lists more than 2,000 species, dividing them as *extinct from nature*, *critically in danger*, *in danger*, and *vulnerable*. All categories are fully protected, prohibiting the collection, cutting, transportation, storage, management, processing, and/or commercialization of timber products derived from these species.⁹² With regard to vulnerable species, sustainable management is allowed, as long as it is authorized by the competent environmental agency.⁹³

The permanent prohibition against the exploitation of endangered species is a useful command and control instrument to tackle illegal logging. The listed species are endangered because of their uncontrolled extraction. This is due to their high economic value. Currently, these species are the main objects of illegal trade, such as castanheira, because their extraction from native forests is more profitable than their plantation or the trade of non-endangered species.

⁹² Ministry of the Environment Ordinance 443/2014, art. 2 (Braz.).

⁹³ *Id.* art. 3. To complement Ordinance 443/2014, the Ministry of the Environment issued the Normative Instruction 1 of February 12, 2015. It sets the requirements for the exploitation of vulnerable species listed in the Official National List of Endangered Species of Flora under a Sustainable Forest Management Plan, specifically within the Amazonian region. Such requirements are not applicable to species that are subject to other specific or international norms.

Therefore, the full enforcement of laws that prohibit the suppression of endangered species depends on efficient public monitoring and discouraging the sector to trade such species. Sustainable forest management should be encouraged to allow the utilization of vulnerable species, as well as the plantation of endangered ones. Public Administration could do it through the elimination of illegally sourced timber from the market, making legally sourced products more competitive. Chapter 5 provides recommendations on how the Government could achieve this goal.⁹⁴

iii. The National System of Conservation Units as an instrument for environmental preservation and sustainable use of natural resources

The Federal Constitution, Article 225, Paragraph 1, III, determines the Public Administration's duty to create Specially Protected Areas, among which are the Conservation Units. In order to fulfill its constitutional duty, the Federal Government created the National System of Conservation Units (*Sistema Nacional de Unidades de Conservação - SNUC*), regulated by Federal Law 9.985/2000 and Federal Decree 4.340/2002.

SNUC is classified as a system that comprises an organized pool of several categories of Conservation Units.⁹⁵ A Conservation Unit consists of territorial space, its environmental resources, and relevant natural features. It is created by the Public Administration and subject to a special management plan, with predetermined limits and conservational purposes to which adequate protection guarantees are applied.⁹⁶

⁹⁴ See chapter 5, sections b and c.

⁹⁵ OLIVEIRA, *supra* note 2, at 112.

⁹⁶ Federal Law 9.985/2000, art. 2 § I (Braz.).

Conservation Units may be created in public or private lands, or even in both at the same time. They are classified into two groups, according to the required level of environmental protection: Units of Full Protection and Units of Sustainable Use. Conservation Units of Full Protection are mainly aimed to preserve nature, only admitted the indirect use⁹⁷ of their natural resources except in some specific cases established by law.⁹⁸ Conservation Units of Sustainable Use are intended to harmonize the conservation of nature and the sustainable use⁹⁹ of part of their natural resources.¹⁰⁰ Within these groups, Federal Law 9.985/2000 stipulates the categories of federal Conservation Units on which the state and municipal classifications can be based. Federal Conservation Units of Full Protection are classified as (i) Ecological Stations; (ii) Biological Reserves; (iii) National Parks; (iv) Natural Monuments; and (v) Wilderness Refugees.¹⁰¹ As for Federal Conservation Units of Sustainable Use, they are divided into (i) Areas of Environmental Protection; (ii) Areas of Relevant Ecological Interest; (iii) National Forests; (iv) Extractive Reserves; (v) Reserves of Sustainable Development; (vi) Reserves of Fauna; (vii) and Private Reserves of National Heritage.¹⁰²

⁹⁷ Federal Law 9.985/2000, art. 2 § IX (defines “indirect use” as the one that does not involve consumption, collection, damage or destruction of natural resources.).

⁹⁸ Federal Law 9.985/2000, art. 7 ¶ 1.

⁹⁹ *Id.* art. 2 § XI (defines “sustainable use” as the exploitation of the environment in a way to guarantee the perennial renewable environmental resources and ecological process, maintaining the biodiversity and other ecological attributes, in a socially fair and economically viable form.).

¹⁰⁰ *Id.* art. 7 ¶ 2.

¹⁰¹ *Id.* art. 8.

¹⁰² Federal Law 9.985/2000, art. 14 (Braz.). The federal agencies Institute Chico Mendes of Biodiversity Conservation (*Instituto Chico Mendes de Conservação da Biodiversidade - ICMBio*) and IBAMA are required to execute all actions referring to the federal Conservation Units, while states and municipalities are competent to manage their own respective ones. Federal Law 9.985/2000, art. 6 § III (Braz.).

1. Strict prohibition of timber exploitation within Conservation Units of Full Protection and permitted extraction within Conservation Units of Sustainable Use

Timber exploitation, regardless if for commercial or non-commercial purpose, is not allowed within Conservation Units of Full Protection, neither any other economic activity.¹⁰³ With respect to Conservation Units of Sustainable Use, the level of protection is lower than for Units of Full Protection, since their basic objective is not environmental preservation, but rather to harmonize environmental conservation and sustainable use of natural resources.¹⁰⁴

- **Conservation Units of Sustainable Use where logging is permitted in certain circumstances**

Timber extraction is permitted in some Conservation Units of Sustainable Use, as long as the requirements established by Law 9.985/2000 are fulfilled. Logging is allowed at Areas of Environmental Protection, Areas of Relevant Ecological Interest, National Forests, Extractive Reserves, and Reserves of Sustainable Development.

Areas of Environmental Protection are areas within public or private properties with relatively small human occupation that contain abiotic, biotic, esthetic, or cultural features particularly relevant to the quality of life and well-being of local populations.¹⁰⁵ The use of natural resources within Areas of Environmental Protection, including timber exploitation, is

¹⁰³ Federal Law 9.985/2000, art. 9 (Braz.).

¹⁰⁴ SILVA, *supra* note 20, at 263.

¹⁰⁵ Federal Law 9.985/2000, art. 15 (Braz.).

allowed as long as it is sustainable and permitted by the Area's management plan and by the management body (advisory or deliberative councils).¹⁰⁶

Areas of Relevant Ecological Interest are public or private properties smaller than 5000ha¹⁰⁷ that have little or no human occupation, but with extraordinary natural features or rare samples of regional biota. Their purpose is to maintain a natural ecosystem with regional or local relevance, and to regulate the reasonable use of an area in harmony with the conservational purposes.¹⁰⁸ Therefore, the use of natural resources, such as logging, shall not be such as to undermine the Unit's objective. It shall follow the rules set by the National Counsel of the Environment (*Conselho Nacional do Meio Ambiente* - CONAMA) in specific resolutions for each Area of Relevant Ecological Interest.¹⁰⁹

National Forests consist of areas mainly covered with native species and have as primary objective the sustainable multi-use of forests for both resources and scientific research, with an emphasis on their sustainable utilization. This differentiates them from the other Conservation Units.¹¹⁰ They are of public domain (by Federal, State, or Municipal Governments, whichever created the public forest), and the privately owned areas located within them are expropriated. Although the Public Administration owns them, national, state, and municipal forests may be subject to forest concession for exploitation purposes by private parties, under the terms of Federal Law 11.284/2006.¹¹¹

¹⁰⁶ Federal Law 6.902/1981, art. 9 (Braz.).

¹⁰⁷ Federal Decree 89.336/1984, art. 2 § 1 (Braz.).

¹⁰⁸ Federal Law 6.902/1981, art. 16 (Braz.).

¹⁰⁹ Federal Decree 89.336/1984, art. 4 (Braz.).

¹¹⁰ Federal Law 9.985/2000, art. 17 (Braz.).

¹¹¹ Concession of public forests for exploitation purposes will be further discussed at section e, v.

Extractive Reserves are areas in which traditional populations base their subsistence on extractive activities including sustainable collection and use of renewable natural resources,¹¹² subsistence agriculture, and raising small animals. The objective of an Extractive Reserve is to protect the lives and culture of such populations, and to ensure the sustainable use of the Unit's natural resources.¹¹³ Extractive Reserves are within the public domain, and the privately owned lands located within them are expropriated. Their management follows a specific management plan and is held by a deliberative council similar to that of National Forests. Exploitation of timber resources will only be permitted on a sustainable basis. It shall be complementary to other activities already developed by the traditional community that lives in the Reserve, and as determined by its management plan.¹¹⁴

Like the Extractive Reserves, Reserves of Sustainable Development are used by traditional populations whose subsistence is based on sustainable natural resources exploitation.¹¹⁵ Their basic objective is to preserve the environment and, at the same time, ensure the necessary conditions and means for the reproduction and improvement of the habits, life quality, and exploitation of natural resources by the traditional populations.¹¹⁶ Thus, Reserves of Sustainable Development have environmental conservation as a priority, while Extractive Reserves focus mainly on the protection of culture and life quality of traditional populations.

Reserves of Sustainable Development are within the public domain, and privately owned lands within them are expropriated. Activities exploiting natural ecosystem's components under sustainable management and the replacement of native vegetation with

¹¹² Federal Law 9.985/2000, art. 2 § XII (Braz.).

¹¹³ Federal Law 9.985/2000, art. 18.

¹¹⁴ Federal Law 9.985/2000, art. 18 ¶ 7.

¹¹⁵ OLIVEIRA, *supra* note 2, at 213.

¹¹⁶ Federal Law 9.985/2000, art. 20 (Braz.).

crops are both permitted within Reserves of Sustainable Development. Such activities are subject to zoning rules and the management plan rules.¹¹⁷ Furthermore, when making use of the Unit's natural resources, traditional populations shall participate in its preservation, recovery, defense and maintenance. Moreover, they are prohibited to use species locally endangered or to engage in any activities that may damage their habitats, and to execute any activities that prevent the natural regeneration of ecosystems.¹¹⁸

- **Conservation Units of Sustainable Development where logging is not permitted**

Timber extraction is not permitted in Reserves of Fauna and Private Reserves of National Heritage, due to the incompatibility of logging with the Unit's purposes. Reserves of Fauna are natural areas with native animal species, both land and aquatic species as well as many migratory species, that can be used for scientific studies regarding their economic sustainable management. Reserves of Fauna are units of public domain, and private properties located within shall be expropriated.¹¹⁹ Private Reserves of National Heritage are private areas protected with the intent to conserve biological diversity. Within these reserves only scientific research and limited visitation for tourism or educational purposes are allowed.¹²⁰

¹¹⁷ Federal Law 9.985/2000, art. 20 ¶ 5, § IV.

¹¹⁸ *Id.* art. 23 ¶ 2.

¹¹⁹ Federal Law 9.985/2000, art. 19 (Braz.).

¹²⁰ Federal Law 9.985/2000, art. 21 (Braz.).

2. Conservation Units as relevant instruments of environmental protection in the Amazon region

Conservation Units, including federal, state, and municipal represent 26.6% of the Amazonian biome, equivalent to 1,136,304 Km². This includes 417,569 Km² of Conservation Units of Full Protection and 718,735 Km² of Conservation Units of Sustainable Use.¹²¹

Therefore, Conservation Units are only a small portion of the Amazon, but of significant importance for its protection. They guarantee the sustainable use of its forest resources, and create a balance between preservation purposes and the transformation of the forest into a source of revenue to local communities. However, these areas are constant targets of illegal logging and illegal occupation. Besides, many irregular commercial activities held within the Units result in illegal deforestation, due to their high level of preservation. The level of illegal deforestation is often parallel to deficient monitoring by public authorities of activities held in the area, as well as inefficient enforcement of the rules on limited use described above.

Therefore, the Public Government should make better efforts to overcome such deficiencies and then Conservation Units can fully function according to their purposes. Chapter 5 will suggest methods to eliminate illegal logging in the Amazon timber industry, including in Conservation Units.¹²² Besides Conservation Units, forests owned by the Federal, State and Municipal Governments in the Amazon region may also be object of sustainable forest management through concession to private parties for sustainable use of natural resources, as it will be further discussed.

¹²¹ Conservation Units by Biome, updated on Feb. 17, 2015, MINISTRY OF THE ENVIRONMENT, www.mma.gov.br/cadastro_uc.

¹²² See chapter 5, sections b and c.

e. Encouragement of sustainable use of forest resources in the Amazon region through management of public forests

i. Public forests as the largest portion of the Amazon

A considerable portion of forested areas in Brazil is public. These are native and planted forests located within the several Brazilian biomes, which are owned by the Federal, State, Municipal, or Federal District Government, or any other institution of indirect Public Administration.¹²³ They are not to be mistaken for National Forests as a distinct category of Conservation Units. There is still no accurate information regarding the total area of public forests in Brazil. Their register is still in progress by the Brazilian Forest Service, which is completing the National Forest Inventory.¹²⁴ Currently, official data regarding public forests can be found at the National Register of Public Forests (*Cadastro Nacional de Florestas Públicas - CNFP*),¹²⁵ a database managed by the Brazilian Forest Service that contains all collected information on public forests.

According to CNPF updated information of 2015, 310,7 million ha of public forests have been registered, which corresponds to 36.5% of Brazilian territory. There was a decrease in the registered area, compared to 2014 figures (314 million ha). 92,3% of the registered public forests is located within the Amazonian region, meaning that the majority of areas within the Amazon region are public forests. This is also noticed from the official map

¹²³ Federal Law 11.284/2006, art. 3 § I (Braz.).

¹²⁴ *Florestas do Brasil em Resumo [Brazilian Forests Summarized]*, BRAZILIAN FOREST SERVICE 32 (2013), <http://www.florestal.gov.br/publicacoes/tecnico-cientifico/florestas-do-brasil-em-resumo-2013>.

¹²⁵ The Resolution SFB 2, from July 6, 2007, regulates the National Registry of Public Forests and defines the vegetation forms for the identification of federal public forests.

provided by the Brazilian Forest Service, illustrating the public forests registered at the CNPF until 2015, Appendix 1 of the present work.¹²⁶ According to the CNPF, 51.7% of the registered public forests serves community use, 9.9% for sustainable use, 14.7% for full protection, 0.9% for military area, and 23% have no defined purpose, known as *terras devolutas*.

ii. Discouragement of illegal logging by the enactment of the Law on Management of Public Forests – Law 11.284/2006

Until 2006 the use of public forests was modestly treated by the law. The Forest Code of 1965 did not dedicate any provisions for using public forests.¹²⁷ Due to this lack of regulation, there was great incentive to exploit *terras devolutas*, thus opening space to settlement of illegal activities. Only Federal Law 11.284/2006 – the Law on Management of Public Forests, regulated by Federal Decree 6.603/2007, properly brought the matter into question.¹²⁸

Federal Law 11.284/2006 is seen as the regulatory framework on public forests and has the purpose of regulating their sustainable use. It allows the exercise of forest management activities held by private parties in public areas owned by the Federal Government, states or municipalities.¹²⁹ The law also creates the following institutions to support the implementation of its provisions: the Brazilian Forest Service (*Serviço Florestal Brasileiro – SFB*) and the

¹²⁶ *Cadastro Nacional de Florestas Públicas: Atualização 2015 [National Register of Public Forests: 2015 Update]*, BRAZILIAN FOREST SERVICE, http://www.florestal.gov.br/informacoes-florestais/cadastro-nacional-de-florestas-publicas/index.php?option=com_k2&view=item&layout=item&id=2358 (May 24, 2016).

¹²⁷ OLIVEIRA, *supra* note 2, at 191.

¹²⁸ *Id.*

¹²⁹ OLIVEIRA, *supra* note 2, at 52.

National Fund for Forest Development (*Fundo Nacional de Desenvolvimento Florestal - FNDF*).¹³⁰

Federal Law 11.284/2006 grants private parties the right to use the public forests by means of a sustainable management plan duly approved and monitored. The rationale for this approach is that transfer of title over the forests to private parties would not generate economic, social and environmental benefits to society.¹³¹ The law establishes three forms of forest management to be adopted: (i) governmental direct management by means of Conservation Units that allow sustainable use within their boundaries; (ii) use by local communities; and (iii) forest concessions.¹³²

iii. Direct management of public forests by the Public Administration

The first method of forest management consists in the creation of National, State, or Municipal Forests, under the National System of Conservation Units (Article 17 of Federal Law 9.985/2000), in which the Public Administration may directly manage the use of natural resources. It may also enter into partnerships or similar agreements with third parties to manage the units, as long as they observe the applicable bidding proceedings and norms. In such cases, environmental licensing of management activities is replaced by the approval of the Conservation Unit's management plan.¹³³ It is important that the management plan of National, State, and Municipal Forests are prepared with the participation of all actors

¹³⁰ Federal Law 11.284/2006, art. 1 (Braz.).

¹³¹ OLIVEIRA, *supra* note 2, at 193.

¹³² Federal Law 11.284/2006 art. 4 (Braz.). *See also* Ana Maria de Oliveira Nusdeo, *Os instrumentos econômicos na lei de gestão de florestas públicas e seu controle* [*The Economic Tools in the Law of Management of Public Forests and its Control*] 11 REVISTA DE DIREITOS DIFUSOS 18 (2011).

¹³³ Federal Law 11.284/2006, art. 18 ¶ 8 (Braz.).

involved with the forest area, including its inhabitants, public bodies, and non-governmental organizations. This demonstrates that environmental preservation is a responsibility of all sectors involved. Moreover, the elaboration of the management plan based in a consensus of all parties involved may avoid future conflicts, which makes it more effective.¹³⁴

iv. Management of public forests by local communities

The second system of management of public forests established by Law 11.284/2006 is the grant of management powers to local communities.¹³⁵ Local communities are traditional populations¹³⁶ or other groups with lifestyles conducive to the conservation and sustainable use of biological diversity.¹³⁷ Before the grant of management powers to local communities over public forests, the occupied or used areas shall receive one of the following designations: (i) to be officially declared as Extractive Reserves or Reserves of Sustainable Development, under the terms of the National System of Conservation Units;¹³⁸ (ii) to be object of projects of forest settlement for sustainable use, agroextractivism, or other similar projects, under the terms of Article 189 of the Federal Constitution;¹³⁹ (iii) or other designations established by law.¹⁴⁰ The management actions shall follow the rules of the Unit's management plans or the terms of the forest settlement.

¹³⁴ OLIVEIRA, *supra* note 2, at 205.

¹³⁵ Federal Law 11.284/2006, art. 4 § II (Braz.).

¹³⁶ According to Article 20 of Law 9.985/2000, traditional populations execute the sustainable natural resources utilization systems, developed along generations and adapted to local ecological conditions that have a fundamental role in nature protection and biological diversity.

¹³⁷ Federal Law 11.284/2006, art. 3 § X (Braz.).

¹³⁸ See section d, iii, 2, of this chapter.

¹³⁹ Article 189 of the Federal Constitution determines that the beneficiaries of the distribution of rural properties under the land reform will receive dominion titles or use concessions. Lands will be non negotiable for the period of 10 years, and can be given to the man or woman, or both, regardless their marital status.

¹⁴⁰ Federal Law 11.284/2006, art. 6 (Braz.).

v. Concession of public forests to private parties for sustainable use of natural resources

The third and main system for sustainable management of public forests provided by Law 11.284/2006 is the so-called forest concession. It is a delegation made by the public body to a legal person,¹⁴¹ in the form of a consortium, of the rights to sustainably manage portions of public forest for a determined period and for the exploitation of products and services.¹⁴² It has an environment-economic character¹⁴³ where the grantee agrees to manage the public area upon the payment of the so-called *forest price*.¹⁴⁴ The system of forest concession provides the economic instrument of a discount bonus over the forest price, in case the land grantee overcomes the indices on socio-environmental performance foreseen at the concession agreement. This stimulates the best results in the sustainable forest management.¹⁴⁵ However, the success of the discount depends on the bonus value being greater than the investment made by the grantee to reach the best performance.¹⁴⁶

¹⁴¹ Federal Law 11.284/2006, art. 19 ¶ 1 only admits companies and legal persons established under the law, with headquarters in Brazil, to be granted with forest concessions.

¹⁴² According to Federal Law 11.284/2006 art. 3 §§ III, IV (Braz.), forest products are timber and non-timber products originated from the sustainable forest management; and forest services are tourism and other actions or benefits originated from forest management and conservation, that are not featured as forest products.

¹⁴³ OLIVEIRA, *supra* note 2, at 228.

¹⁴⁴ The forest price includes (i) the payment of bidding costs, which includes the costs of preparation of forest inventory, environmental studies, environmental licensing procedure, among others; (ii) payment of the forest management price, that is based in the quantity of products or services provided by the concession, or based in the net or gross earnings; (iii) payment of investment price, which is due in case the concession agreement foresees the grantee's commitment in making a minimal annual investment in development and execution of the management plan, of which a parcel is paid to the grantor body; and (iv) payment for reversible goods. The payment for reversible goods is the discount on the total forest price relative to the indemnification of the grantee for the goods and value added to the public patrimony. Federal Law 11.284/2006, art. 36 (Braz.).

¹⁴⁵ Federal Decree 6.063/2007, art. 46 (Braz.).

¹⁴⁶ Nusdeo, *supra* note 132, at 24.

The amount acquired with concession of federal public forests shall be shared among SFB, IBAMA, ICMBio, the states and municipalities where the public forest is located, and the National Fund of Forest Development – FNDF.¹⁴⁷ The latter invests the received amounts in public research entities, and fields of technological research and development in sustainable management. It also finances technical assistance and recovery of damaged areas of native species, among other projects.¹⁴⁸ Therefore, besides its benefit as an instrument to encourage sustainable forest management in the Amazon, concession of public forests also contributes with financial resources to be invested in environmental matters.

The grantee shall be chosen in a bidding proceeding,¹⁴⁹ and shall practice the granted rights in respect to the bidding rules and showing performance capacity.¹⁵⁰ It is the concession of use of a public good, in the words of the Administrative Law.¹⁵¹ The concession establishes a bilateral juridical relation between grantor and grantee,¹⁵² executed by means of an administrative agreement.¹⁵³ The agreement contains the rules for the utilization of the area and for price update of forest products and services, as well as the management period.¹⁵⁴ At the enactment of the concession agreement, the grantee assumes all obligations foreseen in the agreement. The grantee becomes liable for all damage caused to the grantor body, to the

¹⁴⁷ Federal Law 11.284/2006, art. 39 (Braz.).

¹⁴⁸ Federal Law 11.284/2006, art. 41 (Braz.). The National Fund for Forest Development is an accounting fund, managed by the Brazilian Forest Service, whose purpose is to promote the development of sustainable forest activities in Brazil, and to promote the sector's technological improvement. *See also* Nusdeo, *supra* note 132, at 27.

¹⁴⁹ Bidding proceedings shall observe not only the best price offered, but also the criteria of best technique. According to Article 26 § II, this regards the lowest environmental impact, the greatest direct social benefits, the greatest efficiency, and the biggest value added to the forest product or services provided within the concession region. Federal Law 11.284/2006, art. 4 § I (Braz.); *Id.* § 5; Federal Decree 6.063/2007, art. 36 ¶ 5 § III (Braz.). The Institute Chico Mendes of Biodiversity Conservation (*Instituto Chico Mendes de Conservação da Biodiversidade - ICMBio*) is responsible for conducting the bidding proceeding and the negotiation of agreements referent to the forest concession.

¹⁵⁰ Federal Law 11.284/2006, art. 3 § VII (Braz.).

¹⁵¹ OLIVEIRA, *supra* note 2, at 147.

¹⁵² *Id.* at 168.

¹⁵³ Federal Law 11.284/2006, art. 30 lists the essential clauses of a concession agreement.

¹⁵⁴ Nusdeo, *supra* note 132, at 20.

environment, or to third parties, regardless the monitoring held by the competent public bodies.¹⁵⁵ These obligations are taken even though it does not imply in any property rights or land tenure to the grantee, but only authorizes the management of forest products or services.¹⁵⁶

The area under forest concession is known as *management unit*, located in public forests, subject to a Sustainable Forest Management Plan (*Plano de Manejo Florestal Sustentável – PMFS*) approved by the competent authority.¹⁵⁷ Some measures shall be taken by the grantor public body to allow the bidding proceeding for a forest concession. These are the inclusion of the public forest at the National Register of Public Forests,¹⁵⁸ the preparation of the Annual Plan of Forest Grant (*Plano Anual de Outorga Florestal – PAOF*) by the Brazilian Forest Service¹⁵⁹ in federal scope (and by state and municipal authorities as well), and the environmental licensing of the management activities. Such measures improve the concession's potential to guarantee that the utilization of natural resources will be sustainably held.

¹⁵⁵ Federal Law 11.284/2006, art. 27 (Braz.).

¹⁵⁶ Nusdeo, *supra* note 132, at 19.

¹⁵⁷ Federal Law 11.284/2006, art. 31 ¶ 2 (Braz.).

¹⁵⁸ Federal Decree 6.063/2007, art. 11 clarifies that the public forests that are not included in the General Register of Federal Public Forests are also subject to Federal Law 11.284/2006.

¹⁵⁹ The Brazilian Forest Service was created by Federal Law 11.284/2006, arts. 54, 55, within the structure of the Brazilian Ministry of the Environment to act exclusively in the management of the public forests. The mission of the Brazilian Forest Service is the reconciliation of forest use and conservation, in order to aggregate value to forests for the benefit of present and future generations. It does so by means of public forest management, knowledge construction, development of capacities, and specialized services. The SFB is also responsible for the update of the National Register of Public Forests and the preparation of the Annual Plan of Forest Grant - PAOF in federal level. *See* SERVIÇO FLORESTAL BRASILEIRO [BRAZILIAN FOREST SERVICE], <http://www.florestal.gov.br/menu-horizontal-de-internet/institucional/servico-florestal-brasileiro>.

1. Aspects of the forest concession proceeding that require forest management to be held sustainably

The PAOF is annually proposed by the management body of public forests (Federal, State, or Municipal Government), containing a description of all public forests to be submitted at concession procedures during its one-year term.¹⁶⁰ It is subject to a public hearing and the approval by the Manager Council of Public Forests, formed by representatives from the government and society including academic sector, NGOs, social movements, and State Governments. Participation of stakeholders enables social aspects to be taken into account during the choice of public forests to be granted, thus increasing the system's chances of success.¹⁶¹

The grantor public body shall also provide the environmental licensing of utilization of forest resources. The sustainable use of a management unit shall be subject to a Previous License and an Operation License, without the need of an Installation License.¹⁶² The Previous License shall be required by the grantor body to the competent environmental agency through the presentation of a Preliminary Environmental Report (*Relatório Ambiental Preliminar – RAP*).¹⁶³ A RAP consists of a simplified report on the potential environmental impacts and possible mitigation measures for a determined construction or activity. It shall be issued at the beginning of the licensing procedure, and it is used by the licensing agency to conclude whether a more detailed study will be necessary. In the positive case, the agency would

¹⁶⁰ OLIVEIRA, *supra* note 2, at 247.

¹⁶¹ Nusdeo, *supra* note 132, at 19.

¹⁶² Federal Law 11.284/2006, art. 18 ¶ 6 (Braz.).

¹⁶³ *Id.* art. 18.

conduct an Environmental Impact Study (*Estudo de Impacto Ambiental – EIA*).¹⁶⁴ The issuance of the Previous License authorizes the preparation of the Sustainable Forest Management Plan - PMFS, as well as the bidding proceeding. As for the activities of forest management, they will only be allowed to begin after the approval of the PMFS by the environmental agency and issuance of the Operation License.¹⁶⁵

Another requirement for the bidding proceeding of a public forest concession is a public hearing before the publication of the invitation to bid.¹⁶⁶ The purpose of such measure is to provide transparency to governmental acts. It also allows the local community to analyze the potential impacts of the forest concession and thus to exercise their right and duty to preserve and conserve the environment. This is in accordance with the terms of Article 225 of the Federal Constitution.¹⁶⁷ In case the public hearing is not held before the bidding proceeding, the concession contract shall be declared void, under the terms of Article 49, Paragraph 2, of Federal Law 8.666/1993, which regulates bidding proceedings and administrative agreements.¹⁶⁸

The proceeding contains the necessary requirements that make sustainable forest management mandatory for public forest concessions. Besides, it determines the participation of stakeholders in the decision process. Such initiative increases the concession's chances of success because it takes into consideration the social impacts the concession may cause.

¹⁶⁴ ÉDIS MILARÉ, DIREITO DO AMBIENTE [ENVIRONMENTAL LAW] 1333 (Revista dos Tribunais, 2009).

¹⁶⁵ Federal Law 11.284/2006, art. 18 §§ 4, 5 (Braz.).

¹⁶⁶ *Id.* art. 8; *Id.* art. 20 § 2.

¹⁶⁷ OLIVEIRA, *supra* note 2, at 281.

¹⁶⁸ *Id.* at 282.

2. The grantee's obligations under a public forest concession agreement and their importance for environmental conservation

The grantee of the forest concession has several obligations under the concession agreement. It shall delimit an area equivalent to 5% of the total area of the management unit as an absolute reserve (*reserva absoluta*), which will not be the object of any economic utilization. The purpose of such area is to keep it for the conservation of biodiversity, evaluation and monitoring of the forest management impacts.¹⁶⁹ Furthermore, the grantee shall remediate the damaged forested areas when the connection between its actions and the damage caused is identified, regardless negligence or malice.¹⁷⁰ These are measures that assure the main purposes of concession of public forests, namely environmental conservation and promotion of sustainable forest management.

The monitoring of such obligations and activities held within management units is executed in three different formats. IBAMA will monitor the environmental aspects of the implementation of the PMFS. SFB will monitor the compliance with the concession agreement. In addition, an independent audit of the forest practices will be carried out by an entity recognized by an administrative act of the grantor public body.¹⁷¹

¹⁶⁹ Federal Law 11.284/2006, art. 32 (Braz.).

¹⁷⁰ *Id.* art. 31 § IV.

¹⁷¹ Nusdeo, *supra* note 132, at 20.

3. Advantages of long-term forest concession agreements to an effective implementation of sustainable forest management

The period of forest concession agreements may be negotiated for a maximum of 40 years.¹⁷² Long periods of forest concession are beneficial to the conservation of the public forests, since short terms encourage the grantee to over-exploit timber and maximize profits, causing greater environmental damage. Most of tropical forests require around 60 to 100 years to partially regenerate. Therefore, a short period for a grantee to exploit the granted area will encourage the cut of as much timber as possible during the concession period, undermining the regeneration of the forest.¹⁷³ Through the termination of the forest concession, the grantee shall return the management unit to the grantor public body, under the terms and requirements of the concession agreement.¹⁷⁴

vi. Management of public forests as an effective instrument to discourage illegal logging and its benefits to the sustainable use of Amazonian Rainforest's natural resources

Federal Law 11.284/2006 intends to enable the sustainable utilization of public forests by both large timber companies and smallholders. This is carried out in practice by the inclusion at the PAOF of tracts of land containing management units of various sizes, feasible

¹⁷² Federal Law 11.284/2006, art. 35 (Braz.).

¹⁷³ OLIVEIRA, *supra* note 2, at 325 (quoting Claudio Ferraz and Ronaldo Serôa da Motta, CONCESSÕES FLORESTAIS E EXPLORAÇÃO MADEIREIRA NO BRASIL, CONDICIONANTES PARA A SUSTENTABILIDADE [FOREST CONCESSIONS AND TIMBER EXPLOITATION IN BRAZIL, REQUIREMENTS FOR SUSTAINABILITY] 28 (Ministério do Meio Ambiente, Programa Nacional de Florestas 2002).

¹⁷⁴ Federal Law 11.284/2006, art. 31 ¶ 3 (Braz.).

for different kinds of grantees, and thus avoiding economic concentration.¹⁷⁵ The access to forest concessions given to small business provides greater distribution of opportunities and revenues, as well as income generation to local population.¹⁷⁶ Furthermore, traditional populations of Extractive Reserves and Reserves of Sustainable Development may also participate of bidding proceedings for forest concessions. They can do it through community associations, cooperatives, or other legal persons admitted by law.¹⁷⁷

Thus, the system of management of public forests brought by Federal Law 11.284/2006 provides instruments for a better use of the vast public forested areas located mainly in the Amazon region, many times with no defined purpose. In this regard, the adoption of sustainable forest management is, without any doubt, an instrument for the achievement of the socio-environmental function of properties. It harmonizes economic development and environmental conservation, following the fundamentals of Article 170, III and VI, and Article 225 of the Federal Constitution.¹⁷⁸

Both the direct sustainable management of public forests by the Public Administration and its concession to private parties address the scarcity of titled, accessible, and productive forestland. They also combat the inefficacy and corruption associated with monitoring of activities related to timber industry.¹⁷⁹ In addition, the forest price collected by the grantor public bodies means the internalization by the forest user of the impacts from utilization of forest resources.¹⁸⁰ This may be invested in the creation of a monitoring structure suitable for

¹⁷⁵ Federal Law 11.284/2006, art. 33 (Braz.).

¹⁷⁶ Nusdeo, *supra* note 132, at 21.

¹⁷⁷ Federal Law 11.284/2006, art. 6 ¶¶ 1 - 3 (Braz.).

¹⁷⁸ OLIVEIRA, *supra* note 2, at 229.

¹⁷⁹ Peter May, *Forest Certification in Brazil*, in BENJAMIN CASHORE ET AL., *CONFRONTING SUSTAINABILITY: FOREST CERTIFICATION IN DEVELOPING AND TRANSITIONING COUNTRIES* 337, 356 (Yale F&ES Publication Series, Rep. No. 8, 2006).

¹⁸⁰ Nusdeo, *supra* note 132, at 23.

the Amazonian situation, or even directed to finance sustainable activities, such as the utilization of natural resources by local communities.¹⁸¹

Therefore, the concession of public forests for sustainable use is a well-structured procedure that takes society's interest into consideration. The same can be said about the creation of National, State, and Municipal Forests in which the Public Administration will execute forest management activities, and the grant of management powers over public forests to local communities. These policies treat the environment as a common asset. They bring economic benefits to both local communities and large companies while stimulating the legalization of timber industry in the Amazon region. They are promising instruments in the combat against illegal logging and associated trade. This is because a significant portion of the Amazon region consists in unoccupied federal and state public forests, which gives space to illegal occupation and execution of illegal activities, mostly causing illegal deforestation. Further chapters will discourse on the current situation of public forests in the Amazon and how the approaches provided by Law 11.284.2006 should be promoted.¹⁸²

f. Environmental administrative and criminal offenses at timber supply chain and liability for environmental damage

Forestry Law establishes environmental administrative and criminal offenses, and liability for environmental damage caused along timber supply chain. The analysis of such rules, added to the study of command and control instruments presented above, provide the classification of conducts considered as illegal logging and associated trade.

¹⁸¹ Nusdeo, *supra* note 132, at 23.

¹⁸² See chapter 3, section c, iii, and chapter 5, section c, iii, on fostering of management of public forests.

The Federal Constitution establishes terms of liability for harm caused to the environment. It states that penal and administrative sanctions shall be applicable to those who violate the law and harm the environment, regardless if the perpetrator is an individual or legal person. This is without prejudice of civil obligation to repair the damage caused.¹⁸³ The term *environmental damage* may be applied to causation of harm to the environment. It means any injury caused by acts or activities taken by an individual or a legal person, regardless if a private party or an entity from the Public Administration.¹⁸⁴ As for the scope of liability resulting from environmental damage, the Constitution classifies it into three kinds: civil,¹⁸⁵ criminal, and administrative liability.

i. Criminal liability for environmental damage and the classification of criminal offenses – Lack of clarity in the offenses’ descriptions and the apparent conflict between them

Environmental criminal offenses are regulated under Federal Law 9.605/1998. Sanctions applicable to environmental felonies are deprivation of freedom or restriction of individual

¹⁸³ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 225 (Braz.) (“(...)

Paragraph 3. Procedures and activities considered as harmful to the environment shall subject the violators, be their individuals or legal entities, to penal and administrative sanctions, without prejudice to the obligation to repair the damage caused. (...”).

¹⁸⁴ SILVA, *supra* note 20, at 323.

¹⁸⁵ When committing an administrative or criminal offense, the violator will hold civil liability to repair the damage caused to the environment. Article 14, Paragraph 1 of the National Policy of the Environment (Federal Law 6.938/1981) asserts liability upon those who pollute the environment to indemnify and repair the damage caused to the environment and affected third parties, regardless of their intention to cause harm. These are the general provisions on civil strict liability (*responsabilidade civil objetiva*) adopted by the Brazilian legal system for the imposition of civil liability regarding environmental matters. Civil strict liability for environmental damage is based on the *theory of full risk*, by which if someone introduces a situation of danger or risk within society, it shall be held liable for all damage caused. This means that liability will be subject only to the proof of environmental damage and causation between the damage and the human act itself. It is not subject to whether the damage was also the fault of the victim or third party, there were unforeseeable circumstances, or force majeure. Federal Decree 6.514/2008, art. 2 (Braz.). See also SILVA, *supra* note 20, at 336.

rights and/or fines.¹⁸⁶ The crimes against native and planted forests of native species within the Brazilian legal system are the following:

Article 38. Destruction or damage of a forest considered as an Area of Permanent Preservation, including areas under recovery, or use them in violation of protection rules. Penalty: detention¹⁸⁷ of 1 to 3 years, fine, or both.¹⁸⁸

Article 38-A. Destruction or damage of a recovering native forest within the Atlantic Forest Biome, or use it in violation of protection rules. Penalty: detention of 1 to 3 years, fine, or both.¹⁸⁹

Article 39. Cut of trees within Areas of Permanent Preservation, without the authorization by the competent environmental agency. Penalty: detention of 1 to 3 years, fine, or both.¹⁹⁰

Article 40. Direct or indirect damage to Conservation Units and to the area surrounding them, equivalent to a radius of 10Km. Penalty: imprisonment¹⁹¹ of 1 to 5 years.¹⁹²

Article 45. To cut or transform timber considered as *madeira de lei*¹⁹³ into coal, for industrial, energy or other purposes, economic or not, in violation of applicable rules. Penalty: imprisonment of 1 to 2 years, and fine.¹⁹⁴

Article 46. To receive or acquire, for commercial or industrial purposes, timber, firewood, coal, or any other timber products, without the inspection of the vendor's license, issued by the

¹⁸⁶ SILVA, *supra* note 20 at 329.

¹⁸⁷ Detention consists in the partial incarceration during nights and weekends in prisons, and the prisoner is required to work in farms or industrial colonies, or similar places during the day (*regime semi-aberto*). Detention may also be partial incarceration during nights and weekends in prisons of minimum security or the prisoner's house, being the prisoner required to work during the days (*regime aberto*). Federal Law 7.210/1984, arts. 91, 93 (Braz.).

¹⁸⁸ Federal Law 9.605/1998, art. 38 (Braz.).

¹⁸⁹ Federal Law 9.605/1998, art. 38-A.

¹⁹⁰ *Id.* art. 39.

¹⁹¹ Imprisonment consists in the permanent imprisonment in a penitentiary (*regime fechado*).

¹⁹² Federal Law 9.605/1998, art. 40 (Braz.).

¹⁹³ The definition of *madeira de lei* has not been provided by the regulatory system (*norma penal em branco*). Therefore, the definition created by jurisprudence is usually applied, by which the types of timber subject to the norm, considered as *madeira de lei*, are the more resistant species, as for instance, mahogany, pau-brasil, ipê, peroba, jacarandá, among others. See NELSON BUGALHO, DELITOS CONTRA O PATRIMÔNIO FLORESTAL [OFFENSES AGAINST THE FOREST PATRIMONY] 234 (Juruá, 2010).

¹⁹⁴ Federal Law 9.605/1998, art. 45 (Braz.).

competent authority, and without its copy that shall follow the products until their processing, as well as to sell, storage, transport or keep such products without a valid license for the transport and storage period. Penalty: detention of 6 months to 1 year, and fine.¹⁹⁵

Article 48. To prevent or difficult the natural regeneration of forests and other vegetation forms. Detention of 6 months to 1 year, and fine.¹⁹⁶

Article 50. Destruction or damage of native forests, or planted forests, or vegetation that holds dunes, protects mangroves, which are object of special protection. Penalty: detention of 3 months to 1 year, and fine.¹⁹⁷

Article 50-A. Deforestation, degradation, and economic exploitation of native or planted forests located within areas of public domain or *terras devolutas*, without authorization by the competent authority. Penalty: imprisonment of 2 to 4 years, and fine, being increased 1 year per each 1,000 ha. There is no crime in case the act is taken for immediate personal subsistence.¹⁹⁸

The criminal offenses against native and planted forests of native species lack clarity, precision and certainty at the description of conducts.¹⁹⁹ Its content also lacks technical and scientific rigor.²⁰⁰ The offenses make generalized reference to certain types of vegetation with no specifications of the good that is being protected by the offense. This is the case of Article 48, for example, which describes “forests and other vegetation forms” as the element to be protected. The law also makes reference to protection of some Specially Protected Areas, such as Areas of Permanent Preservation at Articles 38 and 39, while omitting others as Areas of Legal Reserve.²⁰¹

¹⁹⁵ Federal Law 9.605/1998, art. 46.

¹⁹⁶ *Id.* art. 48.

¹⁹⁷ *Id.* art. 50.

¹⁹⁸ Federal Law 9.605/1998, art. 50-A.

¹⁹⁹ MILARÉ, *supra* note 164, at 1001.

²⁰⁰ BUGALHO, *supra* note 193, at 257.

²⁰¹ *Id.* at 168.

The lack of coherence of the legal system also resulted in overlapping offenses. For example, Article 38 of Federal Law 9.605/1998 classifies *destruction or damage* of Areas of Permanent Preservation (APPs) as a criminal offense, while Article 39 classifies *cut of trees* within APPs as another criminal offense. To cut trees will consequently mean damage and destruction. Therefore, both offenses are applicable to a single conduct of cutting trees within APPs. However, the *non bis in idem* principle applicable to Brazilian Law determines that no one shall be twice tried for the same offense.²⁰² Therefore, only one sanction can be applied. This is called an *apparent conflict between the offenses (conflito aparente de normas)*. The requirement for confirmation of conflict between offenses is the plurality of offenses applicable to a sole conduct.²⁰³ In case of conflict, the specialty principle must be applied.²⁰⁴ According to it, the special rule prevails over the generic rule.²⁰⁵ Therefore, in the case under discussion, the offense of cutting trees at APPs will be applicable.

All offenses under discussion can conflict, depending on what kind of conduct is held and where it is held. For instance, this is the case of Articles 38 and 38-A. Destruction or damage of APPs may occur within the Atlantic Biome, meaning two different offenses applicable to a same conduct. Article 50 may also conflict with Articles 38, 39, and 40.²⁰⁶ The destruction or damage of forests “which are object of special protection” may refer to endangered species, APPs, ARLs, Conservation Units, or any other special protection given by competent authorities. Such areas are also the element protected by the other mentioned Articles. Further, Article 50-A can also overlap with Articles 38, 39, 40, and 50. All categories of Specially Protected Areas described within such criminal offenses may be

²⁰² DAMÁSIO E. DE JESUS, 1 DIREITO PENAL [CRIMINAL LAW] 11 (Saraiva, 2003).

²⁰³ BUGALHO, *supra* note 193, at 185.

²⁰⁴ *Id.* at 186.

²⁰⁵ *Id.* at 187.

²⁰⁶ *Id.* at 218.

located within areas of public domain or *terras devolutas* (unoccupied public lands) protected by Article 50-A.²⁰⁷

Conflicts between offenses result in the imposition of only one sanction to a conduct that corresponds to more than one crime. This means punishment lower than merited by the conduct's gravity. Besides, the law's lack of clarity and overlapping offenses generate disharmony in its content. These factors make the interpretation of the law harder, undermining its application and thus its enforcement. The inaccuracy of the law leaves the environment unprotected.²⁰⁸ Both the law enforcer and the one subject to the law need to know exactly what is prohibited and what is not, in respect to the principle of exhaustive determination.²⁰⁹ In addition to environmental crimes, Environmental Law establishes administrative liability for environmental damage and classifies administrative infractions similarly to criminal offenses, as described in the following section.

ii. Administrative liability for environmental damage and the classification of administrative infractions – Lack of clarity in the infractions' descriptions and the apparent conflict between them

Administrative liability results from the commitment of administrative infractions, which comprise every action or omission that violates legal rules on use, promotion, protection, and recovery of the environment.²¹⁰ The Executive Power, within its federal, state, and municipal levels, enforces administrative liability, respecting jurisdictional limits. The

²⁰⁷ BUGALHO, *supra* note 193, at 220.

²⁰⁸ *Id.* at 155.

²⁰⁹ *Id.* at 257.

²¹⁰ Federal Decree 6.514/2008, art. 2 (Braz.).

sanctions for violations also have administrative character. They are typically warnings, fines, seizure, or destruction of the violating products and instruments. They can also regard suspension of activities (*embargo*), or the suspension of benefits, depending on the offense's severity. Administrative liability reflects the police power held by Public Administration over activities and goods that may affect diffuse rights.²¹¹

Administrative infractions are defined by law or regulations. Federal Decree 6.514/2008 regulates administrative infractions, respective sanctions, and establishes the administrative procedure for their imposition. Among the established infractions against the flora, the following pertain to offenses of deforestation of native forests anywhere or native species within planted forests:

Article 43. Destruction or damage of native forests, or their exploitation in violation of protection rules of Areas of Permanent Preservation, or without authorization by the competent agency, or in violation of the authorization terms, when existent. Penalty: minimum fine of R\$ 5,000.00,²¹² and maximum of R\$ 50,000.00 per hectare or fraction.²¹³

Article 44. To cut trees, without permission by the competent authority, within Areas of Permanent Preservation or which species is specially protected. Penalty: minimum fine of R\$5,000.00, and maximum of R\$20,000.00 per hectare or fraction, or R\$500.00 per tree, cubic meter or fraction.²¹⁴

Article 46. To transform timber from native forests into coal, for industrial, energy or other purposes, economic or not, without proper license or in violation of applicable rules. Penalty: fine of R\$500.00 per cubic meter of coal.²¹⁵

Article 47. To receive or acquire, for commercial or industrial purposes, sawn wood, round wood, firewood, coal, or any other

²¹¹ SILVA, *supra* note 20, at 325.

²¹² Brazilian Reais.

²¹³ Federal Decree 6.514/2008, art. 43 (Braz.).

²¹⁴ *Id.* art. 44.

²¹⁵ *Id.* art. 46.

timber products, without the inspection of the vendor's license, issued by the competent authority, and without its copy that shall follow the products until their processing, as well as to sell, storage, transport or keep such products without a valid license, or in violation with it, for the transport and storage period. Penalty: fine of R\$300.00 per unit.²¹⁶

Article 48. To prevent or impede the recovery of native forests within Conservation Units or other Specially Protected Areas, including Areas of Permanent Preservation, Areas of Legal Reserve, or other locations indicated by environmental authorities. Penalty: fine of R\$5,000.00 per hectare or fraction.²¹⁷

Article 49. Destruction or damage of native forests object of special preservation, where exploitation and suppression are prohibited, not subject to authorization. Penalty: fine of R\$6,000.00 per hectare or fraction.²¹⁸

Article 50. Destruction or damage of native or planted forests with native species that are object of special preservation, without necessary authorization or license issued by the competent environmental agency. Penalty: fine of R\$5,000.00 per hectare or fraction.²¹⁹

Article 51. Destruction, deforestation, damage, or exploitation of native or planted forests with native species, within Areas of Legal Reserve, of public or private domain, without the necessary previous authorization by the competent environmental agency, or in violation of the issued authorization. Penalty: fine of R\$5,000.00 per hectare or fraction.²²⁰

Article 51-A. To execute forest management without previous authorization by the competent environmental authority, or without complying with the technical requirements from the Sustainable Forest Management Plan, or in violation of the issued authorization. Penalty: fine of R\$1,000.00 per hectare or fraction.²²¹

Article 52. To clear-cut native forests, located outside of Areas of Legal Reserve, without previous authorization by the competent

²¹⁶ *Id.* art. 47.

²¹⁷ *Id.* art. 48.

²¹⁸ Federal Decree 6.514/2008, art. 49.

²¹⁹ *Id.* art. 50.

²²⁰ *Id.* art. 51.

²²¹ *Id.* art. 51-A.

environmental agency. Penalty: fine of R\$1,000.00 per hectare or fraction.²²²

Article 53. To exploit or damage native forests or planted forests with native species located outside Areas of Legal Reserve, of public or private domain, without previous authorization by the competent environmental agency, or in violation of an issued authorization, or to violate the obligation of reforestation. Penalty: fine of R\$300.00 per hectare or fraction.²²³

Article 54. To purchase, intermediate, transport, or commercialize forest products or byproducts produced in areas subject to closing order by competent authorities (*embargo*). Penalty: fine of R\$500.00 per kilo or unit.²²⁴

Administrative infractions are similar to criminal offenses. Most of them are a reproduction of the crimes' description.²²⁵ Therefore, the deficiencies of Law 9.605/1998 are also found at Federal Decree 6.514/2008. Infractions lack clarity, technical and scientific rigor, and their descriptions overlap, causing a conflict between them. For instance, Article 52 of Federal Decree 6.514/2008 establishes as an infraction to clear-cut native forests outside Areas of Legal Reserve. Article 53 establishes as an infraction to exploit or damage native forests outside Areas of Legal Reserve. Both descriptions refer to a same conduct, since the clear-cut will consequently cause damage to native forests. Therefore, only one sanction can be applied.

The disharmony between the administrative infractions, and the inaccuracy in determining what types of areas and vegetation are being protected complicates the interpretation of the law. Besides, similarly to what happens with the criminal offenses, the

²²² *Id.* art. 52.

²²³ *Id.* art. 53.

²²⁴ Federal Decree 6.514/2008, art. 54.

²²⁵ BUGALHO, *supra* note 193, at 257.

overlap of infractions means punishment lower than merited by the conduct's gravity. These factors undermine the application of the law and thus its enforcement.

In addition to the inaccurate classifications of administrative and criminal offenses, the Law 9.605/1998 and the Decree 6.514/2008 are deficient when it comes to proportionality between penalties and the conduct's gravity. This will be discussed in the following section.

iii. Disproportionality between penalties and the conducts' gravity

Federal Law 9.605/1998 allows for detention for 1 to 3 years, a fine, or both; but the penalty is the same whether for destruction or damage to an entire Area of Permanent Preservation or only a single tree within the area (Articles 38 and 39). Such unreasonable disparity between the penalty and the conducts' gravity does not discourage illegal undertakings. On the contrary, it favors a more hostile behavior. As once noted by Cesare Bonesana Beccaria, "if an equal punishment is laid down for two crimes which damage society unequally, men will not have a stronger deterrent against committing the greater crime if they find it more advantageous to do so."²²⁶

Federal Decree 6.514/2008 establishes a fine of R\$ 500.00 (US\$ 125.00) for cut of a tree within Areas of Permanent Preservation without permission by the competent authority. This provides no deterrent, as the revenue from the sale of only one high value species tree may reach R\$50,000.00 (US\$12,500.00).²²⁷ Trade of illegal timber from the Amazon is quite a

²²⁶ BUGALHO, *supra* note 193, at 168 (quoting Cesare Bonesana Beccaria, *On Crimes and Punishments*, at 39).

²²⁷ Nacho Doce, *From Paradise to Inferno*, REUTERS (Nov. 11, 2013), <http://blogs.reuters.com/photographers-blog/2013/11/11/from-paradise-to-inferno/>.

profitable activity, in which one single tree, depending on its species, may be valued at thousands of Brazilian Reais in the international market. Thus, such soft penalties as the ones set by law may not provide any coercive effect. On the other hand, sanctions that are too high may have the same impact, due to the impossibility of payment. Therefore, the effectiveness of fines as intimidating tools depends on a balance between the coercive minimum amount and the practically payable maximum amount. As for penalties of deprivation of freedom (imprisonment) or restriction of individual rights, the same principle applies. Penalties should be rigid enough to discourage recidivism.²²⁸

iv. The need for a legislative reform of administrative and criminal sanctions to improve Forestry Law enforcement

Due to the lack of clarity of environmental criminal and administrative offenses regarding native and planted forests of native species, such offenses need to rely on other laws to be implemented. The complementary laws bring descriptions of the illegal undertaking that are essential for the application of offenses (*norma penal em branco*).²²⁹ Additionally, the complexity of regulating environmental matters requires such complementation.²³⁰ The offenses must leave specificities to be treated by the complementary law. Nevertheless, they must precisely and clearly set the incriminating conducts, in respect for the principle of legality.²³¹

²²⁸ The practical aspects of sanctioning of administrative and criminal offenses will be presented in chapter 3, section i.

²²⁹ BUGALHO, *supra* note 193, at 155.

²³⁰ *Id.* at 160.

²³¹ BUGALHO, *supra* note 193, at 156.

The foregoing analysis of administrative and criminal sanctions has shown that legislative reform is needed to make law enforcement more effective, as well as to serve the sanction's purpose to discourage illegal undertakings. This work recommends the creation of an offense that eliminates the deficiencies of the current environmental offenses applicable to the Amazon timber supply chain. This would be the inclusion of a new criminal offense at Federal Law 9.605/1998 and an administrative infraction at Federal Decree 6.514/2008. The suggested approach is based on the ban of trade of illegally sourced timber provided by the United States Lacey Act,²³² and the definition of 'legal timber' and 'illegally harvested timber' by the instruments of the European Union Forest Law Enforcement, Governance and Trade Action Plan.²³³

The new legal provision would be focused on describing environmental offenses along the timber supply chain. It would gather the activities to be considered illegal, avoiding loopholes and overlaps. The provision would have the structure of an incriminating law, and would leave technical and scientific specificities to be treated by the complementary law. This structure would give more clarity to the criminal and administrative offenses. It would show the law enforcer and those subject to the law the exact prohibited acts and lead them to the complementary laws to be complied.

Furthermore, the new offense would solve the problem of disproportionality between the penalties and the conducts' gravity. It would do it by listing the incriminating acts regarding timber supply chain in one single offense. Thus, there will not be conflict between different offenses. The penalty would be measured in accordance with the illegal conducts' gravity.

²³² See chapter 4, section b, i, on the United States Lacey Act as a timber trade control mechanism.

²³³ See chapter 4, section b, ii, 3 and 4, on the definition of "legal timber" provided by the instruments of the European Union Forest Law Enforcement, Governance and Trade Action Plan.

This would make the law serve the purpose of discouraging illegal logging and its associated trade, by making it not profitable. Later chapters will further provide recommendations on how the content of the law can be improved.²³⁴

g. Prohibition of logging within Indigenous Lands

The preceding section provided an overview of the federal environmental regulatory system on forests, which examined the main laws applicable to utilization of forest resources in timber industry. Nevertheless, the law also provides protection tools for forest resources under other types of rules aside from the Forestry Law, such as rules of protection of Indigenous Lands.

As previously mentioned, indigenous people suffered throughout the colonization period and experienced a dramatic decrease in their population due to the invasion of their lands and enslavement of their people. In order to cease the abuse of such communities, the regulatory system grants a special status for indigenous people by safeguarding their rights over the lands they occupy and use for their subsistence. According to the Federal Constitution,²³⁵ indigenous people have the original right (*direito originário*) and exclusive usufruct (*usufruto exclusivo*) to the lands they traditionally occupy. Indigenous Lands are those where indigenous people live on a permanent basis and use for their productive activities. These lands are indispensable

²³⁴ Chapter 5, section b, i, will discourse upon recommendations of legislative reform.

²³⁵ Federal Decree 5.051/2004 that ratifies the International Labor Organization [ILO] Convention 169 on Indigenous People also guarantees the rights of indigenous people within the regulatory system. Federal Decree 7.747/2012 establishes the National Policy of Territorial and Environmental Management of Indigenous Lands.

to the preservation of environmental resources necessary for their well-being and for their physical and cultural reproduction according to their uses, customs and traditions.²³⁶

The Federal Government owns the Indigenous Lands. Indigenous people hold the original rights and exclusive usufruct over the federal land. These rights are acknowledged when legal and technical requirements are fulfilled, according to the provisions of Article 231 of the Federal Constitution. As the Federal Government owns Indigenous Lands, they are inalienable, as are the legal rights over them.²³⁷

The Federal Government has the duty and power to demarcate, protect and assure the respect for Indigenous Lands.²³⁸ The National Foundation of Indigenous People (*Fundação Nacional do Índio* – FUNAI) is the federal agency that coordinates and executes the indigenous policy. It is responsible for assuring the indigenous communities the full

²³⁶ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 231 (Braz.) (“Indians shall have their social organization, customs, languages, creeds and traditions recognized, as well as their original rights to the lands they traditionally occupy, it being incumbent upon the union to demarcate them, protect and ensure respect for all of their property.

Paragraph 1. Lands traditionally occupied by Indians are those on which they live on a permanent basis, those used for their productive activities, those indispensable to the preservation of the environmental resources necessary for their well-being and for their physical and cultural reproduction, according to their uses, customs and traditions.

Paragraph 2. The lands traditionally occupied by Indians are intended for their permanent possession and they shall have the exclusive usufruct of the riches of the soil, the rivers and the lakes existing therein.

Paragraph 3. Hydric resources, including energetic potentials, may only be exploited, and mineral riches in Indian land may only be prospected and mined with the authorization of the National Congress, after hearing the communities involved, and the participation in the results of such mining shall be ensured to them, as set forth by law.”).

²³⁷ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 231 (Braz.) (“Paragraph 4. The lands referred to in this article are inalienable and indisposable and the rights thereto are not subject to limitation.

Paragraph 5. The removal of Indian groups from their lands is forbidden, except ad referendum of the national congress, in case of a catastrophe or an epidemic which represents a risk to their population, or in the interest of the sovereignty of the country, after decision by the national congress, it being guaranteed that, under any circumstances, the return shall be immediate as soon as the risk ceases.

Paragraph 6. Acts with a view to occupation, domain and possession of the lands referred to in this article or to the exploitation of the natural riches of the soil, rivers and lakes existing therein, are null and void, producing no legal effects, except in case of relevant public interest of the Union, as provided by a supplementary law and such nullity and voidness shall not create a right to indemnity or to sue the union, except in what concerns improvements derived from occupation in good faith, in the manner prescribed by law.”).

²³⁸ Federal Decree 1.775/1996 regulates their geographical delimitation by means of an administrative procedure in which the limits of the territory traditionally occupied by indigenous people is identified and marked. *See* FUNDAÇÃO NACIONAL DO ÍNDIO [NATIONAL FOUNDATION OF INDIGENOUS PEOPLE] [FUNAI] www.funai.gov.br (July 21, 2015).

possession and management of their lands, as well as for protecting isolated indigenous people.²³⁹ Currently, there are 462 regularized Indigenous Lands in Brazil, representing 12.2% of the national territory and a majority of which is located within the Legal Amazon region (around 54%). Examples include the *Yanomami* and *Raposa Serra do Sol* Indigenous Lands.²⁴⁰

The exclusive usufruct held by indigenous people over their lands means that the occupation, domain and possession of Indigenous Lands by third parties is null and void and produces no legal effects. This includes occupation intending the exploitation of natural resources.²⁴¹ The only exception is in case of public interest.²⁴² Article 18, Paragraph 1, of Federal Law 6.001/1973 (The Statute of Indigenous People) determines that third parties are not allowed to hunt, fish, collect fruits, or to execute agricultural or exploitation activities within Indigenous Lands. However, law has not been efficiently enforced in that matter.

Indigenous Lands, especially in the Amazon region, are constant targets for invaders, mainly

²³⁹ Besides Indigenous Lands, FUNAI may acknowledge the territorial rights of indigenous communities by creating Reserved Areas, based on Federal Law 6.001/1973, art. 26 (The Statute of Indigenous People). This is allowed only in the event of irreversible internal conflicts, great enterprises' impacts, or technical impossibility of acknowledgement of the traditional occupation. In order to create Indigenous Reserved Areas, the Government shall acquire, expropriate, or receive as a donation the estate where the Reserved Area will be created. Reserved Areas may be created as Indigenous Reserves, Indigenous Parks, or Indigenous Agricultural Colonies. Indigenous Reserves are areas destined as indigenous habitat. Indigenous Parks are areas within Indigenous Lands where economic, educational, and health assistance is provided by the Public Administration, as well as promoting environmental preservation. Indigenous Agricultural Colonies are areas for agricultural activities, managed by FUNAI, where indigenous communities live and interact with members of the national community. Federal Law 6.001/1973, arts. 26 - 29. In the case of isolated indigenous communities, or those with no contact with the national community whatsoever, FUNAI restricts the area's use. It does so to protect the physical integrity of indigenous people against the invasion by third parties. CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 231 (Braz.); Federal Decree 1.775/1996, art. 7; Federal Law 5.371/1967, art. 1 § VII. See also FUNDAÇÃO, *supra* note 238.

²⁴⁰ FUNDAÇÃO, *supra* note 238.

²⁴¹ *Id.*

²⁴² According to Article 20 of the Statute of Indigenous People, the Federal Government may intervene within Indigenous Lands in cases of fights between tribes, serious epidemics, and national security. It may intervene to develop public works relevant to national development, to cease disturbance or robbery, and to exploit underground natural resources of relevant interest to national safety and development, when there is no other alternative solution.

loggers and miners. This is due to the lands' high conservation level or the presence of precious metals. There are also cases where the indigenous people themselves are partners with illegal logging, allowing illegal harvesting on their lands for a price.²⁴³

There are obstacles to the full protection and respect of Indigenous Lands. Corrupt public officers allow the invasion of Indigenous Land by loggers, and deficient public monitoring permits illegal deforestation in these lands. The high profitability of illegally sourced timber also stimulates loggers and indigenous people to illegally exploit these areas with high concentration of valuable trees.²⁴⁴ Chapter 5 provides recommendations on how the Government could overcome these impediments to full enforcement of the law and eliminate illegal logging at Indigenous Lands.²⁴⁵

The preceding sections presented the rules under the federal regulatory system on the utilization of timber resources. The following sections will provide the main laws to which the other stages of timber supply chain are subject, namely transport, storage and processing of timber and byproducts.

h. Environmental licensing of timber industry activities as a form to combat illegal undertakings within timber supply chain

Environmental licensing is an administrative procedure by which the competent environmental agency licenses the location, installation, extension, and operation of an

²⁴³ Chapter 3, section f, presents the impacts of illegal logging on Indigenous Lands.

²⁴⁴ See more on illegal logging at Indigenous Lands at chapter 3, section f, iii.

²⁴⁵ See chapter 5, sections b and c.

enterprise or activity. Activities subject to environmental licensing use environmental resources and are considered effectively or potentially harmful to the environment, or might cause environmental degradation in any form.²⁴⁶ By issuing the environmental license, the agency establishes conditions, restrictions, and mitigation measures to be followed by the entrepreneur.²⁴⁷ The licensing system is a monitoring instrument to assure timber processing is held in sustainably, and that environmental impacts are mitigated so as not to cause irreversible damage.

i. Timber industry enterprises and activities subject to environmental licensing

Resolution 237/1997 issued by the National Council of Environment (*Conselho Nacional do Meio Ambiente* - CONAMA) brings a set of enterprises and activities subject to environmental licensing.²⁴⁸ Sawmills and other timber processing plants such as manufacturing of veneer sheets, plywood, furniture and timber structures production, are subject to previous environmental licensing.²⁴⁹

When it comes to enterprises or activities considered potentially harmful to the environment, environmental licensing will occur upon an Environmental Impact Assessment (*Estudo Prévio de Impacto Ambiental* - EIA) and a respective Report on Environmental Impact (*Relatório de Impacto Ambiental* - RIMA).²⁵⁰ Environmental Impact Assessments are technical studies that support the analysis of the environmental license required.²⁵¹ An EIA

²⁴⁶ CONAMA Resolution 237/1997, art. 1 § I (Braz.).

²⁴⁷ *Id.* art. 1 § II.

²⁴⁸ CONAMA Resolution 237/1997, art. 2.

²⁴⁹ *Id.* Annex 1.

²⁵⁰ *Id.* art. 3 (Braz.).

²⁵¹ *Id.* art. 1 § III.

shall present an environmental diagnosis of the area to be influenced by the project, an analysis of the environmental impacts to be caused, the mitigation measures of the negative environmental impacts, and a monitoring program of the positive and negative impacts.²⁵² A RIMA shall present the conclusions brought by the EIA.²⁵³ The list of enterprises and activities subject to an EIA/RIMA, as provided by CONAMA Resolution 01/1986, includes economic timber exploitation in areas greater than 100 ha, or in areas smaller than 100 ha when it is an area of environmental relevance.²⁵⁴

ii. Competence of environmental agencies to issue licenses – state environmental agencies as the main competent body to license timber industry activities

The environmental licensing of an enterprise or activity may be held by the federal environmental agency (IBAMA), the state, or the municipal environmental agency from where the project will be located. IBAMA is competent to license enterprises or activities with a significant environmental impact in a national or regional scope, such as those located or developed within two states or more at the same time.²⁵⁵ State and Federal District environmental agencies are competent to license enterprises and activities located or developed in more than one municipality at the same time, or in a State or Federal District Conservation Unit. They are also competent to license activities located or developed in Areas of Permanent Preservation, that cause environmental impacts in more than one municipality's

²⁵² CONAMA Resolution 01/1986, art. 6 (Braz.).

²⁵³ *Id.* art. 9.

²⁵⁴ CONAMA Resolution 01/1986, art 2 § XIV(Braz.).

²⁵⁵ CONAMA Resolution 237/1997, art. 4 (Braz.).

territory, or in case the licensing competence is delegated by IBAMA.²⁵⁶ Municipal environmental agencies, when possessing the necessary infrastructure to conduct an environmental licensing procedure, will be held as competent to do so with regards to activities of local environmental impact. Municipal agencies may also issue licenses in case the competence is delegated by the state agency.²⁵⁷ Usually, activities such as timber exploitation, as well as timber processing enterprises like sawmills and furniture production, are licensed by the state environmental agency. This is due to the extension of the project's environmental impacts.

iii. The environmental licensing procedure

The environmental licensing procedure involves the issuance of three licenses: a Previous License, an Installation License, and an Operation License. All are issued upon the entrepreneur's request. The Previous License is granted at the project's initial phase. It approves its location, conception, and environmental viability, and establishes the basic requirements and conditions to be followed during the next step of the project's implementation. The Installation License authorizes the construction of the physical structure necessary for the enterprise's operation, according to the previously approved project. It includes the environmental mitigation measures and other requirements previously set. The Operation License authorizes the enterprise's operation and activities' execution, after full compliance with the conditions set in the previous licenses.²⁵⁸ Environmental licenses have a

²⁵⁶ *Id.* art. 5.

²⁵⁷ *Id.* art. 6.

²⁵⁸ CONAMA Resolution 237/1997, art. 8 (Braz.).

determined validity period and require renewal.²⁵⁹ When determined by the competent environmental agency, simplified licensing procedures may be applied in cases of lower potential environmental impacts.²⁶⁰

Through the environmental licensing procedure, the community may exercise its right to an ecologically balanced environment and its duty to protect and preserve it for present and future generations, as set in Article 225 of the Federal Constitution. This is accomplished by participating in public hearings where the environmental agency will present the results of the Environmental Impact Assessment. Communities can clarify doubts and discuss the project's socio-environmental impacts.²⁶¹ Public hearings are mandatory in environmental licensing procedures when they are required by a civil entity, by the Public Prosecutor, or by groups of 50 citizens or more.²⁶²

iv. Illegality at licensing procedures of timber industry activities

As demonstrated above, environmental licensing is a comprehensive and well-structured system. Nevertheless, fraudulent documents, corrupt officers, and the omission of public participation at proceedings are common, among other illegalities. This is particularly prevalent in the Amazon region.²⁶³

Operating without a valid environmental license when required, or when in violation of the conditions of an environmental license is considered an environmental crime, according to Article 60 of Federal Law 9.605/1998. Doing so can result in detention of 1 to 6 months

²⁵⁹ *Id.* art. 18.

²⁶⁰ *Id.* art. 12.

²⁶¹ CONAMA Resolution 01/1986, art. 11 (Braz.).

²⁶² CONAMA Resolution 09/1987, art. 2 (Braz.).

²⁶³ See more on that at chapter 3, section e.

and/or a fine. Furthermore, the company and/or the entrepreneur might be held liable at the administrative level by the environmental agency²⁶⁴ and also at the civil level to repair or indemnify the damage caused.²⁶⁵

The presentation of false or misleading statements, as well as the omission of information or scientific and technical data by a public officer within environmental licensing or authorization proceedings is also an environmental crime. The penalty can include imprisonment of 1 to 3 years and a fine.²⁶⁶ It is also a crime to issue a license, authorization, or permission in violation of the applicable environmental rules. The applicable penalty is detention of 1 to 3 years, and a fine.²⁶⁷ The preparation and presentation of false environmental reports and studies, by both private parties and public officers, can merit 3 to 6 years of imprisonment and a fine. This is applicable to licensing proceedings, forest concessions, or any other environmental administrative proceeding.²⁶⁸

However, impunity and recidivism are a constant reality in the illegal timber market. This is due to factors such as corrupt licensing agencies and deficient public monitoring of activities subject to environmental license.²⁶⁹ Chapter 5 provides recommendations on how the Government could overcome these deficiencies to an effective functioning of the licensing system.²⁷⁰

²⁶⁴ Federal Supplementary Law 140/2011, art. 17 (Braz.).

²⁶⁵ Federal Law 6.938/1981, art. 14 ¶ 1 (Braz.).

²⁶⁶ Federal Law 9.605/1998, art. 66 (Braz.).

²⁶⁷ *Id.* art. 67.

²⁶⁸ Federal Law 9.605/1998, art. 69-A (Braz.).

²⁶⁹ See chapter 3, sections h and i, on that matter.

²⁷⁰ See chapter 5, sections b and c.

i. Federal and main State Control Systems of Forest Products' Origin as mechanisms to combat illegal undertakings within timber supply chain

i. The National Control System of Forest Products' Origin (SINAFLOR) and the Document of Forest Origin (DOF)

The Forest Code requires the control and monitoring of transport and storage of native forest products and byproducts over the country's territory. It established that national control of forest products' origin, including timber, coal, and other products and byproducts, shall be executed by a national system. The system shall link data from Federal and each State Government to be coordinated, monitored, and regulated by the Federal Government.²⁷¹

Although the matter had been treated in the past by federal regulations, the National Control System of Forest Products' Origin (SINAFLOR) was created in December 2014 by IBAMA Normative Instruction 21/2014. The system is intended to be a national database that improves control over the origin of timber, coal, and other forest products and byproducts.²⁷² All forest activities that need specific license or authorization for their execution must be registered at SINAFLOR.²⁷³ In addition, the system intends to make the integration between federal and state control systems, as required by the Forest Code, more efficient.

²⁷¹ Forest Code, art. 35 (Braz.).

²⁷² SINAFLOR integrates the federal systems required by the Forest Code. It includes the already mentioned System of Rural Environmental Register (*Sistema de Cadastro Ambiental Rural – SICAR*), the Declaratory Environmental Act (*Ato Declaratório Ambiental - ADA*), the Federal Technical Registry of Potentially Polluting Activities or Users of Environmental Resources (*Cadastro Técnico Federal de Atividades Potencialmente Poluidoras ou Utilizadoras de Recursos Ambientais – CTF/APP*), the Federal Technical Registry of Instruments of Environmental Defense (*Cadastro Técnico Federal de Instrumentos de Defesa Ambiental – CTF/AIDA*), and the DOF System. IBAMA Normative Instruction 21/2014, art. 1 (Braz.).

²⁷³ IBAMA Normative Instruction 21/2014, art. 6 (Braz.).

SINAFLOR was supposed to be available for use in March 2015. However, it is not functioning to date.²⁷⁴ In the meantime, the DOF System has executed control of forest products' origin. The Document of Forest Origin (*Documento de Origem Florestal - DOF*) was originally implemented by the Ministry of Environment, by Ordinance 253/2006. It consists of a mandatory document for the transportation and storage of timber, coal, and any other native forest products and byproducts with commercial or industrial purposes. DOF applies from the product's origin until its final processing.²⁷⁵ It shall include the product specifications, volume, and information regarding its origin and final destination.²⁷⁶ It shall accompany its respective products and byproducts throughout Brazilian territory, regardless of transportation method.

The DOF System is an online system that controls the issuance of DOFs.²⁷⁷ The online system consists in a database of so called *credits*. These are amounts of timber volume previously authorized by the competent environmental agency for a logger to cut in a determined area, during a limited period. The area shall be subject to a Sustainable Forest Management Plan. A DOF will indicate the volume the carrier is allowed to transport, and the credits to which the cargo corresponds.²⁷⁸ Those who receive or acquire timber, coal, or any other native forest products or byproducts for commercial or industrial purposes are required

²⁷⁴ IBAMA Normative Instruction 12/2015 (Braz.) determines the register of forest activities at SINAFLOR will be mandatory from January 1st, 2017.

²⁷⁵ Forest Code, art. 36 (Braz.). INSTITUTO BRASILEIRO DO MEIO AMBIENTE E DOS RECURSOS NATURAIS RENOVÁVEIS [BRAZILIAN INSTITUTE OF THE ENVIRONMENT AND RENEWABLE NATURAL RESOURCES] [IBAMA], <https://servicos.ibama.gov.br/index.php/licencas/documento-de-origem-florestal-dof> (July 28, 2015).

²⁷⁶ Forest Code, art. 36 ¶ 4.

²⁷⁷ *Saiba como funciona o controle de produto florestal* [How the control system of forest products works] (Mar. 2, 2007), <http://noticias.terra.com.br/brasil/noticias/0,,OI1448909-EI306,00-Saiba+como+funciona+o+controle+de+produto+florestal.html>.

²⁷⁸ The individual or legal person interested in acquiring a DOF shall be registered before the Federal Technical Registry of Potentially Polluting Activities or Users of Environmental Resources (*Cadastro Técnico Federal de Atividades Potencialmente Poluidoras ou Utilizadoras de Recursos Ambientais*). Federal Law 12.651/2012, art. 36 (Braz.).

to demand the presentation of the respective DOF and hold a copy of it that must accompany the products.²⁷⁹ DOF is required for native forest products and byproducts, as listed in Article 32 of IBAMA Normative Instruction 21/2014.²⁸⁰

ii. State Control Systems of Forest Products' Origin

Aside from having DOF as the federal control system on the origin of forest products and byproducts, states are also permitted to implement their own control systems. The most expansive state control system is the Forest Products Transport and Trading System (SISFLORA) that is used by the States of Pará and Mato Grosso within the Legal Amazon.²⁸¹ Under SISFLORA, the document that accompanies the forest products at their transport is called Forest Waybill (*Guia Florestal – GF*).²⁸² As for the State of São Paulo, the main consumer of Amazonian native timber, it uses the DOF System to monitor the transport and storage of native forest products.²⁸³

²⁷⁹ Federal Law 12.651/2012, art. 36 §§ 2,3.

²⁸⁰ DOF is not mandatory for transportation of wood from the eradication of crops, orchards, or cut of urban trees. It is neither applicable to byproducts that are finished and wrapped for final use; cellulose; sawdust; leaves; chaff; coconut husk and coal made of coconut husk; briquette; reuse of wooded fences, corral, and houses. It also not applicable to wrapped charcoal; bamboo; planted bushes; plants and native non-timber products not listed at the federal list of endangered species and at CITES; and voucher specimen for scientific research. IBAMA Normative Instruction 21/2014, art. 49 (Braz.).

²⁸¹ The State of Minas Gerais, located outside the Legal Amazon, makes use of the Electronic Environmental Control Document (*GCA-Eletrônica*) as its own state control system.

²⁸² Interview with Rodolfo Gadelha, Director of the Environmental Monitoring Office of the State of Pará's Environmental Agency [SEMA], in Belém, Brazil (Jan., 2015).

²⁸³ SÉRGIO ADEODATO ET AL., WOOD: FROM THE FOREST TO THE CONSUMER 72 (FGV RAE, 1st ed., 2011).

iii. Illegalities at the Control Systems of Forest Products' Origin

Missing a DOF during the transport and storage of forest products or byproducts is considered as an administrative infraction and also an environmental crime.²⁸⁴ Federal Law 9.605/1998 also makes it a crime for a public officer to defraud the DOF System.²⁸⁵ A DOF will be invalid in case the transported volume or species diverge from the ones indicated at the document (except when the volume divergence is inferior to 10%). It will also be invalid if the route taken is different from the one indicated at the document, the vehicle used is different from the indicated one, or the DOF is overdue. The presented product shall not differ from the one indicated at the document, and the DOF shall not present obliteration, omission, or inconsistency.²⁸⁶

The control of the origin of forest products is one of the most delicate phases of the timber sector, since fraudulent documents might pollute the entire supply chain. Nevertheless, fraud at federal and state systems is common, due to corrupt environmental controlling agencies and other factors. These impediments to an effective functioning of the control systems will be described in chapter 3.²⁸⁷ Recommendations on how to overcome such obstacles will be presented in chapter 5.²⁸⁸

²⁸⁴ Federal Decree 6.514/2008, art. 47 (Braz.); Federal Law 9.605/1998, art. 46 (Braz.).

²⁸⁵ Federal Law 9.605/1998, arts. 66, 67 (Braz.).

²⁸⁶ IBAMA Normative Instruction 21/2014, art. 48 (Braz.).

²⁸⁷ See chapter 3, section e.

²⁸⁸ See chapter 5, section b and c.

iv. State of São Paulo's Native Wood Retailers Registry as a mechanism to encourage consumer awareness about the origin of timber products

The State of São Paulo, the major consumer of tropical timber from the Amazon, created the State of São Paulo's Native Wood Retailers Registry. This is a voluntary control mechanism of timber trade carried by legal persons within the State. The Cadmadeira, as it is called, consists of a voluntary registry of legal persons that commercialize native forest products and byproducts within the State of São Paulo. It promotes responsible timber trade, mitigating externalities over native forests and illegal logging. It was created by State Decree 53.047/2008 and it is managed by the State of São Paulo Environmental Agency.²⁸⁹

Cadmadeira gives publicity to the legal persons that commercialize native forest products and byproducts that voluntarily registered themselves at the system, in particular in the civil construction sector. This increases the efficiency of the state control over the products' origin. It also assists public procurement by the State's Administration when it comes to purchasing native forest products and byproducts.²⁹⁰

Furthermore, the register at Cadmadeira gives an enterprise the opportunity to receive the State's forest certification system, the Legal Timber Tag (*Selo Madeira Legal*). The system distinguishes responsible companies among all enterprises that commercialize forest products. The tag will be valid for one year, subject to renewal. It will be issued given the following requirements are fulfilled: the legal person is registered at Cadmadeira, timber stock is well organized at the yards by types, sizes, and species, and biannual technical reports on

²⁸⁹ *Cadmadeira*, SECRETARIA DO MEIO AMBIENTE DO GOVERNO DO ESTADO DE SÃO PAULO [ENVIRONMENTAL AGENCY OF THE STATE OF SÃO PAULO'S GOVERNMENT], <http://www.ambiente.sp.gov.br/madeiralegal/cadmadeira/o-que-e/> (July 10, 2015).

²⁹⁰ State of São Paulo Decree 53.047/2008, art. 2 (Braz.).

sales and stocks are made available.²⁹¹

The implementation of Cadmadeira had also a significant influence in the State of São Paulo's public procurement proceedings. From June 1st, 2009 on, all public purchases by the Direct and Indirect State Administration of native forest products and byproducts are subject to the register of the seller at Cadmadeira.²⁹² Hiring services that involve the use of native forest products and byproducts also requires the seller to be registered at Cadmadeira.²⁹³

In August 2015, 185 legal persons were holding a valid register at Cadmadeira, from lumberyards to retailers and sawmills,²⁹⁴ and around 50 companies were holding the Legal Timber Tag.²⁹⁵ Cadmadeira stimulates consumer awareness about the origin of timber products, and promotes green public procurement. It could be used as a benchmark for other states to promote social and environmental responsibility among the private sector.²⁹⁶

In addition to the regulatory system previously analyzed, the following section will discuss the rules on land tenure regularization in the Amazon. The reason for such analysis is that irregular occupation is one of the most common causes of illegal logging in the region.

²⁹¹ State of São Paulo Decree 53.047/2008, art. 5.

²⁹² *Id.* art. 7.

²⁹³ State of São Paulo Decree 53.047/2008, art. 8 (Braz.).

²⁹⁴ *Cadastro de Comerciantes de Madeira no Estado de São Paulo [Registry of Timber Traders in the State of São Paulo]* SIGAM, <http://appvps6.cloudapp.net/sigam3/Default.aspx?idPagina=13852> (Aug. 10, 2015).

²⁹⁵ *Empresas com Selo Madeira Legal [Companies the Holding Legal Timber Tag]* <http://www.ambiente.sp.gov.br/madeiralegal/files/2011/10/Empresas-com-o-Selo7.pdf>.

²⁹⁶ See more on that matter at chapter 5, section b, i, 5.

j. Land tenure regularization – Illegal occupation in the Amazon as a major cause of deforestation

The history of the Amazon features the movement of uncontrolled occupation of the forest by citizens from other regions of Brazil during the 1960s.²⁹⁷ They were looking for work opportunities and ways to guarantee their subsistence. This was stimulated by the military dictatorship in power at that time and was a desperate solution to avoid the internationalization of the Amazon region. People would settle in “no one’s lands” hidden in the vast forest -- lands with no official ownership. For several decades, the tenure of workers and families over the occupied estates remained irregular, as no official agency or registry would acknowledge their ownership over the lands.

i. Uncertainty of landownership in most Amazon region

In 2008, title to 53% of the Legal Amazon was uncertain. It was estimated that 23% of the Legal Amazon was owned by private parties with no official register before the National Institute of Colonization and Land Tenure Reform (*Instituto Nacional de Colonização e Reforma Agrária - INCRA*). 21% of public lands were unoccupied areas outside Specially Protected Areas and 9% of lands were possessed by private parties with no ownership title.²⁹⁸ Moreover, some Conservation Units are still object of irregular occupation and need land

²⁹⁷ See chapter 3, section b, on that matter.

²⁹⁸ Brenda Brito & Paulo Barreto, *Os riscos e os princípios para a regularização fundiária na Amazônia* [*The risks and principles of land tenure regularization in the Amazon*], IMAZON – O ESTADO DA AMAZÔNIA 1 (Mar. 2009).

tenure regularization. In 2008, land tenure of around 10 million ha of Conservation Units was pending.²⁹⁹

ii. Public policies on land tenure regularization – The National Agrarian Policy and the Legal Land Program

1. The National Agrarian Policy – Regularization of private parties’ tenure over public lands as a mechanism to tackle illegal logging

The regularization of private lands has been improved with the implementation of the Rural Environmental Register (*Cadastro Ambiental Rural* – CAR) by state and federal environmental agencies, as discussed previously. As for public lands irregularly occupied by private parties, land tenure regularization is achieved with the ownership transfer to the private occupants. Due to the significant portion of public lands historically found in such circumstances, the Government has launched the national agrarian policy to regularize the situation. The policy determines the expropriation of private and public rural properties not performing their social function against prior and fair compensation.³⁰⁰ The agrarian reform

²⁹⁹ *Id.*, at 1.

³⁰⁰ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 184 (Braz.) (“It is within the power of the union to expropriate on account of social interest, for purposes of agrarian reform, the rural property which is not performing its social function, against prior and fair compensation in agrarian debt bonds with a clause providing for maintenance of the real value, redeemable within a period of up to twenty years computed as from the second year of issue, and the use of which shall be defined in the law.

Paragraph 1. Useful and necessary improvements shall be compensated in cash.

Paragraph 2. The decree declaring the property as being of social interest for agrarian reform purposes empowers the union to start expropriation action.

Paragraph 3. It is incumbent upon a supplementary law to establish special summary adversary proceeding for expropriation action.

Paragraph 4. The budget shall determine each year the total volume of agrarian debt bonds, as well as the total

aims to promote social justice, the progress and well-being of the rural producer, and the country's economic development. It intends to do it by changing the composition of the country's rural areas replacing large rural properties (*latifúndios*) with medium and small productive properties.³⁰¹

The regularization of rural public lands is relevant for the achievement of the agrarian reform purposes. It is also important for the fulfillment of constitutional objectives of reduction of social and regional inequality (Article 3, III), promotion of human dignity (Article 1, III), and the exercise of the property's social function (Article 5, XXIII).³⁰² It contributes to economic development and environmental management of the region, ends and avoids social conflicts, provides assurance of the property rights of local populations, and implements the goals of institutional transparency and coordination.³⁰³

Furthermore, illegal occupation in the Amazon region is directly related to illegal deforestation. It is one of its major contributors for several reasons, among which is the fact that without public authorities acknowledging the actual owner or certain forested area, punishment of illegal deforestation is undermined. Moreover, illegal occupation is usually set by clearing the land's vegetation, to justify its occupation and use to public authorities.³⁰⁴

amount of funds to meet the agrarian reform program in the fiscal year.

Paragraph 5. The transactions of transfer of property expropriated for agrarian reform purposes are exempt from federal, state and municipal taxes.”); CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 188 (Braz.) (“The destination given to public and unoccupied lands shall be made compatible with the agricultural policy and the national agrarian reform plan.”).

³⁰¹ Maíra Esteves Braga, *Regularização Fundiária na Amazônia Legal: alguns aspectos relevantes [Land Tenure Regularization in the Legal Amazon: some relevant aspects]* 3, <http://incra.gov.br/procuradoria/artigos-e-doutrinas/file/1102-regularizacao-fundiaria-na-amazonia-legal-alguns-aspectos-relevantes-por-maira-esteves-braga>.

³⁰² *Id.* at 6.

³⁰³ Brito & Barreto, *supra* note 298, at 1.

³⁰⁴ See chapter 3, section j, on that matter.

Therefore, land tenure regularization is one of the prime mechanisms to tackle illegal logging and associated trade in the Amazon.

2. The National Agrarian Policy as a slow and bureaucratic process of land tenure regularization

The regularization of rural public lands by means of ownership transfer to private occupants faces some difficulties. Public forests are assets of common use, therefore they are inalienable, unless otherwise established by specific law.³⁰⁵ Besides, the Federal Constitution prohibits the acquisition of public lands by special adverse possession (*usucapião*).³⁰⁶ In that regard, the Federal Constitution establishes that the alienation of public assets shall be subject to previous public bidding proceedings, ensuring the fair competition between all bidders. It intends to ensure compliance of land tenure regularization with the principles in which public administration is based, that is, lawfulness, morality, publicity, impersonality, and efficiency, among others.³⁰⁷

Thus, Federal Law 8.666/1993 was enacted, regulating public bidding proceedings required for sales of public lands. However, since bidding proceedings are slow and bureaucratic, the regularization of public lands in the Amazon region has been taking decades

³⁰⁵ Civil Code, arts. 99 § I, 100 (Braz.).

³⁰⁶ CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 191 (Braz.) (“The individual who, not being the owner of rural or urban property, holds as his own, for five uninterrupted years, without opposition, an area of land in the rural zone, not exceeding fifty ha, making it productive with his labor or that of his family, and having his dwelling thereon, shall acquire ownership of the land. The public real estate shall not be acquired by prescription.”).

³⁰⁷ Braga, *supra* note 301, at 7.

to be fully executed. The Federal Government created the Legal Land Program to accelerate the process.

3. The Legal Land Program – A promising mechanism to tackle illegal logging

The Legal Land Program (*Programa Terra Legal*) regulates the occupation of federal urban and rural lands within the Legal Amazon by means of alienation and concession of use rights.³⁰⁸ The goal is to accelerate the regularization process by simplifying it to legitimate land tenure in the Amazon efficiently. The Program focuses on the occupation by small families who represent a considerable portion of illegal occupiers in the Amazon. It is executed by the Brazilian Ministry of Agrarian Development.

Federal Law 11.952/1009, which implements the Legal Land Program, and Federal Law 8.666/1993,³⁰⁹ establish when public bidding proceeding is not required for regularization of public lands. One of the requirements for the ownership interests of federal lands is the exercise of agricultural, agro-industrial, forest, extractive, fishing, or any other similar type of utilization of the rural estate. It shall be transferred for subsistence purposes.³¹⁰ The Legal Land Program limits the size of rural properties that may be transferred to 15 fiscal modules³¹¹

³⁰⁸ The Federal Law 11.952/2009 is a result of the Provisional Measure 458/2009, issued with the purpose of establishing rules that simplify the procedures for obtaining land title within the Legal Amazon, in order to legalize legitimate occupation of land, especially by small farmers and local communities.

³⁰⁹ Federal Law 8.666/1993, art. 17 § I(i); ¶ 2 § II.

³¹⁰ Federal Law 11.952/2009, arts. 5 § III, 2 § V (Braz.).

³¹¹ The area equivalent to one fiscal module is set by Special Instruction/INCRA/20/1980, based on the municipality where the property is located. For example, 1 fiscal module in Belém, State of Pará, is equivalent to 5 ha.

and not superior to 1,500 ha.³¹² Areas larger than 15 fiscal modules or 1,500 ha may be the object of partial ownership over such limits only.³¹³

The Program focus on lands owned by the Federal Government, excluded military lands, lands traditionally occupied by indigenous communities, public forests subject to concession under Federal Law 11.284/2006, Conservation Units, and lands with accessions or appurtenances made by the Federal Government.³¹⁴ The areas subject to such program are known as *rural settlements*, which are public lands (*terra devolutas*), or a previously declared unproductive rural property originally owned by one individual or legal person, divided by INCRA into agricultural units and handed to family farmers.³¹⁵

The Legal Land Program is a promising mechanism to combat illegal logging in the Amazon, because irregular occupation is a historical cause of deforestation. Besides, it is structured to regularize small areas occupied by local communities dwellers. Therefore, it will discourage lumberjacks from local communities to continue illegal logging, by providing alternative regularized sources of income. Since local lumberjacks represent the majority of illegal loggers in the region, the Program's contribution might be significant. Nevertheless, the Program needs some adjustments, as its implementation has been deficient. Suggestions on this matter will be presented in chapters 3 and 5.³¹⁶

³¹² Federal Law 11.952/2009, art. 6 ¶ 1 (Braz.).

³¹³ *Id.* art. 14.

³¹⁴ *Id.* art. 4.

³¹⁵ *Settlements*, INSTITUTO NACIONAL DE COLONIZAÇÃO E REFORMA AGRÁRIA [INCRA] [NATIONAL INSTITUTE OF COLONIZATION AND LAND REFORM], <http://www.incra.gov.br/assentamento> (Jun. 29, 2015).

³¹⁶ Practical aspects of land tenure regularization in the Amazon will be presented at chapter 3, section j, ii. Recommendations on the improvement of land tenure regularization policies will be addressed at chapter 5, section c, ii.

k. Conclusion

Uncontrolled deforestation is a historical and cultural problem in Brazil. For such reason, although Forestry Law today establishes requirements for the sustainable utilization of forest resources, its enforcement is deficient. This is one of the causes of the current high levels of illegal deforestation in the Amazon.

Brazilian Environmental Law is a comprehensive set of rules and principles that value and promote environmental preservation and sustainable use of natural resources. It is one of the most complete environmental legal systems worldwide. The Federal Constitution grants people the right to a healthy and ecologically balanced environment. It establishes the Government and community's duty to defend and preserve the environment for present and future generations. It sets instruments to be used, and principles to be followed for the assurance of the sustainable use of natural resources. The Constitution also institutes the Specially Protected Areas, Indigenous Lands, and unoccupied lands as objects of environmental preservation. Such rights, duties, and principles should be fully implemented within activities of timber supply chain. Hence, their acknowledgment is fundamental in the creation of mechanisms to promote the sustainable use of forest resources and to tackle illegal logging.

The Forest Code is the principal environmental law applicable to activities related to timber supply chain. It establishes rules for environmental protection and requires the sustainable use of native forests. However, its full enforcement is undermined by obstacles responsible for the high levels of illegally sourced timber in the Amazon. Among them, there are the deficient public monitoring of activities related to the timber industry and the

competitive disadvantage of legally sourced timber. Such obstacles and measures to overcome them will be further discussed in this work.

The federal environmental regulatory system on forests comprises laws prohibiting the suppression of endangered species. However, these are currently the main objects of illegal trade. Therefore, the Government should better protect endangered trees and encourage sustainable management of vulnerable ones. It should do so through the elimination of illegally sources timber from the market.

The National System of Conservation Units is a well-structured tool for the protection and sustainable use of natural resources in the Amazon. It creates a balance between preservation purposes and the transformation of the forest into a source of revenue to local communities. However, Conservation Units are constant targets of illegal logging, illegal occupation, and irregular commercial activities held within them. This is due to deficient law enforcement and monitoring by the Public Government, who should make better efforts to assure Conservation Units serve for their purposes.

The instruments for concession of utilization rights over public forests to private parties are promising mechanisms to promote the sustainable use of the Amazon forest resources, since the majority of areas within the Amazon are public forests. They assist the achievement of the socio-environmental function of properties, harmonizing the economic development and environmental conservation. Public forest concessions provide titled, accessible, and productive forestland in areas of sufficient scale to make possible long-term wood production and forest rejuvenation. They help to eliminate illegal logging, as well as inefficacy and corruption associated with monitoring of activities.

Forestry Law establishes sanctions on environmental administrative and criminal offenses, and liability for environmental damage caused by illegal activities held along timber supply chain. However, the classification of these offenses is inaccurate and overlaps, causing conflict between them. This undermines application and enforcement of the law. Besides, penalties are usually disproportional to the offenses' gravity, thereby undermining their purpose to discourage illegal undertakings. Hence, there is a need for a legislative reform to improve Forestry Law enforcement.

Brazilian Law shows concerns with indigenous people when ensuring their original right over the lands they occupy and their exclusive usufruct. It prohibits any occupation or exploitation by third parties. Since the majority of Indigenous Lands are located within the Amazon region, their protection and respect is a significant measure of protection to native forests. However, these lands are constantly invaded by loggers or illegally exploited by indigenous people themselves. This is due to obstacles to the full enforcement of the law, such as deficient monitoring and corruption.

Furthermore, the environmental licensing of processing of forest products and byproducts, as well as the storage and transport of such products, is an essential mechanism to avoid and mitigate illegal conducts. Additionally, federal and state control systems of forest products' origin increase control and monitoring power over transportation and storage of products all over Brazil. However, both systems are common targets of fraudulent schemes and deficient law enforcement. This is due to factors such as corrupt environmental agencies and deficient public monitoring of activities subject to environmental licensing and control of the products' origin.

Aside from the use of legally required control systems, the Government of the State of São Paulo implemented the Cadmadeira system for the monitoring of the timber supply chain within the State. This was done due to the high circulation of timber products. The system stimulates consumer awareness about the origin of timber products and promotes green public procurement. It could be used as a benchmark for other states to promote social and environmental responsibility among the private sector.

As illegal occupation of forestland has been one of the major contributors to illegal logging activities in the Amazon, programs of land tenure regularization established by the law are also essential tools in the combat against illegal logging. The recently created Legal Land Program is intended to accelerate and simplify the process of land tenure regularization of federal rural lands within the Legal Amazon. It does so by means of alienation and concession of use rights. Nevertheless, the Program needs some adjustments, as its implementation has been deficient.

The main statutes and regulations that compose Forestry Law are construed on the principle that native forests must be kept as they were created by nature. Their only alternative uses are well-defined by law. Furthermore, the law imposes civil, criminal and administrative liability on those that cause environmental damages. Nevertheless, enforcement of law and its outcomes have not been satisfactory. Hence, the next step of this work regards the investigation on which rules have been complied with, and what legal adaptations should be made. The next chapter is dedicated to the elucidation of the current conditions in which logging and other activities related to timber supply chain are being held in the Amazon.

CHAPTER 3 – LOGGING IN THE BRAZILIAN AMAZONIAN RAINFOREST

a. Introduction

The present chapter serves as an overview of timber industry in the Amazon, gathering practical aspects of logging, processing and transportation of timber. It gives a thorough analysis of the sector's features and deficiencies when it comes to illegal logging and associated trade.

The history of exploitation of natural resources in the Amazon is presented first, showing the factors that led to the forest's degradation and how timber industry consolidated in the region. Second, this chapter discourses on the importance of sustainable forest management in the Amazon, and how public forest concessions have been handled lately.

It turns next to the leading causes of deforestation in the Amazon and the changing aspects of deforestation over time. Furthermore, the chapter examines the illegal logging schemes and the frauds executed on the control systems of forest products' origin and environmental licensing procedures. The social, environmental, economic impacts of illegal logging and associated trade are also examined.

The study also takes into account the plans and systems currently deployed by the federal and state environmental agencies to monitor logging activities and to cease and repress illegalities. Both technology instruments and fieldwork strategies are presented, accompanied

by the identification of deficiencies at the monitoring and law enforcement systems and the challenges of eliminating such flaws.

Furthermore, special attention is given to the issue of irregular occupation of forested lands in the Amazon. Its close relation with illegal logging is clarified. The analysis includes the most common schemes of irregular occupation held in the region, the importance of land tenure regularization in tackling illegal logging, and the current results of the main regularization programs being held.

Much of the information on illegal logging schemes and monitoring activities held in the Amazon was acquired through interviews with professionals based in the Amazon region. Representatives of the private sector, federal and local state environmental agencies, locally acting non-profit organizations, and local members of the judiciary were all interviewed in order to present as complete a picture of the situation as possible.

b. Historical background of utilization of natural resources in the Amazonian

Rainforest – deforestation as a historical problem

i. The first phase of deforestation in the Amazon – Exportation of forest products to Europe

The Amazonian Rainforest is located in nine South American countries,¹ with 60% residing in Brazil. The Amazon represents 49.29% of Brazil's territory² with an approximate

¹ Brazil, Suriname, Guiana, French Guiana, Venezuela, Colombia, Ecuador, Bolivia, and Peru.

² The Brazilian Amazon Rainforest shall not be confused with the Brazilian Legal Amazon. The latter comprehends the Amazon Rainforest in addition to part of the *cerrado* and *pantanal*, which are other Brazilian

area of 419,694,300 hectares.³ The Amazon Basin holds one fifth of the planet's fresh water⁴ and is one of the largest natural resources reserves and biodiversity concentration in the world.

The extraction of the forest's resources for commercial purposes in the Amazon began in the 17th century. Its intensity increased when the Portuguese royal regime provided incentives for the commercialization of Amazonian products in Europe, such as nuts, tobacco, exotic fruits, animal and plant-based products.⁵ According to Fernando Henrique Cardoso, this would be the first phase of deforestation in the Amazonian Rainforest. It corresponded to the destruction of tropical forest near rivers and lakes, where the so-called backwoods drugs (*drogas do sertão*)⁶ were useful as food, spices, and medicine in Occidental Europe.⁷

ii. The second phase of deforestation in the Amazon – High levels of deforestation caused by the rubber cycle

In the 19th century, the Industrial Revolution encouraged the search for alternative raw materials to feed manufacturing activities, which led to extensive rubber extraction in the Amazon Rainforest.⁸ During World War II, the Allies' access to Asian rubber ceased, a loss felt especially by the defense industry. Consequently, American authorities turned their

biomes, delimited according to socio-economic requisites. See *O que é a Amazônia Legal* [What is the Legal Amazon], O ECO, <http://www.oeco.org.br/dicionario-ambiental/28783-o-que-e-a-amazonia-legal/> (Sept. 10, 2015).

³ *Os Biomas e Suas Florestas* [Biomes and Their Forests], SERVIÇO FLORESTAL BRASILEIRO [SFB] [BRAZILIAN FOREST SERVICE], <http://www.florestal.gov.br/snif/recursos-florestais/os-biomas-e-suas-florestas> (Sept. 9, 2015).

⁴ *O que é a Amazônia Legal* [What is the Legal Amazon], O ECO, <http://www.oeco.org.br/dicionario-ambiental/28783-o-que-e-a-amazonia-legal/> (Sept. 10, 2015).

⁵ *História da Ocupação da Amazônia* [History of the Amazon's Occupation], TOM DA AMAZÔNIA [AMAZON'S TON] 5, <http://www.tomdaamazonia.org.br/biblioteca/files/Cad.Prof-4-Historia.pdf>.

⁶ *Drogas do sertão* are, for example, *urucum*, *guaraná*, carnation, cinnamon, indigo, *salsa parrilha*, vanilla, nuts, and cocoa.

⁷ FERNANDO HENRIQUE CARDOSO, *AMAZÔNIA: EXPANSÃO DO CAPITALISMO* [THE AMAZON: THE CAPITALISM EXPANSION] 18 (Brasiliense, 1977).

⁸ *História*, *supra* note 5, at 8.

attention and investments to the Amazon as a provider of rubber, while the Government agreed to send a large number of workers to the Rainforest. In 1941 and 1942, 30,000 workers migrated from the city of Fortaleza in Northeast of Brazil to the rubber plantations.⁹ Interest in rubber extraction in the Amazon was such that Henry Ford even built his so-called Fordlandia during the 1920s. This was a city in the middle of the Rainforest where he planted what was supposed to be the largest rubber plantation (*seringal*) in the world. At that time, 200,000 ha were cleared for the planting of rubber trees.¹⁰

The rubber cycle came to an end after three decades, due to a bio piracy act in which Europeans took rubber trees' seeds to Asia and achieved rubber production at a lower cost.¹¹ American interest in rubber production in the Amazon declined as World War II ended.¹² However, the end of this era, classified by Cardoso as the second phase of deforestation in the Amazon,¹³ left permanent scars in the Rainforest. The 'rubber soldiers' that moved to the forest from other regions of Brazil hoping for better jobs and a better quality of life, were left there without either¹⁴ while the forest was left destroyed.

iii. The third phase of deforestation in the Amazon – agriculture, mining, disordered occupation, and poorly planned infrastructure projects

After the end of the rubber period, the third phase of the Amazon's devastation took

⁹ *História*, *supra* note 5, at 8.

¹⁰ The rubber trees plantation in Fordlandia ended in failure due to pests problems added to the decline of the rubber period. *See* Videotape: *Amazônia - Heranças de uma Utopia* [Amazon – Heritage of Utopia] (MPC & Associados 2003).

¹¹ *História*, *supra* note 5, at 7.

¹² *Id.* at 8.

¹³ CARDOSO, *supra* note 7, at 18.

¹⁴ *História*, *supra* note 5, at 8.

place with the increase in agriculture and mining activities during the 20s and 30s.¹⁵ In 1960, some eyes turned to the Amazon Rainforest again, when the military dictatorship raised concerns about the possible ‘internationalization’ of northern Brazil.¹⁶ As a preventive measure, the military government created the movement ‘Integrate to not give it away’, (*‘Integrar para não entregar’*), also known as the National Integration Plan. The main purpose of the movement was to enable the colonization of the Rainforest and the Government decided to do so by attracting people from other regions with work, investment, and landownership opportunities. It consisted of incentives for the economic development of the Amazon region through large-scale mining, logging, cattle raising, and agricultural projects. Tax incentives and credits were given; and, among other measures, roads were built to facilitate access into the forest.¹⁷ As a consequence, massive forested areas were cleared and burned to give space to new economic activities.

During the 1970s, the national energy and transport policy promoted the construction of highways (Transamazônica, BR-163 - Cuiabá-Santarém, and Perimetral Norte) and hydroelectric power plants (Tucuruí, Balbina, and Samuel) in the Amazon region, with the main purpose of the area’s colonization.¹⁸ The National Integration Plan stimulated the settlement of small farmers along the Transamazônica in tracts of lands not bigger than 100ha.¹⁹ The Federal Government aimed to create a prosperous class of rural producers by

¹⁵ CARDOSO, *supra* note 7, at 18.

¹⁶ *História*, *supra* note 5, at 9.

¹⁷ *Id.*

¹⁸ DAVID FERREIRA CARVALHO, GLOBALIZAÇÃO FINANCEIRA E AMAZÔNIA NOS ANOS 90 [FINANCIAL GLOBALIZATION AND THE AMAZON DURING THE 90S] 493 (UFPA, 2006).

¹⁹ The Transamazônica Highway, the most popular unsuccessful project in the Rainforest, was supposed to be an 8,000 Km paved road. However, it is currently an unpaved road of around 4,300Km from the State of Maranhão to the State of Acre across the Amazon Rainforest. See MARIANNE SCHMINK & CHARLES H. WOOD, CONFLITOS SOCIAIS E A FORMAÇÃO DA AMAZÔNIA [SOCIAL CONFLICTS AND THE FORMATION OF THE AMAZON] 35 (UFPA, 2012). Another unsuccessful infrastructure project of huge proportions implemented in the Amazon worth mentioning is the Railroad Madeira-Mamoré. As the Transamazônica Highway, Madeira-Mamoré was a project

providing free agricultural lands in the region.²⁰ It promoted the transfer of families from the South and Northeast of Brazil, regions with great concentration of people and lack of agricultural lands, to agricultural cities that were supposed to be built near Transamazônica. The Government would give comfort and infrastructure to the families and they would in turn cultivate and occupy lands in the Amazon. This allowed the Government to colonize the forest before its occupation by other nations.²¹

The colonization project based on the construction of Transamazônica was presented to society as a solution for landless families. However, it resulted in a migration movement much more dense than what the Government was capable of resettling in the Amazon.²² The Government did not keep its promises and those families that moved to the Rainforest looking for comfort, food, and health were abandoned and left to their own fate.²³ A disordered occupation took form and, consequently, the uncontrolled vegetation suppression of colonized

that resulted in significant financial losses to Public Government, and severe social and environmental damage. Railroad Madeira-Mamoré went from the city of Porto Velho, capital of the State of Rondônia, to the city of Guajará-Mirim, at the frontier with Bolivia, being 366Km long. It was built as a payment to Bolivia for the concession of the territory that is currently the State of Acre, with the purpose to transport rubber. It took 40 years for the project to be completed, having several interruptions at its construction. However, the rubber era ended before the railroad could be finished. It was such an enormous project at the time that more than 20,000 people from all over the world went to the site to work at the railroad's construction. Its operation started in April, 1912, being seen as a promising project for the region, where citizens expected it to bring prosperity and wealth. But the railroad was deactivated in July, 1971, as it was useless after the end of the rubber cycle. Among the several challenges faced during its construction, one of the biggest was the health problems suffered by the workers. Tropical diseases killed more than 1,500 workers. One year after the construction was initiated, it was interrupted due to malaria epidemic. A second interruption at the construction was also due to problems with tropical diseases. For such reasons, it was usually called The Devil's Railroad. *See Ferrovia Madeira-Mamoré [Madeira-Mamoré Railroad]*, FUNDAÇÃO JOAQUIM NABUCO (May 29, 2014), http://basilio.fundaj.gov.br/pesquisaescolar/index.php?option=com_content&view=article&id=1037:ferrovia-madeira-mamore&catid=41:letra-f&Itemid=1.

²⁰ MARIANNE SCHMINK & CHARLES H. WOOD, CONFLITOS SOCIAIS E A FORMAÇÃO DA AMAZÔNIA [SOCIAL CONFLICTS AND THE FORMATION OF THE AMAZON] 35 (UFPA, 2012).

²¹ Videotape: Amazônia - Heranças de uma Utopia, *supra* note 10.

²² SCHMINK & WOOD, *supra* note 20, at 35.

²³ Videotape: Amazônia - Heranças de uma Utopia, *supra* note 10.

areas.²⁴ At that time, deforestation and fires destroyed 4 million hectares of native forests. Settlers let the grass grow in the deforested fields and transformed them into pasture.²⁵

Transamazônica became the main gate to unexplored areas in the Amazon, making an easier access to valuable timber for illegal loggers. The construction of smaller roads in the countryside of other Amazonian states had the same effect, transforming the local timber industry during the 1970s. For instance, the construction of the Road PA-150 in the State of Pará gave access to one of the richest mahogany concentration areas in the world. The road connects the Port of Belém to the State's South region and the consumer markets in South of Brazil. This contributed to the 4,000% rise in timber production in Pará during the following decade. By 1980 the State was responsible for 69% of timber industry production in the Amazon.²⁶ The construction of the Road BR 163 also contributed to deforestation in the region. The road cuts through the Rainforest. Areas equivalent to a stripe 5Km wide were deforested at each of its sides. It is expected that these areas will be 45Km wide after the road's total paving (currently 1,000 Km out of 3,467 Km are not paved).²⁷

iv. The fourth phase of deforestation in the Amazon – Governmental incentives to pasture and crops

The National Integration Plan also attracted investors from developed regions who took advantage of governmental tax incentives to colonize the Amazon, resulting in the conversion

²⁴ SCHMINK & WOOD, *supra* note 20, at 35.

²⁵ Videotape: Amazônia - Heranças de uma Utopia, *supra* note 10.

²⁶ SCHMINK & WOOD, *supra* note 20, at 214.

²⁷ SÉRGIO ADEODATO, AMAZÔNIA, A FLORESTA ASSASSINADA: FALTA MUITO POUCO PARA MATÁ-LA DE VEZ [AMAZON, THE MURDERED FOREST: IT WILL TAKE JUST A LITTLE BIT TO KILL IT ONCE FOR ALL] 39 (Mostarda, 2006).

of immense native forested areas into pasture. Forests were cleared mainly with the use of fire, thus wasting enormous amounts of tropical timber.²⁸ The movement brought extreme consequences to the forest ecosystem²⁹ and its traditional communities, since the goal of occupation was to devastate the forest as much as possible, to create space for pasture and crops.³⁰ This period was deemed the fourth phase of great degradation of the Amazonian region.³¹ It caused fresh water scarcity, a loss of biodiversity and also contributed to climate change. Additionally, there have been social consequences caused by illegal deforestation, such as an increase in poverty.³²

v. Disordered occupation and uncontrolled deforestation in the Amazon during the 1980's due to mining expansion

During the 1980s and 1990s, a new economic cycle took place in the Amazon, based on timber exploitation and mining activities.³³ Gold mines (*garimpo*) were discovered in the Amazon region, especially in the South of the State of Pará. The biggest and most popular of them was Serra Pelada. Mines attracted migrants to the region with the hope for wealth. Similarly to the National Integration Plan, the Government was not able to control the dense

²⁸ SCHMINK & WOOD, *supra* note 20, at 36.

²⁹ The Amazon is home for more primate species than in any other country, and around 11% of all bird species existent in the world. By 1979, it was believed that 20 species of mammals, 5 species of birds, and 3 species of reptiles already had problems caused by degradation of their natural habitats, due to deforestation. Five of these species were considered endangered. See José Márcio Ayres et. al., *Estratégias para a conservação da fauna amazônica* [Strategies for the conservation of the Amazonian fauna], *Estratégias para a política florestal na Amazônia brasileira* [Strategies for a forest policy in the Brazilian Amazon], 4 ACTA AMAZONICA 81 (1979).

³⁰ *História*, *supra* note 5, at 9.

³¹ CARDOSO, *supra* note 7, at 18.

³² *História*, *supra* note 5, at 11.

³³ CARVALHO, *supra* note 18, at 494.

migration of miners to the Amazon. This resulted in a disordered occupation, violence, and uncontrolled deforestation.³⁴

vi. The recent emergence of the Amazonian timber industry

There is not much data available on the growth of the timber market in the Amazon region, although it is known that in 1900 there were only 5 timber companies in the State of Pará and, in 1920, only 4 in the State of Amazonas.³⁵ By 1940, both states had 100 timber companies, as well as some sawmills and processing plants. Such increase was due to the retraction in the Amazonian rubber market resulting from the expansion of the Asian rubber industry.³⁶ But the momentum of the timber industry in the Amazon region took place toward the end of the 19th Century with the arrival of immigrants specialized in timber processing. Shipbuilding and civil construction also provided a significant contribution to the improvement of timber industry in the region by that time.³⁷

In the 20th century, timber sector continued to grow in the Rainforest and, according to studies from 1978 there were 480 sawmills and 8 lumberyards in the Amazon.³⁸ Today timber extraction and processing have become pillars of the Amazon's economy, together with cattle

³⁴ SCHMINK & WOOD, *supra* note 20, at 43.

³⁵ Marino Baima de Almeida, *A Indústria madeireira na Amazônia* [Timber industry in the Amazon], 49 (1985) (unpublished thesis, Universidade Federal da Paraíba) (on file with Núcleo de Altos Estudos Amazônicos - NAEA).

³⁶ *Id.* at 55.

³⁷ *Id.* at 64.

³⁸ *Id.*

raising, agriculture (mainly soybean plantation), mining, seeds, fruits, rubber extraction, fishing, and ecotourism.³⁹

vii. Deforestation in the Amazon as a historical problem and factors that caused it in the past that are still major contributors to illegal logging

The history of utilization of natural resources in the Amazon shows that uncontrolled deforestation is a historical problem. The Government stimulated the region's colonization without taking any mitigation of environmental and social impacts. These impacts last until today, as it is the case of damage to flora and fauna, and poverty.

Environmental Law has evolved over time and currently regulates environmental preservation and establishes strict requirements for sustainable use of natural resources and environmental licensing of infrastructure projects. It also regulates land tenure and the agrarian reform. Nevertheless, factors that caused deforestation in the past are still major contributors to illegal logging, such as the irregular occupation of forestlands and infrastructure projects poorly planned that are still under construction, as Transamazônica Highway. This is due to deficient law enforcement and monitoring. The following sections discourse on their causes. The encouragement of sustainable forest management as a form to decrease deforestation levels will also be discussed.

³⁹ *Economia da Amazônia* [Amazon's Economy], TOM DA AMAZÔNIA [AMAZON'S TON], <http://www.tomdaamazonia.org.br/biblioteca/files/Cad.Prof-10-Economia.pdf>.

c. Sustainable logging practices in the Amazonian Rainforest

i. Benefits of sustainable forest management

In the past, loggers would adopt the conventional timber exploitation method, by which trees were randomly cut, without considering any technical, social, or safety aspects. Clear cutting an area is done without the adoption of any mitigation measures of impacts caused over fauna, flora, and water resources. Areas of Permanent Preservation and Areas of Legal Reserve are not respected either. Therefore, the method of clear-cutting historically used is unsustainable and harmful to the environment.⁴⁰

Sustainable forest management method, on the other hand, consists of the economic use of the forest with the lowest impact possible, allowing the forest to regenerate before is used again.⁴¹ Unlike the conventional exploitation method, forest management consists of harvesting of timber according to a plan and rules for identification and selection of species, as well as techniques for cutting and dragging the logs to trucks and monitoring of the forest throughout the process.⁴² Such approaches have resulted in not just environmental but also economic advantages to logging activities. Costs of forest management are 12% lower than conventional logging. There are savings from rational use of machinery and a two-thirds reduction in waste with a better use of wood.⁴³ Aside from having more control over production, sustainable forest management reduces losses from fires, halves the impacts on

⁴⁰ SÉRGIO ADEODATO ET AL., *WOOD: FROM THE FOREST TO THE CONSUMER* 44 (FGV RAE, 1st ed., 2011).

⁴¹ ADEODATO ET AL., *supra* note 40, at 41.

⁴² *Id.*

⁴³ *Id.* at 54.

the forest soil and on the trees left to the second harvest cycle,⁴⁴ and decreases from 30 to 20 years the period between timber cuttings.⁴⁵ The technique of sustainable forest management usually consists in the division of the area to be harvested into parcels, and only one parcel is harvested per year, while the others are left to re-generate.⁴⁶ For successful examples of sustainable forest management implementation in the Amazon region, one may look to Amata⁴⁷ and Cikel.⁴⁸ These are timber companies acknowledged for their seriousness in complying with Environmental Law and promoting sustainability.

ii. Encouragement of sustainable forest management among community forests

Logging activities are mostly done (approximately 60% of local logging) by the so-called *toreiros*, meaning lumberjacks. They are individuals that live usually in local communities and cut timber to sell it to sawmills.⁴⁹ Sawmills buy timber mostly from third parties (61%) instead of logging it themselves.⁵⁰ The popularity of sustainable forest management among *toreiros* in the Amazon has been growing because the Forest Service has promoted the practice among traditional communities, indigenous people, family farmers and rural settlers. These are inhabitants of the so-called *community forests* and have their economy based on forest resources. The Forest Service launched the Federal Program of Family and

⁴⁴ ADEODATO ET AL., *supra* note 40, at 54.

⁴⁵ Judy McKean Rankin, *Manejo florestal ecológico* [Ecological forest management], *Estratégias para a política florestal na Amazônia brasileira* [Strategies for a forest policy in the Brazilian Amazon], 4 ACTA AMAZONICA 119 (1979).

⁴⁶ ADEODATO ET AL., *supra* note 40, at 71.

⁴⁷ *Floresta Sem Fim* [Endless Forest], FOLHA DE SÃO PAULO, <http://arte.folha.uol.com.br/tudo-sobre/desmatamento-zero/> (Sept. 18, 2015).

⁴⁸ CIKEL, RELATÓRIO DE SUSTENTABILIDADE [SUSTAINABILITY REPORT] 43 (2009).

⁴⁹ *Quais são e onde estão os atores envolvidos na cadeia da madeira tropical amazônica?* [What are and where are the players of the Amazonian tropical timber supply chain?], HOW STUFF WORKS, <http://empresasefinancas.hsw.uol.com.br/industria-da-madeira4.htm> (June 10, 2014).

⁵⁰ ADEODATO ET AL., *supra* note 40, at 39.

Community Forest Management, in operation since 2010. It promotes and coordinates the adoption of sustainable forest management by community forests.⁵¹ The Program focuses on community forests due to their significant participation in the Amazon's economy. They comprise around 136 million ha and are revenue source for more than 2 million citizens. In 2010, there were 902 registered forest management initiatives in the Amazon region.⁵² Currently, according to the National Register of Public Forests, 57% of public forests are community forests.⁵³

Successful and wide implementation of forest management still faces several difficulties. These include lack of land tenure regularization, difficulty in the access to credit lines, and delay in the approval of forest management plans and environmental licenses.⁵⁴ Full implementation faces barriers not just at community level, but also by timber companies. To be successfully applied and economically feasible, sustainable forest management requires public policies and a transparent and corruption free infrastructure within the forest. Incentives to promote forest management and responsible wood consumption by both the Government and the general public are crucial.⁵⁵ Mechanisms to overcome such difficulties will be further discussed in this work.⁵⁶

⁵¹ *Manejo Comunitário na Amazônia [Community Management in the Amazon]*, SERVIÇO FLORESTAL BRASILEIRO [SFB] [BRAZILIAN FOREST SERVICE], <http://www.florestal.gov.br/florestas-comunitarias/sobre-florestas-comunitarias/sobre-florestas-comunitarias> (June 10, 2014).

⁵² *Manejo Comunitário na Amazônia*, *supra* note 51.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ ADEODATO ET AL., *supra* note 40, at 55.

⁵⁶ See chapter 5, section c.

iii. Small number of management of public forests projects in the Amazon

Public forest concessions promote sustainable forest management, and consequently combat illegal logging and associated trade in the Amazon. Nevertheless, there are only five National Forests under forest concession (an area around 842,000ha). Jamari National Forest, in the State of Rondônia, was the first one to be granted in 2008 to Madeflona Industrial Madeireira, Sakura Indústria e Comércio de Madeiras, and AMATA, consisting in a total area of 96,000ha.⁵⁷ These are still very modest numbers compared to the size of the Amazon Rainforest, as forest concessions represent less than 1% of timber production in the Amazon. The Forest Service intends to raise the number to 40% by 2022. However, to do so new concessions must be executed and current concessions must raise their productivity.⁵⁸ The direct management of National, State, and Municipal Forests by the Government, and the management of public forests by local communities under the Law 11.284/2006 have not been widely adopted in the region either.⁵⁹

In spite of the increasing interest in sustainably held timber extraction, the Amazon remains victim to unsustainable exploitation of forest resources and illegal deforestation. The following sections provide information on how illegal logging currently takes place and its

⁵⁷ *Concessão Florestal – Um novo paradigma de uso das florestas* [Forest Concession – A new paradigm of the forests use], SERVIÇO FLORESTAL BRASILEIRO [SFB] [BRAZILIAN FOREST SERVICE], <http://www.florestal.gov.br/concessoes-florestais/o-que-e-concessao-florestal/concessao-florestal-um-novo-paradigma-de-uso-das-florestas> (June 11, 2014).

⁵⁸ *Floresta Sem Fim*, *supra* note 47. See more on that matter at chapter 5, section c, iii.

⁵⁹ The Brazilian Forest Service's report on management of public forests is not clear on information on the public forests directly managed by the Government or on community forests regulated under Law 11.284/2006. According to it, private parties manage, under concession agreements, the great majority of registered public forests. See SERVIÇO FLORESTAL BRASILEIRO [BRAZILIAN FOREST SERVICE], *Gestão de Florestas Públicas – Relatório 2015* [Management of Public Forests – 2015 Report], <http://www.florestal.gov.br/destaques/gestao-de-florestas-publicas-relatorio-2015>.

environmental, social, and economic impacts. This analysis will make it possible to identify deficiencies in measures being taken to tackle the problem, and thereby to offer feasible solutions.

d. Illegal logging practices in the Amazonian Rainforest – Deforestation levels, the main schemes, and their causes

i. High but steady current deforestation levels

Before its exploitation, the Amazon had 4million Km² of native forests.⁶⁰ Currently, 19% has been destroyed, an area equivalent to the territory of Chile.⁶¹ The State of Pará, where most of deforestation takes place, had 65% of its territory declared to be Specially Protected Areas, while 35% of it was deforested decades ago.⁶²

Over the years, deforestation levels in the Amazon increased steadily, due to lack of environmental concerns over the conservation of forest resources, reaching a rate of 27,800 Km² cleared during 2004.⁶³ Nevertheless, from 2004 on, as a result of increased control and the international financial crisis,⁶⁴ deforestation rates started falling. In 2009, 6,400 Km² of native forest were cleared, a rate 42% smaller than in the previous year.⁶⁵ In 2012, 4,600 Km² were deforested, and the current annual deforestation average is of 5,000Km².⁶⁶ This means

⁶⁰ *Floresta Sem Fim*, *supra* note 47.

⁶¹ *Id.*

⁶² Interview with Rodolfo Gadelha, Director of the Environmental Monitoring Office of the State of Pará's Environmental Agency - SEMA, in Belém, Brazil (Jan., 2015).

⁶³ ADEODATO ET AL., *supra* note 40, at 13.

⁶⁴ *Id.* at 61.

⁶⁵ *Id.* at 11.

⁶⁶ *Floresta Sem Fim*, *supra* note 47.

deforestation in the Amazon region has decreased 80% in one decade.⁶⁷ However, rates of deforestation are still very high.

Although levels of deforestation in the Amazon Rainforest have been constantly monitored by the Government and other private institutions, such as the local environmental think tank Imazon, it is still uncertain how much of it consist of illegally harvested timber. Illegally harvested timber has been considered as logging that takes place when timber is harvested in violation of national laws.⁶⁸ The Forest Service does not tabulate the amount of illegally harvested timber in the Amazon, but the private sector estimates that more than 70% of traded volume is illegal.⁶⁹ AMATA suggests that half of illegal timber is the object of fraudulent documentation, and half of it does not have any documentation at all.⁷⁰

ii. Main causes of deforestation – cattle raising, agriculture, and timber extraction as a consequence of both

Deforestation in the Amazon is a consequence of various economic activities. Cattle raising by medium and large cattle operations is the main cause of deforestation in the region and has expanded since the 1970s.⁷¹ Pastures represent 60% to 70% of the deforested area in the Legal Amazon, including native forest and *cerrado* areas. These are two of the most biodiverse biomes in the world, playing critical roles in the global climate. Furthermore, the

⁶⁷ *Floresta Sem Fim*, *supra* note 47.

⁶⁸ Commission of the European Communities, Communication from the Commission to the Council and the European Parliament, Forest Law Enforcement, Governance and Trade [FLEGT] Proposal for an EU Action Plan, May 21, 2003 (COM (2003) 251 final), <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52003DC0251&from=EN>.

⁶⁹ *Floresta Sem Fim*, *supra* note 47.

⁷⁰ *Floresta Sem Fim*, *supra* note 47.

⁷¹ Sergio Margulis, *Causas do Desmatamento da Amazônia Brasileira* [*Causes of Deforestation in the Brazilian Amazon*], 79 (World Bank, 2003).

fact that Brazil is the second largest global producer of beef after the United States of America, and the world's fourth largest emitter of greenhouse gases, illustrates the dimension of the country's cattle raising industry.⁷² Until 2005, around 600,000Km² of forest, an area correspondent to twice the State of São Paulo, were deforested for the creation of low productivity pastures. Nowadays, one third of such areas are abandoned.⁷³

Agriculture, especially soybean cultivation, has also contributed to the problem, but on a smaller scale. Deforestation for soybean cultivation in the Amazon lasted until 2006 when it was discouraged by the moratorium agreed between the Federal Government, civil society, and soybean traders. This moratorium committed the parties not to purchase soybeans produced in newly deforested areas in the Amazon. Currently, soybean production represents only 1% of cleared areas in the Amazon.⁷⁴

Both cattle raising and agricultural activities in the Legal Amazon are concentrated in a region known as the *Deforestation Arc*, or *Fire Arc*. This is a half-moon arc from the Highway Belém-Brasília to the transition region from Amazon Rainforest to *cerrado* in the State of Mato Grosso.⁷⁵ Its location is known for being the most favorable for agriculture within the Amazon due to the levels of precipitation. It represents the core of the Amazon's economy, but also represents the area with the highest level of deforestation.⁷⁶

Although cattle raising leads among Amazon deforestation causes, economic activities in the Amazon are always interconnected. Usually cattle raising is just the end result for a tract

⁷² THE CONSUMER GOODS FORUM, <http://sustainability.mycgforum.com/> (June 10, 2014).

⁷³ SÉRGIO ADEODATO, AMAZÔNIA, A FLORESTA ASSASSINADA: FALTA MUITO POUCO PARA MATÁ-LA DE VEZ [AMAZON, THE MURDERED FOREST: IT WILL TAKE JUST A LITTLE BIT TO KILL IT ONCE FOR ALL], 46 (Mostarda, 2006).

⁷⁴ *Cientistas defendem a prorrogação da moratória da soja na Amazônia* [Scientists defend the extension of soybean moratorium in the Amazon] ESTADÃO (Jan. 23, 2015), <http://ciencia.estadao.com.br/blogs/her-ton-escobar/cientistas-defendem-prorrogacao-da-moratoria-da-soja-na-amazonia/>.

⁷⁵ ADEODATO, *supra* note 73, at 41.

⁷⁶ *Economia*, *supra* note 39.

of land which has already suffered timber exploitation or mining.⁷⁷ Therefore, the elimination of illegal logging will undermine the execution of other activities that cause deforestation.

iii. Most common illegal logging methods – The zero investment scheme

Illegal logging takes peculiar forms in the Amazon region due to its geographic characteristics. It is commonly done in dense forests with difficult access, with no infrastructure and little policing, and often hundreds of kilometers away from other towns. Over time, illegal loggers have developed unique strategies to harvest timber in prohibited places and to transport and process it without being traced.

Illegal logging is mostly done in rural settlements and small rural properties, in which Areas of Permanent Preservation and Areas of Legal Reserve are illegally deforested.⁷⁸ These properties are usually at remote locations, far away from communities to avoid complaints.⁷⁹ There has been a decrease in illegal logging on large rural properties.⁸⁰ Such illegalities also occur around Indigenous Lands, or traditional population lands and Conservation Units, since these are some of the few places where rare tree species can still be found. Because long distance transportation in the Amazon is economically unfeasible, there is widespread suspicion that not a single log found there is shipped from other states, but is rather all locally harvested.⁸¹

⁷⁷ Margulis, *supra* note 71, at 79.

⁷⁸ Interview with Iran Paz Pires, Vice Executive Secretary and Operational Manager of Instituto Floresta Tropical - IFT, in Belém, Brazil (Jan., 2015).

⁷⁹ *Floresta Sem Fim*, *supra* note 47.

⁸⁰ Interview with Iran Paz Pires, *supra* note 78.

⁸¹ ADEODATO ET AL., *supra* note 40, at 85.

The scheme most commonly adopted by illegal loggers is known as a *zero investment scheme*, in which a forested area owned by the Government or considered as *terra devoluta* (unoccupied public land) is illegally occupied and cleared.⁸² First, the destruction process begins with the construction of clandestine roads towards the forest,⁸³ allowing access and the illegal occupation of public lands by the *grileiros*.⁸⁴ Species of higher value are suppressed with chainsaws, and the revenue from the sale of such trees will finance the rest of the operation. Afterwards, the profits gained from the sale of the remaining timber are invested in pasture and cattle raising in the deforested land.⁸⁵ The term *zero investment* derives from the fact that there is no initial investment in acquiring the land, nor for executing any of the economic activities that make up the scheme.⁸⁶ It is also considered low investment because the taxes over land ownership and possession (*Imposto Territorial Rural - ITR*) are usually forged, especially in remote areas in the Amazon. In addition, because it is a declaratory tax, where the tax value is calculated from information declared by the taxpayer, it cannot be effectively charged against illegal loggers.⁸⁷

During the stage of clearing the entire forest, tractors dragging chains and knocking down anything in their way are used, and they are responsible for 18% of timber harvested in

⁸² Interview with Hugo Américo Schaedler, Superintendent of IBAMA in the State of Pará, in Belém, Brazil (Jan., 2015).

⁸³ ADEODATO, *supra* note 73, at 17. Some roads in the Amazon, such as the *Transiriri* in the region of the Iriri River, Terra do Meio, do not even exist on maps. They are clandestine routes used by illegal loggers that are usually built from the extraction spots to the port. See Videotape: *Amazônia – A Última Fronteira* [Amazon – the Last Frontier] (MPC & Associados 2011) and Videotape: *Aventura na Amazônia* [Adventure in the Amazon] (Ercilene Oliveira, 1997).

⁸⁴ *Grileiros* is the Portuguese name given to the agents that execute the *grilagem* (literally cricketing) process, which consists in the illegal possession of areas, or their purchase for derisive prices, for property speculation, as it will be further explained in more details. The expression *grilagem* derives from the old habit of *grileiros* to keep false title deeds in drawers with crickets to give them the appearance of old paper.

⁸⁵ Interview with Elis Araújo, Lawyer and Legal Researcher at Imazon, in Belém, Brazil (Jan., 2015).

⁸⁶ Videotape: *Amazônia – A Última Fronteira* [Amazon – the Last Frontier] (MPC & Associados 2011).

⁸⁷ Interview with Elis Araújo, *supra* note 85.

the Amazon.⁸⁸ As for organic matter left behind, such as leaves, branches and trunks, they are burned or decompose, all of which results in an addition to carbon emissions. Depending on the tree species cut, the forest may take a long time to regenerate, or might never recover from the damage caused. This is common in most cases, since the deforested land will be used for pasture or crops from that moment on.⁸⁹

The *modus operandi* of zero investment scheme has changed over the time.⁹⁰ In the past, loggers used to settle in virgin forests, where they would hide and camp in a small tent with no infrastructure and start clearing the forest. As they were clearing it, they would implement the economic activities in the locality, most commonly cattle raising. After the land was illegally occupied and the lumbermen settled, they would expand their occupation to other lands.⁹¹ Today loggers (*toreiros*) are usually paid by timber companies to get into the forested area, with no salary or food. They go there by motorcycle, hide the chainsaw somewhere, arrive in the morning and leave by the end of the day, which makes it harder to find the link between loggers and the deforested area. The motorcycle and the chainsaw are usually the payment for the service.⁹²

Timber companies that hire the *toreiros* know when environmental agencies are monitoring with satellite their region of interest. Therefore, they know where agencies are focusing their activities, which gives them a time advantage to leave the place beforehand. Despite such costly investments, the exploitation and trade of illegal timber is still more profitable than compliance with applicable law.⁹³

⁸⁸ ADEODATO ET AL., *supra* note 40, at 40.

⁸⁹ ADEODATO, *supra* note 73, at 44.

⁹⁰ Interview with Hugo Américo Schaedler, *supra* note 82.

⁹¹ Videotape: Amazônia – A Última Fronteira, *supra* note 86.

⁹² *Id.*

⁹³ *Id.*

Illegal loggers are mostly people that settled in the region decades ago. For example, Castanha, a logger known throughout the Amazon region,⁹⁴ started his operations by acquiring some forested areas and clearing them. He was caught, fined, and then sold the land at the end.⁹⁵ Currently, several complex gangs are dealing with illegal logging in the Amazon, with specialized people and a considerable amount of money and equipment. Illegal logging executed by criminal organizations usually involves other criminal activities besides logging itself, such as money laundering.⁹⁶

The analysis of practical aspects of illegal logging shows that schemes are getting more sophisticated and harder to identify. Furthermore, illegal timber is more profitable than legitimate production. Therefore, restraining illegal logging requires a well-prepared monitoring force that, if effectively held, will discourage the illegal market and make legitimate production more competitive. Chapter 5 will present suggestions on how these solutions can be implemented.⁹⁷

e. Control Systems of Forest Products' Origin and environmental licensing procedures frauds

Violation of environmental laws applicable to the timber industry may occur not just during logging activities, but also along the entire supply chain. Tactics have been created to

⁹⁴ Castanha and his gang were arrested in February, 2015, during the Castanheira Operation executed by the Federal Police, IBAMA, the Federal Prosecutor Office and the Federal Revenue Office. They were responsible for 20% of all illegal logging in the Amazon and charged for at least R\$ 47 million (US\$ 11,7 million) in environmental fines. See *Polícia Federal prende madeireiro conhecido como 'Castanha', no Pará* [Federal Police arrests logger known as Castanha in Pará] (Feb. 24, 2015), <http://odia.ig.com.br/noticia/brasil/2015-02-24/policia-federal-prende-madeireiro-conhecido-como-castanha-no-para.html>.

⁹⁵ Interview with Hugo Américo Schaedler, *supra* note 82.

⁹⁶ *Id.*

⁹⁷ See chapter 5, sections b and c, on that matter.

defraud control systems of forest products' origin and environmental licensing of Forest Management Environmental Plans and activities of timber processing.

i. Wood heating scheme – Control systems fraud to extract timber in non-authorized lands

With regards to control systems of forest products' origin, such as DOF and SISFLORA, a fraud scheme known as *wood heating*⁹⁸ is the most commonly adopted in the Amazon. A logger will declare before the system that his timber products were harvested in his own authorized area, subject to a Sustainable Management Forest Plan. However, they were actually harvested in some other non-authorized land, such as on Indigenous Lands or Conservation Units. Thus, the logger will have profit on the sale of illegally harvested timber that will be legalized, or *heated*, with legal documents derived from authorized areas.

In other cases, the holder of credits may sell them to a third illegal logger that will use them to legalize their own illegal timber.⁹⁹ There are cases in which small landowners are not even interested in extracting timber in their properties, but ask for the approval of Forest Management Plans by the environmental agency solely to have credits to be illegally sold to loggers.¹⁰⁰ For instance, there are several Plans to be executed in the Marajó Island, but they do not take place there, as it is a region of difficult extraction. The same kind of fraud is

⁹⁸ Translation of the Portuguese jargon “*esquentar madeira*”. This is how timber market operators refer to the scheme for unknown reasons.

⁹⁹ ADEODATO ET AL., *supra* note 40, at 80.

¹⁰⁰ Interview with Iran Paz Pires, *supra* note 78.

applicable to licenses issued for use of timber waste. In such case, timber is extracted, but the waste is not used. Thus, the license for timber waste is used to *heat* timber illegally sourced.¹⁰¹

ii. Credit cloud scheme – Fraud in virtual credits issued by control systems

Fraud in virtual credits issued by control systems also occurs through the issuance of false credits not connected to any area, or credits that exceed the extraction volume limits in a certain area subject to a Sustainable Forest Management Plan. This is known as the *credit cloud* that feeds the entire illegal logging market.¹⁰² Such frauds are achieved by having corrupt officers steal environmental agencies officers' access passwords to the control system and then inserting extra credits to loggers.¹⁰³ Thus, even if a shipment of wood is accompanied by the required documentation, as a DOF or a GF, the chances of being a fraudulent document are high, known as *false legality*.¹⁰⁴ Today it is rare to find a timber cargo in the Amazon without documentation. However, the question is whether such documents are valid or fraudulent. There is an estimate that 70% of timber is fraudulent, in different levels of fraud (criminal activities of mere administrative irregularities).¹⁰⁵ There are even criminal organizations specialized in credit frauds, such as the gang *Ouro Verde 2* in the State of Pará, who was recently caught by Federal Prosecutor Daniel César Azeredo Avelino and the Federal Police.¹⁰⁶

¹⁰¹ Interview with Iran Paz Pires, *supra* note 78.

¹⁰² Interview with Hugo Américo Schaedler, *supra* note 82.

¹⁰³ *Id.*

¹⁰⁴ Interview with Iran Paz Pires, *supra* note 78.

¹⁰⁵ *Floresta Sem Fim*, *supra* note 47.

¹⁰⁶ Interview with Daniel César Azeredo Avelino, Chief Prosecutor at the Federal Prosecutors' Office in the State of Pará, in Belém, Brazil (Jan., 2015).

The control over forest products' origin executed by the federal and state virtual systems is the most delicate phase of timber sector. The eventual fraud in electronic credits referent to round wood, before its processing, pollutes the legality of the entire chain.¹⁰⁷ Therefore, the assurance of their effective function is crucial for the combat against illegal logging and associated trade.

iii. Fraudulent environmental licenses – False licenses, false Sustainable Forest Management Plans, and corrupt environmental agencies

The use of falsely licensed sawmills and other timber processing plants and warehouses, as well as false Sustainable Forest Management Plans are quite common in the Amazon region. IBAMA has identified several fraud schemes, especially in the region of São Félix do Xingu.¹⁰⁸ There are also corruption cases where federal, state and municipal environmental agencies' officials competent to issue environmental licenses and to approve Sustainable Forest Management Plans do so through bribery. They allow the operation of mills and logging activities not in accordance with legal requirements. Corruption schemes are closely associated with illegal exploitation of forest resources. Corruption is fuelled by profits from illegal logging to such an extent that it is undermining the rule of law, principles of democratic governance, and respect for human rights.¹⁰⁹ The following section will present the negative environmental, economic, and social impacts the said illegal logging and associated trade schemes cause in the Amazon.

¹⁰⁷ Interview with Rodolfo Gadelha, *supra* note 62.

¹⁰⁸ Interview with Hugo Américo Schaedler, *supra* note 82.

¹⁰⁹ Commission of the European Communities, *supra* note 68.

f. Environmental, social and economic impacts of illegal logging and its associated trade

i. Environmental impacts – Damage to flora and fauna

Illegal timber harvest leads to losses of biodiversity, destruction of habitats for animals, soil erosion, changes in water cycles, and increased carbon emissions which fuel climate change.¹¹⁰ It increases chances of fires, causes extinction of local species and reduction of the forest's biomass and canopy.¹¹¹ For example, deforestation of 1,000 Km² affects approximately 2,000 birds, from 350 to 810 primates, and causes the lost of 45,000 to 55,000 trees.¹¹² Illegal logging also facilitates the illegal exploitation of wildlife.¹¹³

ii. Economic impacts – Massive governmental financial losses and weakening of the sector's competitiveness

Besides the environmental damage caused, illegal logging and its associated trade are responsible for massive governmental financial losses and for undermining the sector's competitiveness. Globally, illegal logging is the cause of around US\$ 8 billion a year in

¹¹⁰ EUROPEAN COMMISSION, COMBATING ILLEGAL LOGGING: LESSONS FROM THE EU FLEGT ACTION PLAN 2 (Apr. 2014).

¹¹¹ *Pressão e Impacto Sobre as Florestas [Pression and Impacts over Forests]*, SERVIÇO FLORESTAL BRASILEIRO [SFB] [BRAZILIAN FOREST SERVICE], http://www.florestal.gov.br/snif/recursos-florestais/index.php?option=com_k2&view=item&layout=item&catid=14&id=157 (Sept. 9, 2015).

¹¹² *Id.*

¹¹³ Commission of the European Communities, *supra* note 68.

economic losses, half in taxes that governments cannot collect.¹¹⁴ These missing funds could otherwise be spent on the provision of better healthcare, education and other public services, as well as the implementation of sustainable forest management.¹¹⁵ It thus undermines essential elements such the public sector financing for development targeted at the poor, peace, security, good governance, and the fight against corruption.¹¹⁶ In 2009, illegal logging represented tax evasion of R\$477 million (US\$120 million), and caused greenhouse gas emissions equivalent to 55.8 million tons of carbon.¹¹⁷ When it comes to the sector's competitiveness, illegal logging depresses world prices for forest products by 7% to 16% depending on the product,¹¹⁸ harming legitimate small and medium-sized enterprises.¹¹⁹ In some cases it even fuels organized crime and funds armed groups engaged in civil conflicts.¹²⁰

iii. Impacts on Amazonian communities – involvement of indigenous people and traditional communities in illegal logging, invasion of private lands, threats and violence against local dwellers.

The Amazon's population is a mixture of several ethnicities, from indigenous people to rubber tappers and riverside dwellers. There are also *quilombolas communities* (traditional populations of slaves' descendants),¹²¹ farmers from the South region of Brazil, among others.

¹¹⁴ EUROPEAN COMMISSION, *supra* note 110, at 2.

¹¹⁵ Commission of the European Communities, *supra* note 68.

¹¹⁶ *Id.*

¹¹⁷ ADEODATO ET AL., *supra* note 40, at 97.

¹¹⁸ EUROPEAN COMMISSION, *supra* note 110, at 2.

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ ADEODATO, *supra* note 73, at 68.

Although they all have different origins and have lived different occupational processes in the Amazon, all of them are in some way affected by illegal logging.

Indigenous communities in the Amazon are divided into those involved with illegal logging schemes and those constantly defending their lands against the invasion of illegal loggers. Conflicts between members of the same tribe are frequent.¹²² When a tribe is in collusion with illegal loggers, illegal logging in Indigenous Lands occurs through the payment of a price per cubic meter of extracted wood to the tribe. In some cases, the loggers themselves execute the extraction, while members of the tribe only check the amount of wood in the trucks. A tribe will charge approximately R\$60.00 (US\$15.00) for a cubic meter of cedar or *freijó*. After its processing and fraudulent “legalization”, the same piece of wood will be sold by loggers for around R\$1,200 (US\$300.00).¹²³

Situations where Indigenous Lands are invaded by loggers and farmers are also common. One episode that marked the Amazon’s history is the fight of the Indigenous Land *Raposa Serra do Sol* in the State of Roraima over their territory, which suffered decades of invasion by farmers, loggers, and miners. In 1970, the community had 19.000 individuals, and was struggling with the arrival of alcoholism, prostitution and diseases. After 35 years, the community finally won the battle over their territory, which was recognized by the Federal Supreme Court.¹²⁴

IBAMA argues that the illegal logging situation in Indigenous Lands is out of control and it blames the state environmental agencies for approving Sustainable Forest Management Plans without considering these areas. There are also cases where corrupt public officers are

¹²² *Floresta Sem Fim*, *supra* note 47.

¹²³ *Id.*

¹²⁴ Videotape: *Amazônia – A Última Fronteira*, *supra* note 86.

involved with the invasion of Indigenous Lands by loggers. The high profitability of illegally sourced timber also stimulates indigenous people to illegally exploit their areas with high concentration of valuable trees.¹²⁵ Moreover, protection and monitoring of Indigenous Lands by FUNAI in partnership with environmental agencies and the police force is insufficient to eliminate illegal logging.¹²⁶

Inhabitants of cities and villages in the Amazon are affected by illegal logging differently from indigenous and other traditional populations. In small cities such as Tailândia in the State of Pará, the timber sector is usually the principal job provider.¹²⁷ This is a result of unemployment caused by the cultivation of commodities in the region. Mechanical harvest forced out small farmers through production of crops in competitive advantage, forcing locals to look for survival in illegal logging, cutting trees for an insignificant price paid by the illegal timber companies.¹²⁸ Loggers might pay R\$75.00 (US\$18.00) for a local dweller to find and cut an average *ipê* that will cost around R\$50,000.00 (US\$12,500.00) after it is processed and even before leaving the forest, eventually to be exported overseas.¹²⁹

Therefore, when there is public monitoring of the sector's activities, loggers and sawmill owners take advantage of people's fear to lose their only mean of subsistence and stimulate a civil subversion.¹³⁰ In such cases, the population undermines environmental agencies' investigations on illegal activities.¹³¹ Furthermore, illegal timber companies support land

¹²⁵ *Floresta Sem Fim*, *supra* note 47.

¹²⁶ *Brasil tem só um fiscal por 579km² de área protegida* [Brazil has only one officer for 579km² of protected areas], O GLOBO (Jan. 27, 2014), <http://oglobo.globo.com/brasil/brasil-tem-so-um-fiscal-por-579-km-de-area-protegida-11410382>.

¹²⁷ Interview with Daniel César Azeredo Avelino, *supra* note 106.

¹²⁸ *Id.*; ADEODATO, *supra* note 73, at 35.

¹²⁹ Nacho Doce, *From Paradise to Inferno*, REUTERS (Nov. 11, 2013), <http://blogs.reuters.com/photographers-blog/2013/11/11/from-paradise-to-inferno/>.

¹³⁰ Interview with Daniel César Azeredo Avelino, *supra* note 106.

¹³¹ *Id.*

invaders, as they provide cheap labor for the sector. It is rare for municipal governments to be opposed to such influence of illegal loggers on people, as they also usually do business with illegal timber companies.¹³² For such reasons, it is not easy to deal with illegal logging in the Amazon, as it is not just a matter of law enforcement, but also a social issue that affects thousands of people. Thus, in order to have full law enforcement, alternative subsistence resources must be provided to those who in the past were totally dependent on illegal logging revenues.¹³³

As a result of illegality in the timber sector, and the pressure of illegal loggers over the different communities that form the Amazonian population, violence is constant in the Amazonian timber industry. Frequent disputes occur between *grileiros*, loggers, hit men, farmers, cattle breeders, indigenous people, and non-governmental organizations (NGOs).¹³⁴ When it comes to conflicts over socio-environmental matters, the State of Pará accounts for the largest portion with 38% of occurrences in the Amazon region, followed by the State of Rondônia (18%), Tocantins (13%), and Amapá (10%). One of the main causes of violent conflicts is the possession of natural resources.¹³⁵ Violence may also be consequence of the oppression of those whose goal is forest preservation. Bounties may reach R\$20,000 (US\$5,000) for the heads of those who try to protect the forest and unveil illegal logging

¹³² ADEODATO, *supra* note 73, at 35.

¹³³ Interview with Daniel César Azeredo Avelino, *supra* note 106.

¹³⁴ One alarming fact with respect to violent disputes in the Amazon regards the performance of some NGOs, without taking into consideration those public renown ones, such as Imazon, Amigos da Terra, among others. Some national and even international NGOs that are not registered before the Federal or State Governments act without notice in the illegal exploitation of natural resources, and infiltration in indigenous communities (even foreign people working in the tribes with tourist visas). They are also involved in purchase transactions of rural properties to foreign people. A report issued by the Justice Ministry points that more than 88% of the NGOs acting in the Legal Amazon is clandestine. *See* JACQUES MARCOVITCH, A GESTÃO DA AMAZÔNIA: AÇÕES EMPRESARIAIS, POLÍTICAS PÚBLICAS, ESTUDOS E PROPOSTAS [THE MANAGEMENT OF THE AMAZON: BUSINESS ACTIONS, PUBLIC POLICIES, STUDIES AND PROPOSALS], 79 (EdUSP, 2011).

¹³⁵ ADEODATO, *supra* note 73, at 35.

scheme to authorities.¹³⁶ Violence in the Amazon is usually concentrated in rural areas, different than other sectors of Brazil where violence is typically present in urban centers. In the large capitals in the Legal Amazon, Manaus and Belém, there is also violence, but on a smaller scale.¹³⁷

The city of São Félix do Xingu, in the State of Pará, was for decades the most affected by illegal logging. In 2010, a corpse was left in the front door of IBAMA's office in the city during one of the most critical fights between lumbermen and environmentalists. At that time, the lumbermen made the rules, and the illegally harvested timber market was an active and profitable market.¹³⁸ To combat the illegal logging situation in São Félix do Xingu, IBAMA, working together with SEMA, mobilized staff from other regional offices to act together in the city where it seemed that the law did not exist.¹³⁹ Besides, the city was subject to the Pact for the End of Illegal Deforestation in São Félix do Xingu. These initiatives resulted in the decrease of the city's deforestation levels and, consequently, violence.¹⁴⁰

An historical atrocity that illustrates violence over natural resources in the Amazon is the murder of the religious environmentalist and human rights activist Dorothy Stang, whose goal was to defend the small farmers in the fight for the adoption of a sustainable development plan for the region. This went against the wills of *grileiros*, timber companies, and big rural proprietors. The assassination took place in the city of Anapu, one of the most violent spots

¹³⁶ Doce, *supra* note 129.

¹³⁷ MARCOVITCH, *supra* note 134, at 82.

¹³⁸ Videotape: Amazônia – A Última Fronteira, *supra* note 86.

¹³⁹ *Id.*

¹⁴⁰ The Pact was enacted in 2011 by FAO, the European Community, the Brazilian Ministry of the Environment, the State of Pará's Environmental Agency, and the Municipality of São Félix do Xingu. Its goal was to combat illegal deforestation in the city. See European Union Delegation in Brazil, *Pacto municipal para redução do desmatamento em São Félix do Xingu [Municipal pact for deforestation reduction in São Félix do Xingu]* (Nov. 17, 2014), http://eeas.europa.eu/delegations/brazil/press_corner/all_news/news/2014/20141117_01_pt.htm.

within the Amazon region. Such violence originates from disputes over the forest, regardless if preserved or destroyed.¹⁴¹

g. Contributors to illegal timber trade: lack of consumer interest on products' origin, higher profitability of illegal products, and disunity of timber sector's operators

The illegal undertakings and impacts described above are not just results of a historical behavior of the timber sector. Other factors also contribute to the perpetuation of illegal logging. Purchase decisions in large consumer markets are intimately connected to what happens in the forest: if there is supply of illicit wood, it is probably because there is someone willing to buy it.¹⁴² Consumers lack an interest in the origin of timber products, such as furniture and civil construction material, and lack awareness on whether they are consuming a product harvested and processed in compliance with the law or not. Instead, most consumers prioritize price when choosing a timber byproduct, which tends to lead their decision towards illegally sourced considerably cheaper. Illegal loggers do not do damage control, do not pay taxes, their laborers work in virtual slavery, and in many cases the harvested area is not bought or leased, but illegally taken.¹⁴³ For example, a farmer spends approximately R\$800.00 (US\$200.00) in cutting trees to amplify his pasture or crops, while he would spend R\$2,000 (US\$500.00) to recover productivity in an already degraded land.¹⁴⁴ Therefore, illegal logging and associated trade undermines the competitiveness of legitimate forest industry operations,

¹⁴¹ ADEODATO, *supra* note 73, at 36.

¹⁴² ADEODATO ET AL., *supra* note 40, at 49.

¹⁴³ ADEODATO ET AL., *supra* note 40, at 54.

¹⁴⁴ MARCOVITCH, *supra* note 134, at 37.

limiting the ability of these industries to conduct operations that foster sustainable forest management and sustainable development generally.¹⁴⁵

Another factor that decreases legitimate timber sector's competitiveness and thus undermines the tackling of illegal logging and associated trade is the fact that the sector is the most disunited of all in the Amazon region. It is considered by specialists and professionals in the area to be a disorganized group and not well related in politics, having no power to fight for their own interests. It does not unite and organize itself to find a way to legalize the sector's activities nor to maintain its competitiveness. On the contrary, loggers are usually hostile, violent even with public authorities, and most of the sector chooses to act illegally.¹⁴⁶

This work will suggest approaches to eliminate the said contributors to illegal logging and its associated trade. They comprise methods to increase consumer awareness of timber products' origin, to increase legitimate timber's competitiveness, and to encourage the timber sector to legalize its activities.¹⁴⁷

h. Deforestation monitoring in the Amazonian Rainforest

Over the last decades, the Public Government has implemented several forest policies and plans to monitor and reprimand illegal logging and associated trade in the Amazon. For example, it implemented the National Program on the Environment (PNMA) and the National Program on Forests (PNF), showing the growing concern with conservation and sustainable

¹⁴⁵ Commission of the European Communities, *supra* note 68.

¹⁴⁶ Interview with Hugo Américo Schaedler, *supra* note 82. Mr. Roberto Pupo presented the same opinion. Interview with Roberto Pupo, President of AIMEX, in Belém, Brazil (Jan., 2015).

¹⁴⁷ See chapter 5, section b, i, 1, for methods to increase legitimate timber's competitiveness; section b, ii, 2, for methods to increase consumer awareness of timber products' origin; and sections b and c, for timber sector's encouragement to legalize its activities.

use of Amazonian natural resources. In 2010, there were 138 ongoing operations to combat illegal logging in the Amazon, some of them involving the Federal Police and the Army, besides IBAMA and the state environmental agencies. The operations seized approximately 120,000 cubic meters of timber logs and lumber, enough to fill 6,000 trucks.¹⁴⁸ Currently, Brazil has one of the most sophisticated satellite imagery monitoring systems among the forested countries.¹⁴⁹ Norway's former Environmental Ministry, Mr. Erik Solheim, once said the Brazilian illegal logging control system is "by far the best one, there is nothing similar in tropical forests".¹⁵⁰ This has attracted developed nations, such as Norway and the European Union, to financially support projects of combat against illegal logging in the Amazon.¹⁵¹ However, there are a lot of deficiencies to be improved when it comes to field monitoring.

i. Deforestation monitoring with state-of-the-art satellite imagery

Among the technologies used by the Public Government and non-governmental institutions to monitor deforestation levels in the Amazon, the most efficient has been satellite imagery, a powerful weapon in the fight against deforestation. The National Space Research Institute (INPE) operates the two official satellite monitoring systems: PRODES, a complex and more accurate system that annually shows the situation of deforestation in the Amazon; and DETER, which provides monthly data to support environmental agencies' monitoring activities on the ground. The third reliable satellite system is the Deforestation Warning

¹⁴⁸ ADEODATO ET AL., *supra* note 40, at 90.

¹⁴⁹ *Ministra explica como Noruega está ajudando na preservação da Amazônia* [Minister explains how Norway is helping the Amazon's preservation] (Oct. 7, 2015), <http://www.luminota.com/pt/Ministra-explica-como-Noruega-est%C3%A1-ajudando-na-preserva%C3%A7%C3%A3o-da-Amaz%C3%B4nia/>.

¹⁵⁰ MARCOVITCH, *supra* note 134, at 38.

¹⁵¹ *Ministra*, *supra* note 149.

System (SAD), launched in 2006 by the non-profit Amazonian think-tank Imazon. Similarly to DETER, SAD is an alert system, less accurate than PRODES, whose purpose is to increase data transparency. It helps calibrate official indices, although they may misinform deforestation levels due to natural factors that may undermine the satellite imagery, such as cloudy weather.

SAD uses NASA images to detect both clear cutting (where the forest is totally suppressed and the soil exposed) and degraded areas (where trees are still standing but there has been fire or other impacts).¹⁵² SIPAM (Protection System of the Amazon - *Sistema de Proteção da Amazônia*) is another relevant program created by the Government to monitor the Amazon region by the use of high technology planes. Satellites are used to find illegal-logging spots and drug traffic,¹⁵³ and to monitor the entrance into the Amazon. Today the system also makes use of radar images to track deforestation areas and activities.¹⁵⁴

ii. Field monitoring operations

Amazon's illegal logging and associated trade are mostly monitored by the federal environmental agency IBAMA and the Amazonian states' environmental agencies.

Municipalities also have the competence to protect the environment and monitor activities that

¹⁵² ADEODATO ET AL., *supra* note 40, at 91.

¹⁵³ Videotape: Amazônia - Heranças de uma Utopia, *supra* note 10.

¹⁵⁴ With regards to forest fires specifically, the National Institute of Amazon Research (*Instituto Nacional de Pesquisas da Amazônia* - INPA) created a satellite system to monitor them in the Amazonian Rainforest. Altamira is one of the cities most affected by fire, so IBAMA created a branch specially for such matters. IBAMA and INPA work together in this fight, where INPA will inform where the fire is, and the local IBAMA's firefighters (Prevfogo) will combat it. Firefighters are mainly forest dwellers, and they are the success of the project, as they know the forest better than anyone else. See Videotape: Amazônia – A Última Fronteira, *supra* note 86.

might be harmful to it, but they are allowed to do so only when they hold the minimum necessary infrastructure and trained personnel.¹⁵⁵

1. Deforestation monitoring by the federal environmental agency (IBAMA)
– highly qualified personnel, satisfactory infrastructure, access to state-of-the-art technology, but insufficient number of officers

IBAMA, as the federal environmental agency, receives a considerably higher governmental investment for its operations in comparison with state environmental agencies. It maintains highly qualified personnel, satisfactory infrastructure, and access to state-of-the-art technology. This makes its operations more efficient, especially in the State of Pará. The agency has regional offices in each state which, when added to the support of armed forest police battalions, have favored the agency's local operations.¹⁵⁶ Nevertheless, IBAMA does not have a sufficient number of officers for total coverage of the Amazon.¹⁵⁷ It is undermined by the difficulty the agency faces in finding qualified people to work with matters of higher complexity.¹⁵⁸

Still, even with the mentioned limitations on its personnel, IBAMA monitoring activities have been essential to tackle illegal logging and associated trade in the Amazon region. Currently, IBAMA sets its field operations based on the analysis of data provided by DETER and PRODES. By doing so, the agency has verified that illegal logging is concentrated in

¹⁵⁵ See chapter 2, section c, vi, on that matter.

¹⁵⁶ Peter May, *Forest Certification in Brazil*, in BENJAMIN CASHORE ET AL., CONFRONTING SUSTAINABILITY: FOREST CERTIFICATION IN DEVELOPING AND TRANSITIONING COUNTRIES 337, 341 (Yale F&ES Publication Series, Report Number 8, 2006).

¹⁵⁷ Interview with Daniel César Azeredo Avelino, *supra* note 106.

¹⁵⁸ Interview with Hugo Américo Schaedler, *supra* note 82.

some specific places. It is concentrated around 56 municipalities in the State of Pará, where more than half of deforestation in the State occurs, including the cities of Novo Progresso, São Félix do Xingu, and Trairão.¹⁵⁹

2. Deforestation monitoring by state environmental agencies – Recent improvement of monitoring methods, but poor infrastructure and know-how, insufficient number of officers, low remuneration, corruption, and need for IBAMA’s assistance

- **State environmental agencies’ monitoring methods**

On the state level, several Amazonian states, notably Acre, Amapá, and more recently Amazonas, have adopted proactive forest policy strategies, including support to community forest management projects and pilot public forest concessions. In some cases, their improvement extends to policy support toward forest certification, which is the case of Acre.¹⁶⁰ However, initiatives like those were not always present. The State of Pará’s Environmental Agency – SEMA used to issue environmental licenses and forest management plans for exploitation of natural resources without any posterior monitoring. It had no

¹⁵⁹ Interview with Hugo Américo Schaedler, *supra* note 82.

¹⁶⁰ May, *supra* note 156, at 341.

knowledge or control over illegal activities being conducted.¹⁶¹ Today, the State of Pará has the largest concentration of illegal logging spots in the Legal Amazon.¹⁶²

Currently, SEMA issues reports that alert where illegal logging is possibly taking place. Reports are based on satellites images and associated technology used by expert professionals, giving support to law enforcement activities.¹⁶³ The agency also has a database and a map showing all licensed businesses and activities in the State of Pará, including forest management areas, charcoal plants, still mills, sawmills, wood retailers, etc. These tools assist officers in the monitoring of licensed or illegal activities.¹⁶⁴

To combat the scheme of wood heating, SEMA compares credits issued by the online control system with the satellite data to verify whether the deforested area is the same as the one declared by the logger at the control system. Improvement of SISFLORA to SISFLORA 2 intends to combat such schemes by requiring the geo-referencing of forest management areas and the installment of chips in the logs to track them. However, such measures have an isolated impact in the combat against illegal logging, as chips cease to exist when round wood is processed, and shall be adopted together with other control mechanisms.¹⁶⁵

Complementary to its monitoring activities, SEMA has a partnership with Imazon, Green Municipalities Program,¹⁶⁶ and other municipalities in general, with the purpose to monitor and tackle illegal logging in the State of Pará. Imazon reports the deforestation

¹⁶¹ Interview with Rodolfo Gadelha, *supra* note 62.

¹⁶² *Operação desmantela esquema de exploração ilegal de madeira no Pará* [Operation breaks illegal logging scheme in Pará], CI FLORESTAS (Aug. 31, 2015), http://www.ciflorestas.com.br/conteudo.php?tit=operacao_desmantela_esquema_de_exploracao_ilegal_de_madeira_no_para&id=11901.

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ The Green Municipalities Program was developed by the State of Pará, together with civil society, Municipalities, IBAMA, and the Federal Prosecutor's Office, as an instrument to combat illegal logging and to promote sustainable production, by means of economic incentives. *See* PROGRAMA MUNICÍPIOS VERDES [GREEN MUNICIPALITIES PROGRAM], <http://municipiosverdes.com.br/> (Dec. 10, 2015).

polygons in the State monthly, and SEMA provides such report to municipalities where polygons were identified. SEMA requires the municipalities to investigate the area. The investigations focus on if there has been deforestation activities in fact, and if so, whether any measures have been taken. Some, but not all, municipalities provide reports to SEMA on the identified polygon and its current situation. Afterwards, SEMA's Environmental Monitoring Office will issue a complementary report that will support surveillance in the field and an eventual sanction. However, sometimes municipalities do not respond to SEMA's demands, as they do not have the necessary infrastructure or staff to proceed with a local investigation in the identified areas. Usually access is difficult, or they simply do not have interest in investigating. Sometimes SEMA even gives support to municipalities by means of finance projects, such as the Amazon Fund, donating monitoring equipment, cars, training of personnel, etc.¹⁶⁷

Another useful mechanism created by SEMA to combat illegal logging and associated trade is the State of Pará's Illegal Deforestation List (LDI – State Decree 838/2013). It is a list of rural private properties where illegal deforestation polygons have been identified through the use of satellite imagery and analysis of the CAR database. At the moment the property enters the List, its owner will be forbidden to have access to certain financial resources provided by the Public Power and banks. Licenses for agricultural activities or environmental licenses will not be issued, until the area is regularized. Regularization occurs through the execution of an Environmental Regularization Program (*Programa de Regularização Ambiental* - PRA). As for areas that are not registered at CAR, SEMA only closes the area,

¹⁶⁷ *Operação desmantela*, supra note 162.

where no economic activity can be exercised, and vegetation shall be naturally regenerated.¹⁶⁸

The List is an act that should also be adopted by IBAMA, since it gives the public authority more strength in the combat against illegal logging.¹⁶⁹

- **Deficiencies of state environmental agencies to be overcome**

Although deforestation-monitoring instruments implemented by public environmental agencies have improved over time, they still present several flaws. They need additional support and technologic improvement.¹⁷⁰ The State of Pará's environmental agency, for example, yet does not present the sufficient number of officers to exercise its duties.¹⁷¹ Until 2015, SEMA had only 17 officers to monitor not just deforestation, but all environmental offenses in the entire State of Pará. This is a trivial number in comparison with the State's dimension. To monitor deforestation specifically, there were only 5 officers in charge. Thus, the agency is capable of identifying most of illegal logging operations, but the fieldwork cannot be fully executed.¹⁷²

Furthermore, remuneration of state environmental officers is disproportional to their responsibilities and risks. Officers must usually be careful not to be recognized by illegal loggers and act in places outside their home area to maintain their personal and family's safety. This discourages work commitment and encourages corruption.¹⁷³ Additionally, SEMA received the competence to approve Forest Management Plans without a proper structure and

¹⁶⁸ *Operação desmantela*, *supra* note 162.

¹⁶⁹ Interview with Daniel César Azeredo Avelino, *supra* note 106.

¹⁷⁰ MARCOVITCH, *supra* note 134, at 38.

¹⁷¹ Interview with Hugo Américo Schaedler, *supra* note 82.

¹⁷² Interview with Rodolfo Gadelha, *supra* note 62.

¹⁷³ *Id.*

know-how, which resulted in political harassment and corruption, among other things. In that regard, there was a strong operation in 2010 that revealed the use of the state environmental agency's powers for political campaign benefits.¹⁷⁴ Therefore, the said conditions of environmental agencies' operations resulted in a slow response to illegal activities, noted by the gradual increase in the suppressed area over the time.¹⁷⁵

For such reasons SEMA and IBAMA formed a partnership by which they divide the regions to be monitored among them. This has been productive for SEMA due to the assistance IBAMA has to offer. Besides, some municipalities are executing monitoring activities, such as São Félix do Xingu and Paragominas, which have received significant investments in the local environmental agency. However, the said partnership has not been sufficient to eliminate illegal logging in the region. Besides, most municipalities do not have the necessary infrastructure to contribute to monitoring.¹⁷⁶

Notwithstanding the pointed deficiencies of the environmental agencies, in March 2015 Brazil's President Dilma Roussef reduced the budget for measures against illegal logging by 72%.¹⁷⁷ Such facts show the urgent need for strategies to encourage the increase of the Public Government's political will in tackling illegal logging and associated trade by means on investment on infrastructure and personnel.¹⁷⁸

¹⁷⁴ Interview with Daniel César Azeredo Avelino, *supra* note 106.

¹⁷⁵ Interview with Elis Araújo, *supra* note 85.

¹⁷⁶ Interview with Rodolfo Gadelha, *supra* note 62.

¹⁷⁷ Marcelo Leite, *Dilma corta 72% da verba contra desmatamento na Amazônia* [Dilma reduces budget for measures against deforestation in the Amazon in 72%], FOLHA DE SÃO PAULO (Mar. 31, 2015), <http://www1.folha.uol.com.br/ambiente/2015/03/1610479-dilma-corta-72-da-verba-contra-desmatamento-na-amazonia.shtml>.

¹⁷⁸ Chapter 5, section c, v, provides recommendations on how to overcome the environmental agencies' deficient monitoring.

3. Complexity of field monitoring operations – investigation in forest areas of difficult access, local communities, and dismantling of corruption schemes

Field monitoring operations are quite complex. They consist of looking for illegal logging camps in the middle of the forest, in areas of difficult access.¹⁷⁹ It is difficult to nab loggers. Usually, officers get to the crime scene after its occurrence.¹⁸⁰ At the camps, they will begin the investigations and try to find any clue that may lead them to those who are financing the illegal logging activities,¹⁸¹ which is one of the hardest parts in process.¹⁸² While inspecting, officers talk to local people and farms' employees to get more information on the illegal lumbermen. In small towns people almost always know each other and know what happens around. However, they are usually too afraid to tell the officers the truth, as illegal loggers threaten them. In such scenarios, officers usually intimidate local communities. When they find those responsible, an infraction notice will be issued, and the penalties will be applied, such as fines and restraining orders.¹⁸³

The Castanheira Operation¹⁸⁴ is a recent example of IBAMA's strategy in combating illegal logging and associated trade. Besides involving the imprisonment of the main illegal logger in the Amazon, the operation investigated other activities connected to illegal logging, such as money laundering and invasion of public forests. Such activities were executed by a

¹⁷⁹ Videotape: Amazônia – A Última Fronteira, *supra* note 86.

¹⁸⁰ Interview with Elis Araújo, *supra* note 85.

¹⁸¹ Videotape: Amazônia – A Última Fronteira, *supra* note 86.

¹⁸² Interview with Elis Araújo, *supra* note 85.

¹⁸³ Videotape: Amazônia – A Última Fronteira, *supra* note 86.

¹⁸⁴ See section d, iii.

powerful criminal organization of 19 people, which is why their impediment has a much greater impact than field operations that would only impede smaller gangs.¹⁸⁵

Another well-known case is the Curupira Operation executed in 2004, the first big operation against illegal logging and associated trade in the Amazon. It involved more than 450 agents of Federal Police, together with IBAMA, and the Federal Public Prosecutor's Office in the State of Mato Grosso.¹⁸⁶ It revealed gangs and corruption schemes involving illegal loggers and officers of IBAMA and the State Foundation of the Environment of the State of Mato Grosso (the State's environmental agency). They used to issue false ATPFs (the paperwork that was later replaced by the DOF), and register ghost timber companies in order to enable the trade of fraudulent credits. The operation discovered more than 400 ghost timber companies.¹⁸⁷ The scheme involved the issuance of illegal credits at the state online control system and issuance of fake inspection reports. Criminals also made administrative procedures condemning illegal loggers to pay fines disappear. They used to paid bribes for the liberation of seized trucks, issuance of management plans authorizations in Indigenous Lands, etc.¹⁸⁸ This is a classic example of corruption in the timber market, as well as impunity. More than 150 arrest warrants were issued and more than 70 people were held to testify. Many saw prison, but by 2007 all of them were free again.¹⁸⁹

Although SEMA does not possess financial and infrastructure support as much as IBAMA, it has been executing some relevant field operations with significant impact on tackling illegal logging. For instance, Cuminaú Operation was executed by SEMA in

¹⁸⁵ Interview with Hugo Américo Schaedler, *supra* note 82.

¹⁸⁶ Denise Gomes de Moura, *Mídia e corrupção: a Operação Curupira na Amazônia* [Media and Corruption: the Curupira Operation in the Amazon], 6 (2006) (unpublished thesis, Universidade de Brasília) (on file with Universidade de Brasília).

¹⁸⁷ *Id.* at 3.

¹⁸⁸ *Id.* at 7.

¹⁸⁹ *Id.* at 5.

partnership with the Environmental Agency of the City of Almeirim in 2014. A vast area of illegal deforestation was identified in the frontier between the city and the city of Prainha. The operation's complexity was such that it took SEMA's team four days to reach the area, using land, river, and air transportation. Usually, there are not roads at all that lead to the deforestation spot. In the case of Cuminaú Operation, SEMA's officers spent 20 days in the forest, sleeping in improvised camps, together with environmental policy force. At the end, powerful illegal loggers with strong financial and political influence were identified. Moreover, the mayor of one of the municipalities accused SEMA of executing the operation based on the complaint by the other municipality's mayor as a competitive matter, which had to be clarified and articulated by the environmental agency.¹⁹⁰ 86 polygons were regularized, 2,915 ha were closed, equivalent to 3,000 soccer fields. Two unlicensed mobile sawmills and a tractor were seized, valued at over R\$500,000.00 (US\$125,000.00), and the violators were fined under administrative procedures.¹⁹¹

4. The contribution of non-governmental organizations to monitoring of timber industry activities

Aside from the work of IBAMA, state, and municipal environmental agencies to combat illegal logging and associated trade, non-governmental organizations have served as watchdogs over illegal timber extraction and trade. Organizations such as Greenpeace, World Wildlife Fund, Imazon, Imaflora, and Friends of the Earth have promoted efforts toward good

¹⁹⁰ Interview with Rodolfo Gadelha, *supra* note 62.

¹⁹¹ *Operação Cuminaú combate desmtamento no oeste do Pará [Cuminaú Operation combats deforestation in the West of Pará]* (Dec. 2, 2014), http://www.agenciapara.com.br/noticia.asp?id_ver=107320.

forest management.¹⁹² This has been a fundamental contribution to the Public Government's initiatives, as well as called the community's attention to the matter of illegal exploitation of the Amazon Rainforest.

i. Deficient law enforcement by the administrative and judicial systems over illegal logging and associated trade – High levels of impunity and recidivism

i. Law enforcement by the administrative system – Disproportional and ineffective fine collection

Law enforcement under the administrative and judicial systems is distant from being fully effective. Impunity and recidivism are a constant in both spheres. At the administrative level, until 1998 law enforcement had no significant results in the combat against illegal logging, as sanctions were too low to discourage illegal actions. At that time, the maximum fine applicable to illegal logging was R\$4,950.00 (US\$ 1,240.00). Law 9.605/1998, which regulates environmental administrative and criminal sanctions, raised the fines. Some specific sanctions reached millionaire numbers. However, after an initial successful period, illegal loggers realized that fines were so high that they would not be able to pay it even if they were levied, due to lack of financial resources, which again discouraged compliance.¹⁹³ Currently, disproportionality between sanctions and the conducts' gravity undermines law enforcement, as seen in chapter 2.¹⁹⁴

¹⁹² May, *supra* note 156, at 341.

¹⁹³ Interview with Hugo Américo Schaedler, *supra* note 82.

¹⁹⁴ See chapter 2, section f, iii.

Additionally, administrative proceedings used to take too long. It could take years until a decision could be issued in a proceeding, undermining the system's seriousness and credibility. Only in 2012 the judgment procedure became faster, due to some changes that suppressed some of its phases. Currently, the State of Pará averages about 1000 proceedings per year, and the number of late proceedings to be judged fell 100%. However, the fine collection levels are still very low. The conviction of offenders will not guarantee their punishment, because most of them are insolvent.¹⁹⁵ From 2010 to 2015, IBAMA issued almost R\$ 15.5 billion (US\$3.9 billion) in fines, however only 2% of it was paid.¹⁹⁶

Another cause of low collection is the difficulty of officers in finding the real criminals. In a case of cattle raising held at illegally deforested areas, for example, authorities usually meet only the employee informally hired to pretend to be the place's owner (known as *laranja*). In such cases, the employee does not have sufficient funds to pay the fines. Thus, he will not be charged.¹⁹⁷

Such lack of punishment leads to a sense of impunity that exists in the illegal timber market for decades. Impunity encourages recidivism.¹⁹⁸ Moreover, it is simple to set a sawmill all over again after the closing of an illegal one. Money will be easily recovered.¹⁹⁹ Although IBAMA's operations inhibit illegal logging locally, some places such as the city of Novo Progresso are resistant enough and operations are settled again right after the agency's action. This is due to the high amount of money involved in the timber sector.²⁰⁰ Even when activities of a significant criminal organization are shut down, it gives space in the illegal trade for new

¹⁹⁵ Interview with Hugo Américo Schaedler, *supra* note 82.

¹⁹⁶ *Operação desmantela*, *supra* note 162.

¹⁹⁷ Interview with Daniel César Azeredo Avelino, *supra* note 106.

¹⁹⁸ *Id.*

¹⁹⁹ *Id.*

²⁰⁰ Interview with Hugo Américo Schaedler, *supra* note 82.

illegal operations, until they reorganize themselves to get back to the market. Sometimes it takes longer for that to happen, due to the seizure of equipment and revenue by public authorities.²⁰¹ Therefore, despite the action of public agencies, impunity remains.

ii. Law enforcement by the judicial system – Slow procedure, and ineffective collection of fines and indemnification

A next step takes place, due to non-payment of fines under the administrative system: condemned violators are executed under the judicial system, for assets foreclosure and attachment.²⁰² Parallel to that, environmental public prosecutors have the competence to fill Public Civil Actions pursuing repair of damage when they acknowledge illegal operations.²⁰³ However, lawsuits may take years to be concluded. In the State of Amazonas, approximately 90% of criminal prosecutions expire through lapse of time, because the case takes too long to reach final judgment.²⁰⁴ Most of the time, the lapse until the judgment and execution is so long that the convicted had enough time to dissipate his patrimony. He transfers the ownership of his assets to a third person, getting away with payment of fines, indemnification, and attachment.²⁰⁵

The judicial system also has high levels of impunity. One of the reasons is the deficient prison system. For example, in Castanheira Operation the convicted criminals were released from prison for Christmas break in 2014, a right guaranteed by law, and did not return as

²⁰¹ Interview with Hugo Américo Schaedler, *supra* note 82.

²⁰² *Id.*

²⁰³ Federal Law 7.347/1985, art. 5 § I (Braz.).

²⁰⁴ MICHAEL BOTHE ET AL., AMAZONIA AND SIBERIA: LEGAL ASPECTS OF THE PRESERVATION OF THE ENVIRONMENT AND DEVELOPMENT IN THE LAST OPEN SPACES, *in* Roberto dos Santos Vieira, *Brazilian Environmental Law Relating to Amazonia* 128 (Graham & Trotman, 1993).

²⁰⁵ Interview with Daniel César Azeredo Avelino, *supra* note 106.

required, choosing instead to go on the run in the forest. Further, Giovanni, one of the gang's chiefs, has been fined a second time even after his imprisonment, being held responsible for illegal logging executed while he was in prison. Currently, most of them are free while on trial.²⁰⁶

Therefore, the administrative and judicial systems should be strengthened and modernized to eliminate impunity and recidivism from the timber sector. This work will discourse on how to improve law enforcement at both levels.²⁰⁷

j. Irregular occupation and land tenure regularization in the Amazonian Rainforest

The irregular occupation of rural areas within the Amazon endures until today. The historical migration movement of people from other regions looking for a new beginning in the Amazon still takes place. Furthermore, other markets have encouraged occupation of unexplored lands. For instance, cattle raising is in expansion in the Midwest region of Brazil, within the Legal Amazon. People go there for new opportunities, encouraged by the easy occupation of lands.²⁰⁸ Infrastructure projects have been responsible for a massive amount of migrants. Nonetheless, the Government has shown to be unprepared to handle and regularize migration, despite the fact this is predictable in infrastructure projects. This is the case of construction of the hydroelectric power plant Belo Monte in the city of Altamira.²⁰⁹

Parallel to that, the Government is still struggling with the mapping of the Legal Amazon and regularization of land tenure. Around 2 million Km² in the Amazon, nearly three

²⁰⁶ Interview with Hugo Américo Schaedler, *supra* note 82.

²⁰⁷ See chapter 5, section c, v.

²⁰⁸ Interview with Elis Araújo, *supra* note 85.

²⁰⁹ *Id.*

times the territory of France, have still not been mapped.²¹⁰ In addition, problems with deficient and often overlapping land tenure definitions are quite common in the region. This is due to the lack of control by both federal and state public authorities over the region and their inability to enforce law and confirm whether the land occupation is consistent with its ownership.²¹¹ One of the main functions of the National Institute of Colonization and Land Reform (*Instituto Nacional de Colonização e Reforma Agrária* – INCRA) is to solve such flaws. INCRA is a federal public authority responsible for executing the agrarian reform and to organize national land tenure.²¹² However, INCRA is well known for being one of the hardest public authorities to work with, as it is very disorganized when it comes to the execution of its functions. It is also known to be quite corruptible, which has been one of the main undermining factors of land tenure regularization.²¹³

i. Irregular occupation schemes – Occupation by local communities, large companies, and *grilagem*

Irregular occupation in the Legal Amazon can take several forms. The most usual is the illegal possession of small areas near rivers and roads by populations that are marginalized before the economic system and dependent on subsistence crops. There is also the illegal

²¹⁰ Videotape: Amazônia – A Última Fronteira, *supra* note 86.

²¹¹ May, *supra* note 156, at 342.

²¹² INSTITUTO NACIONAL DE COLONIZAÇÃO E REFORMA AGRÁRIA [INCRA] [NATIONAL INSTITUTE OF COLONIZATION AND LAND REFORM] http://www.incra.gov.br/institucional_abertura (last visited, Jun. 29, 2015).

²¹³ Interview with Iran Paz Pires, *supra* note 78.

possession of areas by large companies that intend to implement projects there,²¹⁴ and the illegal scheme known as *grilagem*.²¹⁵

Grilagem (literally cricketing) consists in the illegal possession of areas by expelling the occupants, or forcibly purchasing the land for derisory prices, for the purpose of property speculation.²¹⁶ In order to obtain ownership titles, *grileiros* (those that execute *grilagem*) falsify documents and take part in corruption schemes with the competent Public Registry Office. To justify the occupation of the land before INCRA, the suppression of vegetation ends up being the most effective way. This is because of the ancient tradition in the region that deforestation of a certain area would entitle the tenure to the person who cleared it.²¹⁷ Therefore, the irregular occupation of rural areas in the Amazon is directly connected with illegal deforestation. Furthermore, the payment of eventual fines for deforestation may serve as occupation proof.²¹⁸

Currently, *grileiros* act under a modern and organized scheme. They make use of satellite images and services provided by surveyors and other specialized professionals to analyze and identify available public lands. They are known as the ‘pirates of the forest’.²¹⁹ It is a scheme surrounded by fraud, slavery, concession of wheeling and dealing, and gunmen. The State of Pará is the main spot for *grilagem* in the Amazon, where 837 conflicts over lands, 173 murders, and 501 death threats were detected between 1994 and 2003, related to *grilagem*

²¹⁴ FUNDAÇÃO UNIVERSIDADE DO AMAZONAS, PROPOSTA DE POLÍTICA FLORESTAL PARA A AMAZÔNIA BRASILEIRA [PROPOSAL OF A FOREST POLICY FOR THE BRAZILIAN AMAZON], 23 (Metro Cúbico, 1979).

²¹⁵ See *supra* note 84.

²¹⁶ FUNDAÇÃO UNIVERSIDADE DO AMAZONAS, *supra* note 214, at 23.

²¹⁷ Philip M. Fearnside, *Desenvolvimento da floresta amazônica: problemas prioritários para a formulação de diretrizes* [Development of the Amazonian Forest: priority problems for the formulation of guidelines], Estratégias para a política florestal na Amazônia brasileira [Strategies for a forest policy in the Brazilian Amazon], 4 ACTA AMAZONICA 125 (1979).

²¹⁸ ADEODATO, *supra* note 73, at 43.

²¹⁹ *Id.* at 42.

disputes.²²⁰ Even today, *grilagem* is a popular process, encouraged by the uncertainty over most of public lands ownership in the Amazon,²²¹ as well as the tolerance of the Public Government.²²²

Grileiros also sell illegally occupied lands in the Amazon to third parties, creating a real estate market. In such cases, *grileiros* are usually from other regions, and the occupation is done in association with local people. Local people have the function to temporarily occupy the land, in order to demonstrate due occupation while the third party purchaser does not take possession of it. Usually, such properties are located next to places like the highway BR-163. *Grileiros* wait the land value increase by factors such as the highway paving to sell it later.²²³ Although more than 90% of occupation in BR-163 region represents real estate speculation,²²⁴ some occupants are small families that moved there from other regions searching for subsistence opportunities.

One of the main consequences of irregular occupation schemes in the Amazon region is violence against the current land occupants. For example, Indigenous Lands are invaded, causing destruction of tribes and death of indigenous people by the transmission of diseases.²²⁵ Irregular land tenure is also one of the main contributors to illegal deforestation. The lack of control over land ownership undermines monitoring and control of use of natural resources. Besides, the tradition to clear-cut the land to justify occupation has a historical contribution to deforestation in the Amazon. Furthermore, illegal deforestation occurs even after land tenure regularization. Illegal logging usually persists in rural settlements, because of the lack of

²²⁰ ADEODATO, *supra* note 73, at 43.

²²¹ Interview with Elis Araújo, *supra* note 85.

²²² ADEODATO, *supra* note 73, at 43.

²²³ Interview with Elis Araújo, *supra* note 85.

²²⁴ *Id.*

²²⁵ FUNDAÇÃO UNIVERSIDADE DO AMAZONAS, *supra* note 214, at 24.

continuing monitoring by both INCRA and the competent environmental agency. It is estimated that one third of illegal logging areas consists in rural settlements.²²⁶

Besides directly causing environmental degradation, illegal occupation of forest areas supposed to be totally or partially preserved also undermines the efforts of those who intend to legalize their timber production. Companies complain about legal uncertainty over the Amazon region and the constant risk of invasions of their lands, in addition to the general absence of Government from upholding the safety of citizens' properties.²²⁷ For instance, the main problems faced by Cikel during the development of its environmental projects were invasions of the company's lands and deficient assurance of land tenure rights.²²⁸

ii. Land tenure regularization as a mechanism to combat illegal logging – Need for a more efficient implementation of the Rural Environmental Register and the Legal Land Program

Because illegal and uncontrolled land occupation in the Amazon is one of the main facilitators of illegal logging, the regularization of land tenure is a fundamental instrument to control and monitor the use of forest resources. Regularization of land ownership rights terminates violent disputes over possession. It encourages the communities to implement the sustainable use of forest resources within their properties to increase their revenue. It is also a prerequisite for forest certification²²⁹ and for Extractive Reserve communities to have access

²²⁶ Interview with Daniel César Azeredo Avelino, *supra* note 106.

²²⁷ MARCOVITCH, *supra* note 134, at 152.

²²⁸ *Id.*, at 145.

²²⁹ FAO, *State of the World's Forests 2009*, 34 (2009), <http://www.fao.org/docrep/011/i0350e/i0350e00.HTM>.

to credits offered by the Public Government.²³⁰ Furthermore, land tenure regularization of public lands enables larger areas to be subject to forest concession, thus contributing to the increase in the volume of legal timber production.²³¹

Among the instruments currently deployed to make land tenure regularization more effective are the Rural Environmental Register (CAR) and the Legal Land Program. The implementation of CAR has been a great improvement because it links the land to its owner who assumes responsibility over it when proceeds with CAR registration. It also makes monitoring activities easier to execute.²³² The State of Pará's CAR system, for example, has one of the most complete databases in number of registered rural properties, in comparison with other states, as it is preexisting to the national system.²³³

The Legal Land Program was launched in 2009 with the intention to accelerate the land tenure regularization of federal urban and rural lands within the Legal Amazon, by means of alienation and concession of use rights. The Program is a promising instrument to combat illegal logging in the Amazon.²³⁴ Nonetheless, its implementation should be improved to function effectively. It has shown to be a disorganized program, with no focus, competence, straightforward criteria, objective, or control. It is a risky program since such flaws open possibility that false documents will be considered in the analysis of land ownership.²³⁵ Additionally, an audit procedure executed by the Federal Audit Court (*Tribunal de Contas da União* – TCU) has verified that until July 2014, the Program had a low achievement of its pre-established goals. It did not succeed in promoting the rural properties' social function, as

²³⁰ Interview with Elis Araújo, *supra* note 85.

²³¹ ADEODATO ET AL., *supra* note 40, at 121.

²³² Interview with Elis Araújo, *supra* note 85.

²³³ Interview with Daniel César Azeredo Avelino, *supra* note 106.

²³⁴ See chapter 2, section j, ii, 3, on the structure of the Legal Land Program.

²³⁵ *Id.*

required by the Federal Constitution.²³⁶ By 2011, only 1% of the regularization requests presented at the Legal Land Program had received the ownership title, corresponding to only 611 deeds.²³⁷ This work will further present recommendations for an effective regularization of land tenure in the Amazon.²³⁸

k. Conclusion

Deforestation in the Amazon is consequence of historical uncontrolled occupation of unexplored lands, construction of poorly planned infrastructure projects, and irresponsible governmental incentives to colonization. These factors are responsible for illegal deforestation in the region until today, due to deficient law enforcement and monitoring.

Sustainable forest management is gradually becoming popular among timber companies and community forests, and has been promoted by the Forest Service. However, its successful and wide implementation directly depends on land tenure regularization, as well as on a solid economic and political foundation, transparent and corruption free, provided by the Government. Necessary infrastructure to ensure processing and trade of forest products must be provided. Public policies that stimulate the sector's legalization and responsible wood consumption by both Government and population must be implemented. Furthermore, concession of public forests has shown to be a promising alternative for the promotion of sustainable forest management, although it has not been implemented up to satisfactory levels.

²³⁶ TCU, AC- 0627-10/15-P Brasília, Relator: Weder de Oliveira, 25.03.2015, 4 (Braz.).

²³⁷ Brenda Brito & Paulo Barreto, *A Regularização Fundiária Avançou na Amazônia? Os dois anos do programa Terra Legal [Did Land Tenure Regularization improve in the Amazon? Two years of Legal Land Program]*, 12 (Imazon, 2011).

²³⁸ See chapter 5, section c, ii, on recommendations for a full regularization of land tenure in the Amazon.

Yet, there is a very modest area of granted public forests, compared to the totality of the Amazon.

Illegal logging is more profitable than legitimate production. Schemes are sophisticated and well planned. Hence, monitoring agencies must have the necessary structure and preparation to restrain illegal logging in order to discourage it and make legitimate production more competitive. Fraud of the control systems of forest products' origin is one of the major challenges in ending illegal timber, since false legality is difficult to identify and pollutes the entire supply chain. Moreover, false environmental licenses and falsely approved Sustainable Forest Management Plans, as well as their issuance under bribes and corruption schemes, are common in the Amazon region. Other contributors to illegal logging and its associated trade are the lack of consumer interest on products' origin, higher profitability of illegal products, and disunity of timber sector's operators.

This chapter examined the current aspects of the Government's plans on monitoring and reprimand of illegal logging and associated trade in the Amazon. It was shown they are being improved and amplified by the federal, state, and some municipal environmental agencies, but environmental agencies are not yet well structured enough to cover all illegal activities in timber industry.

IBAMA has highly qualified personnel, satisfactory infrastructure, access to state-of-the-art technology, and is responsible for several successful operations against illegal logging. Nonetheless, it does not have enough officers to cover the monitoring of the entire Amazon. The state environmental agencies, in particular the State of Pará that cumulates the highest concentration of deforested areas in the Amazon, have improved their monitoring systems over the last years. But they still do not have sufficient staff to cover all work required, since

they do not receive as much funding for infrastructure and capacity building as IBAMA. In addition, state officers are usually underpaid, which discourages commitment and stimulates corruption.

Law enforcement over the timber sector is ineffective under the administrative and judicial systems. Both systems present high rates of impunity and recidivism, and low collection of fines. This is due to proceedings' slowness, convict's insolvency, difficulty in finding the real criminals, and a deficient prison system. Both systems should be strengthened and modernized to eliminate impunity and recidivism from the timber sector.

Irregular occupation of forested areas is a major contributor to illegal deforestation in the Amazon. It has been allowed by the lack of control over the territory by the Public Power. Such lack of control, added to the practice of clear-cutting to justify land occupation, undermines monitoring and control of natural resources. It allows violent land disputes, encourages schemes such as *grilagem*, and creates a parallel real state market of illegally occupied lands. In such a scenario, regularization of land tenure is a fundamental instrument to control and monitor the use of forest resources. However, although the CAR System and Legal Land Program regularization programs have promising initiatives, their implementation should be improved to function effectively.

The next step of this work will be the study of the most effective international control mechanisms of illegal logging and associated trade that might be implemented, promoted, or adapted to the Amazon's timber sector. The purpose of such analysis is to provide instruments to overcome the deficiencies presented in this chapter.

CHAPTER 4 – INTERNATIONAL MECHANISMS OF TIMBER TRADE CONTROL

a. Introduction

The previous chapters considered the timber sector's practical aspects,¹ the respective applicable Environmental Law,² and the scenario of illegal deforestation and the unsustainable use of forest resources. They also presented the challenges to be faced to eliminate illegal logging and associated trade in the region.³ This chapter undertakes the study of the mechanisms that have been adopted worldwide to combat illegal logging and associated trade. It includes those provided by the international environmental community and instruments domestically implemented by nations and groups. It describes methods identified during this study as the most effective worldwide, and that already have a beneficial impact in the Brazilian timber industry, or that could have, if better promoted in Brazil.

With regard to domestic regulations and policies, the United States' Lacey Act and the European Union's Forest Law Enforcement, Governance, and Trade Action Plan are explored in detail. This chapter analyzes their structure, function, main features, and performance. This study adopts the same approach concerning forest certification schemes.

Furthermore, this chapter contains an overview of the International Forest Regime. Special attention is dedicated to the systems that might be effective in tackling illegal logging in the

¹ See chapter 1 on that matter.

² See chapter 2 on that matter.

³ See chapter 3 on that matter.

Amazon or already have significant influence on the utilization of tropical timber in Brazil. The selected systems are: the United Nations Forum on Forests; the International Climate Change Regime, with a focus on the Clean Development Mechanism and the Reduced Emissions by Deforestation and Forest Degradation; and the Amazon Cooperation Treaty Organization.

b. Domestic regulations and policies successful in tackling illegal logging and its associated trade

i. The Lacey Act – United States of America

1. 2008 Amendments to the Lacey Act – The inclusion of the ban on trading illegally sourced timber and the requirement of timber’s origin declaration

The Lacey Act⁴ is a United States law originally passed in 1900 to protect wildlife from trafficking.⁵ It combats the impact of hunting to supply commercial markets, interstate shipment of unlawfully killed game, and the killing of birds for the feather trade.⁶ Until 2008, the protection provided by the Act did not cover trees against their many threats, including

⁴ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900).

⁵ FOREST LEGALITY ALLIANCE, ALL YOU NEED TO KNOW ABOUT THE US LACEY ACT, THE EU TIMBER REGULATION AND THE AUSTRALIAN ILLEGAL LOGGING PROHIBITION BILL, INTERNATIONAL DEVELOPMENTS IN TRADE IN LEGAL TIMBER 4.

⁶ United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, *Lacey Act Primer and Updates 2* (Aug. 2013).

illegal logging and the associated trade of wood products.⁷ An amendment to the Lacey Act was passed on May 22, 2008,⁸ expanding its protection to a broader range of plants and plant products⁹ such as timber and paper. It became the world’s first ban on the trade of illegally sourced wood products.¹⁰ It did so through two components: a ban on trading plants or plant products in violation of the law and a requirement to declare the scientific name, value, quantity, and country of harvest for some products.¹¹

2. The Lacey Act’s ban on trade of illegally sourced timber and byproducts

Under the trading ban of the Lacey Act, it is unlawful to import, export, transport, sell, receive, acquire, or purchase plants taken,¹² possessed, transported, or sold in violation of any law, treaty, or regulation of the US or Indian tribal law.¹³ It is also unlawful to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce a plant that was

⁷ *US Lacey Act*, ENVIRONMENTAL INVESTIGATION AGENCY [EIA], <http://eia-global.org/lacey/> (July 30, 2014).

⁸ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], THE US LACEY ACT – FREQUENTLY ASKED QUESTIONS ABOUT THE WORLD’S FIRST BAN ON TRADE IN ILLEGAL WOOD 2 (Jan. 2009).

⁹ *The Animal Plant Health Inspection Service [APHIS]*, US DEPARTMENT OF AGRICULTURE http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/importexport?1dmy&urile=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_plant_health%2Fsa_import%2Fsa_lacey_act%2Fct_lacey_act.

¹⁰ FOREST LEGALITY ALLIANCE <http://www.forestlegality.org/policy/us-lacey-act> (July 20, 2014).

¹¹ *Id.*

¹² “Taken” shall be read as *harvested, cut, logged, or removed* (16 U.S.C. §3371 (j)(1)).

¹³ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900) (“§ 3371. Definitions

For the purposes of this chapter:

(...)

(b) The term “import” means to land on, bring into, or introduce into, any place subject to the jurisdiction of the United States, whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States.

(...)

(k) The term “transport” means to move, convey, carry, or ship by any means, or to deliver or receive for the purpose of movement, conveyance, carriage, or shipment.

§ 3372. Prohibited acts

(a) Offenses other than marking offenses

It is unlawful for any person—

(1) to import, export, transport, sell, receive, acquire, or purchase any fish or wildlife or plant taken, possessed, transported, or sold in violation of any law, treaty, or regulation of the United States or in violation of any Indian tribal law; (...)

taken, possessed, transported or sold in violation of any law or regulation of any state. Such conducts are also unlawful if held in violation of any foreign law that protects plants or that regulates the theft of plants, the taking of plants from a park, forest reserve, or other officially protected or designated area, or the taking of plants without, or contrary to required authorization.¹⁴

The Lacey Act also forbids possession, within the special maritime and territorial jurisdiction of the United States, of any plant taken, possessed, transported, or sold in violation of any law or regulation of any state, or any foreign law that protects plants or that regulates the theft of plants. It bans the taking of plants from a park, forest reserve, or other officially protected or designated area, and the taking of plants without, or contrary to required authorization.

The Act bans possession, within the special maritime and territorial jurisdiction of the United States, of any plant taken, possessed, transported, or sold without the payment of appropriate royalties, taxes, or stumpage fees required by any law or regulation of any state or any foreign law. It also bans possession in the said circumstances in violation of any limitation under any law or regulation of any state, or under any foreign law, governing the export or

¹⁴ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900) (“§ 3372. Prohibited acts

(a) Offenses other than marking offenses

It is unlawful for any person—

(...)

(2) to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce—

(...)

(B) any plant—

(i) taken, possessed, transported, or sold in violation of any law or regulation of any State, or any foreign law, that protects plants or that regulates—

(I) the theft of plants;

(II) the taking of plants from a park, forest reserve, or other officially protected area;

(III) the taking of plants from an officially designated area; or

(IV) the taking of plants without, or contrary to, required authorization; (...))”

transshipment of plants.¹⁵ The Lacey Act also bars the import, export, transport, sale, receipt, acquisition, and purchase of interstate or foreign commerce of plants that were taken, possessed, transported, or sold without the payment of appropriate royalties, taxes, or stumpage fees required by any law or regulation of any state or any foreign law. It also bans possession in the said circumstances in violation of any limitation under any law or regulation of any state, or under any foreign law, governing the export or transshipment of plants.¹⁶

The term “plants”, defined under 16 U.S.C. §3371(f), was amended in 2008 to include “trees” from native and planted forests, as well as derived products.¹⁷ The following are not

¹⁵ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900) (“§ 3372. Prohibited acts

(a) Offenses other than marking offenses

It is unlawful for any person—

(...)

(3) within the special maritime and territorial jurisdiction of the United States (as defined in section 7 of title 18)—

(...)

(B) to possess any plant—

(i) taken, possessed, transported, or sold in violation of any law or regulation of any State, or any foreign law, that protects plants or that regulates—

(I) the theft of plants;

(II) the taking of plants from a park, forest reserve, or other officially protected area;

(III) the taking of plants from an officially designated area; or

(IV) the taking of plants without, or contrary to, required authorization;

(ii) taken, possessed, transported, or sold without the payment of appropriate royalties, taxes, or stumpage fees required for the plant by any law or regulation of any State or any foreign law; or

(iii) taken, possessed, transported, or sold in violation of any limitation under any law or regulation of any State, or under any foreign law, governing the export or transshipment of plants; or (...)

¹⁶ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900) (“§ 3372. Prohibited acts

(a) Offenses other than marking offenses

It is unlawful for any person—

(...)

(2) to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce—

(...)

(B) any plant—

(...)

(ii) taken, possessed, transported, or sold without the payment of appropriate royalties, taxes, or stumpage fees required for the plant by any law or regulation of any State or any foreign law; or

(iii) taken, possessed, transported, or sold in violation of any limitation under any law or regulation of any State, or under any foreign law, governing the export or transshipment of plants; or (...)

¹⁷ Lacey Act Implementation Plan; Definitions for Exempt and Regulated Articles, 78 Fed. Reg. 131, 40940 (July. 9, 2013) (to be codified at 7 C.F.R. pt. 357). Before, trees were not expressly considered within the definition of “plants”. The scope of protection of the Lacey Act would only include plants indigenous to any State in the US, and which were either listed on an appendix to the CITES, or listed pursuant to any State law that provides for the conservation of species threatened with extinction (Former §3371(f)).

considered plants under the Act: (i) common cultivars (except trees) and common food crops, such as corn, cotton or cut flowers;¹⁸ (ii) a scientific specimen of plant genetic material that is to be used only for laboratory or field research; and (iii) any plant that is to remain planted or to be planted or replanted. In the last two cases, the exclusions do not apply if the plant is listed: in an appendix to the CITES; as an endangered or threatened species under the US Endangered Species Act; or pursuant to any state law that provides for the conservation of species that are indigenous to the state and threatened with extinction.¹⁹ Therefore, after 2008 all wood products, such as raw logs, sawn timber, plywood, composite materials, musical instruments, pulp,²⁰ paper, furniture, tool handlers, or certain types of fabric were submitted to the rules of the Lacey Act.²¹

The ban on illegally sourced wood by the Lacey Act, thus, is not based on a prohibited species list, as for example, CITES.²² Neither the Lacey Act bans or restricts trade of timber products into the United States,²³ nor does it impose US law on other countries. “Illegally

¹⁸ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *supra* note 8, at 2.

¹⁹ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900) (“§ 3371. Definitions

For the purposes of this chapter:

(...)

(f) Plant.—

(1) IN GENERAL.—The terms “plant” and “plants” mean any wild member of the plant kingdom, including roots, seeds, parts, and products thereof, and including trees from either natural or planted forest stands.

(2) EXCLUSIONS.—The terms “plant” and “plants” exclude—

(A) common cultivars, except trees, and common food crops (including roots, seeds, parts, or products thereof); (B) a scientific specimen of plant genetic material (including roots, seeds, germplasm, parts, or products thereof) that is to be used only for laboratory or field research; and (C) any plant that is to remain planted or to be planted or replanted.

(3) EXCEPTIONS TO APPLICATION OF EXCLUSIONS.—The exclusions made by subparagraphs (B) and (C) of paragraph (2) do not apply if the plant is listed—

(A) in an appendix to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (27 UST 1087; TIAS 8249); (B) as an endangered or threatened species under the Endangered Species Act of 1973 (16 USC. 1531 et seq.); or

(C) pursuant to any State law that provides for the conservation of species that are indigenous to the State and are threatened with extinction.”)

²⁰ FOREST LEGALITY ALLIANCE, *supra* note 5, at 4.

²¹ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *supra* note 8, at 2.

²² United States Department of Agriculture, *supra* note 6, at 6.

²³ FOREST LEGALITY ALLIANCE, *supra* note 5, at 6.

sourced” is defined by the content of sovereign nations’ own laws,²⁴ the US federal law, Indian tribal law, and state law.

3. The Lacey Act’s information declaration requirement for imported timber products

The second component added to the Lacey Act by the 2008 Amendment is the requirement of import declarations.²⁵ The Act considers it unlawful for any person to import any plant into the US without filing a declaration. Such declaration shall contain: (i) the scientific name of the plant (including the genus and species of the plant), (ii) a description of the value of the importation and quantity of the plant, and (iii) the name of the country from which the plant was taken.²⁶ The declaration is not a certification of legality, and importers are

²⁴ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *supra* note 8, at 2.

²⁵ The Lacey Act is enforced by the Animal Plant Health Inspection Service (APHIS), part of the US Department of Agriculture, together with the Customs and Border Protection, the Fish and Wildlife Service, and the Department of Justice. APHIS keeps a registry of exporters, processors, manufacturers, and any other actor that may be affected by the Lacey Act. APHIS also plays the primary role in processing Declaration Forms under the Act. See FOREST LEGALITY ALLIANCE, *supra* note 5, at 7; *The Animal Plant Health Inspection Service*, *supra* note 9; *Lacey Act: Frequently Asked Questions*, ANIMAL AND PLANT HEALTH INSPECTION SERVICE [APHIS] 6 (Nov. 2013),

http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/importexport?1dmy&urile=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_plant_health%2Fsa_import%2Fsa_lacey_act%2Fct_lacey_act; *Schedule of Enforcement of the Plant and Plant Product Declaration Requirement*, Animal and Plant Health Inspection Service [APHIS] (Mar, 2015),

http://www.aphis.usda.gov/plant_health/lacey_act/downloads/ImplementationSchedule.pdf.

²⁶ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900) (“§ 3372. Prohibited acts

(...)

(f) PLANT DECLARATIONS.—

(1) IMPORT DECLARATION.— Effective 180 days from the date of enactment of this subsection, and except as provided in paragraph (3), it shall be unlawful for any person to import any plant unless the person files upon importation a declaration that contains—

(A) the scientific name of any plant (including the genus and species of the plant) contained in the importation;

(B) a description of—

(i) the value of the importation; and

(ii) the quantity, including the unit of measure, of the plant; and

(C) the name of the country from which the plant was taken.”)

not required to provide information on chain of custody or any other type of standard.²⁷ The import declaration is only deemed to increase transparency about the trade and enable the US Government to better enforce the law.²⁸

The Act does not require import declaration for plant-based packaging material that supports, protects, or carries another item, unless the packaging itself is the imported product.²⁹ Examples of such materials are wood crating, wood pallets, cardboard boxes, packing paper used as cushioning, etc.³⁰ A product may still be subject to the legality requirement even if it is not subject to the declaration requirement under the Lacey Act. For instance, bagpipes with wooden pipes do not need declaration forms to get into the US. However, the legality requirement still applies to the wooden pipes, so if the pipes were made from illegally harvested trees, then the shipment is in violation of the Act.³¹

²⁷ DAVID W. OLIVER, OFFICE OF THE US TRADE REPRESENTATIVE, US POLICY ON COMBATING ILLEGAL LOGGING AND ASSOCIATED TRADE AND PROMOTING TRADE IN LEGALLY HARVESTED FOREST PRODUCTS, PRESENTATION AT LEGAL FOREST PRODUCTS AND INTERNATIONAL TRADE: A REGIONAL PERSPECTIVE 24 (AUG. 2012).

²⁸ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *supra* note 8, at 2.

²⁹ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900) (“§ 3372. Prohibited acts
(...)”)

(3) EXCLUSIONS — Paragraphs (1) and (2) shall not apply to plants used exclusively as packaging material to support, protect, or carry another item, unless the packaging material itself is the item being imported.”)

³⁰ Currently, the declaration requirement is enforced only for formal entries such as most commercial shipments. It is not required for informal entries, such as most personal shipments, mail, transportation and exportation entries, in-transit movements, carnet importations (merchandise or equipment that will be re-exported within a year), and foreign trade zone and warehouse entries. This approach focuses on shipments of bigger volumes because there is a more significant impact on the local timber market, thus giving more efficiency to the efforts of the monitoring authorities. *See Lacey Act: Frequently Asked Questions*, ANIMAL AND PLANT HEALTH INSPECTION SERVICE [APHIS] 4 (Nov. 2013), http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/importexport?1dmy&urile=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_plant_health%2Fsa_import%2Fsa_lacey_act%2Fct_lacey_act.

³¹ United States Department of Agriculture, *supra* note 6, at 19.

4. Violator’s degree of due care as a basis for measurement of penalties under the Lacey Act

The Lacey Act stipulates penalties for violations, including civil and criminal penalties, and the forfeiture of goods.³² The Act provides caps for penalties, but it also establishes that the level to be imposed shall be determined subjectively by the competent authority. It shall be based on the nature, circumstances, extent, and gravity of the prohibited act committed, as well as the violator’s degree of culpability, ability to pay, among other matters that may be required.³³ Penalties are established by the Lacey Act based on the degree of due care taken by those subject to the law. In this sense, “due care” is construed as “that degree of care at which a reasonably prudent person would exercise under the same or similar circumstances.” This interpretation is applied differently to different categories of persons with varying degrees of knowledge and responsibility.³⁴ This means that there is not a standard for the definition of due care. Instead, to consider due care, the circumstances must be analyzed, including the defendant’s degree of knowledge and familiarity with the issues and facts.³⁵

Penalties are higher for those who knew they were trading illegally harvested materials. For those who did not know, penalties vary based on whether the individual or

³² 16 U.S.C. § 3373 (1900).

³³ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900) (“§ 3373. Penalties and sanctions
Civil penalties
(...)

(6) In determining the amount of any penalty assessed pursuant to paragraphs (1) and (2), the Secretary shall take into account the nature, circumstances, extent, and gravity of the prohibited act committed, and with respect to the violator, the degree of culpability, ability to pay, and such other matters as justice may require.”)

³⁴ S. REP. NO. 97-123. *See* ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *supra* note 8, at 4.

³⁵ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], SETTING THE STORY STRAIGHT - THE US LACEY ACT: SEPARATING MYTH FROM REALITY 3.

company in question did everything possible to determine that the product was legal.³⁶ For instance, a company or professional from the timber market is supposed to have greater awareness of possible illegalities related to their activities than a tourist who purchases a wooden souvenir.³⁷ Factors such as the sector, size of the company, and how risky the product itself might be, shall also be considered.³⁸ It is a flexible concept that continues to develop over time within the US legal system.³⁹

The adoption of the concept of “due care” aims to transfer to people involved in the trade of plant and byproducts the responsibility to ensure that the good is not illegally sourced.⁴⁰ The law’s goal is to assure the conservation and sustainable use of natural resources without undermining the pace of business transactions. Therefore, the law gives the plant and plant product traders the freedom to determine how best to conduct due care and avoid illegal products in the market.⁴¹ Companies have taken the following due care initiatives:

- developing a compliance plan and documenting the execution of compliance;
- investing in employee capacity building;
- developing and following industry standards;
- visiting suppliers and asking questions based on any specific concerns in the source material’s region;
- asking overseas supplier for genus/ species information;
- confirming that source companies operate legally (licensed/certified);

³⁶ FOREST LEGALITY ALLIANCE, *supra* note 10.

³⁷ OLIVER, *supra* note 27, at 21.

³⁸ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *supra* note 35, at 3.

³⁹ *Id.*

⁴⁰ FOREST LEGALITY ALLIANCE, *supra* note 5, at 5.

⁴¹ *Id.*

- confirming validity of scientific names, checking botanical resources, and confirming geographic distribution;
- requesting pertinent plant protection laws from a government official in the country of harvest; and
- keeping complete records of efforts.⁴²

The provisions and penalties established by the Lacey Act demonstrate that it covers the entire supply chain of plant products, where all parties are equally liable under the law.⁴³ For that reason, to achieve full compliance, actors must understand its supply chain fully, as well as the supplying country's law and associated risks to define its own level of appropriate traceability.⁴⁴

In general, the execution of a risk assessment may help determine the level required to ensure confidence in any forest product supply and ensure that a reasonable level of due care can be shown.⁴⁵ Good information management, as well as a proactive approach based on asking questions and back it up with on-the-ground audits, are fundamental for success in compliance with the Act rules.⁴⁶ In this sense, while following the Lacey Act, checking out and trusting suppliers and their products is as important, if not more important, than proper

⁴² ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *supra* note 35, at 4.

⁴³ FOREST LEGALITY ALLIANCE, ALL YOU NEED TO KNOW ABOUT THE US LACEY ACT, THE EU TIMBER REGULATION AND THE AUSTRALIAN ILLEGAL LOGGING PROHIBITION BILL, INTERNATIONAL DEVELOPMENTS IN TRADE IN LEGAL TIMBER, *supra* note 5, at 4.

⁴⁴ ADAM GRANT & SOFIE BECKHAM, WORLD RESOURCES INSTITUTE, FOREST LEGALITY ALLIANCE, CASE STUDY - IKEA'S RESPONSE TO THE LACEY ACT: DUE CARE SYSTEMS FOR COMPOSITE MATERIALS IN CHINA 2 (2013), <http://www.wri.org/publication/case-study-3.2>.

⁴⁵ *Id.*

⁴⁶ *Id.*

paperwork.⁴⁷ Responsible procurement is no longer voluntary but is now mandatory.⁴⁸

5. The Lacey Act's fact-based System

When applying the Lacey Act, documents are part of demonstrating due care and assessing legality, but they are not accepted as final proof.⁴⁹ The essence of the Lacey Act is to look behind the documents, in order to avoid frauds such as forged papers, false certification, and laundered wood crossing borders.⁵⁰ Therefore, the Act is fact-based, not document-based.⁵¹ Only actual legality counts.⁵² No third-party documents or systems, such as forest certification or sustainability verification,⁵³ stamps, licenses, or marks, can be used as final proof of legality.⁵⁴

Despite the fact that the Lacey Act does not require certification or verification to export to the United States, individual buyers may demand their suppliers to be certified. This certification helps to reduce the risk of accidentally buying illegally sourced products and demonstrates that the buyer has tried to conduct due care.⁵⁵ Major international companies including Walmart, Kingfisher, and Carrefour have required suppliers to be able to demonstrate sustainability through third party certification schemes.⁵⁶ On the other hand, such

⁴⁷ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *Setting the Story Straight - The US Lacey Act: Separating Myth from Reality*, *supra* note 35, at 2.

⁴⁸ GRANT & BECKHAM, *supra* note 44, at 2.

⁴⁹ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *supra* note 35, at 2.

⁵⁰ *Id.*

⁵¹ FOREST LEGALITY ALLIANCE, *supra* note 5, at 5.

⁵² FOREST LEGALITY ALLIANCE, *supra* note 10.

⁵³ FOREST LEGALITY ALLIANCE, *supra* note 5, at 7.

⁵⁴ *Id.* at 5.

⁵⁵ *Id.* at 7.

⁵⁶ FOREST LEGALITY ALLIANCE, *supra* note 5, at 2.

actions do not exempt timber traders from the declaration requirements under the Act.⁵⁷

6. The Lacey Act's effective enforcement

The Lacey Act, especially after its amendment, has been successfully enforced. The first major case related to the importation of illegal wood products publicly resolved in the United States was the Gibson Guitar Corp. case in 2009. The company settled with the Justice Department in 2012.⁵⁸ Besides, the Lacey Act has been invoked against illegally harvested timber in only three other cases since it was amended in 2008. In 2009, at the case *US Department of the Interior v. Three Pallets of Tropical Hardwood & Harlan P. Crouch, II*, the U.S. Fish and Wildlife Service agents confiscated illegally sourced tropical hardwood entering a Florida port.⁵⁹ More recently a Washington state wood buyer and his lumber mill were charged with purchasing illegally harvested big leaf maple from a national forest in violation of the Lacey Act.⁶⁰ And in 2015, at *United States of America v. Lumber Liquidators, INC.*,⁶¹ Lumber Liquidators agreed to plead guilty to a felony charge and other several violations of the Act. It imported illegally harvested timber from areas including forests in far eastern Russia. The company will have to pay US\$13.2 million in fines and community services. Forfeited proceeds will go to national environmental organizations and funds, and the

⁵⁷ ENVIRONMENTAL INVESTIGATION AGENCY [EIA], *supra* note 8, at 4.

⁵⁸ Caitlin Clarke, *Gibson Guitar Logging Bust Demonstrates Lacey Act's Effectiveness*, Forest Legality Alliance 1, <http://www.forestlegality.org/blog/gibson-guitar-logging-bust-demonstrates-lacey-act%E2%80%99s-effectiveness> (July 20, 2014).

⁵⁹ US Department of the Interior v. Three pallets of tropical hardwood & Harlan Crouch, II, INV No. 2009403072 (Office of the DOI Solicitor June 22, 2010).

⁶⁰ \$ 13 Million Fine For Lumber Liquidators Shows U.S. Lacey Act's Clout, WORLD RESOURCES INSTITUTE 3, <http://www.wri.org/blog/2015/10/13-million-fine-lumber-liquidators-shows-us-lacey-acts-clout>.

⁶¹ United States of America v. Lumber Liquidators, Inc.

company will adopt an environmental compliance plan for a five-year probation period.⁶²

The US Government takes the enforcement of the Lacey Act seriously.⁶³ Its effective enforcement and penalties have led timber companies to strengthen their due diligence systems and be more cautious when choosing their suppliers.⁶⁴ Besides, the celerity in which issues were solved, demonstrate the efficiency of the Act's system. Most cases never went to trial, being concluded at the administrative level, which spares the judicial system and advances the case's solution.⁶⁵

7. The Lacey Act's mechanisms potentially effective to tackle illegal logging and associated trade in the Amazon, and their adaptation to the Brazilian environmental legal system.

Compliance with the Lacey Act provisions has been taken seriously by both the monitoring agencies and the private sector. The former no-question-asked import policy has been replaced by a policy of due care focused on the entire timber supply chain. Such approach is of great importance in the combat against illegal logging in producing countries. They encourage timber exporter countries to assure the legality of their products to conquer a

⁶² \$ 13 Million, *supra* note 60, at 3.

⁶³ See Craig Hanson, *Declarations and Due Care: Insights from Another Lacey Case*, FOREST LEGALITY ALLIANCE 2, <http://www.forestlegality.org/blog/declarations-and-due-care-insights-another-lacey-case>.

⁶⁴ \$ 13 Million, *supra* note 60, at 3.

⁶⁵ Notwithstanding the improvements accomplished with the enforcement of the amended Lacey Act, the Government of the United States has taken a multi-faceted approach to address the combat of illegal logging, and to promote trade of legally harvested forest products. It has partnered with other governments, the private sector, civil society, and international organizations in the pursuit of these objectives. It does so by means of bilateral (Indonesia and China, for example) and regional dialogues (Asia-Pacific Economic Cooperation Forum - APEC, for example) and capacity building with key trading partners. The country supports and participates in public-private sector partnerships (Responsible Asia Forestry and Trade Program - RAFT and Forest Legality Alliance, for example), and support international processes and forestry organizations (CITES, ITTO, FAO, for example). It also supports research and innovation, such as the development of innovative technologies for wood identification and traceability. See OLIVER, *supra* note 27, at 2.

more significant space in the international timber market.

Due to the successful implementation of the Act, the present work intends to recommend the adoption of some of its instruments as an improvement of the Brazilian regulatory system on timber industry. They include the ban on trade of illegal timber as a model for the inclusion of a similar offense under the Brazilian regulatory system. Recommendations will also include the adoption of concept of due care as basis for measurement of penalties' levels, the encouragement of the adoption of due care initiatives by timber industry actors, and the implementation of a fact-based monitoring policy in Brazil. Notwithstanding such approaches, the Lacey Act has a small-scale direct impact on the Brazilian timber exports to the United States, which encourages domestic law compliance. The possible forms to implement the said recommendations will be discussed in more detail in chapter 5.⁶⁶

Besides the Lacey Act, another international method of timber trade control has shown to be effective in the combat against illegal logging and associated trade: the European Union Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan. The following sections will be dedicated to describe its main aspects that might effectively contribute to solving the problem of illegal logging in the Amazon.

⁶⁶ See chapter 5, section b, i, 1.

ii. European Union Forest Law Enforcement, Governance and Trade (FLEGT)

Action Plan

1. The EU FLEGT Action Plan and its suggested parameters to combat illegal logging and its associated trade

The European Union Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan⁶⁷ was established in 2003 by the Commission of the European Communities to the European Parliament. It is an instrument to combat illegal logging and the associated trade in illegally harvested timber. It is the most ambitious set of measures adopted by any timber consumer country or bloc to date.⁶⁸ The Plan deals only with questions of legality of timber utilization. However, its long-term aim is to achieve sustainable forest management.⁶⁹

The FLEGT Action Plan sets out instruments to prevent the import of illegal timber into the European Union, to improve the supply of legal timber, and to increase demand for timber from responsibly managed forests.⁷⁰ It is applicable to timber originated from both natural and planted forests.⁷¹ It does so by proposing actions to strengthen sustainable and

⁶⁷ Commission of the European Communities, Communication from the Commission to the Council and the European Parliament, Forest Law Enforcement, Governance and Trade [FLEGT] Proposal for an EU Action Plan, May 21, 2003 (COM (2003) 251 final), <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52003DC0251&from=EN>.

⁶⁸ DUNCAN BRACK AND JON BUCKRELL, CHATHAM HOUSE, CONTROLLING ILLEGAL LOGGING: CONSUMER-COUNTRY MEASURES 2 (EERG IL BP 2011/01, 2011). The EU FLEGT Action Plan was also built on previous regional forest law enforcement and governance (FLEG) initiatives as, for example, FLEG in Asia and the Pacific, the Africa Forest Law Enforcement and Governance (AFLEG) Ministerial Conference, and the Europe and North Asia Ministerial Conference on Forest Law Enforcement and Governance. *See* EU FLEGT FACILITY, <http://www.euflegt.efi.int/home> (Aug. 3, 2014).

⁶⁹ DUNCAN BRACK AND JON BUCKRELL, CHATHAM HOUSE, CONTROLLING ILLEGAL LOGGING: CONSUMER-COUNTRY MEASURES 2 (EERG IL BP 2011/01, 2011).

⁷⁰ EU FLEGT FACILITY <http://www.euflegt.efi.int/home> (Aug. 3, 2014).

⁷¹ *EU Timber Regulation – Frequently Asked Questions, Importing and Exporting*, EU FLEGT FACILITY <http://www.euflegt.efi.int/home> (Aug. 3, 2014).

legal forest management and to improve forest governance and capacity building in timber-producing countries.⁷²

FLEGT Action Plan suggests some parameters to be followed by EU Members and timber-producing countries to achieve the Plan's purposes. Among them are:

- the promotion of public procurement policies for the acquisition of timber and byproducts;
- the support of private sectors initiatives of corporate social and environmental responsibility actions facing sustainable forest management;
- the safeguard of financing and investment, including encouraging financial institutions investing in the forestry sector to develop due care procedures; and
- the Enforcement of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to support the FLEGT Action Plan.

Further, The Plan creates the so-called Voluntary Partnership Agreement (VPA) as an instrument to be signed between the EU and timber-producing countries, to prohibit the entrance of illegal timber and byproducts into the EU market. Finally, it requires the enforcement of the so-called EU Timber Regulation.⁷³

- **Promotion of sustainable public procurement among EU Members**

The FLEGT Action Plan encourages the promotion of sustainable public procurement among EU Members. It suggests the consideration of environmental sustainability during

⁷² EU FLEGT FACILITY, *supra* note 70.

⁷³ *Id.*

public procurement procedures. It also recommends Members States to provide practical information to guide contracting authorities on how to deal with legality when specifying timber in such procedures. The Plan defends that it is possible to take legally harvested timber and its byproducts into account under the public procurement directives.⁷⁴

- **EU's support of timber-producing countries' initiatives of corporate social and environmental responsibility actions facing sustainable forest management**

Another action proposed by the Action Plan is the encouragement of private sector initiatives engaged in corporate social and environmental responsibility in timber-producing countries.⁷⁵ It promotes initiatives such as the establishment of coordinating bodies, the adoption of high standards in codes of conduct, transparency, independent monitoring, and capacity building.⁷⁶ The Plan stimulates the EU Members to work with the private sector in timber-producing countries through the provision of technical and financial assistance.⁷⁷ It suggests the private sector to execute internal and external audit to verify compliance with the supplier's code of conduct, and to be assisted by a third party verification of the supply chain. It also recommends public reports on the progress towards ensuring legality of products.⁷⁸

⁷⁴ Commission of the European Communities, *supra* note 67, at 15.

⁷⁵ According to Communication COM (2002) 347 final, July 2, 2002, corporate social and environmental responsibility is when “companies integrate social and environmental concerns in their business operations and in their interactions with stakeholders on a voluntary basis”. See Commission of the European Communities, *supra* note 67, at 16.

⁷⁶ Commission of the European Communities, *supra* note 67, at 18.

⁷⁷ *Id.* at 16.

⁷⁸ *Id.* at 18.

- **Execution of risk assessment by financial institutions when investing in forestry sector operations**

The FLEGT Action Plan also encourages financial institutions to execute risk assessment when investing in forestry sector operations, specially projects that potentially encourage illegal logging. They should take into account the risks attached to the social and environmental factors that could have a bearing on the investment's viability. For example, investors should consider risks of conflict over land and access to forest resources. The Plan thus suggests that financial institutions to take environmental and social factors into account when conducting due diligence, giving particular attention to investigations on the supply and source of timber available over the long term.⁷⁹

- **Enforcement of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to support the FLEGT Action Plan**

The FLEGT Action Plan is supported by existing legislative instruments, among which is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).⁸⁰ CITES has an important role to play in controlling trade in endangered tree species. It aims to prevent the overutilization of species, subspecies, and populations due to

⁷⁹ Commission of the European Communities, *supra* note 67, at 18.

⁸⁰ Convention on International Trade in Endangered Species of Wild Fauna and Flora [CITES], Mar. 3, 1973, 27 UST 1087, TIAS 8249, 993 UNTS 243.

international trade,⁸¹ making sure trade does not threaten their survival. The Convention developed forms to ensure that trade of specific species is both legal and sustainable. To determine if a species should be protected, the parties evaluate biological and trade data pertaining to a species at periodic meetings of the Convention Conference of the Parties.⁸²

All EC Member States are parties to the Convention. Thus, the Action Plan defends the implementation of CITES as a form of supporting its goals. It proposes the research on endangered timber species to justify their inclusion in Appendices I and II to CITES. It also encourages wood-producing countries to use voluntary listing of timber species under Appendix III, and the encouragement of countries to manage CITES-listed species sustainably.⁸³

2. Outcomes of implementation of the EU FLEGT parameters and their applicability to the Brazilian timber industry

The parameters recommended by the EU FLEGT Action Plan described above have presented positive results in preventing the entrance of illegally sourced timber in the EU market. There have been an increasingly search for more responsible trade in the timber sector, and widespread implementation of sustainable public procurement policies.⁸⁴ Nevertheless, some parameters have not been fully implemented. There were insufficient

⁸¹ David R. Downes, *Global Forest Policy and Selected International Instruments: A preliminary Review*, in RICHARD G. TARASOFSKY, *ASSESSING THE INTERNATIONAL FOREST REGIME* 63-93 83 (IUCN - The World Conservation Union, 1999).

⁸² *Id.*

⁸³ Commission of the European Communities, *supra* note 67, at 20.

⁸⁴ JOHN HUDSON AND CATHERINE PAUL, *FLEGT ACTION PLAN PROGRESS REPORT 2003-2010* 23 (European Forest Institute [EFI], 2011).

results in the implementation of risk assessment by financial institutions in finance and investment on activities in the forestry sector.⁸⁵

Some of these approaches are already present in Brazil, such as corporate and social responsibilities initiatives at the timber sector, although not widely adopted. Others are barely considered by national policies regarding illegal logging and associated trade, as it is the case of sustainable public procurement. Hence, the EU FLEGT Action Plan parameters should be taken as a model by the Brazilian authorities and the private sector to improve forms to tackle illegal logging and associated trade in the Amazon.

The Brazilian Public Administration should encourage environmental sustainability in public procurement for acquisition of timber products, and encourage corporate social and environmental responsibility among timber industry operators. It should also assure, by enforcing existent command and control rules, the execution of risk assessment by financial institutions when investing in forestry sector operations. Moreover, the Government should broaden the implementation of CITES, as Brazil is a party to the Convention. The methods to incorporate the FLEGT Action Plan's parameters into the Brazilian regulatory system will be further discussed in chapter 5.⁸⁶

3. Voluntary Partnership Agreements (VPAs) as an instrument to combat illegal logging in timber-producing countries

The primary instrument set by the EU FLEGT Action Plan to prohibit the entrance of illegal timber and byproducts into the EU market is the Voluntary Partnership Agreements

⁸⁵ HUDSON AND PAUL, *supra* note 84, at 23.

⁸⁶ See chapter 5, section b, i, 5.

(VPAs) between the EU and the timber-producing countries (partner countries). The purpose of VPAs is to put into practice the so-called FLEGT License Scheme. This is a system of checks and controls through the issuance of FLEGT licenses that asserts the legality of timber and byproducts exported to the EU by partner countries. The legality verification is based on the national law of the producing country. Council Regulation 2173/2005 regulates the FLEGT License Scheme.⁸⁷ It is binding and applicable to all EU Member States.⁸⁸

VPAs are voluntary for timber-exporting countries, but once a country has entered the agreement, it is legally binding on both sides.⁸⁹ Any import into the European Community of timber products from a VPA partner country without a FLEGT license shall be prohibited.⁹⁰ Regulation 2173/2005 provides the listing of timber and byproducts subject to FLEGT

⁸⁷ Council Regulation 2173/2005, on the Establishment of a FLEGT Licensing Scheme for Imports of Timber into the European Community, 2005 O.J. (L 347) (EC), 6.

⁸⁸ Council Regulation 2173/2005 (“Article 1

1. This Regulation establishes a Community set of rules for the import of certain timber products for the purposes of implementing the FLEGT licensing scheme.

2. The licensing scheme shall be implemented through Partnership Agreements with timber producing countries. (...)

Article 2

For the purposes of this Regulation the following definitions shall apply:

1. ‘Forest Law Enforcement, Governance and Trade licensing scheme’ (hereinafter referred to as FLEGT licensing scheme) means the issuing of licences for timber products for export to the Community from partner countries and its implementation in the Community, in particular in Community provisions on border controls;

2. ‘partner country’ means any State or regional organisation that enters into a Partnership Agreement, as listed in Annex I;

3. ‘Partnership Agreement’ means an agreement between the Community and a partner country by which the Community and that partner country undertake to work together in support of the FLEGT Action Plan and to implement the FLEGT licensing scheme;

(...)

5. ‘FLEGT license’ means a shipment-based or market participant-based document of a standard format which is to be forgery-resistant, tamper-proof, and verifiable, and which refers to a shipment as being in compliance with the requirements of the FLEGT licensing scheme, duly issued and validated by a partner country’s licensing authority. Systems for issuing, recording and communicating licenses may be paper-based or based on electronic means, as appropriate; (...))”

⁸⁹ EU FLEGT FACILITY, *supra* note 70.

⁹⁰ Council Regulation 2173/2005 (“Article 4

1. Imports into the Community of timber products exported from partner countries shall be prohibited unless the shipment is covered by a FLEGT licence. (...))”

licenses in its Annexes II and III.⁹¹ Wood in the rough, sawn wood, and plywood are some of the listed products.⁹²

- **Definition of *legal timber* and *timber products* under VPAs**

Regulation 2173/2005 defines *legal timber and timber products* as those harvested in or imported into a partner country in accordance with national laws.⁹³ However, in some developing countries Forestry Law might be unclear. This makes it difficult to determine the laws applicable to legal timber definition.

Sometimes, it is also difficult to define which laws are relevant to the definition of *legal timber*. For instance, while laws relating to timber harvesting or payment of royalties or export duties are important, those regulating working conditions of truckers transporting timber might be negligible. In order to solve that, VPA negotiations may contain the adoption of a multi-stakeholder processes to agree on operational definitions of *legal timber*, as well as commitments to legal reform to make the laws clearer and more comprehensive.⁹⁴

The scope of the applicable law in the legality analysis of timber and timber products will be defined in each VPA. For each legal requirement, a VPA will list criteria, indicators, and concrete verifiers.⁹⁵ It is expected to include:

⁹¹ There are currently no items listed in Annex III.

⁹² Council Regulation 2173/2005, on the Establishment of a FLEGT Licensing Scheme for Imports of Timber into the European Community, Annex II, 2005 O.J. (L 347) (EC), 6.

⁹³ Council Regulation 2173/2005 (“Article 2
For the purposes of this Regulation the following definitions shall apply:
(...)”)

10. ‘legally produced timber’ means timber products produced from domestic timber that was legally harvested or timber that was legally imported into a partner country in accordance with national laws determined by that partner country as set out in the Partnership Agreement; (...)”)

⁹⁴ BRACK AND BUCKRELL, *supra* note 69, at 3.

⁹⁵ *Id.* at 4.

- rights of allocation processes, and access rights;
- social obligations, including labor requirements;
- rights of local communities and indigenous populations;
- environmental safeguards;
- rules on forest management, timber harvesting, processing operations and associated financial and fiscal obligations; and
- rules on transport and trade of timber.⁹⁶

- **The Legality Assurance System (LAS)**

In order to implement the FLEGT License Scheme, a VPA shall be underpinned by a Legality Assurance System (LAS). The LAS allows the timber-exporting country to verify if timber products are legally sourced and produced, by identifying, monitoring, and awarding a FLEGT license to each consignment.⁹⁷ The LAS is the central part of a VPA -- essential to improve forestry sector governance in the partner country.⁹⁸

The partner country designs and develops its own licensing system during the VPA negotiations, based on its existing control methods and legal framework.⁹⁹ It may receive some support from the EU in capacity-building for the establishment of the licensing system

⁹⁶ BRACK AND BUCKRELL, *supra* note 69, at 3.

⁹⁷ EU FLEGT FACILITY, *supra* note 70.

⁹⁸ *Briefing Note Number 06, Voluntary Partnership Agreements*, FLEGT BRIEFING NOTES, FOREST LAW ENFORCEMENT, GOVERNANCE AND TRADE 3 (European Commission, 2007) <http://www.euflegt.efi.int/publications>.

⁹⁹ EU FLEGT FACILITY, *supra* note 70.

and improving governance and enforcement.¹⁰⁰ A designated licensing authority in each partner country will issue FLEGT licenses.¹⁰¹

Requirements for implementation of a LAS at a partner country

– Improvement of national environmental licensing procedures

When setting the components of a LAS, a VPA shall include the definition of *legal timber* that describes the laws that must be complied with for a license to be issued. The system shall verify compliance with all elements of the legality definition. There must be a clear, detailed, and documented scope to set out what must be verified to meet all the legality requirements. The system shall track timber along the entire supply chain, including transport, storage facilities and processing, through the point of export.¹⁰² Furthermore, the social aspects of the partner country shall be considered by a VPA. This includes traditional rights; all types of forest management, from large-scale forests to community managed forests; and the entire timber supply chain.¹⁰³

The legality verification system may be carried out by a government, a market participant, third-party organization, or some combination of these. They must be clearly identified, competent, and adequately resourced for it. Verification activities shall be carried out under a transparent and adequately documented management system by skilled and trained personnel. It must also be accompanied by robust and effective mechanisms to control

¹⁰⁰ BRACK AND BUCKRELL, *supra* note 69, at 5.

¹⁰¹ *Id.* at 4.

¹⁰² *Briefing Note Number 05, Legality assurance systems: requirements for verification*, FLEGT BRIEFING NOTES, FOREST LAW ENFORCEMENT, GOVERNANCE AND TRADE 2 (European Commission, 2007) <http://www.euflegt.efi.int/publications>.

¹⁰³ Videotape: Mardi Minangsari, Telapak Forest Campaigner, Indonesia. Fighting Illegal Logging: FLEGT Voluntary Partnership Agreements, <http://www.youtube.com/watch?v=VhdJghv6gGY>.

conflicts of interest at both the individual and organizational levels.¹⁰⁴ Records of legality verification should be kept, which allows monitoring by internal auditors and an independent monitor. Finally, there must be an effective and functioning method for requiring and enforcing appropriate corrective action where non-compliances are identified.¹⁰⁵

The EU provides support to help the partner country implement its LAS.¹⁰⁶ The system's implementation may occur gradually, generally limited to a geographical area first or to limit its scope to key supply chains exporting to the EU. At a later time, the EU will encourage partner countries to expand the application of their legality assurance systems to all their exports as well as the domestic market.¹⁰⁷

The LAS shall ultimately result in the issuance of FLEGT licenses asserting that timber and timber products were legally harvested and/or produced.¹⁰⁸ Once the system is in place and has successfully passed an independent evaluation, the EU will accept only FLEGT licensed timber from the partner country.¹⁰⁹ It will refuse entry at the EU border of non-licensed timber, regardless their type or destination.¹¹⁰ For legality to be asserted, there must be evidence that all the requirements of a partner country's legal timber definition have been met.¹¹¹

¹⁰⁴ *Briefing Note Number 05, supra note 102, at 2.*

¹⁰⁵ *Id.* at 3.

¹⁰⁶ EU FLEGT FACILITY, *supra note 70.*

¹⁰⁷ *Briefing Note Number 03, A timber legality assurance system, FLEGT BRIEFING NOTES, FOREST LAW ENFORCEMENT, GOVERNANCE AND TRADE 2*(European Commission, 2007)
<http://www.euflegt.efi.int/publications>.

¹⁰⁸ *Briefing Note Number 05, supra note 102, at 2.*

¹⁰⁹ EU FLEGT FACILITY <http://www.euflegt.efi.int/vpa> (Aug. 3, 2014), *supra note 70.*

¹¹⁰ BRACK AND BUCKRELL, *supra note 69, at 5.*

¹¹¹ *Id.* at 2.

**Monitoring by an independent third-party organization to assure
the LAS well functioning**

The partner country shall nominate an independent third-party monitoring organization responsible for auditing the partner country's FLEGT license scheme, in order to ensure its integrity and credibility.¹¹² It shall be independent of the partner country's government regulatory bodies,¹¹³ not holding commercial interests in the forestry sector.¹¹⁴ It shall bear a formal mandate to access the people, documents, and sites necessary to carry out the function.¹¹⁵ Its appointment is made in a transparent form, based on publicly available rules.¹¹⁶

The third-party monitor shall possess the necessary skills and systems to ensure its independence and objectivity for checking all aspects of LAS. It must use the best auditing practice and identify non-compliances and system failures. It shall regularly report its findings to the so-called Joint Implementation Committee (JIC)¹¹⁷ or to the Reporting Body,¹¹⁸ when established.¹¹⁹ Each VPA will set out qualifications and terms of reference for the third-party

¹¹² Council Regulation 2173/2005 ("Article 2
For the purposes of this Regulation the following definitions shall apply:
(...)

14. 'Third-party monitoring' means a system through which an organisation that is independent of a partner country's government authorities and its forest and timber sector monitors and reports on the operation of the FLEGT licensing scheme.")

¹¹³ *Briefing Note Number 07, Guidelines for Independent Monitoring*, FLEGT BRIEFING NOTES, FOREST LAW ENFORCEMENT, GOVERNANCE AND TRADE 2 (European Commission, 2007)
<http://www.euflegt.efi.int/publications>.

¹¹⁴ *Id.* at 3.

¹¹⁵ *Id.* at 2.

¹¹⁶ *Id.* at 3.

¹¹⁷ The Joint Implementation Committee (JIC) is a committee established for each VPA made up of representatives of the Partner Country, the European Commission and Member States. Its role is to facilitate and monitor the implementation of the VPA, and to mediate and resolve any conflicts and disputes that arise. *See Briefing Note Number 07, supra* note 113, at 2.

¹¹⁸ "The Reporting Body may be established by the JIC as a subsidiary body for day-to-day work. It: (i) examines and validates the findings of the Third-Party Monitor before their public release; (ii) identifies corrective actions where appropriate and checks whether such actions are taken; and (iii) responds to complaints concerning implementation of the LAS." *See Briefing Note Number 07, supra* note 113, at 2.

¹¹⁹ *Briefing Note Number 07, supra* note 113, at 3.

monitors and the extent to which their findings will be made public.¹²⁰ A monitoring organization is subject to external audits that verify if it operates in accordance with the applicable regulations and if it is qualified to exercise its functions.¹²¹ The involvement of third-party monitors may bring several benefits for the forestry sector. It can shed light upon the operations of public authorities, safeguard them from becoming corrupt, and give them more credibility and more transparency.

Violation of FLEGT Licensing Scheme rules – Penalization by EU Member States

With regards to penalization in case of violation of FLEGT Licensing Scheme rules, the Council Regulation 2173/2005 establishes that the penalties shall be determined by each Member State. They shall be effective, proportionate, and dissuasive.¹²² Furthermore, the Regulation defines that in the absence of FLEGT license for a shipment of timber products imported from partner countries, the Member States' competent authorities shall act in accordance with national law in force.¹²³ Annual reports on the development and implementation of each VPA need to be prepared. These reports shall include details of the achievement of the objectives and agreed time-bound actions, as well as progress on eliminating illegal timber exported to non-EU markets and sold in the domestic market.¹²⁴

¹²⁰ BRACK AND BUCKRELL, *supra* note 69, at 4.

¹²¹ *Briefing Note Number 07, supra* note 113, at 3.

¹²² Council Regulation 2173/2005 (“Article 5

(...)”)

8. Each Member State shall determine the penalties to be imposed where the provisions of this Regulation are infringed. Such penalties shall be effective, proportionate and dissuasive.”)

¹²³ Council Regulation 2173/2005 (“Article 6

1. If competent authorities establish that the requirement laid down in Article 4(1) is not fulfilled, they shall act in accordance with national law in force. (...)”)

¹²⁴ *Briefing Note Number 06, supra* note 98, at 3.

- **VPAs currently in force**

To date, six countries have signed VPAs with the EU: Cameroon, Central African Republic, Ghana, Indonesia, Liberia, and Republic of Congo. They are currently developing the systems needed to control, verify, and license legal timber.¹²⁵ Nine more countries are in negotiations with the EU: Côte d'Ivoire, Democratic Republic of Congo, Gabon, Guyana, Honduras, Laos, Malaysia, Thailand, and Vietnam. Another eleven countries in Africa, Asia, and Central and South America have expressed an interest in VPAs: Bolivia, Colombia, Ecuador, Guatemala, Peru, Philippines, Cambodia, Myanmar/Burma, Papua New Guinea, Solomon Islands, and Sierra Leone.¹²⁶ Brazil has never engaged in discussions regarding a possible enactment of a VPA. To date, no FLEGT licenses were issued by any of the partner countries that signed a VPA with the EU.¹²⁷

- **Benefits to timber-producing countries from signing a VPA – A potentially effective mechanism to tackle illegal logging and associated trade in Brazil**

Although the executions of VPAs have been modest, there have been some positive results in governance improvement and illegality reduction in some of the tropical timber-

¹²⁵ Council Regulation 2173/2005, Article 1, Item 2.

¹²⁶ EU FLEGT FACILITY, *supra* note 70.

¹²⁷ *Just two countries may issue FLEGT licences in 2014*, EUWID – Wood Products and Panels, http://www.euwid-wood-products.com/no_cache/druckversion/news/miscellaneous/single/Artikel/just-two-countries-may-issue-flegt-licences-in-2014.html (2014).

producing countries. For example, in Cameroon and Indonesia, efforts against illegal logging between 2001 and 2006 prevented the emission of 1.6 billion tons of carbon dioxide. Those two countries also collected additional tax revenue of US\$4 billion.¹²⁸ Timber exporters to the European Union have seen that the focus on legality reinforces their national sovereignty.¹²⁹ This allows discussion of sensitive governance issues such as corruption.¹³⁰ Moreover, the inclusion of national stakeholders in dialogues on illegal timber raises awareness of illegal logging and associated problems.¹³¹

The European Commission and Member States have supported timber-producing countries, which have priority for assistance on FLEGT-related measures.¹³² This includes technical¹³³ and financial support,¹³⁴ such as the finance of scientific studies aimed at improving timber tracking,¹³⁵ and assistance in capacity building.¹³⁶ Partner countries obtain additional enforcement tools to combat illegal activities, and develop a foundation framework that will facilitate private operators to progress to certification of sustainable forest management.¹³⁷

By taking part in a VPA, the partner country increases its market confidence.¹³⁸ It improves the country's international reputation for governments' commitment to good

¹²⁸ COMBATING ILLEGAL LOGGING – LESSONS FROM THE EU FLEGT ACTION PLAN 10 (European Commission, 2014).

¹²⁹ *Id.*

¹³⁰ HUDSON AND PAUL, *supra* note 84, at 34.

¹³¹ *Id.* at 24.

¹³² *Briefing Note Number 06, supra* note 98, at 4.

¹³³ Such support is provided in the form of short-term technical assistance and posting of government official or experts as FLEGT facilitators on a medium to long-term basis, to several FLEGT partner countries for the preparation, negotiation and implementation phases of VPAs. *See* HUDSON AND PAUL, *supra* note 84, at 8.

¹³⁴ Such support is provided as projects with budget support, a component of an ongoing project, support in negotiation and implementation of VPAs, institutional strengthening and regulation of forest management in partner countries, development of participatory approaches and stakeholder consultation processes, private sector and think tanks initiatives in partner countries, among other actions. *See* HUDSON AND PAUL, *supra* note 84, at 8.

¹³⁵ HUDSON AND PAUL, *supra* note 84, at 13.

¹³⁶ BRACK AND BUCKRELL, *supra* note 69, at 5.

¹³⁷ *Briefing Note Number 06, supra* note 98, at 4.

¹³⁸ Commission of the European Communities, *supra* note 67, at 12.

governance.¹³⁹ This leads to better access to the EU market, because public and private procurement policies have refused unidentified or illegal timber.¹⁴⁰ It also increases revenue from taxes and duties, due to the reduction in the level of illegal behavior.¹⁴¹ Consequently, it increases revenue to finance poverty reduction and community development programs.

A VPA can also support the partner country in achieving its development objectives in general by emphasizing alleviation of poverty, safeguarding employment and competitiveness, and increasing government revenues. It improves government and private sector capacity, strengthens the rule of law, and secures the rights of people who are dependent on forests for their livelihoods.¹⁴²

Only a small portion of Brazil's timber production is exported to the European Union.¹⁴³ Therefore, a VPA between Brazil and the EU would have a direct impact on the legality of only this minor portion of the country's production. Still, it would contribute to the combat against illegal logging and associated trade nationally. In addition to the benefits mentioned above, a VPA would improve the regulatory system on timber industry through the inclusion of a definition for "legal timber". This would clarify the law's content and enhance its enforcement.¹⁴⁴ It would also improve the national environmental licensing system of activities along the timber supply chain. Therefore, the Government should pursue the enactment of a VPA, what will be discussed in more detail at chapter 5.¹⁴⁵

Notwithstanding all the benefits derived from the implementation of the FLEGT

¹³⁹ *Briefing Note Number 06, supra* note 98, at 4.

¹⁴⁰ *Id.*

¹⁴¹ BRACK AND BUCKRELL, *supra* note 69, at 5.

¹⁴² EU FLEGT FACILITY, *supra* note 70.

¹⁴³ See chapter 1, section d, iii.

¹⁴⁴ See chapter 2, section f, iv on the need for a legislative reform of Brazilian Forestry Law.

¹⁴⁵ See chapter 5, section b, i, 6.

Licensing Scheme, the great majority of timber imported to the EU market is currently not subject to any VPA licensing system, nor listed under CITES Appendices.¹⁴⁶ This led the European Commission to propose an alternative solution within the FLEGT Action Plan provisions, known as the EU Timber Regulation.

4. EU Timber Regulation

The EU FLEGT Action Plan proposes a legislative option that applies to the importation of timber into the EU from countries that are not part of a VPA, known as the EU Timber Regulation (Regulation 995/2010).¹⁴⁷ It requires timber operators who first place timber or timber products into the EU market to establish due diligence systems to minimize the risk of illegal products entering the EU.¹⁴⁸

The Regulation is legally binding on all 28 EU Member States¹⁴⁹ and became effective on March 3, 2013.¹⁵⁰ It sets the obligations of operators in the EU.¹⁵¹ Operators are any natural or legal person that places timber or timber products on the market.¹⁵² The Regulation also sets

¹⁴⁶ BRACK AND BUCKRELL, *supra* note 69, at 6.

¹⁴⁷ Regulation 995/2010, of the European Parliament and of the Council of 20 October 2010 Laying Down the Obligations of Operators who Place Timber and Timber Products on the Market, 2010 O.J. (L 295) (EU) 23, 34.

¹⁴⁸ Commission of the European Communities, *supra* note 67, at 15.

¹⁴⁹ *Timber Regulation*, EUROPEAN COMMISSION, http://ec.europa.eu/environment/forests/timber_regulation.htm (Aug. 4, 2014).

¹⁵⁰ *Id.*

¹⁵¹ Regulation 995/2010 (“Article 1
Subject matter

This Regulation lays down the obligations of operators who place timber and timber products on the internal market for the first time, as well as the obligations of traders.”)

¹⁵² Regulation 995/2010 (“Article 2
Definitions

For the purposes of this Regulation, the following definitions shall apply:

(...)

(b) ‘placing on the market’ means the supply by any means, irrespective of the selling technique used, of timber or timber products for the first time on the internal market for distribution or use in the course of a commercial activity, whether in return for payment or free of charge. It also includes the supply by means of distance

the obligations of traders, who commercialize timber or timber products already placed on the EU internal market.¹⁵³ When it comes to the classification of timber and timber products subject to the Regulation, a list is provided in its Annex.¹⁵⁴ Products such as wood in the rough, sawn wood and plywood are included. This applies to both imported and domestically produced timber and byproducts.¹⁵⁵

- **Definition of *legal timber* under the EU Timber Regulation**

The EU Timber Regulation prohibits the placing of illegally harvested timber and timber products on the EU market.¹⁵⁶ Illegally harvested timber is defined as timber harvested in contravention of the applicable law in the country of harvest.¹⁵⁷ The law to be complied with when verifying the legality of timber shall comprehend:

communication as defined in Directive 97/7/EC of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts (3). The supply on the internal market of timber products derived from timber or timber products already placed on the internal market shall not constitute ‘placing on the market’; (...))”

¹⁵³ Regulation 995/2010 (“Article 2

Definitions

For the purposes of this Regulation, the following definitions shall apply:

(...)

(c) ‘operator’ means any natural or legal person that places timber or timber products on the market;

(d) ‘trader’ means any natural or legal person who, in the course of a commercial activity, sells or buys on the internal market timber or timber products already placed on the internal market; (...))”

¹⁵⁴ Regulation 995/2010, of the European Parliament and of the Council of 20 October 2010 Laying Down the Obligations of Operators who Place Timber and Timber Products on the Market, Annex, 2010 O.J. (L 295) (EU) 33.

¹⁵⁵ *Timber Regulation*, *supra* note 149.

¹⁵⁶ Regulation 995/2010 (“Article 4

Obligations of operators

1. The placing on the market of illegally harvested timber or timber products derived from such timber shall be prohibited.”)

¹⁵⁷ Regulation 995/2010 (“Article 2

Definitions

For the purposes of this Regulation, the following definitions shall apply:

(...)

(g) ‘illegally harvested’ means harvested in contravention of the applicable law in the country of harvest; (...))”

- the rights to harvest timber within legally gazetted boundaries;
- rules of payments for harvest rights and timber, including duties related to timber harvesting;
- rules of timber harvesting, including environmental and forest law, forest management and biodiversity conservation;
- third parties' legal rights concerning use and tenure that are affected by timber harvesting; and
- rules of trade and customs, in so far as the forestry sector is concerned.¹⁵⁸

The EU Timber Regulation expressly lists the scope of laws to be considered when defining *legal timber*, while the VPA system gives the opportunity of a different settlement under each agreement. Timber accompanied by a FLEGT license shall be considered as legally harvested.¹⁵⁹ Timber followed by a Convention on International Trade in Endangered Species of Wild Fauna Flora (CITES) permit, and timber species listed in Annexes A, B, and C to Council Regulation (EC) No 338/97 of December 9, 1996, shall also be considered as

¹⁵⁸ Regulation 995/2010 (“Article 2
Definitions

For the purposes of this Regulation, the following definitions shall apply:

(...)

(h) ‘applicable legislation’ means the legislation in force in the country of harvest covering the following matters:

- rights to harvest timber within legally gazetted boundaries,
- payments for harvest rights and timber including duties related to timber harvesting,
- timber harvesting, including environmental and forest legislation, including forest management and biodiversity conservation, where directly related to timber harvesting,
- third parties’ legal rights concerning use and tenure that are affected by timber harvesting, and
- trade and customs, in so far as the forest sector is concerned.”)

¹⁵⁹ Regulation 995/2010 (“Whereas:

(...)

(9) (...) Therefore, timber embedded in timber products listed in Annexes II and III to Council Regulation (EC) No 2173/2005 of 20 December 2005 on the establishment of a FLEGT licensing scheme for imports of timber into the European Community, originating in partner countries listed in Annex I to that Regulation, should be considered to have been legally harvested provided those timber products comply with that Regulation and any implementing provisions.”)

legally harvested.¹⁶⁰

Certification or other third-party verified schemes¹⁶¹ are not considered valid proof of legality under the EU Timber Regulation.¹⁶² However, they may be taken into account in the risk assessment and risk mitigation procedures because they meet the criteria set out by the Commission Implementing Regulation 607/2012 on the detailed rules for the Regulation 995/2010.¹⁶³

- **The EU Timber Regulation’s Due Diligence System as an instrument to minimize the risk of importing illegal timber**

The EU Timber Regulation establishes the implementation of a due diligence system

¹⁶⁰ Regulation 995/2010 (“Article 3

Status of timber and timber products covered by FLEGT and CITES Timber embedded in timber products listed in Annexes II and III to Regulation (EC) No 2173/2005 which originate in partner countries listed in Annex I to that Regulation and which comply with that Regulation and its implementing provisions shall be considered to have been legally harvested for the purposes of this Regulation.

Timber of species listed in Annex A, B or C to Regulation (EC) No 338/97 and which complies with that Regulation and its implementing provisions shall be considered to have been legally harvested for the purposes of this Regulation.”)

¹⁶¹ For example, certifications provided by the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC).

¹⁶² *EU Timber Regulation*, *supra* note 71.

¹⁶³ Regulation 607/2012 (“Article 4

Risk assessment and mitigation

Certification or other third-party verified schemes referred to in the first indent of the second paragraph of Article 6(1)(b) and in Article 6(1)(c) of Regulation (EU) No 995/2010 may be taken into account in the risk assessment and risk mitigation procedures where they meet the following criteria:

(a) they have established and made available for third-party use a publicly available system of requirements, which system shall at the least include all relevant requirements of the applicable legislation;

(b) they specify that appropriate checks, including field-visits, are made by a third party at regular intervals no longer than 12 months to verify that the applicable legislation is complied with;

(c) they include means, verified by a third party, to trace timber harvested in accordance with applicable legislation, and timber products derived from such timber, at any point in the supply chain before such timber or timber products are placed on the market;

(d) they include controls, verified by a third party, to ensure that timber or timber products of unknown origin, or timber or timber products which have not been harvested in accordance with applicable legislation, do not enter the supply chain.”) Commission Implementing Regulation 607/2012, on the Detailed Rules Concerning the Due Diligence System and the Frequency and Nature of the Checks on Monitoring Organisations as Provided for in Regulation (EU) No 995/2010 of the European Parliament and of the Council Laying Down the Obligations of Operators who Place Timber and Timber Products on the Market, 2012 O.J. (L 177) (EU) 16, 18.

as the main obligation of operators to place timber on the market.¹⁶⁴ The system shall contain three elements: access to information, risk assessment, and mitigation of the identified risks.¹⁶⁵ The operator shall execute a risk assessment procedure. It shall gather and consider information on timber's trade name, type, and species; country of harvest; quantity; suppliers' details; trader's details; and documents indicating compliance with law in the country of harvest. The procedure will evaluate the risk of illegally harvested timber or timber products. It will take into account legal compliance, prevalence of illegal harvesting of particular tree species, and prevalence of illegal harvesting practices and armed conflicts in the country of harvest. It will also consider sanctions imposed by the UN Security Council and Council of the European Union on the country's imports and exports, and its supply-chain complexity.¹⁶⁶

¹⁶⁴ Regulation 995/2010 ("Article 4
Obligations of operators
(...)

2. Operators shall exercise due diligence when placing timber or timber products on the market. To that end, they shall use a framework of procedures and measures, hereinafter referred to as a 'due diligence system', as set out in Article 6.")

¹⁶⁵ Regulation 995/2010 ("Whereas:
(...)

(17) The due diligence system includes three elements inherent to risk management: access to information, risk assessment and mitigation of the risk identified. (...)"

¹⁶⁶ Regulation 995/2010 ("Article 6
Due diligence systems

1. The due diligence system referred to in Article 4(2) shall contain the following elements:

(a) measures and procedures providing access to the following information concerning the operator's supply of timber or timber products placed on the market:

- description, including the trade name and type of product as well as the common name of tree species and, where applicable, its full scientific name,
- country of harvest, and where applicable: (i) sub-national region where the timber was harvested; and (ii) concession of harvest,
- quantity (expressed in volume, weight or number of units),
- name and address of the supplier to the operator,
- name and address of the trader to whom the timber and timber products have been supplied,
- documents or other information indicating compliance of those timber and timber products with the applicable legislation;

(b) risk assessment procedures enabling the operator to analyse and evaluate the risk of illegally harvested timber or timber products derived from such timber being placed on the market. Such procedures shall take into account the information set out in point (a) as well as relevant risk assessment criteria, including:

- assurance of compliance with applicable legislation, which may include certification or other third-party-verified schemes which cover compliance with applicable legislation,
- prevalence of illegal harvesting of specific tree species,

In case it is verified a non-negligible risk, risk mitigation procedures shall be taken. They shall be adequate and proportionate to effectively minimize that risk. Such procedure may include the requirement of additional information or documents and/or third-party verification.¹⁶⁷

The EU Timber Regulation allows operators either to establish their own due diligence systems, get a service provider to create one, or use systems provided by monitoring organizations which will check whether the systems are being properly implemented.¹⁶⁸ The operator must decide it according to its own capacity, resources, and knowledge. The effort required to build a system will depend on the complexity of the supply chain and of the operator's business.¹⁶⁹ In case an operator is already making use of another system that complies with the Regulation requirements, it should not be required to set up new systems.¹⁷⁰

A monitoring organization is a legal person established within the European Union,

-
- prevalence of illegal harvesting or practices in the country of harvest and/or sub-national region where the timber was harvested, including consideration of the prevalence of armed conflict,
 - sanctions imposed by the UN Security Council or the Council of the European Union on timber imports or exports,
 - complexity of the supply chain of timber and timber products. (...)"

¹⁶⁷ Regulation 995/2010 ("Article 6

Due diligence systems

1. The due diligence system referred to in Article 4(2) shall contain the following elements:

(...)

(c) except where the risk identified in course of the risk assessment procedures referred to in point (b) is negligible, risk mitigation procedures which consist of a set of measures and procedures that are adequate and proportionate to minimise effectively that risk and which may include requiring additional information or documents and/or requiring third party verification.

(...)"

¹⁶⁸ Regulation 995/2010 ("Article 4

Obligations of operators

(...)

3. Each operator shall maintain and regularly evaluate the due diligence system which it uses, except where the operator makes use of a due diligence system established by a monitoring organisation referred to in Article 8. Existing supervision systems under national legislation and any voluntary chain of custody mechanism which fulfill the requirements of this Regulation may be used as a basis for the due diligence system."

¹⁶⁹ *EU Timber Regulation*, *supra* note 71.

¹⁷⁰ Regulation 995/2010 ("Whereas:

(...)

(18) In order to avoid any unnecessary administrative burden, operators already using systems or procedures which comply with the requirements of this Regulation should not be required to set up new systems."

recognized and listed¹⁷¹ by the European Commission. It shall maintain and regularly evaluate a due diligence system, grant operators the right to use it, verify its proper use by such operators, and take appropriate action in the event of an operator's failure. Monitoring organizations shall have expertise to exercise its functions and ensure the absence of any conflict of interest in carrying them out. The monitoring organizations shall be regularly checked by competent authorities, which will verify whether they fulfill their functions and comply with their requirements. If it is verified otherwise, the European Commission shall withdraw its recognition.¹⁷² To date, four monitoring organizations were recognized by the European Commission: Consorzio Servizi Legno-Sughero in Italy; NEPCon in Denmark; Control Union Certifications B.V. in The Netherlands; and Bureau Veritas Certification Holding SAS in France.¹⁷³

¹⁷¹ Regulation 995/2010 ("Article 9
List of monitoring organisations

The Commission shall publish the list of the monitoring organisations in the Official Journal of the European Union, C series, and shall make it available on its website. The list shall be regularly updated.")

¹⁷² Regulation 995/2010 ("Article 8
Monitoring organisations

1. A monitoring organisation shall:

(a) maintain and regularly evaluate a due diligence system as set out in Article 6 and grant operators the right to use it;

(b) verify the proper use of its due diligence system by such operators;

(c) take appropriate action in the event of failure by an operator to properly use its due diligence system, including notification of competent authorities in the event of significant or repeated failure by the operator.

2. An organisation may apply for recognition as a monitoring organisation if it complies with the following requirements:

(a) it has legal personality and is legally established within the Union;

(b) it has appropriate expertise and the capacity to exercise the functions referred to in paragraph 1; and

(c) it ensures the absence of any conflict of interest in carrying out its functions.

(...)

4. The competent authorities shall carry out checks at regular intervals to verify that the monitoring organisations operating within the competent authorities' jurisdiction continue to fulfil the functions laid down in paragraph 1 and comply with the requirements laid down in paragraph 2.

(...)

6. The Commission shall withdraw recognition of a monitoring organisation when, in particular on the basis of the information provided pursuant to paragraph 5, it has determined that the monitoring organisation no longer fulfils the functions laid down in paragraph 1 or the requirements laid down in paragraph 2. (...)"

¹⁷³ *Environment, FLEGT Voluntary Partnership Agreements (VPAs)*, EUROPEAN COMMISSION, <http://ec.europa.eu/environment/forests/flegt.htm> (Aug. 5, 2014).

The Regulation only requires operators who place timber and byproducts for the first time on the internal market to be subject to the due diligence system.¹⁷⁴ Traders in the supply chain shall only keep information on operators or traders who have supplied products and those to whom they have supplied for at least five years. When requested by competent authorities, they must provide such information to enable traceability of timber and byproducts.¹⁷⁵ This is because the Regulation avoids imposing unnecessary administrative burden to operators and traders.

- **Penalties for violation of EU Timber Regulation's provisions**

Prescription of penalties under the EU Timber Regulation is a responsibility of EU Member States. They are required to pass their own secondary law and take all measures necessary to ensure its implementation.¹⁷⁶ Rules must be effective and proportionate. Penalties may include fines, seizure of the timber and timber products concerned, and/or immediate suspension of authorization to trade.¹⁷⁷ Furthermore, the Regulation determines that, in the

¹⁷⁴ Regulation 995/2010 (“Whereas:

(...)

(15) Many timber products undergo numerous processes before and after they are placed on the internal market for the first time. In order to avoid imposing any unnecessary administrative burden, only operators that place timber and timber products on the internal market for the first time should be subject to the due diligence system, while a trader in the supply chain should be required to provide basic information on its supplier and its buyer to enable the traceability of timber and timber products.”)

¹⁷⁵ Regulation 995/2010 (“Article 5

Obligation of traceability

Traders shall, throughout the supply chain, be able to identify:

(a) the operators or the traders who have supplied the timber and timber products; and

(b) where applicable, the traders to whom they have supplied timber and timber products.

Traders shall keep the information referred to in the first paragraph for at least five years and shall provide that information to competent authorities if they so request.”)

¹⁷⁶ BRACK AND BUCKRELL, *supra* note 69, at 10.

¹⁷⁷ Regulation 995/2010 (“Article 19

Penalties

1. The Member States shall lay down the rules on penalties applicable to infringements of the provisions of this

case of its infringements, illegally harvested timber or derived timber products should not necessarily be destroyed but may instead be used or disposed of for public interest purposes.¹⁷⁸

- **Enforcement of the EU Timber Regulation**

Member States' competent authorities shall carry out periodical checks on the EU Timber Regulation enforcement. They must follow a risk-based approach to verify if operators comply with the due diligence requirements. The approach shall include the examination of the due diligence system, considering the risk assessment and risk mitigation procedures. Authorities shall also examine the documentation and records that demonstrate the proper functioning of the system, and hold field audits. If shortcomings have been detected, the competent authorities may issue a notice of remedial actions to be taken by the operator. Depending on the nature of the shortcoming, they may seize timber and byproducts or prohibit marketing.¹⁷⁹ According to the European Commission, 24 out of 28 Member States have

Regulation and shall take all measures necessary to ensure that they are implemented.

2. The penalties provided for must be effective, proportionate and dissuasive and may include, inter alia:

- (a) fines proportionate to the environmental damage, the value of the timber or timber products concerned and the tax losses and economic detriment resulting from the infringement, calculating the level of such fines in such way as to make sure that they effectively deprive those responsible of the economic benefits derived from their serious infringements, without prejudice to the legitimate right to exercise a profession, and gradually increasing the level of such fines for repeated serious infringements;
 - (b) seizure of the timber and timber products concerned;
 - (c) immediate suspension of authorisation to trade.
- (...)"

¹⁷⁸ Regulation 995/2010 ("Whereas:

(...)

(27) Member States should ensure that infringements of this Regulation, including by operators, traders and monitoring organisations, are sanctioned by effective, proportionate and dissuasive penalties. National rules may provide that, after effective, proportionate and dissuasive penalties are applied for infringements of the prohibition of placing on the internal market of illegally harvested timber or timber products derived from such timber, such timber and timber products should not necessarily be destroyed but may instead be used or disposed of for public interest purposes.")

¹⁷⁹ Regulation 995/2010 ("Article 10

Checks on operators

established competent authorities for the implementation of the EU Timber Regulation, and 19 Member States have established the national norms regarding the penalties applicable to the violation of the Regulation rules.¹⁸⁰

- **Outcomes of EU Timber Regulation enforcement and adaptation of the due diligence system to the Brazilian timber industry**

The enforcement of the EU Timber Regulation has provoked some changes on practices within the timber sector in the EU. For example, companies have adopted voluntary codes of conduct, procurement policies, and chain-of-custody initiatives, particularly in the timber, paper, and construction sectors.¹⁸¹ This is combined with the sentiment to clean up their supply chains.¹⁸²

Timber exported from Brazil to the EU market is directly subject to the Regulation

1. The competent authorities shall carry out checks to verify if operators comply with the requirements set out in Articles 4 and 6.
2. The checks referred to in paragraph 1 shall be conducted in accordance with a periodically reviewed plan following a risk-based approach. In addition, checks may be conducted when a competent authority is in possession of relevant information, including on the basis of substantiated concerns provided by third parties, concerning compliance by an operator with this Regulation.
3. The checks referred to in paragraph 1 may include, inter alia:
 - (a) examination of the due diligence system, including risk assessment and risk mitigation procedures;
 - (b) examination of documentation and records that demonstrate the proper functioning of the due diligence system and procedures;
 - (c) spot checks, including field audits.
4. Operators shall offer all assistance necessary to facilitate the performance of the checks referred to in paragraph 1, notably as regards access to premises and the presentation of documentation or records.
5. Without prejudice to Article 19, where, following the checks referred to in paragraph 1, shortcomings have been detected, the competent authorities may issue a notice of remedial actions to be taken by the operator. Additionally, depending on the nature of the shortcomings detected, Member States may take immediate interim measures, including inter alia:
 - (a) seizure of timber and timber products;
 - (b) prohibition of marketing of timber and timber products.”)

¹⁸⁰ *Environment, supra* note 173.

¹⁸¹ COMBATING ILLEGAL LOGGING, *supra* note 128, at 9.

¹⁸² HUDSON AND PAUL, *supra* note 84, at 34.

provisions, what makes the law a control mechanism of legality of the country's exports. Additionally, due to its positive results, the due diligence system created by the EU Timber Regulation is a tool that could be adapted to Brazil's timber industry to tackle illegal logging and associated trade in the Amazon. The timber industry actors should be required to adopt due diligence systems within their operations, with the purpose of assuring the legality of timber and byproducts they deal with along the supply chain. The due diligence requirement in Brazil could be based on EU Timber Regulation's provisions. It would contain the specific adjustments to the Brazilian timber market, what will be further discussed in chapter 5.¹⁸³

c. Forest certification schemes as successful non-governmental instruments to tackle illegal logging and associated trade worldwide

Governmental policies, regulations, and international treaties, among other initiatives from the public sector, are not alone in the combat and control of illegal logging and associated trade worldwide. The private sector has been gradually intensifying the development and adoption of methods parallel to governmental initiatives in such matter. Among several systems currently in use in the global market, the so-called forest certification schemes prevail.

Forest certification is a non-state market-driven system of eco-labeling.¹⁸⁴ It is a voluntary process adopted by companies that intend to assert that their products and

¹⁸³ See more on that matter at chapter 5, section b, i, 7.

¹⁸⁴ Gabriela Bueno and Benjamin Cashore, *Can Legality Verification Combat Illegal Logging In Brazil? Strategic Insights for Policy Maker and Advocates* 6 (IUFRO TASK FORCE ON FOREST GOVERNANCE 2013).

production process follow specific quality and sustainability patterns.¹⁸⁵ The requirements set for forest certification are based on the three pillars of sustainability: ecologically correct, socially fair, and economically viable activities.¹⁸⁶

There are several forest certification schemes worldwide. The main ones, with the largest certified areas, are the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). These are the most present in Brazil. In North America, one of the greatest wood consumer regions, a very popular certification scheme is the Sustainable Forestry Initiative (SFI).

i. Forest Stewardship Council (FSC)

In 1990, a group of timber users, traders, and environmental and human rights organizations in California, all concerned about environmental degradation and social exclusion, gathered and created the Forest Stewardship Council (FSC).¹⁸⁷ FSC is a global, not-for-profit organization dedicated to the promotion of responsible forest management worldwide.¹⁸⁸

FSC's mission is the promotion of environmentally appropriate, socially beneficial, and economically viable management of the world's forests. It aims to maintain the forests' biodiversity, productivity, and ecological process. It helps both local people and society at large to enjoy long-term benefits. It provides strong incentives to local people to sustain the

¹⁸⁵ *Produção Florestal [Forest Production]*, SISTEMA NACIONAL DE INFORMAÇÕES FLORESTAIS [SNIF] [NATIONAL SYSTEM OF FOREST INFORMATION], <http://www.florestal.gov.br/snif/producao-florestal/certificacao-florestal> (Sep. 17, 2014).

¹⁸⁶ *Id.*

¹⁸⁷ FOREST STEWARDSHIP COUNCIL INTERNATIONAL, <https://ic.fsc.org/> (Mar. 25, 2016).

¹⁸⁸ *Id.*

forest resources and adhere to long-term management plans. FSC also assists the structuring of forest operations so as to be sufficiently profitable, without generating financial profit at the expense of the forest resource, the ecosystem, or affected communities.¹⁸⁹

1. FSC Principles and Criteria (P&C)

The FSC Principles and Criteria (P&C)¹⁹⁰ sets high standards of forest management that are environmentally appropriate, socially beneficial, and economically viable, which is the basis for the process of forest certification.¹⁹¹ The P&C describes the essential elements or rules of forest management in ten principles, each of them supported by several criteria that provide a way of judging whether the principle has been met in practice.¹⁹²

All ten FSC Principles and Criteria apply worldwide, to all types and scales of forests. This includes natural forests, plantations, and other (i.e. non-forest) vegetation types. It applies to those land-uses involving the growing of trees, and to ‘non-forest’ land-uses as they contribute to the mission of FSC.¹⁹³ They cover all management activities that are related to the area to be certified (management unit), whether directly undertaken or contracted out. They apply generally to the entire geographic space inside its boundary.¹⁹⁴

¹⁸⁹ FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

¹⁹⁰ Version 4 of FSC Principles and Criteria is the currently applicable. FSC International Standard – FSC Principles and Criteria for Forest Stewardship, FOREST STEWARDSHIP COUNCIL – INTERNATIONAL CENTER [FSC] (FSC-STD-01-001, version 4-0, EN, 2002).

¹⁹¹ FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ FSC Principles and Criteria for Forest Stewardship, FOREST STEWARDSHIP COUNCIL [FSC] (FSC-STD-01-001, V5-0, EN), at 9. A fifth version of the FSC Principles & Criteria (P&C V5) has been revised and was approved in February 2012. However, such version shall not be used for audit until completion of the FSC International Generic Indicators and the transfer process of the National Standards is complete. *See* FSC Principles and Criteria for Forest Stewardship, FOREST STEWARDSHIP COUNCIL [FSC] (FSC-STD-01-001, V5-0, EN). *See* INTERNATIONAL GENERIC INDICATORS [IGI], <http://igi.fsc.org/index.htm> (Mar. 30, 2015).

In terms of products and services, the FSC Principles and Criteria cover the production of wood and non-timber forest products, conservation, protection, ecosystem services, and other uses. Ecosystem services include the sequestration and storage of carbon, which contributes to the mitigation of climate change.¹⁹⁵ In terms of the law, FSC intends to complement, not supplant, other initiatives that support responsible forest management worldwide. The FSC Principles and Criteria are to be used in conjunction with international, national, and local laws and regulations, though they may contain more stringent or demanding provisions.¹⁹⁶

2. Brazil's FSC Forest Stewardship Standards (FSS)

Besides the FSC Principles and Criteria, the FSC also sets National or Regional Standards, called FSC Forest Stewardship Standards (FSS). Any international standard for forest management needs to be adapted at the regional or national level to reflect the diverse legal, social, and geographical conditions of forests in different parts of the world.¹⁹⁷ In addition, FSC sets standards for the accreditation of conformity assessment bodies (also

¹⁹⁵ FSC Principles and Criteria for Forest Stewardship, FOREST STEWARDSHIP COUNCIL [FSC] 9 (FSC-STD-01-001, V5-0, EN).

¹⁹⁶ Besides its Principles & Criteria, FSC also applies the following as FSC Normative Framework: guidance, directives and other documents issued or approved by FSC; FSC Forest Stewardship Standards; standards for particular vegetation types, products and services. It also applies standards for particular types of management units, such as small and low intensity managed forests, large scale high intensity plantations, conservation zones and protection areas, as approved by FSC. *See* FSC Principles and Criteria for Forest Stewardship, FOREST STEWARDSHIP COUNCIL [FSC] 8 (FSC-STD-01-001, V5-0, EN).

¹⁹⁷ The FSS are developed by National Standards Development Groups (SDGs), under the guidance of the FSC Forest Management Program. The FSC Principles & Criteria, together with a set of indicators approved by the FSC International Board's Policy and Standards Committee, constitute an FSC National or Regional Forest Stewardship Standard. *See* FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

known as certification bodies) that certify compliance with FSC's standards.¹⁹⁸ Brazil's National Standards are the following:

- Certification Standards of the Forest Stewardship Council for Forest Management on 'Terra Firme' in the Amazon;
- Brazilian FSC Standard for Small and Low Intensity Managed Forests (SLIMF);
- Harmonized Certification Bodies' Forest Stewardship Plantation Standard for the Federative Republic of Brazil.¹⁹⁹

FSC forest certification is based on a complex and detailed set of principles and rules, which makes it the most effective and reliable system worldwide. As asserted by Maguire, citing Dingwerth,²⁰⁰ FSC operations have quasi-legislative nature, as one of the most advanced cases of non-state-driven rule-making dynamics in the environmental field globally.²⁰¹

3. Types of FSC certificates

Independent certification bodies issue all FSC certifications. FSC has an integrated accreditation program that systematically checks its certification bodies to guarantee the

¹⁹⁸ FSC Principles and Criteria for Forest Stewardship, FOREST STEWARDSHIP COUNCIL [FSC] 8 (FSC-STD-01-001, V5-0, EN).

¹⁹⁹ Currently, the Standards are to be revised with the transfer process into the revised FSC Principles & Criteria. See FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187. They were subject to a series of stakeholder consultations over several years, a time consuming and intensely participative process that was open to public discussion. See Peter May, *Forest Certification in Brazil*, in BENJAMIN CASHORE ET AL., *CONFRONTING SUSTAINABILITY: FOREST CERTIFICATION IN DEVELOPING AND TRANSITIONING COUNTRIES* 347 (Yale F&ES Publication Series, Report Number 8, 2006).

²⁰⁰ Dingwerth Klaus (2008), 'North-South Parity in Global Governance: The Affirmative Procedures of the Forest Stewardship Council', *Global Governance*, 14 (1), 53-71, at 59.

²⁰¹ ROWENA MAGUIRE, *GLOBAL FOREST GOVERNANCE: LEGAL CONCEPTS AND POLICY TRENDS* (Edward Elgar ed., 2013), at 278.

authenticity of their claims. It defines the procedures that certification bodies should follow in their certification assessments.²⁰² Certification bodies shall fulfill FSC accreditation requirements²⁰³ and carry out annual checks on holders of FSC forest management and chain of custody certificates.²⁰⁴

FSC issues three different types of certificates: Forest Management, Chain of Custody, and Controlled Wood. Each of them relates to different origins of forest products and stages of production.²⁰⁵ Forest Management Certification is awarded to forest managers or owners of a management unit whose management practices meet the requirements of the FSC Principles & Criteria. The main evaluation process is an in depth review of the forest management system and their results on the ground.²⁰⁶

The Chain of Custody Certification covers activities held by manufacturers, processors, and traders of forest products. It verifies the entire production chain and ultimately certifies the product itself. It also confirms whether FSC certified wood products are kept separate from uncertified products through the chain or mixed in approved ways.²⁰⁷ FSC Chain of Custody Certification allows organizations to label their FSC products, which in turn enables consumers to identify and choose products that support responsible forest management.²⁰⁸

²⁰² FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²⁰³ FSC accreditation is made by Accreditation Services International (ASI).

²⁰⁴ FSC International Standard – FSC Principles and Criteria for Forest Stewardship, FOREST STEWARDSHIP COUNCIL – INTERNATIONAL CENTER [FSC] 3 (FSC-STD-01-001, version 4-0, EN, 2002).

²⁰⁵ Including forest certification, FSC has six program areas, through which it manages and develops its activities. These are the Forest Program, Chain of Custody (CoC), Social Policy, Monitoring and Evaluation, Controlled Wood, Ecosystem Services, and Supply Chain Integrity. *See* FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²⁰⁶ FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²⁰⁷ *Id.*

²⁰⁸ *Id.*

There are four types of Chain of Custody certifications that organizations can choose from, depending on their scale and type of operation. The Individual Chain of Custody Certification is the main standard within the Chain of Custody Program. It is set for companies that manufacture and trade FSC certified forest products. The Multiple Site Chain of Custody Certification is ideal for larger companies operating at multiple locations, because it makes use of elements of scale and is more economical than seeking a separate certificate for each site. The Project Certification certifies individual objects or buildings of any size or scale that are built or renovated on a one-off basis.²⁰⁹ When it comes to small enterprises, a feasible option may be to form a group of operators and apply for Group Chain of Custody Certification, making certification more accessible to small companies.²¹⁰

The third certification scheme provided by FSC is the Controlled Wood, which covers non-certified timber that can be mixed with FSC certified material during manufacturing. Timber is subject to a formal risk assessment process, and wood harvested in the following conditions is not subject to Controlled Wood Certification:

- illegally harvested wood;
- wood harvested in violation of traditional and civil rights;
- wood harvested in forests in which High Conservation Values are threatened by management activities;
- wood harvested in forests being converted to plantations or non-forest use; and

²⁰⁹ FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²¹⁰ Both Group and Multi Site Chain of Custody Certification require common, centrally administered and monitored control and reporting systems. *See* FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

- wood from forests in which genetically modified trees are planted.²¹¹

Controlled Wood allows a higher number of manufacturers to take part in the mission and vision of FSC, reaching more consumers and being more visible on the market.

Controlled Wood is considered as a first step towards achieving full forest management certification.²¹²

In order to expand the access to certification, FSC also provides specific schemes for small, low-intensity community producers -- the so-called *smallholders*.²¹³ It offers policy tools that reduce the costs of certification and provides access to financial and technical support to help smallholders maintain their certification and benefit from the FSC label in the market. Products will have competitive costs proportional to smallholders' financial situation.²¹⁴ These are the Small or Low-intensity Managed Forests Certification (SLIMF Certification) and Group Certification. By the SLIMF Certification, small producers can be FSC-certified at costs that are reasonable for the size of their business and competitive with the cost of certification for larger producers.²¹⁵ The Group Certification is available for forest owners who wish to share the cost of certification. They can form a group and apply for one

²¹¹ FSC Controlled Wood can only be mixed with FSC certified wood in labeled FSC Mix Products, and its standards are related to both the Forest Management and Chain of Custody certification. See FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²¹² FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²¹³ According to FSC, "a smallholder is a producer who has a small area of forest, harvests timber at a low-intensity, or is part of a community who owns and manages a forest, or agrees as a group to let a third party manage the forest for them. Smallholders are, for example, known as small woodlot owners, family foresters, small non-industrial private forest owners, community forestry operators and non-timber forests product harvesters." See FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²¹⁴ FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²¹⁵ Certification costs can be reduced by streamlined auditing procedures that, for example, reduce the sampling in the audit. The procedures also allow for desk-based audits in years where a small producer has not harvested. See FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

FSC certificate to cover them all, which reduces the costs and workload related to achieving and maintaining an FSC certificate.²¹⁶

ii. Programme for the Endorsement of Forest Certification (PEFC)

The Programme for the Endorsement of Forest Certification (PEFC) is one of the main forest certification schemes worldwide together with Forest Stewardship Council. It is an international non-profit, non-governmental organization dedicated to promoting sustainable forest management through independent third-party certification. It works as an umbrella organization, by endorsing national forest certification systems developed through multi-stakeholder processes and tailored to local priorities and conditions. All the national certification systems will make use of a single eco-label.²¹⁷

PEFC was founded in 1999 by national organizations from eleven countries representing a wide range of interests to promote sustainable forest management, especially among small forest managers. It was created in response to the specific requirements of small and family forest owners. It provides a mechanism for the independent development of national standards tailored to the political, economic, social, environmental, and cultural realities of the respective countries. PEFC assures that endorsed certification bodies comply with internationally accepted requirements and are globally recognized.²¹⁸

²¹⁶ FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²¹⁷ PROGRAMME FOR THE ENDORSEMENT OF FOREST CERTIFICATION [PEFC] <http://www.pefc.org/> (Mar. 21, 2016).

²¹⁸ *Id.*

PEFC's mission is "to give society confidence that people manage forests sustainably". It is committed to encouraging sustainable forest management.²¹⁹ It works throughout the entire forest supply chain to ensure that timber and non-timber forest products are produced with respect to the highest ecological, social, and ethical standards.²²⁰ In the same way FSC does, PEFC bases its activities and goals on the three pillars of sustainability: economically viable, ecologically sound, and socially just activities.²²¹

PEFC certifications are based in five principles: (i) law compliance; (ii) rationality in the use of forest resources within a short, medium, and long period, aiming its sustainability; (iii) care for biological diversity; (iv) respect to water, soil, and air; and (v) environmental, economic, and social development of forested regions.²²² PEFC is considered the certification system of choice for small forest owners.²²³ This is because it supports them to gain recognition in the market place through provision of systems for group and regional certification, making a lasting contribution to livelihoods and rural development.²²⁴

The national forest certification systems endorsed by PEFC are subject to rigorous third-party assessment and based on PEFC's Sustainability Benchmarks, to ensure consistency with international requirements.²²⁵ Currently, 38 national certification systems are members of

²¹⁹ As per the expression "sustainable forest management", PEFC based its understanding on the definition adopted by FAO: "The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems." PROGRAMME, *supra* note 217.

²²⁰ PROGRAMME, *supra* note 217.

²²¹ *Id.*

²²² Raimundo da Costa Almeida, *Certificação florestal: uma análise dos protocolos do FSC para emissão de selo verde e das normas estatais para licenciamento florestal no Estado do Pará* [Forest certification: analysis of FSC protocols for issuance of green stamp and state norms on forest licensing in the State of Pará] 43 (2012) (unpublished thesis, on file with Universidade Federal do Pará).

²²³ PROGRAMME, *supra* note 217.

²²⁴ *Id.*

²²⁵ *Id.*

PEFC. Stakeholders, such as civil society organizations, businesses, government entities, and intergovernmental bodies may also be members of PEFC.²²⁶

1. Types of PEFC certificates

The certification schemes provided by PEFC are Sustainable Forest Management Certification, Chain of Custody Certification, and Project Certification. The Sustainable Forest Management Certification, similar to the one offered by FSC, provides forest owners and managers, in special families and communities, with independent recognition of their responsible management practices.²²⁷ The Chain of Custody Certification, also alike to FSC's, tracks the certified material from the forest to the final product to ensure the wood material originates from certified forests. All the supply chain members must attain such certification.²²⁸

The PEFC Project Certification is a specific form of Chain of Custody Certification. It is aimed for short-term projects involving different, uncertified contractors, and it recognizes that not all parties of an specific project are certified, even though wood materials and products used for the project are covered by the regular Chain of Custody Certification. PEFC Project Chain of Custody Certification makes certification more accessible and, at the same time, avoids non-certified parties breaking the chain of certified products.²²⁹

²²⁶ PROGRAMME, *supra* note 217.

²²⁷ *Id.*

²²⁸ *Id.*

²²⁹ *Id.*

iii. Benefits of forest certification schemes and their promotion in the Amazon as a method to tackle illegal logging and its associated trade

FSC and PEFC have been successful in tackling illegal logging and associated trade around the world. FSC has grown so much over the years that its total certified area by March 2016 was of 187,580,821 hectares. 1,375 Forest Management Certificates and 30,077 Chain of Custody certificates were issued.²³⁰ As for PEFC, in March 2016 there were 272 million hectares of certified forests, more than 750,000 forest owners, and 17,787 companies holding the PEFC Chain of Custody Certification.²³¹

Among its environmental, social and economic benefits, forest certification has made it imperative that the forest sector observes land use rules, thus ensuring maintenance or recuperation of riparian areas and hillside vegetation.²³² It leads producers to commit to improvements that reduce costs and increase productivity, thus enhancing the economic viability of forest management.²³³ Furthermore, training staff in forest management techniques, as required for timber production to be certified, reduces wood waste.²³⁴

Forest certification enhances companies' corporate image and credibility,²³⁵ which can be strengthened by other social and environmental projects, such as fair trade and organic

²³⁰ FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²³¹ PROGRAMME, *supra* note 217.

²³² Peter May, *Forest Certification in Brazil*, in BENJAMIN CASHORE ET AL., CONFRONTING SUSTAINABILITY: FOREST CERTIFICATION IN DEVELOPING AND TRANSITIONING COUNTRIES 354 (Yale F&ES Publication Series, Report Number 8, 2006).

²³³ SÉRGIO ADEODATO ET AL., WOOD: FROM THE FOREST TO THE CONSUMER 54 (FGV RAE, 1st ed., 2011).

²³⁴ Folder Institucional FSC Brasil [Institutional Folder FSC Brazil], CONSELHO BRASILEIRO DE MANEJO FLORESTAL [BRAZILIAN COUNCIL OF FOREST MANAGEMENT] 8, <http://br.fsc.org/certificacao.177.htm>.

²³⁵ MARCO W. LENTINI ET AL., ACERTANDO O ALVO 3: DESVENDANDO O MERCADO BRASILEIRO DE MADEIRA AMAZÔNICA CERTIFICADA FSC [HITTING THE TARGET 3: UNVEILING THE BRAZILIAN MARKET OF FSC CERTIFIED AMAZONIAN TIMBER] 41 (Imaflora, 2012).

schemes.²³⁶ Constructing a better corporate image maintains dominance in markets already conquered and improves prospects of accessing new and more competitive markets.²³⁷ It also brings better access to financing sources.²³⁸

FSC has been present in Brazil since 1996, being formally established in 2001.²³⁹ PEFC has endorsed CERFLOR (Forest Certification / *Certificação Florestal*) as the national certification scheme, which became operational in early 2003.²⁴⁰ Nevertheless, they are not widely adopted in the country, due to impediments to their implementation.²⁴¹ Central and South America hold only 6.9% of FSC Forest Management certificates and 5% of FSC Chain of Custody certificates.²⁴² Only 2% of the total PEFC certified forest area worldwide is located in Central and South America,²⁴³ and 1% of PEFC Chain of Custody certificates were issued in the region.²⁴⁴ The percentage that FSC and PEFC certificates in Brazil represents in global certification numbers is not available. Therefore, their implementation should be encouraged

²³⁶ MAGUIRE, *supra* note 201, at 259.

²³⁷ May, *supra* note 232, at 340.

²³⁸ VIRGÍLIO MAURÍCIO VIANA ET AL., CERTIFICAÇÃO FLORESTAL [FOREST CERTIFICATION] 26 (Conselho Nacional da Reserva da Biosfera da Mata Atlântica, 2003).

²³⁹ FOREST STEWARDSHIP COUNCIL BRASIL, <http://br.fsc.org/> (Mar. 30, 2015). The FSC accredited certification bodies in Brazil are the following: Apcer Brasil – Associação Portuguesa de Certificação; Smart Wood Program – Rainforest Alliance (representative in Brazil: Instituto de Manejo e Certificação Florestal e Agrícola - Imaflo); Control Union Certifications – Skal International; BRTÜV Avaliações da Qualidade S.A.; Bureau Veritas Certification; Scientific Certification Systems, Inc.; DNV Business Assurance; GFA Consulting Group; IMO – Instituto de Mercado Ecológico; SGS ICS Certificadora Ltda.; Woodmark – Soil Association. *See* Folder, *supra* note 234, at 8.

²⁴⁰ PEFC originated in Brazil as a reaction of some industry groups that considered FSC norms excessive and inflexible. It spurred determination by industry associations such as the Brazilian Silvicultural Society (SBS, *Sociedade Brasileira de Silvicultura*) to work toward the creation of a national forest management standards-setting process parallel to FSC. CERFLOR is administered jointly by the national standards and metrics institute INMETRO (National Institute of Metrology/*Instituto Nacional de Metrologia, Normalização e Qualidade Industrial*) and ABNT (Brazilian Association for Technical Norms/*Associação Brasileira de Normas Técnicas*). ABNT is a quasi-private agency specializing in capacity-building and monitoring application of technical norms such as the ISO series throughout industrial segments in Brazil. INMETRO accredits and ABNT trains certifiers for forest management and chain of custody systems. *See* May, *supra* note 232, at 346.

²⁴¹ *See* chapter 5, section b, ii.

²⁴² FOREST STEWARDSHIP COUNCIL INTERNATIONAL, *supra* note 187.

²⁴³ PEFC Global Statistics: SFM & CoC Certification, PROGRAMME FOR THE ENDORSEMENT OF FOREST CERTIFICATION [PEFC] 7 (2014) <http://www.pefc.org/about-pefc/who-we-are/facts-a-figures>.

²⁴⁴ *Id.* at 13.

in the country, as another form to tackle illegal logging and its associated trade. Measures to foster FSC and PEFC certification schemes in Brazil and the challenges to be faced will be explored in more details in chapter 5.²⁴⁵

In addition to the domestic command and control systems and non-governmental schemes previously studied, the International Forest Regime provides instruments and vehicles to combat illegal logging and control trade of illegally sourced timber and byproducts. The following section presents the mechanisms that have a positive influence in the utilization of tropical timber in the Amazon, or that might have, if better implemented.

d. Mechanisms from the International Forest Regime to eliminate illegal logging and trade of illegally sourced timber and byproducts in the Amazon

Forest governance is primarily a matter of national sovereignty, although non-state international forestry regulation has been gaining more space over the time in the format of soft law.²⁴⁶ Countless institutions of different natures around the world have put efforts on the consolidation of rules, standards, principles, and tools, with the final purpose to control deforestation worldwide, and to foster the sustainable management of forest resources. This is due to the current inexistence of a supreme international authority accompanied by a legally binding convention in the International Forest Regime.²⁴⁷

²⁴⁵ See chapter 5, section b, ii.

²⁴⁶ Soft law are non-binding instruments used in contemporary international relations. It is by nature the articulation of a 'norm' in a non-binding written form. *See* PATRICIA BIRNIE ET AL., *INTERNATIONAL LAW & THE ENVIRONMENT* 35 (Oxford Univ. Press., 2009).

²⁴⁷ MAGUIRE, *supra* note 201, at 91.

Currently, different international bodies regulate global forest governance, each of them focusing on an individual forest value.²⁴⁸ The main one is the United Nations. It implemented the UN Forum on Forests, the International Climate Change Regime, the UN Development Program (UNDP),²⁴⁹ the UN Environment Program (UNEP),²⁵⁰ the UN Food and Agriculture Organization (FAO),²⁵¹ and the World Bank. There is also the World Trade Organization (WTO),²⁵² and the International Tropical Timber Organization (ITTO).²⁵³

As a consequence of the variety of institutions involved in the International Forest Regime, soft law on forestry has expanded over the last years. It has formed a complex

²⁴⁸ MAGUIRE, *supra* note 201, at 70.

²⁴⁹ The UNDP has a significant involvement with forest issues, mainly in the provision of technical assistance. It links forest problems in a more cross-central fashion with its overall goal of poverty alleviation and sustainable human development. Forest issues are currently dealt with mainly by its Sustainable Energy and Environment Division. See Richard G. Tarasofsky and David R. Downes, *Global Cooperation on Forests through International Institutions*, in RICHARD G. TARASOFSKY, *ASSESSING THE INTERNATIONAL FOREST REGIME* 106 (IUCN - The World Conservation Union, 1999).

²⁵⁰ The UNEP has a relatively modest capacity to deal with forest issues. It currently has the lead in the *Inter-agency Task Force on Forests* for underlying causes of deforestation and forest conservation. In 1998, UNEP became involved with other UN entities in preparing emergency action plans aimed at tackling the environmental consequences of forest fires in Indonesia and Amazonia. See Richard G. Tarasofsky and David R. Downes, *Global Cooperation on Forests through International Institutions*, in RICHARD G. TARASOFSKY, *ASSESSING THE INTERNATIONAL FOREST REGIME* 107 (IUCN - The World Conservation Union, 1999).

²⁵¹ FAO's mission in forestry is to enhance human well-being through the sustainable management of the world's trees and forests. Its goals are of environmental, economic and social scope, while its implementation strategies include fulfilling its mandated role (a neutral forum that facilitates policy and technical dialogue, source of information, technical assistance, policy advice, investment advice and research support), setting priorities, and building partnerships with others. See FAO, Secretariat Note, *FAO's Strategic Plan for Forestry*, European Forestry Commission, Twenty-Ninth Session, 19-23 October 1998. See also Richard G. Tarasofsky and David R. Downes, *Global Cooperation on Forests through International Institutions*, in RICHARD G. TARASOFSKY, *ASSESSING THE INTERNATIONAL FOREST REGIME* 102 (IUCN - The World Conservation Union, 1999).

²⁵² The WTO is intended to provide a regulatory and institutional framework for the world trading system. It regulates national trade-related policies through a growing number of agreements that bind its 130-plus member countries. Many of WTO's programs relate to forests in indirect ways. However, it does not have a forest program. See Richard G. Tarasofsky and David R. Downes, *Global Cooperation on Forests through International Institutions*, in RICHARD G. TARASOFSKY, *ASSESSING THE INTERNATIONAL FOREST REGIME* 103 (IUCN - The World Conservation Union, 1999).

²⁵³ ITTO is primarily a commodity organization, created by the International Tropical Timber Agreement (ITTA), under the auspices of UN Conference on Trade and Development (UNCTAD). UNCTAD regulates the international trade in tropical timber between producer and consumer countries. Its mission statement is to facilitate discussion, consultation and international cooperation on issues relating to the international trade and utilization of tropical timber and the sustainable management of its resource base. ITTO has more than 50 members, including the Brazil, covering more than 90% of the world's tropical timber trade. See Richard G. Tarasofsky and David R. Downes, *Global Cooperation on Forests through International Institutions*, in RICHARD G. TARASOFSKY, *ASSESSING THE INTERNATIONAL FOREST REGIME* 97 (IUCN - The World Conservation Union, 1999).

framework of rules mainly elaborated by the United Nations institutions.²⁵⁴ Among the international legal instruments, some were not designed to address forests, but have a relevant impact on its conservation and sustainable management. In reality, there are no instruments to date that address sustainable forest management specifically, but the most prominent instruments relate to conservation of forests instead.²⁵⁵

This overwhelming number of institutions and rules that compose the International Forest Regime result in a fragmented international system.²⁵⁶ It has deficiencies when it comes to the regulation of the forestry sector and the promotion and implementation of good governance and sustainable forest management.²⁵⁷

The lack of a legally binding international instrument on forests is the primary failure of the international community in addressing deforestation and sustainable forest management.²⁵⁸ Because there is no binding definition of sustainable forest management

²⁵⁴ The main international forestry documents are: Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all Types of Forests (1992); Intergovernmental Panel on Forests/Intergovernmental Forum on Forests Proposals for Action (1995-2000); Non-Legally Binding Instrument on all Types of Forests (2007); Land Use, Land-Use Change and Forestry Guidelines Decision 11/CP.7 2001; The World Bank Forest Strategy (2002); FAO Ministerial Meeting on Forest Declaration (1995, 1999, 2005); FAO Voluntary Code on Fire Management (2007); FAO Voluntary Code on Responsible Management of Planted Forests (2007); FAO State of the World's Forest Annual Report; International Tropical Timber Agreement (1994, 2006); Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971); Convention on Biological Diversity (1992); Forest Biological Diversity COP 6 Decision V1/22 (2002); United Nations Convention to Combat Desertification (1994); United Nations Framework Convention on Climate Change (1994); Convention on International Trade of Endangered Species of Wild Fauna and Flora (1973); Treaty for the Amazonian Cooperation (1978); Central American Forest Convention (1993).

²⁵⁵ Downes, *supra* note 81, at 65. As an example, the Convention on Biological Diversity does not specifically refer to forests, but its entire scope is relevant as forests are a component of, and a habitat for, terrestrial biological diversity. Moreover, CBD is structured on three pillars: conservation of biological diversity, sustainable use of biodiversity, and equitable sharing of benefits from the use of biodiversity. The Convention requires its parties to establish a system of protected areas or areas where special measures are required to conserve biological diversity (Article 8). See Ruth Khalastchi and Ruth Mackenzie, *The Conservation and Sustainable Use of Forest Biological Diversity: The Role of the Convention on Biological Diversity*, in RICHARD G. TARASOFKY, *ASSESSING THE INTERNATIONAL FOREST REGIME* 40 (IUCN - The World Conservation Union, 1999).

²⁵⁶ MAGUIRE, *supra* note 201, at 19.

²⁵⁷ *Id.*

²⁵⁸ *Id.* at 18.

within the international regime,²⁵⁹ several public international organizations create individual sustainable forest management standards and requirements. Such organizations include the United Nations Forum on Forests, the UNFCCC, and the World Bank.²⁶⁰ The regime does not provide uniform rules and standards for sustainable forest management, nor instruments for equitable resolution of conflicts. This diversity and lack of coordination between institutions and policies weakens the international regulation and its structure.²⁶¹ It discourages the willingness of governments to reach a consensus on forest governance.

Brazil is resistant to the enactment of a legally binding agreement on forests. This is shown by the country's statements presented at the 11th Session of the UNFF, in which it supported the initiative of improving existing non binding arrangements instead of “establishing a costly and heavy legally binding instrument”.²⁶²

Despite the absence of a legally binding agreement on forests, the International Forest Regime comprises specific instruments useful to tackle illegal logging and associated trade as described in the following sections. These instruments could have an effective impact in the Amazon region if better implemented by the Brazilian Government, as it will be further discussed in this work.²⁶³

²⁵⁹ MAGUIRE, *supra* note 201, at 70.

²⁶⁰ *Id.* at 76.

²⁶¹ *Id.* at 77.

²⁶² Statement by Brazil at the 11th Session of the United Nations Forum on Forests 2 (2015).

²⁶³ See chapter 5, section b, iii, on how the instruments provided by the International Forest Regime could be better implemented in Brazil.

i. United Nations Forum on Forests (UNFF)

The United Nations Forum on Forests is the UN body charged with the responsibility to regulate forest use and management.²⁶⁴ It intends to provide an “intergovernmental policy-negotiating platform that promotes the management, conservation and sustainable development of all types of forests, and strengthens long-term political commitment to this end”.²⁶⁵ Negotiations are typically dominated by contentious issues, such as state sovereignty, finance, capacity building, and technology transfer.²⁶⁶

The Forum has several roles. One of them is to facilitate the implementation of forest-related agreements and foster common understanding about sustainable forest management. Another is to provide continuing policy development and dialogue between governments to address forest issues and emerging areas of concern in a holistic, comprehensive, and integrated manner.²⁶⁷ It also provides multi-stakeholder dialogues that include: industry, youth, farmers and small landowners, indigenous people, non-governmental organizations, scientific and technological communities, women, workers, and trade unions.²⁶⁸

In order to achieve its purpose, the UNFF has developed instruments to regulate forest governance worldwide. It has also developed methods to assist its country members in the negotiations and consensus on forestry matters. In 1992, the Non-Legally Binding

²⁶⁴ The UNFF was created as part of the international arrangement on forests, to carry on the work built on the Intergovernmental Panel on Forests (IPF), from 1995-1997, and the Intergovernmental Forum on Forests (IFF), from 1997-2000. They resulted in more than 270 proposals for action towards sustainable forest management, considered collectively as the IPF/IFF Proposals for Action. *See* UNITED NATIONS FORUM ON FORESTS, <http://www.un.org/esa/forests/about-history.html> (Apr. 3, 2015).

²⁶⁵ General Assembly, Report of the United Nations Conference on Environment and Development (UN Doc A/CONF.151/26 (Vol. III) (14 Aug 1992) annex III, principle 1).

²⁶⁶ MAGUIRE, *supra* note 201, at 100.

²⁶⁷ *Id.* at 98.

²⁶⁸ *Id.* at 101.

Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all Types of Forests was created at the United Nations Conference on Environment and Development (UNCED). They are known as the Forest Principles 1992, which serve as goals and guidelines for nations when creating domestic forest policy.²⁶⁹

Principle 2(d) of Forest Principles 1992 establishes governments' obligation to promote and provide opportunities for the participation of interested parties in the development, implementation and planning of national forest policies. This includes indigenous and local communities, the private sector, non-governmental organizations, and society.²⁷⁰ Involvement of society in public policies usually results in pressuring the government for improvements and solution, being an effective way to enhance political will to combat illegal logging and associated trade.

In 2007, a second regulatory instrument was created by the UNFF, the Non-Legally Binding Instrument on All Types of Forests, known as the Forest Principles 2007.²⁷¹ It brings four global objectives on forests:

- reverse the loss of forest cover worldwide through sustainable forest management;
- enhance forest-based economic, social, and environmental benefits, including improving the livelihoods of forest dependent people;

²⁶⁹ Non-legally binding instrument authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests [Forest Principles 1992], Aug. 14, 1992, U.N. Doc. A/CONF.151/26 (Vol. III).

²⁷⁰ *Id.*

²⁷¹ *Id.*

- significantly increase the area of protected forests worldwide and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests; and
- reverse the decline in official development assistance for sustainable forest management, and mobilize new and additional financial resources from all sources for the implementation of sustainable forest management.²⁷²

The Forest Principles 2007 have a main purpose of strengthening political commitment and action to implement effectively sustainable forest management. They also provide the means to achieve such purpose, and point the efforts to be taken by the state members. Such efforts include treatment of sustainable forest management as a priority, the provision of financial resources for poverty reduction, and other positive incentives for the reduction of deforestation. The Principles recommends bilateral, regional, and international cooperation to address illicit international trafficking in forest products. Further, they highlight the importance of public awareness, education, institutional capacity building, technological transfer and technical cooperation. Furthermore, they encourage law enforcement, creation of information networks, strengthening of research and development in the forestry sector, among other acts. Forest Principles 2007 also establish that member states may submit voluntary reports regarding their progress on the improvement of national forest governance. Brazil has recently presented its Voluntary National Report at the UNFF 11th Session.²⁷³

²⁷² MAGUIRE, *supra* note 201, at 113.

²⁷³ Brazil's Voluntary National Report to the 11th Session of the United Nations Forum on Forests, http://www.un.org/esa/forests/pdf/national_reports/unff11/Brazil.pdf.

The UNFF's members might benefit from the effective implementation of the UNFF principles in national level and from their active participation at the Forum. Both Forest Principles from 1992 and 2007 are useful instruments in the combat against illegal logging and associated trade. They bring values and criteria that, if efficiently applied, can significantly enhance the governmental measures against such issues. Besides, a member's participation in the UNFF calls the attention of timber consumer countries for the legality of national production. This encourages the country (both private sector and the Public Administration) to increase its timber market credibility before the international market. Brazil, as a member state of UNFF, should take advantage of such benefits and enhance its participation at the Forum, as a form to improve the implementation of sustainable forest management within the country. Further recommendations on that matter will be discussed in chapter 5.²⁷⁴

ii. The International Climate Change Regime

The United Nations Framework Convention on Climate Change (UNFCCC) represents the core of the International Climate Change Regime. Its goal is the reduction on the emission of greenhouse gases and the control of the world's temperature. It sets out the definitions, objectives, principles, implementing bodies, and procedural rules necessary for the regime's operation.²⁷⁵ The Convention does not bring legally binding obligations to its parties. Instead, the Kyoto Protocol and the Cancun Adaptation Framework specify how mitigation and

²⁷⁴ See chapter 5, section b, iii, 1.

²⁷⁵ MAGUIRE, *supra* note 201, at 141.

adaptation measures and policies are to be implemented.²⁷⁶ Under the Kyoto Protocol, individual legally binding emission reduction targets are set for specific parties listed on Annex I to the Protocol.²⁷⁷

Although the International Climate Change Regime has addressed forest-related issues to a limited extent, the UNFCCC recognizes the role of forests as both sources and sinks of carbon. It commits parties to engage in the conservation and enhancement of them as carbon stocks. The Kyoto Protocol thus endorsed forests²⁷⁸ as sinks to be used by parties in achieving their emission limitation and reduction commitments.²⁷⁹

The parties shall achieve the reduction requirements by making use of nationally determined measures. Nevertheless, the Protocol brings three alternative mechanisms that can be used by the parties: Clean Development Mechanism (CDM); Joint Implementation; and Emissions Trading. Special attention will be given to the Clean Development Mechanism because it is the only tool available for non-Annex I parties to the Convention, which includes Brazil.

1. The Clean Development Mechanism (CDM)

By the CDM, emission-reduction projects in non-Annex I parties earn certified emission reduction (CER) credits, each equivalent to one tonne of CO₂. This can be traded and sold to Annex I parties, who will account it at their national emissions inventory and use it

²⁷⁶ MAGUIRE, *supra* note 201, at 141.

²⁷⁷ *Id.* at 143.

²⁷⁸ The Kyoto Protocol specifies the types of forest activities that are suitable for inclusion in its accounting frameworks, which are explained by the Good Practice Guidelines for Land use, Land-Use Change and Forestry (LULUCFG). *See* MAGUIRE, *supra* note 201, at 140.

²⁷⁹ JOYEETA GUPTA ET AL., *CLIMATE CHANGE, FORESTS AND REDD – LESSONS FOR INSTITUTIONAL DESIGN* 58 (Routledge, 2013).

to meet part of their emission reduction targets under the Kyoto Protocol.²⁸⁰ To generate CER credits from forest activities under the CDM, the forest activity must fall into the afforestation or reforestation category (A/R). Reduction of deforestation and forest degradation do not generate CER credits, due to concerns over permanence, accounting²⁸¹ and the question of additionality.²⁸² The conservation of existing forests is not eligible under the CDM either. Eligible activities would be: agro-forestry,²⁸³ monoculture or mixed industrial plantations of forest areas, forest landscape restoration projects, community forest projects, and other afforestation or restoration projects that focus on timber production, biomass energy or watershed management.²⁸⁴

Currently, there are around 375 CDM projects being hosted by Brazil.²⁸⁵ There are not many reforestation and afforestation CDM projects in the Amazon. Although Brazil has the largest number of CDM projects in Latin America, the majority of such projects are on energy generation and swine, located mainly in the states of São Paulo and Minas Gerais.²⁸⁶

²⁸⁰ UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE <http://unfccc.int/2860.php> (Apr. 10, 2015).

²⁸¹ GUPTA ET AL., *supra* note 279, at 79.

²⁸² Additionality consists in the level of generation of emission reductions by a certain project that are additional to what have happened if its absence. *See* JOHN COSTENBADER, LEGAL FRAMEWORKS FOR REDD 81 (IUCN, 2009).

²⁸³ Agro-forestry is a system that mixes agricultural and horticultural crops and livestock with woody perennials.

²⁸⁴ JOHN COSTENBADER, LEGAL FRAMEWORKS FOR REDD 158 (IUCN, 2009).

²⁸⁵ UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, *supra* note 280.

²⁸⁶ BEATRIZ GARCIA, THE AMAZON FROM AN INTERNATIONAL LAW PERSPECTIVE 235 (2011).

2. Reduced Emissions from Deforestation and Forest Degradation combined with conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks (REDD+)

A voluntary emission trading system was also proposed during the negotiations of the UNFCCC. In 2005, at the Conference of the Parties (COP) 11, the Coalition of Rainforest Nations, represented by Papua New Guinea and Costa Rica, introduced the proposal of the Reduced Emissions from Deforestation and Forest Degradation (REDD) initiative. REDD's purpose is to create an incentive for tropical countries to preserve their forests, by granting them financial compensation when there is a reduction of their emissions from forests, relative to a calculated reference level. Developed countries would pay compensation for developing countries that accomplish GHGs emissions reduction.²⁸⁷ It is broader in scope than CDM projects and covers a range of donor-funded forest practices that occur in non-Annex I parties.²⁸⁸ The emergence of the REDD concept gave the conservation of forests, afforestation and reforestation initiatives a prominent place within the tools for GHGs emissions reduction.²⁸⁹

The term REDD has been expanded and replaced by REDD+, meaning Reduced Emissions from Deforestation and Forest Degradation combined with conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks.²⁹⁰

²⁸⁷ *Introduction to REDD+*, EUREDD FACILITY 1 (2014), [HTTP://WWW.EUREDD.EFI.INT/DOCUMENTS/15552/154912/INTRODUCTION+TO+REDD%2B/EAABC68F-9176-40B0-ACF3-DD4E81E40AAD](http://www.euredd.efi.int/documents/15552/154912/INTRODUCTION+TO+REDD%2B/EAABC68F-9176-40B0-ACF3-DD4E81E40AAD).

²⁸⁸ MAGUIRE, *supra* note 201, at 140.

²⁸⁹ GUPTA ET AL., *supra* note 279, at 77.

²⁹⁰ *Introduction*, *supra* note 287, at 1.

The main sources of financial compensation for REDD+ are international funds, compliance-based finance, and voluntary funds. International funds come from national governments and are usually paid out through direct bilateral agreements, multilateral organizations such as the World Bank,²⁹¹ or the UN-REDD. Compliance-based finance comes from the acquisition of carbon credits by countries that have legally binding targets for emission reductions. They buy carbon credits from other countries that sell unused emission allowances, or from countries that do not have emission targets. Voluntary funds come from countries that buy carbon credits to offset undertaken activities, even without a legal emission reduction target.²⁹²

Brazil works with a voluntary fund-based approach -- the Amazon Fund (*Fundo Amazônia*). The REDD+ projects receive direct financing under the UNFCCC,²⁹³ based on voluntary conservation sponsorship contributions from other countries and the private sector for the reduction of deforestation.²⁹⁴ The Amazon Fund is a private fund, launched in 2008 by Federal Decree 6.527/2008 and managed by the Brazilian Development Bank (BNDES). The Fund is still not fully functional²⁹⁵ and currently supports only seventy-three projects.²⁹⁶ Most of REDD+ initiatives in Brazil are still in the form of pilot programs, mostly within the Amazon region.²⁹⁷

²⁹¹ The World Bank Forest Carbon Partnership Facility (FCPF) focuses on forest finance and forest carbon conservation and sequestration. As the UN-REDD Program, it is one of the greatest supporters of REDD projects.

²⁹² *Introduction*, *supra* note 287, at 5.

²⁹³ COSTENBADER, *supra* note 284, at 132.

²⁹⁴ *Id.* at 133.

²⁹⁵ *Id.*

²⁹⁶ FUNDO AMAZÔNIA [AMAZON FUND]

http://www.fundoamazonia.gov.br/FundoAmazonia/fam/site_pt/Esquerdo/Projetos_Apoiados/ (May 1, 2015).

²⁹⁷ COSTENBADER, *supra* note 284, at 134.

3. CDM and REDD+ projects as mechanisms potentially effective to tackle illegal logging and associated trade in the Amazon

Although Brazil is not included within the list of parties at Annex I to the Kyoto Protocol, it is currently ranked to have the fourth biggest carbon footprint in the world.²⁹⁸ This is because Brazil's GHGs emissions are mostly caused by deforestation in the Amazon region.²⁹⁹ Nevertheless, the presence of CDM and REDD+ projects in the region is still modest. Both mechanisms are potential tools against illegal logging and associated trade in the Amazon, as they increase the value of standing forests.³⁰⁰ However, these systems are not popular in Brazil because of the deficiencies in the country's domestic policies that undermine their successful implementation. Basically, the success of CDM and REDD+ initiatives depends on a solid national legal framework and a strong regulatory capacity.³⁰¹ It must be one that is capable of hosting the systems and, at the same time, flexible in light of a dynamic International Climate Change Regime,³⁰² able to keep coherence among institutional methods.³⁰³ Chapter 5 will provide recommendations on how obstacles that undermine the effective and broad implementation of CDM and REDD+ projects in Brazil should be overcome.³⁰⁴

²⁹⁸ INSTITUTO DE PESQUISA AMBIENTAL DA AMAZÔNIA [INSTITUTE OF ENVIRONMENTAL RESEARCH IN THE AMAZON] [IPAM], <http://www.ipam.org.br/saiba-mais/abc/mudancaspergunta/Quem-sao-os-grandes-emissores-de-gases-de-efeito-estufa-/16/7> (April 20, 2015).

²⁹⁹ GARCIA, *supra* note 286, at 238.

³⁰⁰ *REDD no Brasil: um enfoque amazônico: fundamentos, critérios e estruturas institucionais para um regime nacional de Redução de Emissões por Desmatamento e Degradação Florestal – REDD [REDD in Brazil: an Amazonian view: fundamentals, criteria and institutional structures for a national regime on Reduction of Emissions by Deforestation and Forest Degradation - REDD]*, CENTRO DE GESTÃO DE ESTUDOS ESTRATÉGICOS [CGEE] [CENTER FOR MANAGEMENT OF STRATEGIC STUDIES] 39 (2011).

³⁰¹ MAGUIRE, *supra* note 201, at 161.

³⁰² COSTENBADER, *supra* note 284, at 103.

³⁰³ *Introduction*, *supra* note 287, at 1.

³⁰⁴ See chapter 5, section b, iii, 2.

iii. The Amazon Cooperation Treaty Organization

The Amazon Cooperation Treaty (ACT) is an international agreement signed in 1978 by eight South American countries,³⁰⁵ whose territories share the Amazon Rainforest. They have a common goal of promoting harmonious development of all Amazonian territories, including the promotion of environmental preservation, as well as the conservation and rational utilization of natural resources.³⁰⁶ The ACT is based on the basic principles of cooperation, development, sovereignty, and environment.³⁰⁷ The Amazon Cooperation Treaty Organization (ACTO) is the international organization, led by Brazil,³⁰⁸ which coordinates the procedures in the framework of the ACT through its Permanent Secretariat.³⁰⁹

The ACT is primarily perceived as a device to allow cooperation of noneconomic nature among its parties.³¹⁰ Although not conceived as a conservation agreement, its scope embraces environmental protection and sustainable use of natural resources. This makes it a potential tool to combat illegal logging and associated trade.

³⁰⁵ Bolivia, Brazil, Colombia, Ecuador, Guiana, Peru, Suriname, and Venezuela.

³⁰⁶ The Amazon Cooperation Treaty (“Article 1. The Contracting Parties agree to undertake joint actions and efforts to promote the harmonious development of their respective Amazonian territories in such a way that these joint actions produce equitable and mutually beneficial results and achieve also the preservation of the environment, and the conservation and rational utilization of the natural resources of those territories. Paragraph: to this end, they would exchange information and prepare operational agreements and understandings as well as the pertinent legal instruments which will permit the aims of the present Treaty to be attained.”) See GARCIA, *supra* note 286, at 74.

³⁰⁷ Susana Camargo Vieira, *Cooperação internacional para o desenvolvimento sustentável da Amazônia brasileira: o papel do Direito [International Cooperation for the sustainable development of the Brazilian Amazon: the role of Law]* 159 (1999) (unpublished dissertation, on file with USP).

³⁰⁸ The idea of signing the ACT was launched by Brazil, aiming the integration between the countries involved.

³⁰⁹ AMAZON COOPERATION TREATY ORGANIZATION [ACTO] <http://otca.info/portal/a-otca.php?p=otca> (May 5, 2015).

³¹⁰ GARCIA, *supra* note 286, at 86.

Despite its promising structure and goals, the ACTO has not reached its expected performance, because supranational mechanisms for its implementation have not been established.³¹¹ The ACT still does not have strong influence on its parties as it was expected. This is due to failure to address the parties' common problems, such as illegal deforestation, and the scarcity of human and financial support of its operations.³¹² Besides, Brazil has not been exercising its leadership role at ACTO, what undermines the Organization's functioning.

Nevertheless, overcoming such issues, together with positive political intentions of the parties' governments,³¹³ may result in a better application of the ACT. This would transform it into a useful instrument to tackle deforestation problems in the Amazon region. In chapter 5, the role of ACT and the ACTO members' efforts will be explored in more details as an alternative for adoption of policies and legislative reforms by its parties in the combat against illegal logging and the trade of illegally sourced timber and byproducts.³¹⁴

e. Conclusion

This chapter provided a description of the international timber trade control mechanisms successful in tackling illegal logging and associated trade. The US Lacey Act is an efficient instrument in the United States. Its enforcement is taken seriously and has been effective in encouraging companies to strengthen their due diligence systems and be more cautious when choosing their suppliers. Such success is due to the way the law was structured and some systems it establishes. These are the ban on trade of illegally sourced timber, and the

³¹¹ Vieira, *supra* note 307, at 159.

³¹² GARCIA, *supra* note 286, at 120.

³¹³ Vieira, *supra* note 307, at 161.

³¹⁴ See chapter 5, section b, iii, 3.

requirement of information declarations for importers of timber and byproducts. Further, the Act adopts the concept of due care to measure the level of penalties to be imposed, and the fact-based monitoring policy. Such mechanisms should be used as an inspiration for a reform of the Brazilian Law to enhance its enforcement and the tackling of illegal logging and associated trade. The approaches on how such instruments should be implemented within the Brazilian system will be discussed in Chapter 5.

The EU FLEGT Action Plan is an ambitious set of instruments that prevent the import of illegal timber in the European Union. It provides parameters to be applied by its members, for the improvement of supply of legally and sustainably harvested timber. Some of these parameters are already part of the Brazilian forestry policy, but should be more broadly adopted, due to their relevant contribution in tackling illegal logging. Among them is the encouragement of environmental sustainability in public procurement for acquisition of timber products. The Plan also encourages corporate social and environmental responsibility initiatives among timber industry operators, and assurance of execution of risk assessment by financial institutions when investing in forestry sector operations. Moreover, it suggests a broader implementation of CITES by the EU Members and timber-producing countries, through the expansion of the range of species listed in the Convention's Appendices.

The EU FLEGT Action Plan creates the Voluntary Partnership Agreement (VPA). It is an instrument to assert the legality of timber and timber products exported to the EU by partner countries, in accordance with the national law of the producing country. A VPA between Brazil and the EU would contribute to the tackling of illegal logging and associated trade nationally. It would improve forest governance, increase the country competitiveness in

international market, and improve the regulatory system and the environmental licensing system of timber industry activities. It would also bring economic benefits to Brazil.

The EU Timber Regulation requires timber operators who first place timber or timber products into the EU market to establish due diligence systems to minimize the risk of entrance of illegal products. Its due diligence system is an additional instrument that can be adapted to Brazil's timber industry to assure the legality of timber and byproducts they deal with along their supply chain. Chapter 5 will discourse on the manners of applying the instruments provided by the EU FLEGT Action Plan to Brazil's timber sector and regulatory system.

Forest certification schemes have shown successful results in tackling illegal logging and promoting sustainable forest management around the world. The main schemes are the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). Nevertheless, they are not widely adopted in Brazil, due to obstacles to their implementation. Recommendations on how to overcome such obstacles and to foster forest certification in Brazil will be further presented.

There are systems from the International Forest Regime that should have their efficiency in tackling illegal logging and associated trade enhanced in Brazil. The country should effectively participate in the United Nations Forum on Forests and implement the Forest Principles 1992 and 2007 nationally. The UNFF encourages and assists its members in the development of initiatives to promote sustainable forest management and eliminate illegal logging. A more active participation would call the attention of timber consumer countries for the legality of Brazil's production, encouraging both private sector and the Public Administration to increase their timber market credibility before the international market.

As initiatives to reduce greenhouse gases emissions, the CDM and REDD+ projects also contribute to protection, conservation, and sustainable use of forests. Both mechanisms are present in Brazil, however represented by just some few pilot programs of REDD+ and a modest number of CDM projects. Deficiencies in the country's domestic policies undermine their successful implementation. Such deficiencies should be overcome in order to CDM and REDD+ function as efficient mechanisms to tackle illegal logging in the Amazon, as it will be further discussed.

The Amazon Cooperation Treaty Organization (ACTO) serves as a vehicle for cooperation among Amazonian countries for initiatives of noneconomic nature, including environmental preservation and sustainable use of natural resources. It provides instruments for the adoption of policies and legislative reforms by its parties. Nevertheless, its functioning is undermined by the fact that its instruments have not been implemented, and Brazil has not been exercising its leadership role. If such issues are overcome, ACTO can be an effective mechanism to encourage Amazonian countries to take measures against illegal logging and its associated trade.

The present chapter had the purpose of identifying the effective international timber trade control mechanisms and to point how useful they might be in the combat against illegal logging and associated trade in the Amazon region. The following chapter will be dedicated to explore in more depth the possibilities on how such instruments should be implemented and adapted to the Brazilian forestry regulatory and monitoring systems.

CHAPTER 5 – POTENTIALLY EFFECTIVE CONTROL MECHANISMS OF ILLEGAL LOGGING AND ASSOCIATED TRADE IN THE BRAZILIAN AMAZON

a. Introduction

The following pages will expose the recommendations on how control mechanisms of illegal logging and associated trade should be applied in the Amazon. These recommendations were built upon the analysis of the Brazilian timber market,¹ the timber sector in the Amazon,² the federal environmental legislation applicable to the sector,³ and identification of successful international timber trade control mechanisms currently deployed.⁴

The approaches to be suggested comprise the implementation of systems provided by the United States Lacey Act⁵ and the European Union Forest Law Enforcement, Governance and Trade Action Plan⁶ to the Brazilian Law and the Government's policies. Such approaches embrace forest certification schemes, as well as instruments provided by the International Forest Regime. These are the United Nations Forum on Forests,⁷ the Clean Development

¹ See chapter 1 on that matter.

² See chapter 3 on that matter.

³ See chapter 2 on that matter.

⁴ See chapter 4 on that matter.

⁵ The Lacey Act, 16 U.S.C. §§ 3371 – 3378 (1900).

⁶ Commission of the European Communities, Communication from the Commission to the Council and the European Parliament, Forest Law Enforcement, Governance and Trade [FLEGT] Proposal for an EU Action Plan, May 21, 2003 (COM (2003) 251 final), <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52003DC0251&from=EN>.

⁷ See chapter 4, section d, i.

Mechanism and the REDD+ Program under the UN Framework Convention on Climate Change,⁸ and the Amazon Cooperation Treaty Organization (ACTO).⁹

This chapter will also examine the control mechanisms of illegal logging and associated trade already deployed in Brazil, but poorly implemented by public authorities. It suggests methods of improvement and fostering based on their implementation deficiencies. These are methods for the full application of the Sustainable Development and Resilience Principles in timber industry activities, the regularization of land tenure in the Amazon, and fostering of public forest concessions. The chapter will also provide recommendations for the appreciation of the standing forest through sustainable forest management, and the improvement of the Public Administration's performance on monitoring and law enforcement over forestry activities.

By endorsing these approaches, this work presents a strategy to totally eliminate illegal logging and trade of illegally sourced timber and byproducts from native forests in the Amazon. It is an ambitious proposal, though not impossible. If all the recommendations made herein are implemented, illegal logging can be fully tackled in the region in a long-term period.

⁸ United Nations Framework Convention on Climate Change [UNFCCC], May 9, 1992, 1771 UNTS 107; S. Treaty Doc No. 102-38; U.N. Doc. A/AC.237/18 (Part II)/Add.1; 31 ILM 849 (1992). See chapter 4, section d, ii.

⁹ See chapter 4, section d, iii.

b. Implementation of international timber trade control mechanisms in the Amazon timber industry

Illegal logging and associated trade may occur in several forms and levels in the Amazon. Illegalities can happen along the entire supply chain, encouraged by a variety of factors. They cause environmental, social and economic impacts, and may take place on an industrial scale or may entail small-scale violations, with minimal or highly-localized impacts.¹⁰ In addition, even though the activities of timber sector may comply with legal requirements, they may still be unsustainable and cause undesirable environmental impacts. Furthermore, the legalization of timber sector can cause social impacts that must be mitigated, because occasionally illegal logging is the only source of subsistence in rural communities.¹¹ Thus, the diversity of circumstances – both with respect to causes and impacts – means that there is no easy solution to illegal logging and associated trade. Focusing only on enforcement is rarely the answer, as it can reinforce corrupt networks or increase poverty amongst some forest users. Rather, multi-faceted approaches adapted to the Amazon’s particular situation are necessary to help ensure that outcomes are equitable and sustainable.¹² They must consist of several tools used simultaneously.¹³

¹⁰ ILLEGAL LOGGING PORTAL, <http://www.illegal-logging.info/> (last visited, July 20, 2014). See more on these matters at chapter 3, section d.

¹¹ *Id.*

¹² *Id.*

¹³ Interview with Hugo Américo Schaedler, Superintendent of IBAMA in the State of Pará, in Belém, Brazil (Jan., 2015).

Tackling methods should embrace both command and control and economic measures.¹⁴ This section presents strategies to adopt, within Forestry Law, international systems that have been successfully adopted in other jurisdictions. These include improvements on the Brazilian command and control system that should protect forests and regulate their utilization. The system has some inadequately designed requirements and is poorly enforced and undermined by corruption. Further, market-driven measures are presented. They will encourage sustainable development in the timber sector, by making sustainable utilization of timber economically viable and more profitable than illegal logging.¹⁵

i. The adaptation of US Lacey Act and EU FLEGT Action Plan mechanisms to the Brazilian federal environmental regulatory system of timber supply chain

Through analysis of the American and European domestic regulations on timber trade, namely the US Lacey Act and the European Union Forest Law Enforcement, Governance and Trade Action Plan, some principles and tools have been identified as promising to solve the same problems in the Amazon. Strategies and legal provisions may be adapted to Brazil's Forestry Law, provided they are adjusted to the local timber industry's aspects.

¹⁴ Ana Maria de Oliveira Nusdeo, *Os instrumentos econômicos na lei de gestão de florestas públicas e seu controle* [The economic tools in the law of management of public forests and its control] 11 (9, Revista de Direitos Difusos, Vol. 11, No. 54, 2011).

¹⁵ *Id.*

1. Creation of an environmental felony and an administrative infraction for trade of illegal timber – Adaptation of the Lacey Act’s ban on trade of illegally sourced timber and the definition of ‘legal timber’ by the instruments of the EU FLEGT Action Plan.

- **Deficiencies of Brazilian environmental administrative and criminal offenses**

Brazilian Federal Environmental Law sets administrative and criminal sanctions for environmental damages caused along timber supply chain.¹⁶ As analyzed in chapter 2, the provisions of environmental offenses lack clarity, precision and certainty about the incriminating conducts and the environmental goods being protected. Besides, most offenses overlap, conflicting with each other, and only one of the applicable offenses can be applied to a certain conduct. This means punishment lower than the merited by the conduct’s gravity, resulting in impunity and recidivism. Moreover, the insufficient description of illegal conducts and goods to be protected makes the application of administrative and criminal offenses dependent on complementary law (*norma penal em branco*). The said deficiencies generate disharmony in the law’s content, make its interpretation harder, thus undermining application and enforcement, and leaving the environment unprotected.¹⁷ A more comprehensive description of environmental offenses, capable of covering any activity related to illegal logging and associated trade, would simplify and strengthen the timber regulation system.

¹⁶ Federal Decree 6.514/2008 and Federal Law 9.605/1998.

¹⁷ See chapter 2, section f, for a description of environmental administrative and criminal offenses at timber supply chain, and their flaws.

- **Construction of a legal provision based on the Lacey Act's structure**

Among the international timber trade control mechanisms studied in this work, the Lacey Act has been successful in tackling illegalities in the United States timber industry. This is because the enforcement of the Act is taken seriously, and its structure is efficient. It comprises the ban on trading illegal timber and the requirement of timber's origin declaration, which cover all stages of timber supply chain, from harvest to sale. Besides, it covers all activities related. This structure prevents conflict between offenses and loopholes in the law, because the protected goods and conducts subject to the law are clearly indicated. Furthermore, the Act regulates a wide range of timber products, as well as derived products, excluding only those that do not have high conservational value.¹⁸

The structure provided by the Lacey Act could be used to complement Brazilian Law to fulfill the deficiencies of criminal and administrative offenses. The Brazilian control systems of forest products' origin, such as the DOF System, resemble the Lacey Act's information declaration requirement.¹⁹ Nonetheless, when it comes to the ban of trading illegally sourced timber there is no correspondent offense under Brazilian Law. Here is a proposed addition of a criminal offense to Federal Law 9.605/1998, based on the Lacey Act's structure:

It is an environmental felony to import, export, transport, sell, receive, acquire, or purchase timber and byproducts from native forests harvested, cut,

¹⁸ See more on the structure of the Lacey Act at chapter 4, section b, i.

¹⁹ See chapter 2, section i, for a description of federal and main state control systems of forest products' origin in Brazil.

logged, removed, possessed, transported, manufactured or sold in violation of any federal, state, or municipal applicable law, regulation or treaty, without prejudice of any other applicable sanction.

Paragraph 1. Timber byproducts are products originated from timber manufacturing.

The suggested provision should also be included within Federal Decree 6.514/2008 as an administrative infraction. This would allow both penalty of restriction of individual rights under Federal Law 9.605/1998 and pecuniary and objective punishment (seizure of goods, suspension of environmental licenses, etc.) under Federal Decree 6.514/2008.²⁰ The implementation of the same provision under both administrative and criminal levels would not cause conflict between offenses, because the *non bis in idem* principle²¹ does not apply to environmental sanctions imposed in different spheres (judicial and administrative), allowing them to be cumulatively enforced.²² The administrative infraction to be included in Federal Decree 6.514/2008 would be the following:

It is an environmental infraction to import, export, transport, sell, receive, acquire, or purchase timber and byproducts from native forests harvested, cut, logged, removed, possessed, transported, manufactured or sold in violation of any federal, state, or municipal applicable law, regulation or treaty, without prejudice of any other applicable sanction.

²⁰ Chapter 2, section f, i and ii, discourse on the sanctions applicable under environmental criminal and administrative offenses.

²¹ The *non bis in idem* principle asserts that no one shall be twice tried for the same offense.

²² CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 225, ¶3 (Braz.)

Paragraph 1. Timber byproducts are products originated from timber manufacturing.

The first component of the provisions proposed herein is the execution of at least one of the conducts describing timber trade -- to import, export, transport, sell, receive, acquire, or purchase timber. The suggested text clearly sets the incriminating conducts that comprise trade of illegally sourced timber and byproducts. By doing so, they eliminate risks of loopholes in their classification as an offense. Further, the provisions gather all conducts of timber trade in one offense, thus preventing overlaps and the apparent conflict between them. It also forces traders to pay attention to the entire supply chain, stimulating the sector's legalization.

The second component of the proposed offenses regards the goods to be protected -- timber and byproducts from native forests, being timber byproducts those originated from manufacturing. This is a specific and clear delimitation of the environmental goods being protected. It gives the law certainty and precision.

The third component of the offense consists in harvest, cut, log, removal, possession, transport, manufacture or sale of timber or byproducts in violation of any environmental federal, state, or municipal applicable law, regulation or treaty. These conducts comprise all stages of timber supply chain. Therefore, the offense covers trade of timber that had any illegality in its production chain. This eliminates loopholes in the law, by verifying legality of all stages. Besides, the suggested offense will complement the law, but will not overlap with

the existing classifications, because it punishes illegal trade, which has not been treated by law.²³

- **Definition of ‘illegal timber’ within the proposed offense for trade of illegal timber**

The environmental offenses suggested above are not just an adaptation of the Lacey Act’s ban on trading of illegally sourced timber. They are also an adjustment of the definitions of ‘legal timber’ and ‘illegally harvested timber’ provided by the instruments of the EU FLEGT Action Plan. Regulation 2173/2005, which regulates Voluntary Partnership Agreements (VPAs), defines ‘legal timber and timber products’ as those harvested in or imported into a partner country in accordance with national laws. The EU Timber Regulation (Regulation 995/2010) defines illegally harvested timber as timber harvested in contravention of the applicable law in the country of harvest.²⁴ The suggested text contains a description of illegal timber structured similarly to the said definitions: ‘timber and byproducts from native forests harvested, cut, logged, removed, possessed, transported, manufactured or sold in violation of any federal, state, or municipal applicable law, regulation or treaty’. It indicates the laws to be taken into consideration in the verification of timber products’ legality. Thus, the offense serves its purpose to be an incriminating law and to leave specificities to be treated by complementary law (*norma penal em branco*).

²³ Article 46 of Federal Law 9.605/1998 and Article 47 of Federal Decree 6.514/2008 classify as criminal and administrative offenses the receipt and acquisition of timber products for commercial purpose without the inspection of the vendor’s license that certifies the legality of the products’ origin. These are the only offenses that would conflict with the offenses proposed hereby. According to the specialty principle, the existent offenses would be applied over the proposed ones. See chapter 2, section f, i and ii.

²⁴ See chapter 4, sections b, ii, 3 and 4.

The range of laws to be considered when analyzing the product's legality should address the three pillars of sustainability -- economic, environmental, and social aspects.²⁵ A multi-stakeholder process should be adopted to agree on the laws to be contemplated. Such method is deployed in VPA negotiations.²⁶ The VPA regulation provides suggestions on the scope of laws to be considered, while the EU Timber Regulation establishes the mandatory range.²⁷ Based on these selections, laws on the following matters should be applied in the legality verification of traded timber and byproducts:

- rights of allocation processes and access rights;
- third parties' rights concerning use and tenure that are affected by timber harvesting;
- rights to harvest timber within legally defined boundaries;
- rules on forest management, timber harvesting, processing operations and associated financial and fiscal obligations;
- environmental safeguards, including forestry law and biodiversity conservation;
- social obligations, including labor requirements;
- rights of local communities and indigenous populations;
- rules on transport and trade of timber; and
- requirements concerning taxes, import and export duties, royalties and fees directly related to timber harvesting, timber trade, tenure and use rights to land and resources.

²⁵ *Briefing Note Number 02, What is legal timber?* FLEGT BRIEFING NOTES, FOREST LAW ENFORCEMENT, GOVERNANCE AND TRADE 1 (European Commission, 2007) <http://www.euflegt.efi.int/publications>.

²⁶ See chapter 4, section b, ii, 3.

²⁷ See chapter 4, sections b, ii, 3 and 4. See also *Briefing Note Number 02, supra* note 25, at 1.

- **Means to include trade of illegal timber as an offense within Brazilian Law**

The inclusion of trade of illegal timber as an environmental offense within the Brazilian legal system should be done as a general rule within the federal law to be applicable to all Federation Units. States and municipalities have the power to supplement or complement the general provision, based on particularities of their region and local system. However, proposing a new law before the Brazilian Congress involves slow bureaucratic procedures, influenced by personal interests of its components and leaders, what may undermine its enactment. The most feasible strategy would be the inclusion of the proposed offense through International Law. Member states of international organizations to which Brazil is a party should agree on a classification of trade of illegal timber, to be further incorporated by their domestic legal systems. A possibility would be to use the Amazon Cooperation Treaty Organization and the United Nations Forum on Forests²⁸ as vehicles to achieve such goal. Treating it as a foreign affair may be easier to achieve a fast and efficient solution, depending on whether the member states will be willing to address the matter. Furthermore, international pressure has shown to be an effective accelerator of finding solutions for domestic legal questions.

²⁸ See more one these international organizations at chapter 4, sections d, i and iii.

- **Punishment of trade of illegal timber**

The administrative and criminal offenses for trade of illegal timber should provide the basis for penalties. Minimum and maximum limits should be established in levels sufficient to discourage illegal undertakings. To avoid punishment lower than the merited by the conduct's gravity, penalties should be measured in accordance with the number of illegal conducts that were held and their gravity. The Lacey Act adopts this approach in the measurement of pecuniary sanctions.²⁹ Additionally, measurement of penalties should be based on the violator's state of knowledge of the illegality, and on the degree of due care taken to assert the products' legality. Further, the investigation of illegal undertakings should follow a fact-based policy. Such methods will be explained in the following sections.

2. Adjustment of penalties' levels to be sufficient to discourage illegal logging and associated trade

Penalties of criminal and administrative offenses under Brazilian Law related to illegal logging and associated trade are often minimal in comparison with the profits illegal timber market can provide. For instance, Federal Decree 6.514/2008, Article 52, establishes a fine of R\$1,000.00 (US\$250.00) for each clear-cut ha of native forest. This provides no deterrent, as the revenue from the sale of only one high value tree species may reach R\$50,000.00

²⁹ The Lacey Act, 16 U.S.C. §3373 (a) (1).

(US\$12,500.00).³⁰ Furthermore, penalties imposed by Federal Law 9.605/1998 and Federal Decree 6.514/2008 are usually disproportional to the conducts' gravity.³¹ Therefore, sanctions will only be effective of discouraging illegal loggers and traders if they are strict enough to make illegal logging unprofitable.

- **Adjustment of penalties to a level superior to the economic gains from illegal activities and proportional to the gravity of the committed offenses**

A first step to make penalties efficient in discouraging illegal logging is increasing fines to a level significantly higher than economic gains from illegal activities, based on the current market value of timber products and byproducts. Imprisonment and restriction of rights should also be proportional to the gravity of committed crimes and infractions. They should be based on consequences to public health and the environment. Although the law already requires the observation of such factors for penalty measurement and imposition,³² penalties are still commonly disproportional under the law and obsolete with regard to the current profits of illegal loggers.

³⁰ Nacho Doce, *From Paradise to Inferno*, REUTERS <http://blogs.reuters.com/photographers-blog/2013/11/11/from-paradise-to-inferno/> (Jun. 10, 2014).

³¹ See more on that matter at chapter 2, section f, iii.

³² Federal Law 9.605/1998, chapter 2; Federal Decree 6.514/2008, chapter 1; and the Criminal Code, Title 5, chapter 3; provide the factors to be considered for penalty measurement and imposition, among which is the gravity of the fact.

- **Measurement of penalties' levels based on the violator's state of knowledge of the illegality, and on the degree of due care taken to assert the product's legality**

The Brazilian Law should be adapted in the same way as the Lacey Act's due care system, under which penalties vary in severity based on the violator's state of knowledge of the illegality: penalties are higher for those who knew they were trading illegally harvested materials. For those who did not know about the products' illegal origin, penalties vary based on whether the individual or company in question did everything possible to determine that the product was legal, that is to say, took due care to do so.³³ This could bring balance between the gravity of offenses and the sanctions applicable.³⁴

The measurement of due care taken by the violator is important when it comes to illegal logging and associated trade, because illegalities may be avoided when actors concern about the origin of products acquired. Thus, such adaptation of law may give timber sector's actors conscience that the more they take due care to avoid illegal timber, the less chances they will have to deal with it in the market, and consequently to be held liable for it.

³³ See more on that matter at chapter 4, section b, i, 4.

³⁴ Such criteria has not been included in the legal system, under which Federal Law 9.605/1998, chapter 2, Federal Decree 6.514/2008, chapter 1, and the Criminal Code, Title 5, chapter 3, provide guidelines for application of criminal and administrative penalties.

3. Encouragement of timber industry operators to adopt due care initiatives to verify timber products' legality

The due care system provided by the Lacey Act should also be deployed to encourage people involved in the activities of timber industry to verify the source of forest products they are acquiring. All the sector's operators, from sawmill owners to ultimate consumers, should ensure they are dealing with legally sourced timber. This means taking a degree of care that a reasonably prudent person would exercise under the same or similar circumstances. It resembles the Theory of the Average Man, used in Brazilian Criminal Law,³⁵ and the United States Reasonable Person Standard.³⁶ However, it should be applied differently to different categories of persons, meaning persons with different degrees of knowledge and responsibilities.

Due care initiatives are powerful to combat illegal logging and associated trade, as they allow operators to understand timber supply chain fully, as well as to acknowledge the associated risks and define their own level of appropriate traceability.³⁷ The adoption of due care mechanisms closes the doors to illegal loggers and stimulates the execution of logging and commercial activities in compliance with the law.³⁸ It increases people's commitment to verify the legality of timber's origin, and raises awareness of the importance to acquire and consume legally sourced products.

³⁵ The Theory of the Average Man is an abstract pattern correspondent to a person of reasonable conduct for specific circumstances. See Silvio Salvo Venosa, *The Contractual Good Faith in the Civil Code 2*, <http://docslide.com.br/documents/a-boa-fe-contratual-no-codigo-civil-silvio-venosa.html>.

³⁶ Hypothetical person in society who exercises average care, skill, and judgment in conduct and who serves as a comparative standard for determining liability. See The Free Dictionary, <http://legal-dictionary.thefreedictionary.com/Reasonable+person+standard> (last visited, Mar. 7, 2016).

³⁷ See more on that matter at chapter 4, section b, i, 4.

³⁸ Interview with Daniel César Azeredo Avelino, Chief Prosecutor at the Federal Prosecutors' Office in the State of Pará, in Belém, Brazil (Jan., 2015).

- **Encouragement of due care initiatives through economic incentives**

The encouragement of due care initiatives should be executed by the offering of economic incentives to those who adopt measures considered as such. The Government should provide monetary or tax incentives directed to the payment of investments on risk management assessment and other due care tools.³⁹ This method would complement the command and control system, and stimulate law compliance.⁴⁰

Currently, there are not many programs of public incentives to implementation of due care at the Amazon timber industry. The Pact for Legal Timber and Sustainable Development (*Pacto pela Madeira Legal e Desenvolvimento Sustentável*) is an example.⁴¹ The Pact's core tenet is for timber industry operators to agree not to acquire products from illegal sources and to observe whether the registers that follow the products comply with the official norms. They must also inform the origin of the primary timber product and any eventual irregularities that may be detected at the purchase. Under such agreement, the Ministry of the Environment compromises to grant the use of 4 million ha of public forests, to regulate the utilization of planted forests, and to inform online its suppliers' conditions. The Government of Pará will

³⁹ Interview with Daniel César Azeredo Avelino, *supra* note 38. See examples of due care initiatives at chapter 4, section b, i, 4.

⁴⁰ JACQUES MARCOVITCH, *A GESTÃO DA AMAZÔNIA: AÇÕES EMPRESARIAIS, POLÍTICAS PÚBLICAS, ESTUDOS E PROPOSTAS* [THE MANAGEMENT OF THE AMAZON: BUSINESS ACTIONS, PUBLIC POLICIES, STUDIES AND PROPOSALS] 102 (EdUSP, 2011).

⁴¹ The Pact was signed by the Federation of Industries from Pará (*Federação de Indústrias do Pará – Fiepa*), the Association of Timber Export Industries from the State of Pará (*Associação de Indústrias Exportadoras da Madeira do Estado do Pará - Aimex*), the Group of Certified Forest Producers in the Amazon (*Grupo de Produtores Florestais Certificados na Amazônia – PFCA*), the Ministry of the Environment, and the Government of the State of Pará. See MARCOVITCH, *supra* note 40, at 102.

grant the use of 150,000 ha of state forests.⁴² The Green Municipalities Program in the State of Pará is another successful example of this approach.⁴³

4. Implementation of a fact-based monitoring policy

The Lacey Act is a fact-based system. Legality of timber products' origin must be proved by evidence and proof shall not rely on documents alone. Fact-based proof prevents the influence of fraudulent schemes, such as forged papers and false certification. This is one of the reasons for the Act's high efficiency in tackling illegal logging and associated trade.⁴⁴

In Brazil, the main logging and timber trade control systems are document-based. Control systems on forest products' origin, such as the DOF federal system, are solely based on documents and an online database. Monitoring of environmental licensing, land tenure and use rights mostly rely on documentation too.⁴⁵ In addition, field monitoring in the Amazon is inefficient due to its vast territory, dense forests of difficult access, lack of personnel, and financial resources, what has contributed to documentation be the primary proof of timber's legality.⁴⁶

Nevertheless, a considerable portion of logging and timber trade is based on fraudulent paperwork, issued by both criminals and corrupt public agencies and officers. Control systems

⁴² MARCOVITCH, *supra* note 40, at 102.

⁴³ The Green Municipalities Program was developed by the State of Pará, together with civil society, municipalities, IBAMA, and the Federal Prosecutor's Office, as an instrument to combat illegal logging and to promote sustainable production, through economic incentives. *See* PROGRAMA MUNICÍPIOS VERDES [GREEN MUNICIPALITIES PROGRAM], <http://municipiosverdes.com.br/> (Dec. 10, 2015).

⁴⁴ See chapter 4, section b, i, 5.

⁴⁵ See chapter 2, section d, i, 3 on Rural Environmental Register CAR; section h on environmental licensing of timber industry activities; and section i for control systems of forest products' origin.

⁴⁶ See chapter 3, section h, ii on deficiencies of field monitoring in the Amazon.

on forest products' origin are commonly subject to fraud. Land tenure and use rights in the Legal Amazon are also based on fraudulent schemes and false documentation.⁴⁷

As a solution, Brazil's environmental agencies should adopt a fact-based policy, as the Lacey Act does, to monitor illegal logging and associated trade and to enforce the law. If actual legality is prioritized, major causes of illegal logging and associated trade will be tackled, namely corruption schemes, irregular land occupation (as *grilagem*), falsification of environmental licenses and Sustainable Forest Management Plans.

However, this new approach requires the improvement of infrastructure in federal, state, and municipal monitoring and law enforcement systems in the Amazon region. Investments should be focused on source-tracking systems, risk management, and on-the-ground audits. This diminishes the dependence on paperwork and makes legality verification of tropical timber more efficient. Such adaptation of monitoring strategies is an ambitious proposal, but realistic and doable, as technical experts and public officers from the United States have proposed in this regard.⁴⁸ However, success depends on whether the Public Administration will adopt and expand on it.

⁴⁷ See more on that matter at chapter 3, section e on fraud in control systems of forest products' origin and environmental licensing system; and section j, i on irregular occupation schemes.

⁴⁸ ADAM GRANT & SOFIE BECKHAM, WORLD RESOURCES INSTITUTE, FOREST LEGALITY ALLIANCE, CASE STUDY - IKEA'S RESPONSE TO THE LACEY ACT: DUE CARE SYSTEMS FOR COMPOSITE MATERIALS IN CHINA 2 (2013), <http://www.wri.org/publication/case-study-3>. See also ENVIRONMENTAL INVESTIGATION AGENCY [EIA], SETTING THE STORY STRAIGHT - THE US LACEY ACT: SEPARATING MYTH FROM REALITY 2.

5. The adoption of the FLEGT Action Plan's parameters into the Brazilian regulatory system and the governmental policies to combat illegal logging and associated trade

The EU FLEGT Action Plan is molded by parameters to be followed in the combat against illegal logging and associated trade in the European Union's territory, which focus on the assurance of timber legality and sustainable forest management, as previously exposed. It does so by promoting better law enforcement and forest governance.⁴⁹ Some of these parameters serve as guidelines, not just to the European timber market, but to any other market, Brazil's included. The following items will illustrate how the adoption of these considerations may improve the Brazilian logging and timber trade control systems.

- **Promotion of sustainable public procurement**

The FLEGT Action Plan defends that the improvement of environmental sustainability in timber public procurement should be encouraged. The legality of timber and its byproducts' source, as well as the employment of sustainable forest management, should be confirmed by public governments at their purchase. In Brazil, public procurement of tropical timber represents a significant portion of national timber market, as a considerable share of Amazonian native wood used in the country is destined to public works.⁵⁰

Public procurement is regulated by Federal Law 8.666/1993 (Bidding Proceedings Law). Although the Law establishes sustainable development as one of its principles (Article

⁴⁹ See chapter 4, section b, ii, 1.

⁵⁰ SÉRGIO ADEODATO ET AL., *WOOD: FROM THE FOREST TO THE CONSUMER* 114 (FGV RAE, 1st ed., 2011).

3), it states that the lowest price is the defining factor for public purchases.⁵¹ This puts sustainable products at a disadvantage, since compliance with environmental standards usually makes goods and services more expensive, which clashes with the regulation. The Law also determines that all suppliers must be treated equally, what may be difficult to do when only a handful of them comply with environmental standards.⁵² Therefore, sustainable public procurement has not been highly encouraged by Brazilian command and control systems.

On the other side, some initiatives have been taken to promote sustainable public procurement. For instance, the International Council for Local Environmental Initiative (ICLEI) and FGV Center for Sustainability Studies (GVCes) published in 2008 the Guidebook for Sustainable Public Procurement, a reference material to guide governments. In the State of São Paulo, which is the major consumer of tropical timber from the Amazon, the Cadmadeira System has encouraged sustainable public procurement.⁵³ It has among its goals the instruction and regulation of public procurement by the State's Administration when it comes to the purchase of native forest products and byproducts. Cadmadeira also establishes that all public purchases of native forest products by the Direct and Indirect State Administration are subject to the seller's register at Cadmadeira.⁵⁴ Thus, it encourages timber producers and traders to give more transparency to their products' origin by registering at Cadmadeira, if they intend to trade with the Public Administration.

Hence, although the legal system does not encourage sustainable public procurement, public and private initiatives has been taken. Nonetheless, most of the Brazilian states have

⁵¹ Federal Law 8.666/1993, art. 15, ¶ 3, § I.

⁵² ADEODATO ET AL., *supra* note 50, at 114.

⁵³ See more on that matter at chapter 2, section i, iv.

⁵⁴ State of São Paulo Decree 53.047/2008, art. 7.

not adopted sustainable public procurement.⁵⁵ Therefore, initiatives as those mentioned above should be promoted to tackle illegal logging and associated trade in Brazil. In this regard, Cadmadeira can be used as a benchmark for other states.

- **Encouragement of corporate social and environmental responsibility within timber sector**

FLEGT Action Plan suggests the engagement of private sector in social and environmental responsibility as another manner to legalize timber industry. It proposes the implementation of initiatives such as the establishment of coordinating bodies, the adoption of high standards in codes of conduct, transparency, independent monitoring, and capacity. Further, the Action Plan encourages governmental commitment to provide technical and financial assistance to private sector in the implementation of such initiatives.⁵⁶

Benefits are brought to society and the environment when corporations take measures addressing the wellbeing of their stakeholders and the mitigation of their activities' impact on them. Besides, social and environmental responsibility acts are relevant for timber industry as they supplement the failures of the Public Sector in tackling illegal logging and associated trade.

In the Amazon, the corporate social and environmental responsibility profile has been increasingly implemented by the timber sector, although the majority of the sector's actors

⁵⁵ THIAGO H. K. UEHARA ET AL., *PODER PÚBLICO E CONSUMO DE MADEIRA: DESAFIOS E ALTERNATIVAS PARA A GESTÃO RESPONSÁVEL DA MADEIRA AMAZÔNICA* [PUBLIC GOVERNMENT AND TIMBER CONSUMPTION: CHALLENGES AND ALTERNATIVES FOR THE RESPONSIBLE MANAGEMENT OF AMAZONIAN TIMBER] 23 (FGV, 2011).

⁵⁶ See chapter 4, section b, ii, 1.

still have not adopted it.⁵⁷ Only some large timber companies in the Amazon region have taken measures toward social and environmental responsibility, such as the timber company Cikel. The company is well known for its significant investments in sustainable measures and responsible social and environmental initiatives.⁵⁸ It has experienced that implementation of social-environmental responsible measures resulted in higher profitability. Investments in such initiatives are high, but compensated in the future. Cikel's expenses with capacity building for the new patterns of forest utilization increased the costs with labor force in 12%. However, the workers' productivity grew 30%. Besides, the implementation of a system of reduced environmental impact brought the company gains in the waste reduction at timber utilization and reduction of expenses with equipment's maintenance.⁵⁹

Parallel to private parties' initiatives, the Public Administration has provided assistance to companies developing channels to execute social and environmental responsibility projects. For instance, in the State of São Paulo, the already mentioned Cadmadeira system is an assistance tool for corporate social and environmental responsibility. There are also non-governmental initiatives in that respect. The non-profit organization *Instituto Ethos* launched the program *Sustainable Connections: São Paulo – Amazônia*, which consists in a pact for the exclusive finance, use, and commercialization of certified sustainable forest products.⁶⁰

Agreements as such show a new business posture interested in environmental and social

⁵⁷ As previously mentioned in this work, estimates point that 70% of timber extracted in the Amazon is illegally sourced, meaning that social and environmental aspects of production are not taken into account. See chapter 3, section d, i.

⁵⁸ Cikel also implemented the following environmental programs: (i) Program of Solid Waste Management, by which controls solid waste management and gives them the environmentally correct destination; and (ii) Program of Soil and Biodiversity Conservation, which consists in techniques of forest utilization with reduced impact, containing the inventory and control of local fauna and flora, encouraging reforestation in the company's lands. See MARCOVITCH, *supra* note 40, at 141-144.

⁵⁹ MARCOVITCH, *supra* note 40, at 142.

⁶⁰ *Id.* at 103.

issues. Even if such deals do not bring sanctions in case of non compliance, they still have great force in the sense that their members have to honor an important factor before society: their image on the market.⁶¹ Besides, they also show the commitment of business actors with social-environmental responsibility and sustainable development principles.

Social and environmental responsibility initiatives should then be broadly adopted among timber industry's operators. By incorporating them, timber companies make their operations environmentally sustainable, thus eliminating illegally sourced timber from their production chain. Besides, such measures have shown to be profitable to timber companies, what is an incentive to their implementation. Public policies such as Cadmadeira, and non-governmental projects like *Sustainable Connections: São Paulo – Amazônia* are tools that facilitate and encourage the private sector to implement social and environmental responsible measures. Therefore, the Government, together with non-profit organizations and the private sector itself should make policies and projects as such increasingly accessible at timber market.

- **Execution of risk assessments by forest finance institutions – Effective enforcement of the applicable Brazilian Law**

The FLEGT Action Plan also encourages banks and financial institutions to execute risk assessments before investing in forestry sector operations, to avoid financing illegal logging projects. It suggests both private and public financial institutions to conduct due diligence on

⁶¹ MARCOVITCH, *supra* note 40, at 104.

the timber supply chain.⁶² The financing of logging projects in the Amazon is a historical problem. During the 1950s and 1960s, governmental financial incentives were provided without any kind of risk assessment. The situation endured for such a long time that forest finance used to be a major contributor to illegal deforestation in the region.⁶³

To prevent financing of illegal logging in the Amazon, the National Monetary Council (CMN) issued Resolution 3553 in 2008, which requires public and private financial institutions to execute risk assessments for forest finance. It established that they shall require Amazonian rural producers to present a certificate of the land's legal occupation (Certificate of Rural Property Register - CCIR), the applicable environmental license, and documents that prove the area has not been subject to usage restrictions due to illegal logging. Institutions shall analyze the documentation before financing logging activities.⁶⁴

Nevertheless, the financial sector continues to struggle to restrict finance solely to legally authorized forestry activities. The neglect of public and private financial institutions on this matter is common. For instance, in 2011, the Federal Prosecutor's Office in the State of Pará prosecuted the financial semi-public institutions *Banco do Brasil* and *Banco da Amazônia* and the National Institute of Colonization and Land Tenure Reform (INCRA). The Prosecutor's Office alleged the institutions financed illegal logging in the Amazon region and

⁶² See chapter 4, section b, ii, 1.

⁶³ Philip M. Fearnside, *Desenvolvimento da floresta amazônica: problemas prioritários para a formulação de diretrizes* [Development of the Amazonian Forest: priority problems for the formulation of guidelines], Estratégias para a política florestal na Amazônia brasileira [Strategies for a forest policy in the Brazilian Amazon], 4 ACTA AMAZONICA 125 (1979).

⁶⁴ MPF no Pará processa Basa, Banco do Brasil e Incra [The Federal Prosecutor's Office in the State of Pará prosecutes Basa, Banco do Brasil and Incra], ESTADÃO, <http://sustentabilidade.estadao.com.br/noticias/geral/mpf-no-para-processa-basa-banco-do-brasil-e-incra,700107> (Nov. 10, 2015).

pointed INCRA's negligence in monitoring the regularity of forested areas occupation. This is an ongoing public civil action.⁶⁵

Therefore, there should be more effective enforcement of the laws on financing forestry sector activities in the Amazon by both private and public financial institutions. Any kind of finance for utilizing natural resources must follow a well-designed strategy: it must be more restrictive than its usual, better understood with regard to environmental impacts, and should be frequently re-evaluated to reflect the current economic and political situations.⁶⁶ These measures would make the regulation of forest finance better serve its purpose of preventing financing of illegal timber production, thus contributing to tackling illegal logging.

- **Broader implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to tree species utilized in the Brazilian timber sector**

The FLEGT Action Plan acknowledges the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as a means to tackle illegal logging and associated trade. It encourages wood-producing countries to use voluntary listing of timber species under Appendix III to include species that are commonly illegally sourced nationally.⁶⁷

⁶⁵ Interview with Daniel César Azeredo Avelino, *supra* note 38.

⁶⁶ Fearnside, *supra* note 63, at 124.

⁶⁷ See more on that matter at chapter 4, section b, ii, 1.

Most commercially traded timber species worldwide are listed in Appendices II and III of CITES.⁶⁸ By March 2015, there were six Appendix I tree species, twenty two Appendix II taxa (eighteen species and four genera), and fifteen Appendix III tree species used for lumber or other wood products.⁶⁹ Regarding the influence of CITES in the Brazilian timber sector, although the country has been a party to the Convention since 1975, the major portion of timber produced is not subject to CITES because most of it is consumed nationally.⁷⁰ By its own initiative, Brazil included both pau-brasil (redwood, *Caesalpinia echinata*) in 2007, and pau-rosa (rosewood, *Aniba rosaeodora*) in 2010, in Appendix II of CITES.⁷¹ In 1998, Brazil listed its population of bigleaf mahogany (*swietenia macrophylla*) in Appendix III of CITES, which is currently listed in Appendix II.⁷²

Nevertheless, the Convention's broader implementation to tree species utilized in the Brazilian timber sector would be a stronger tool against illegal logging in the future, in case the species range of the country's timber exportation ever increases. Therefore, the Government should work to include in Appendix III of CITES the species mainly commercialized in the current national market. Additionally, broader enforcement of CITES

⁶⁸ CITES applies to plants just as it applies to animals species. However, proposals to list endangered tree species, particularly species that are commercially harvested for their timber, are highly controversial. Many parties seem reluctant to the listing of timber-producing species in the Appendices for a variety of reasons. One involves the practical and technical problems that derive from incongruities between timber transport practices and CITES permit requirements. Another stems from the fact that some timber products, such as chemical extracts, are not readily recognizable specimens of the species. The parties tried to address the technical particularities of the timber trade by defining the scope of listings to cover a manageable category of specimen types. For example, the listing for mahogany (*Swietenia mahagoni*) applies only to logs, sawn wood, and veneer sheets, and not to other parts or derivatives such as finished products. See David R. Downes, *Global Forest Policy and Selected International Instruments: A preliminary Review*, in RICHARD G. TARASOFSKY, ASSESSING THE INTERNATIONAL FOREST REGIME 84 (IUCN - The World Conservation Union, 1999).

⁶⁹ *CITES I-II-III Timber Species Manual*, UNITED STATES DEPARTMENT OF AGRICULTURE [USDA] (2015), at 2-5. For the list of CITES tree species, see Appendix II of this work.

⁷⁰ See more on that matter at chapter 1, section d, iii.

⁷¹ *Brazil's Voluntary National Report to the 11th Session of the United Nations Forum on Forests*, http://www.un.org/esa/forests/pdf/national_reports/unff11/Brazil.pdf.

⁷² JADE SAUNDERS AND ROSALIND REEVE, CHATHAM HOUSE AND CIFOR, *THE EU TIMBER REGULATION AND CITES 14* (2014).

over the country's timber exportation would also influence the national market in the long-term: it would stimulate law compliance by domestic traders interested in increasing their competitiveness.

6. Enacting a Voluntary Partnership Agreement (VPA) between Brazil and the European Union

One of the forms to tackle illegal logging and associated trade provided by the EU FLEGT Action Plan is the Voluntary Partnership Agreement into which timber-producing countries and the European Union may enter. One of its goals is to implement the FLEGT License Scheme in the producing countries. This work recommends the enactment of a VPA between Brazil and the EU. This would contribute in several forms to eliminating illegal logging and associated trade in the country's domestic and exportation timber market, as will be presented below. Nonetheless, it should be considered as a system with long-term results. The enactment of a VPA between Brazil and the EU could take years to be accomplished, due to long negotiations and implementation procedures.⁷³

⁷³ See more on that matter at chapter 4, section b, ii, 3.

- **Enacting a VPA as a control mechanism of illegal logging and associated trade related to Brazil’s exports, and as a vehicle to implement third-party monitoring organizations in the national environmental licensing system**

An eventual enactment of a VPA would have a direct impact on Brazil’s timber production aimed for exportation, even representing just a small portion of the country’s overall production. Still, the enactment would also secure the European Union’s support for the implementation of a Legality Assurance System (LAS) in Brazil, which would verify whether timber products are legally sourced and produced.⁷⁴ This would improve the national control systems on illegal logging and associated trade by complementing existing processes with a control instrument required by the LAS that is not yet present in Brazil’s system: third-party monitoring organizations. Monitoring organizations are responsible for verifying the proper functioning of the LAS and assuring the system’s transparency.⁷⁵

An independent, third party, skilled institution would be appointed as a monitoring organization responsible for auditing the FLEGT License Scheme in Brazil, and consequently the national control systems, to ensure their integrity and credibility. Due to its independence from the Public Administration and its lack of commercial interests in the forestry sector, audits by a monitoring organization would combat corruption within public agencies. They would also maintaining the desirable level of expertise of public officers and encourage their commitment. Moreover, monitoring by third-party organizations would give transparency and

⁷⁴ See chapter 4, section b, ii, 3, *The Legality Assurance System (LAS)* for a detailed description of the Legality Assurance System.

⁷⁵ Third-party monitoring organizations are described at chapter 4, section b, ii, 3, *The Legality Assurance System (LAS)*

credibility to the Brazilian timber market from the perspective of international consumers. As per monitoring of environmental agencies undertaken by the Government itself, the Inspector General's Office (*Corregedoria Geral da União*- CGU) and its agencies are competent to handle these responsibilities. However, the ongoing high levels of corruption and illegalities in timber sector show that current monitoring has been inefficient.

- **Improving the quality and efficiency of national control systems of illegal logging and associated trade**

The enactment of a VPA would require Brazil to improve its existing systems to the quality levels required by the EU FLEGT Action Plan. This would contribute to the control system's efficiency. Areas that would require improvement include, for example, the national environmental licensing system, control systems on forest products' origin, monitoring schemes, land tenure regularization projects. The credibility of all of these elements would also have to be increased. The European Union may provide financial and technical support to Brazilian environmental agencies that lack sufficient resources. This would improve their infrastructure, recruiting the necessary number of officers to cover the country's timber sector, and capacity building.⁷⁶

⁷⁶ DUNCAN BRACK AND JON BUCKRELL, CHATHAM HOUSE, CONTROLLING ILLEGAL LOGGING: CONSUMER-COUNTRY MEASURES 5 (EERG IL BP 2011/01, 2011).

- **Enactment of a VPA as a vehicle to establish a definition of ‘illegal timber’ within the Brazilian environmental regulatory system**

The enactment of a VPA could be a means to establish a definition of ‘illegal timber’ within the Brazilian environmental regulatory system. The LAS would provide a definition for legally produced timber and, according to VPA regulatory law, ‘legal timber and timber products’ are those harvested in or imported into a partner country in accordance with national laws.⁷⁷ A definition of ‘illegal timber’ under a VPA would support the environmental offense for trade of illegal timber previously proposed in this chapter.⁷⁸ It would either serve as a vehicle to include the offense within Brazilian law, or contribute to its implementation, if already enacted.

- **Other benefits from the enactment of a VPA**

Once the tools brought by the eventual execution of a VPA are properly implemented in Brazil, market confidence in its industry will increase, thereby improving its competitive advantage in the international timber and leading to a better access to EU markets. Moreover, other generic improvements will be noticed in the country’s economy, besides the reduction in the levels of illegal logging and trading of illegally sourced timber. These comprise:

- alleviating poverty;
- safeguarding employment and competitiveness;
- increasing government revenues in general;

⁷⁷ Council Regulation 2173/2005, art. 2, Item 10.

⁷⁸ See section b, i, 1 of this chapter.

- improving capacity of the government and the private sector;
- strengthening the rule of law; and
- securing the rights of people dependent on the forests for their livelihoods.⁷⁹

The implementation of the FLEGT License Scheme in Brazil should occur gradually, focusing firstly on the export market before being extended to the domestic market: this is the approach usually encouraged by the European Union and would address Brazil's main necessity. The structuring of the VPA's content and License System should also involve local stakeholders, essential to maintain the balance between the economic, social, and environmental pillars of timber production. If such approaches are fully adopted, illegalities along the timber supply chain should be gradually eliminated and levels of deforestation not just in the Amazon region, but also throughout the Brazilian territory, should decline considerably.

In addition to the VPAs, the EU FLEGT Action Plan establishes the EU Timber Regulation, which has a direct impact on Brazil's timber exports. The Regulation also provides tools for timber trade control that can be adapted to the country's national regulatory system, as will be considered next.

⁷⁹ See more on that matter at chapter 4, section b, ii, 3, *Benefits to timber-producing countries from signing a VPA*.

7. Implementation of a due diligence system requirement within Brazilian Law, based on the EU Timber Regulation

The EU Timber Regulation, as the second core factor of the FLEGT Action Plan, has set the execution of due diligence systems as the prime precondition for timber operators to import timber into the EU market for the first time. The system verifies timber products' legality and impedes the entrance of illegally sourced products. Illegal timber is defined by the EU Timber Regulation as harvested in contravention of the applicable law.⁸⁰ To date, due diligence has been successfully implemented in the EU Member States and has proved to be an efficient tool to decrease the amount of illegal products in the European timber sector.⁸¹

There is no equivalent due diligence requirement for the timber supply chain under Brazilian Law. Instead, timber companies that intend to achieve a stronger position in the market voluntarily adopt forest certification schemes, although certification's popularity in Brazil is still modest. A system that requires timber industry operators to verify the legality of the origins of the raw materials and byproducts they handle can be quite useful to tackle illegal logging and the illegal timber trade. Therefore, a due diligence requirement for the timber industry should be introduced through national law, as it could give more transparency to timber supply chain and minimize the risks of operators' acquiring illegal timber: due to Brazil's vastness, the inclusion of so many participants in the chain increases opportunities for illegality to occur.⁸²

⁸⁰ Regulation (EU) 995/2010, art. 2, g.

⁸¹ See more on that matter at chapter 4, section b, ii, 4.

⁸² Interview with Hugo Américo Schaedler, *supra* note 13.

A due diligence system in Brazil should require all operators involved in the native tropical timber supply chain to present periodic reports to competent authorities, demonstrating all necessary measures are being taken to assure the product's legality. The report should include the product's basic information, a risk assessment, and a proposal on mitigation of identified risks, when necessary. Due diligences should verify the compliance with laws indicated by the definition of 'illegal timber' set by the EU Timber Regulation.⁸³ With regard to the set of laws to be considered, the list previously provided in this chapter for the application of the trade of illegal timber offense could be adopted.⁸⁴ The products to be subject to due diligence would be roundwood, sawn wood, veneer, plywood, production waste, and byproducts, which are the most common in the Brazilian timber industry.⁸⁵

In the case of the EU Timber Regulation, only operators placing timber for the first time into the EU market are required to implement and comply with the due diligence system. This is because the Regulation's main goal is to ban the importation of illegal timber from producing-countries. However, timber is produced nationally in Brazil, and it is hard to track its origin from the beginning of the supply chain, especially in the Amazon where access to logging areas is difficult. Tracking timber and byproducts along the rest of the supply chain is also complex, due to the long distances over which products are transported to reach their final destination. Therefore, the entire supply chain should be required to implement the system in Brazil.

Competence to monitor and check the issued due diligence reports in Brazil should be given to the federal, state, and municipal environmental agencies, in accordance with their

⁸³ See more on that matter at chapter 4, section b, ii, 4, *Definition of legal timber under the EU Timber Regulation*.

⁸⁴ See section b, i, 1, *Definition of 'illegal timber' within the proposed offense for trade of illegal timber*.

⁸⁵ See chapter 1, section d, i, on that matter.

material common jurisdiction to protect the environment, as established by the Federal Constitution, Article 23.⁸⁶ Another option would be for such agencies to harness their competence to nominate independent monitoring organizations that would report to them on the due diligence system. In either scenario, competent monitoring entities should conduct periodical checks to verify whether operators are complying with the system.

When the system is violated, penalties should be established for failure to present a due diligence report to competent authorities, for presenting an incomplete or false report, or for non-execution of mitigation measures when non-negligible risks are identified. There must be a strict control rule to lower the competitiveness of operators that do not comply with the system and establishes penalties proportionate to the seriousness of each violation. For instance, a sawmill operator informs in the due diligence report that they identified non-negligible risks of illegality along the supply chain of products he acquired. However, it failed to take measures – such as tracing wood systems – to avoid handling illegal timber. In such case, the public agency should issue notices of remedial actions and levy fines. As another example, environmental licenses should be suspended in cases of false due diligence reports being presented.

Besides functioning as a command and control approach, a mandatory due diligence system should also contain features of an economic instrument: financial incentives – such as tax exemptions – should be provided to operators that comply with the law. This would minimize resistance against the new rules and encourage compliance by offsetting the high costs associated with execution of the required due diligence.

⁸⁶ See chapter 2, section c, vi, on that matter.

The EU Timber Regulation give operators three alternatives for implementing a due diligence system: establish their own system, instruct a service provider to create one, or use systems provided by monitoring organizations that will check whether the systems are being properly implemented.⁸⁷ In Brazil, the same options could be stipulated to provide different cost possibilities for the private sector, thus increasing the feasibility of compliance. Furthermore, although forest certification schemes, such as the FSC, are not accepted as proof of legality under the EU Timber Regulation, they could be accepted by the environmental agency competent to check due diligence reports in Brazil. This would be an alternative to fulfill the legal requirements, because the techniques of a due diligence system are similar to chain of custody forest certification. This alternative would make the process less costly and bureaucratic.

Thus, the present work advocates the implementation of a due diligence system based on the system created by the EU Timber Regulation as another tool to tackle illegal logging and associated trade in the Amazon. Furthermore, the Regulation already impacts on the country's production, as it is directly applicable to imports into the European Union of tropical timber from Brazil, although this covers only a small portion of the country's production. For example, in 2014 Belgian authorities impounded six containers of illegally harvested timber from the Amazon.⁸⁸

⁸⁷ Regulation (EU) 995/2010 of the European Parliament and of the Council, of 20 October 2010, art. 4. See more on that matter at chapter 4, section b, ii, 4, *The EU Timber Regulation's Due Diligence System as a mechanism to minimize the risk of importing illegal timber*.

⁸⁸ *Belgium authorities impound Rainbow Trading's illegal timber*, GREENPEACE INTERNATIONAL, <http://www.greenpeace.org/international/en/news/Blogs/makingwaves/belgium-authorities-impound-rainbow-tradings-/blog/51359/> (Mar. 20, 2015).

ii. Fostering of forest certification schemes as a mechanism to combat illegal logging and associated trade in the Amazon

Parallel to the governmental systems in the US and the European Union explored above, several tools implemented by the private sector worldwide have delivered successful results in tackling illegal logging and associated trade. As explored in chapter 4, forest certification schemes are the most prominent non-governmental system deployed to date, with high potential for effectiveness if more intensively implemented in Brazil, as will be discussed next.⁸⁹

1. Forest certification schemes in Brazil

Although forest certification has been shown to be an efficient instrument to combat illegal logging and illegal timber trade,⁹⁰ its adoption in the Amazon region is quite recent, and remains little deployed in regional production. In 1997, Amazonas-based Madeira Mill was the first sawmill to receive a FSC certification for low impact timber production in the Amazon region.⁹¹ There were, as of March 2016, 6,176,497 ha of FSC Forest Management certified areas in Brazil, with 108 certified operations, including native and planted forests. With regards to FSC Chain of Custody Certificates, as of March 2016 Brazil had 1094 certificates.⁹² By December 2015, there were 2,797,161 ha of PEFC certified forest areas in

⁸⁹ See chapter 4, section c, on that matter.

⁹⁰ *Id.*

⁹¹ ADEODATO ET AL., *supra* note 50, at 54.

⁹² FOREST STEWARDSHIP COUNCIL BRASIL, <http://br.fsc.org/> (Mar. 30, 2016).

Brazil,⁹³ and 70 certified chains of custody.⁹⁴ Certified areas in Brazil correspond to a small portion of the entire territory (851,576,705 ha).⁹⁵ Only 1% of areas subject to certification in the Amazon are certified by FSC.⁹⁶

The limited emergence of forest certification in Brazil was due to some specific factors: for instance, northern importers of native timber were more interested in forest products of sustainable origin than in non-certified products. Threats of environmental boycotts from the northern importers to noncertified native timber became more frequent, based on consumer perceptions that damage caused by illegal deforestation in the Amazon are related to the tropical timber trade.⁹⁷ This was the reason for mahogany boycotts.⁹⁸

Forest certification should be widely encouraged in Brazil by the Public Administration due to its benefits for the environment and society, and its contribution to tackling illegal logging and associated trade.⁹⁹ Nevertheless, some obstacles must be overcome for its broad implementation.

⁹³ PEFC Global Statistics: SFM & CoC Certification, PROGRAMME FOR THE ENDORSEMENT OF FOREST CERTIFICATION 5 [PEFC], <http://www.pefc.org/about-pefc/who-we-are/facts-a-figures> (2015).

⁹⁴ *Id.* at 11.

⁹⁵ IBGE, http://www.ibge.gov.br/home/geociencias/cartografia/default_territ_area.shtm (Apr. 15, 2016).

⁹⁶ *O selo verde garante que o produto respeita rios e nascentes* [The green label assures the product's respect for rivers and springs], <http://epoca.globo.com/colunas-e-blogs/blog-do-planeta/noticia/2015/02/o-selo-verde-garante-que-o-bproduto-respeita-rios-e-nascentesb.html>.

⁹⁷ MARCO W. LENTINI ET AL., ACERTANDO O ALVO 3: DESVENDANDO O MERCADO BRASILEIRO DE MADEIRA AMAZÔNICA CERTIFICADA FSC [HITTING THE TARGET 3: UNVEILING THE BRAZILIAN MARKET OF FSC CERTIFIED AMAZONIAN TIMBER] 59 (Imaflora, 2012).

⁹⁷ Peter May, *Forest Certification in Brazil*, in BENJAMIN CASHORE ET AL., CONFRONTING SUSTAINABILITY: FOREST CERTIFICATION IN DEVELOPING AND TRANSITIONING COUNTRIES 344 (Yale F&ES Publication Series, Report Number 8, 2006).

⁹⁸ *Id.* at 345.

⁹⁹ See chapter 4, section c, iii on the benefits of forest certification schemes.

2. Obstacles to and recommendations for a broad implementation of forest certification in Brazil

Several reformulations and improvements still need to be made for a broad implementation of forest certification in Brazil. The issues to be overcome are mainly related to illegal land occupation and weak enforcement of laws. Furthermore, certification schemes may be undermined by the lack of consumer knowledge about such schemes' labels and standards.¹⁰⁰

- **Land tenure regularization to overcome illegal occupation of forested areas**

One of the most critical obstacles for forest certification in the Amazon region is the violation of land tenure rights. Illegal occupation of native forests is an historical issue in the Amazon.¹⁰¹ As FSC Principle 2 asserts, “long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established” for a forest to be certified.¹⁰² Therefore, it is not possible to certify a forested area that is illegally occupied. Public Administration should effectively regularize land tenure in the Amazon, and assure natural resources use rights are respected to allow a greater number of forests to be certified.¹⁰³

¹⁰⁰ VIRGÍLIO MAURÍCIO VIANA ET AL., CERTIFICAÇÃO FLORESTAL [FOREST CERTIFICATION] 26 (Conselho Nacional da Reserva da Biosfera da Mata Atlântica, 2003).

¹⁰¹ See more on that matter at chapter 3, section j.

¹⁰² May, *supra* note 97, at 340.

¹⁰³ Strategies for land tenure regularization will be discussed in section c, ii of this chapter.

- **Encouragement of forest certification in community forests, which comprise the majority of illegal loggers in the Amazon region**

Forest certification in Brazil prevails in large land areas that are usually owned by large companies possessing the necessary investment capital for the certification procedure. Small properties are the minority within the certified areas, including Amazonian community forests.¹⁰⁴ Smallholders' revenue is generally not sufficient for investment in forest certification. The great majority of them exercise their activities informally, selling their products to timber manufacturers and processors with no awareness of social or environmental obligations. They accomplish minimum and unfair profits, that barely handle their survival, and they do so by exploring the forest in unsustainable forms, fruit of lack of technical instruction. Thus, at the same time community forests do not get the fair revenue from their forests utilization, they also execute it by gradually exhausting the natural resources they rely on.¹⁰⁵

However, community forests represent a considerable portion of the illegal loggers in the Amazon region.¹⁰⁶ Therefore, forest certification should be encouraged in smallholders' forestlands to achieve sustainable forest management and to eliminate illegal logging and associated trade practiced by them. The Public Administration, private sector, and non-governmental organizations should provide guidance and incentives for community forests to have access to forest certification. Buyers of smallholders' timber products should also prioritize certified timber.

¹⁰⁴ Roberto Scorsatto Sartori et al., *A Evolução da Certificação Florestal no Brasil 8* [The Evolution of Forest Certification in Brazil], Presentation at the 45th Sober Congress (Jul. 2007).

¹⁰⁵ See more on community forests at chapter 3, section c, ii.

¹⁰⁶ *Id.*

FSC and PEFC provide certificates specially designed for smallholders, through which costs for each timber producer are diminished when shared among the community members. FSC created the Small or Low-intensity Managed Forests – SLIMF Certification,¹⁰⁷ Group Forest Management Certification and Group Chain of Custody Certification. As for PEFC certificates, all types are focused on smallholder's production.¹⁰⁸ Such certification schemes should be fostered in the Amazon, as they are still not widely deployed in the region. Seringal Cachoeira, in the city of Xapuri, was the first community in Brazil to receive the FSC Group Certification, in 2002. Until November 2013, only 83 properties in the country got the certification.¹⁰⁹

The implementation of community forest management plans has increased the revenue of thousands of families that live in the forests. According to the extractive Nilson Mendes, forest management made lots of forest residents cease deforestation and begin to take care of the forest:

Forest management not just changed our financial life but also gave us more environmental consciousness. We noticed that it is better to take care of the forest than clear it. A resident that used to clear the forest to make pasture or crops does not do it

¹⁰⁷ According to FSC Brazilian National Standards, a small-scale forestry operation corresponds to native forests in the Amazon up to 1,000 ha of the total area of the Forest Management Unit. Low-intensity forestry operation is classified by the harvesting rate proportional to the average annual increment (AAI) for the total production area of the Forest Management Unit. In Brazil, it includes native forests in the Amazon where the collection index of the Forest Management Unit is less than 20% of the average annual increment (AAI) and the forest harvest limit is of a maximum of 5.000 m³/year. It does not apply to forest plantations in Brazil. *See* Brazilian FSC standard for Small and Low Intensity Managed Forests [SLIMF], FOREST STEWARDSHIP COUNCIL 4 (FSC-STD-BRA-03-2013 V3-1 EN, 2013).

¹⁰⁸ See more on that matter at chapter 4, section c, i and ii.

¹⁰⁹ Brazilian FSC standard for Small and Low Intensity Managed Forests [SLIMF], FOREST STEWARDSHIP COUNCIL 4 (FSC-STD-BRA-03-2013 V3-1 EN, 2013).

anymore, because forest management is more profitable to him, by, for instance, collecting nuts and extracting latex.¹¹⁰

New opportunities may also be brought to forest communities by the benefits of forest certification, for example through launching new product lines in which larger companies have no comparative advantage, such as marquetry, musical instruments, and design furniture.¹¹¹ In other parts of the world, certification schemes have empowered community forest management enterprises constituted by smallholders, giving them bargaining power in market niches¹¹² previously monopolistically controlled by intermediaries or by timber companies.¹¹³ Better accessibility of forest certification schemes to smallholders also contributes to spreading such schemes within the timber industry, due to their significant participation in timber extraction in the Amazon region.¹¹⁴

Such benefits are not limited only to smallholders, but also to partner timber companies to whom they are third party suppliers. Companies have their image and credibility improved as environmentally and socially concerned organizations. Cases where a large company supports sustainable timber production by community producers are becoming more common: for example, Cikel, known worldwide as the pioneer in forest certification in Brazil, has initiated support to community-managed forests in its vicinity.¹¹⁵

¹¹⁰ *Acre recebe o primeiro selo de certificação florestal 100% comunitário do país* [Acre receives the first group certification in the country], <http://br.fsc.org/newsroom.261.199.htm> (Sep. 12, 2014).

¹¹¹ LENTINI ET AL., *supra* note 97, at 59.

¹¹¹ May, *supra* note 97, at 354.

¹¹² *Id.* at 352.

¹¹³ *Id.* at 354.

¹¹⁴ ROWENA MAGUIRE, *GLOBAL FOREST GOVERNANCE: LEGAL CONCEPTS AND POLICY TRENDS* 260 (Edward Elgar ed., 2013).

¹¹⁵ May, *supra* note 97, at 349.

- **Encouragement of chain of custody certification due to its suitability for the Amazonian timber industry**

Chain of custody certification schemes should also be encouraged in the Amazon region.¹¹⁶ They are ideal for Amazon based timber companies, as well as for companies from other regions that acquire timber from the Amazon, because such companies are usually dependent on several third party timber suppliers. Therefore, chain of custody certification gives more transparency to, and assures legality of, the entire supply chain, instead of certifying just timber harvesting. When a company seeks to obtain certification of its chain of custody, it has to demonstrate that all its suppliers are also subject to certification, as they must all meet the required standards.¹¹⁷ Moreover, chain of custody certification can improve efficiency and production systems through enhanced traceability and accounting.¹¹⁸

- **Education of consumers to value sustainable and legally sourced timber products**

One of the most critical flaws in the timber market concerns the ultimate consumers. The entire supply chain adjusts according to consumer demand, what kind of products they require, and the products' final destination. However, Brazilian citizens, which are the main consumers of tropical timber from the Amazon region, are still mostly concerned with the

¹¹⁶ See more on chain of custody certification at chapter 4, section, c, i and ii.

¹¹⁷ May, *supra* note 97, at 349.

¹¹⁸ PROGRAMME FOR THE ENDORSEMENT OF FOREST CERTIFICATION [PEFC], <http://www.pefc.org/>, (Apr. 13, 2015).

quality and price of wood products, giving little attention to their origin and being even more reckless with regard to legality matters.

Therefore, consumers should be educated to value products sourced legally and through sustainable activities; they should also be made aware that their simple actions have a significant impact in encouraging market actors to adopt sustainable production systems. There is an urgent need for consumers to become more aware of the importance of being selective in the purchase of wood products and to avoid those without specification of origin. In addition, they must be aware of the existence of tools that facilitate identifying legally sourced timber products, as is the case with forest certification labels. As a solution, public policies focused on consumer awareness should be implemented at federal, state, and municipal levels.

- **Government as a key promoter of forest certification**

The key for successful consolidation of certification schemes, besides consumer awareness, is the Government's full support in the matter.¹¹⁹ The Government should address land tenure regularization, financing of companies that aim to achieve forest certification,¹²⁰ provision of subsidies and tax exemptions, enforcement of environmental law, and intensification of monitoring of the forestry sector's activities.¹²¹ Further, it should disseminate throughout the market information about certified products and their benefits, support

¹¹⁹ May, *supra* note 97, at 356.

¹²⁰ MAGUIRE, *supra* note 114, at 260. *See also* LENTINI ET AL., *supra* note 97, at 41.

¹²¹ Raimundo da Costa Almeida, *Certificação florestal: uma análise dos protocolos do FSC para emissão de selo verde e das normas estatais para licenciamento florestal no Estado do Pará* [Forest certification: analysis of FSC protocols for issuance of green stamp and state norms on forest licensing in the State of Pará] 39 (2012) (unpublished thesis, on file with Universidade Federal do Pará).

producers interested in implementing sustainable forest management, and support the preparation of forest management projects.¹²² Nevertheless, it is important to ensure schemes are independent from governmental power, preserving their necessary operational independence and credibility.¹²³

Non-governmental organizations (NGOs) and representatives of the forestry sector should also promote forest certification. NGOs could support the creation of a new market in which certification has a significant role, and the private sector should work on building this market. NGOs could also contribute by providing capacity building and dissemination of technology for the fulfillment of forest certification requirements.¹²⁴

- **Requirement of forest certification in green public procurement**

Another strategy to stimulate the adoption of forest certification should be its requirement by governmental authorities in public procurement policies.¹²⁵ Timber companies should not be allowed to sell wood and byproducts to the Public Administration if their production is not certified. Although figures are still unknown regarding the acquisition of Amazonian timber by the Government, preference for certified products in acquisitions under public procurement would represent a significant step towards the successful consolidation of forest certification in Brazil, and consequently contribute to reducing illegal deforestation levels.¹²⁶

¹²² VIANA ET AL., *supra* note 100, at 29.

¹²³ *Id.* at 27.

¹²⁴ Almeida, *supra* note 121, at 39.

¹²⁵ Sartori et al., *supra* note 104, at 10.

¹²⁶ LENTINI ET AL., *supra* note 97, at 22.

The recommendations made above should be jointly deployed to make forest certification in Brazil more feasible, simpler to implement, and more efficient. By doing so, the Government could foster forest certification countrywide, especially with respect to native timber from the Amazon, thus implementing another successful mechanism to tackle illegal logging.

In addition to the study of domestic regulations on timber trade and the private sector's measures to tackle illegal logging and associated trade, systems provided by the International Forest Regime have also been considered during this work. The following pages contain recommendations on how they should be applied in the Amazon's timber market.

iii. Potential mechanisms against illegal logging and associated trade under the International Forest Regime

The International Forest Regime provides instruments that should be used by nations to promote sustainable forest management nationally. From among these instruments, the United Nations Forum on Forests, the Climate Change Regime, and the Amazon Cooperation Treaty Organization were selected during the studies for this work as potentially effective tools to combat illegal logging and associated trade in the Amazon, as discussed below.¹²⁷

¹²⁷ See more on that matter at chapter 4, section d.

1. Enhancement of Brazil's participation at the United Nations Forum on Forests

The United Nations Forum on Forests (UNFF) provides some useful tools for the promotion and implementation of sustainable forest management worldwide. Among them, the Forest Principles of 1992 and of 2007 contain values and criteria that, if efficiently applied in Brazil, could contribute to the fight against illegal logging. Their basic values are the reinforcement of sustainable forest management, improvement of the livelihoods of forest dependent people, increase in the area of protected forests worldwide, and financial assistance for sustainable forest management.¹²⁸

Brazil, as a UNFF member state, should participate more intensively in the Forum's efforts to tackle illegal activities within the forestry sector, especially in the Amazon region. Stronger engagement with the UNFF will cause the country to strengthen its political commitment and actions to implement effectively sustainable forest management. Additionally, this will intensify the use of instruments provided by the UNFF for implementing sustainable forest management.¹²⁹

Furthermore, Brazil should continue to submit voluntary reports at UNFF sessions regarding the country's improvements in national forest governance. Brazil has recently started to do this as a vehicle to enhance the transparency of the country's forestry sector, increasing its competitiveness in the international timber market. The Public Administration's commitment to provide annual reports also encourages initiatives to drive better results in combatting illegal logging and its associated timber trade.

¹²⁸ See more on that matter at chapter 4, section d, i.

¹²⁹ *Id.*

Although the UNFF's regulations are not legally binding, the Forum's functioning has allowed stakeholders speak up and put pressure on state members' timber industries to assure the sector's legality. Among those speaking out are NGOs and consumer markets. As an example of the commitment promoted by the UNFF, the United Nations declared 2011 the International Year of Forests, intended to expand efforts to increase forest conservation and, in turn, their benefits to humanity.¹³⁰ Therefore, a more intense participation in the Forum could incentivize the Government to increase their efforts in the fight against illegal logging and associated trade, thus building a better image of the national timber market.

2. Use of mechanisms from the International Climate Change Regime to combat illegal logging in the Amazon: CDM and REDD+ projects, and Brazil's Zero Deforestation Policy.

- **Promotion of CDM and REDD+ projects, and elimination of obstacles that undermine their implementation in Brazil**

As the basis of the International Climate Change Regime, the United Nations Framework Convention on Climate Change (UNFCCC) features some suitable illegal logging and timber trade control systems that could be applicable in Brazil. These are the Clean Development Mechanism (CDM), and Reduced Emissions from Deforestation and Forest Degradation Combined with Conservation of Forest Carbon Stocks (REDD+).¹³¹

¹³⁰ ADEODATO ET AL., *supra* note 50, at 24.

¹³¹ See more on that matter at chapter 4, section d, ii.

Deforestation in the Amazonian Rainforest is the main cause of GHG emissions in Brazil.¹³² By increasing commitment to cut carbon emissions from deforestation and adopting the mentioned mechanisms, Brazil promotes best practices for timber production.¹³³ The proportion of emissions attributable to illegal logging fell from 70% to 35% over the past years, as deforestation levels decreased.¹³⁴ Nevertheless, intensive and illegal timber extraction and cattle raising are still accountable for great part of the billions of tons of carbon dioxide emitted in the Amazon. According to scientific studies, each deforested square kilometer emits an average of 44,000 tons of carbon dioxide. In 2007, this amounted to the emission of 42.3 million tons per month.¹³⁵ Likewise, rotting timber, leaves, and roots resulting from deforestation also emit GHGs.¹³⁶

There are currently not many CDM projects and just a few pilot REDD+ projects in the Amazon.¹³⁷ Nevertheless, some REDD programs were successfully implemented. For example, the Government of the State of Amazonas created the Juma Sustainable Development Reserve REDD Project, near Highway BR-319. It produces reduced deforestation carbon credits for international sale. It works in connection with the Amazonas State' payment for ecosystem services program called *Bolsa Floresta* (Forest Conservation Grant Program). Under the program, local communities receive 100% of the benefits obtained in the voluntary carbon markets, and all revenues are reinvested in the implementation of

¹³² ADEODATO ET AL., *supra* note 50, at 24.

¹³³ *Id.*

¹³⁴ *Floresta Sem Fim [Endless Forest]*, FOLHA DE SÃO PAULO, <http://arte.folha.uol.com.br/tudo-sobre/desmatamento-zero/> (Sept. 18, 2015).

¹³⁵ MARCOVITCH, *supra* note 40, at 73.

¹³⁶ *Floresta Sem Fim [Endless Forest]*, FOLHA DE SÃO PAULO, <http://arte.folha.uol.com.br/tudo-sobre/desmatamento-zero/> (Sept. 18, 2015).

¹³⁷ See more on that matter at chapter 4, section d, ii.

management plans of protected areas.¹³⁸ Furthermore, there is a commitment to an investment in environmental education, health, and improvement of environmental monitoring of at least 10% of the annual budget generated through the sales of REDD credits. The State and Federal Governments monitor the entire surrounding area of the Juma project as part of its plan.¹³⁹ The project had positive results beyond any expectations. It authorized deforestation of 1,659 ha, but only 38 ha were cleared. Further, the program *Bolsa Floresta* encourages the replacement of deforestation with sustainable forest management.¹⁴⁰

Although they are both useful instruments for encouraging forest conservation and sustainable forest management, the presence of CDM and REDD+ projects in Brazil is still modest due to deficiencies in the country's domestic policies that undermine their successful implementation. Lack of law enforcement, uncertainty of land ownership in the Amazon region, deficient monitoring of logging activities, corruption and lack of transparency in governmental environmental agencies pose major complications.¹⁴¹

Illegal occupation of forested lands, regardless of whether they are private or public, is an obstacle to the effective implementation of CDM and REDD+ programs.¹⁴² There must be clarification of entitlements and responsibilities of forest users. A well known REDD project in Brazil, The Nature Conservancy's pilot program in São Félix do Xingu, is an example of how irregular occupation of forest lands can undermine the implementation of these

¹³⁸ JOHN COSTENBADER, LEGAL FRAMEWORKS FOR REDD 134 (IUCN, 2009).

¹³⁹ COSTENBADER, *supra* note 138, at 137.

¹⁴⁰ MARCOVITCH, *supra* note 40, at 77.

¹⁴¹ COSTENBADER, *supra* note 138, at 125.

¹⁴² *Id.* at 137.

programs.¹⁴³ Although The Nature Conservancy points successful results from the program, it highlights land registration as one of main and most critical challenges that needed to be addressed before the program's implementation.¹⁴⁴ In July 2009, The Nature Conservancy signed a Memorandum of Understanding with local stakeholders to implement an environmental registry system for private lands in town.¹⁴⁵

Improvement in capacity building of the forestry sector's public officials – including business skills, human and institutional capacities – is also necessary for the success of CDM and REDD+ projects.¹⁴⁶ Equally relevant, public participation in governmental decision-making regarding environmental matters is essential for their successful establishment. Participation of stakeholders to be affected by the implementation of these mechanisms can contribute to gathering and disseminating information¹⁴⁷ on the potential impacts and risks. Thus, risks are better managed and outcomes gain legitimacy.¹⁴⁸ Furthermore, public participation enhances their level of awareness with respect to the issues in question and increases opportunities to influence the design of policies,¹⁴⁹ tailoring them suitably for local features and stakeholders' needs.

The Government must also deal with cultural diversity among the several indigenous

¹⁴³ São Félix do Xingu is a small town located in the State of Pará with a significant tract of rainforest and most affected by illegal deforestation. The project involves an area of 8.4 million ha, roughly the size of Panama, including 1.5 million ha of original forest cover lost. See *Combating Deforestation and Climate Change in Brazil's Amazon*, THE NATURE CONSERVANCY 3, <http://www.nature.org/ourinitiatives/urgentissues/global-warming-climate-change/how-we-work/brazil-redd-fact-sheet-final.pdf>.

¹⁴⁴ *Climate Change – Saving Forests with Brazil's Ranchers and Farmers*, THE NATURE CONSERVANCY 4, <http://www.nature.org/ourinitiatives/urgentissues/global-warming-climate-change/explore/saving-forests-with-brazils-ranchers-and-farmers.xml>.

¹⁴⁵ *Combating Deforestation and Climate Change in Brazil's Amazon*, THE NATURE CONSERVANCY 3, <http://www.nature.org/ourinitiatives/urgentissues/global-warming-climate-change/how-we-work/brazil-redd-fact-sheet-final.pdf>.

¹⁴⁶ COSTENBADER, *supra* note 138, at 105.

¹⁴⁷ David N. Cassuto and Rômulo S. R. Sampaio, *The Importance of Information and Participation Principles in Environmental Law in Brazil, the United States and Beyond*, 22 *Review of European Community & International Environmental Law*, 68 (2013), <http://ssrn.com/abstract=2246986>.

¹⁴⁸ *Id.* at 69.

¹⁴⁹ *Id.* at 70.

communities to be affected by REDD+. In that regard, success will be achieved if the federal and state governments acknowledge this diversity and address the needs of local communities.¹⁵⁰ Benefits should be shared with stakeholders, while land, forest, and carbon ownership rights need to be supported by measures allowing stakeholders to benefit from the systems.¹⁵¹ REDD+ projects should be designed in a way that is equitable for indigenous, poor, and forest-dwelling communities,¹⁵² making it essential to ensure that carbon payments are accessed by local communities and farmers involved in the projects, and that this is not impeded by corrupt governance practices.¹⁵³ It is vital for REDD+ projects' efficacy that indigenous communities are entitled to the income generated by their activities.¹⁵⁴ The ongoing high level of corruption remains a major obstacle for REDD+ consolidation in Brazil.¹⁵⁵

Implementation of the CDM and, especially, REDD+ in Brazil without dealing with the above issues would cause high risk of "leakage": when efforts to control emissions in one location cause emissions in another location that is not subject to the policy and where emissions are not accounted for.¹⁵⁶ The Amazon Rainforest is particularly sensitive to leakage because of its vast dimensions and remoteness, which undermine monitoring activities.¹⁵⁷

Finally, a great challenge to be addressed is to increase financial support to REDD+ projects in Brazil. Donor countries are still insecure regarding assurances by the Government as to the proper destination of their resources. For instance, there are cases in which financial

¹⁵⁰ COSTENBADER, *supra* note 138 at 137.

¹⁵¹ *Id.* at 107.

¹⁵² MAGUIRE, *supra* note 114, at 165.

¹⁵³ *Id.*

¹⁵⁴ COSTENBADER, *supra* note 138, at 132.

¹⁵⁵ *Id.*

¹⁵⁶ JOYEETA GUPTA ET AL., *CLIMATE CHANGE, FORESTS AND REDD – LESSONS FOR INSTITUTIONAL DESIGN* 219 (Routledge, 2013).

¹⁵⁷ COSTENBADER, *supra* note 138, at 136.

resources have been donated to regions that are being already protected, instead of reaching unprotected areas. To prevent such cases, the ideal solution would be to provide assurances that financial resources are being properly applied by means of, for example, special guardians that only make the resources available for the right stewardship purposes.

In any event, CDM and REDD+ are efficient mechanisms to tackle illegal logging in Brazil, though of low priority at present. They should be regarded as options for long-term solutions due to all the above deficiencies of the national timber market that still need to be overcome to enable their effective implementation in Brazil. In this regard, the other systems recommended in this work should be applied to enhance the feasibility of CDM and REDD+ for the national timber market.

- **Reform of Brazil's Zero Deforestation Policy**

As the UNFCCC is an international convention with near-universal global membership, it is challenging for member states to reach agreement, making it even more difficult to agree on binding obligations: tangible outcomes are usually limited to commitments to use best efforts to reduce national GHGs emissions. Nevertheless, at the 21st Conference of the Parties (COP 21) held in Paris in 2015, significant improvements were agreed. For the first time in the UNFCCC's history, a rarely seen strong engagement of the international community occurred.¹⁵⁸ The Paris Agreement, which will be in force by 2020, strengthens the parties' commitment to hold the increase of the world's average temperature to well below 2°C above

¹⁵⁸ *Acordo do clima na COP-21 é sucesso ainda a ser confirmado* [Climate agreement at COP 21 is a success to be confirmed], <http://noticias.uol.com.br/internacional/ultimas-noticias/le-monde/2015/12/29/cop21-um-sucesso-ainda-a-ser-confirmado.htm> (Dec. 29, 2015).

pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.¹⁵⁹ It also determined that developed country parties shall make available US\$100 billion annually by 2020 to support the other parties to face climate change effects.¹⁶⁰

Brazil's Intended Nationally Determined Contribution (INDC)¹⁶¹ was presented in New York City in September 2015 for COP 21. Its main goal is the reduction of GHGs emissions by 37% between 2005 and 2025, and by 43% until 2030.¹⁶² It also includes the so-called Zero Deforestation Policy, through which the Federal Government committed itself to end illegal deforestation in the Amazon by 2030 and to restore 12 million ha of forests by the same year.¹⁶³

At first glance, Brazil's INDC seems a quite ambitious proposal. Indeed, total elimination of illegal deforestation in the Amazon is a hard goal to achieve, but not impossible if all tackling mechanisms are correctly applied. Nevertheless, the proposed timeline in which the goals should be accomplished is not at all ambitious. In fact, Brazil's Public Administration previously made a similar commitment back in 2008, which has not yet been achieved. The National Plan on Climate Change, presented in that year, had the goal of completely eliminating the net loss of forested areas countrywide by 2015.¹⁶⁴ To achieve this,

¹⁵⁹ Adoption of the Paris Agreement, Dec. 12, 2015, U.N. Doc. FCCC/CP/2015/L.9/Rev.1., 115, Annex - Paris Agreement, art. 2, 1(a).

¹⁶⁰ Adoption of the Paris Agreement, Dec. 12, 2015, U.N. Doc. FCCC/CP/2015/L.9/Rev.1., 115.

¹⁶¹ INDCs are outlines published by the parties to the UNFCCC, where they describe the post-2020 climate actions they intend to take under a new international agreement. See *What is an INCD?*, World Resources Institute, <http://www.wri.org/indc-definition>.

¹⁶² FEDERATIVE REPUBLIC OF BRAZIL, *Intended Nationally Determined Contribution towards achieving the objective of the United Nations Framework Convention on Climate Change 1*, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Brazil/1/BRAZIL%20iNDC%20english%20FINAL.pdf>.

¹⁶³ FEDERATIVE REPUBLIC OF BRAZIL, *Additional Information on the INDC for clarification purposes only 3*, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Brazil/1/BRAZIL%20iNDC%20english%20FINAL.pdf>.

¹⁶⁴ *Plano Nacional Sobre Mudança do Clima – PNMC – Brasil [Brazilian National Plan on Climate Change]* 27, http://www.mma.gov.br/estruturas/smcq_climaticas/_arquivos/plano_nacional_mudanca_clima.pdf.

it proposed the gradual reduction of levels of illegal deforestation to zero,¹⁶⁵ and to double Brazil's planted forests from 5.5 million ha to 11 million ha by 2020, including 2 million native species.¹⁶⁶ Therefore, Brazil's INDC commitments for 2030 regarding illegal deforestation are close to those goals set in 2008 by the National Plan on Climate Change to be accomplished by 2020: this represents a setback to the country's efforts to solve this critical problem.

Hence, although Brazil's INDC proposal to achieve zero illegal deforestation in the Amazon is a desirable and attainable goal, the proposed period for its achievement is not sufficiently ambitious. The Government already acknowledged that the goal is achievable before 2030 when it determined a shorter period in the National Plan on Climate Change. Therefore, it should be accomplished earlier than 2030. Brazil's INDC should be reformed to present a stronger commitment to eliminating illegal deforestation, as ending illegal activities in the forestry sector should be treated as an urgent matter. It is not acceptable that 14 more years have to pass before full compliance with the law is required.

As discussed in the present work, the Government should implement a multi-faceted strategy to totally eliminate illegal logging, incorporating several different systems especially designed to address each of its causes. Illegal logging is one of the main causes of illegal deforestation in the Amazon.¹⁶⁷ Therefore, the tools recommended in this work to tackle illegal logging and its associated trade should be strongly considered in Brazil's Zero Deforestation Policy to successfully eliminate illegal deforestation in the Amazon.

While Brazil's INDC should continue to be ambitious, it should also be more realistic

¹⁶⁵ *Plano Nacional*, *supra* note 164, at 11.

¹⁶⁶ *Id.* at 12.

¹⁶⁷ See chapter 3, section d, ii, on that matter.

on how the proposed goals will be achieved. For instance, it is not clear in the INDC whether reforestation will be of native or exotic species, such as eucalyptus. This is relevant because reforestation with mainly exotic species would undermine biodiversity.¹⁶⁸ In any event, even if the proposed area is reforested, this represents only half of the illegally deforested private areas that need to be reforested, according to parameters specified in the Forest Code.¹⁶⁹ Such numbers should be more ambitious. Therefore, Brazil's INDC should reflect the country's commitment to improve its forestry policies to achieve its goals effectively and in a reasonable time, considering the urgency of controlling climate change.

Aside from the CDM and REDD+ projects and Brazil's Zero Deforestation Policy, another mechanism under the International Forest Regime that should be accumulated with others suggested in this work is the Amazon Cooperation Treaty Organization. It should be used as an instrument to encourage and request its parties to adopt measures to locally tackle illegal logging and associated trade, as further discussed below.

¹⁶⁸ *Floresta Sem Fim*, *supra* note 136.

¹⁶⁹ *ONGs elogiam metas de Dilma para clima, mas cobram Brasil a ir além [NGOs compliment Dilma's climate goals, but request Brazil to go further]*, BBC, http://www.bbc.com/portuguese/noticias/2015/09/150927_repercussao_clima_jf_ab (Sept., 28, 2015).

3. Use of the Amazon Cooperation Treaty Organization to encourage its parties to implement measures against illegal logging and associated trade

Among the systems provided by the International Forest Regime, international cooperation is a solution for enforcement of environmental norms.¹⁷⁰ The Amazon Cooperation Treaty (ACT)¹⁷¹ is a tool for international cooperation on noneconomic matters, establishing environmental preservation, conservation, and rational utilization of natural resources among its main goals. It can be a useful instrument to encourage and request its parties to implement measures to increase the effectiveness of combatting illegal logging and associated trade.

In this sense, the Amazon Cooperation Treaty Organization (ACTO) should treat illegal logging and trade in illegal timber more emphatically: it should encourage parties to compromise in adopting national policies and legislative reforms to decrease levels of illegal logging and to combat trade in illegal timber and byproducts. It should also promote the improvement of command and control systems and foster economic instruments, such as forest certification. Moreover, as previously advocated in this chapter, the ACT may also be used as a vehicle to establish trade of illegal timber as a legally binding offense in international law, to be incorporated in parties' domestic legal systems.

Although currently little used, ACTO can put such suggestions into practice by stimulating and enabling the enactment of bilateral and multilateral agreements between its

¹⁷⁰ Roberto dos Santos Vieira, *Brazilian Environmental Law Relating to Amazonia*, MICHAEL BOTHE ET AL., *AMAZONIA AND SIBERIA: LEGAL ASPECTS OF THE PRESERVATION OF THE ENVIRONMENT AND DEVELOPMENT IN THE LAST OPEN SPACES*, ROBERTO DOS SANTOS VIEIRA 129 (Graham & Trotman, 1993).

¹⁷¹ See more on that matter at chapter 4, section d, iii.

parties. They could be encouraged and eventually achieved by the promotion of forums for parties to reach a consensus on the matters to be agreed, such as it occurs at the UN Forum on Forests. It should be done with respect to Article 18¹⁷² of ACT, always addressing only matters of common interests, without undermining the parties' national sovereignty neither domestic affairs. For example, parties could commit under such agreements to trade only legally sourced timber between them. Such a commitment would be assured by obligations of full disclosure and transparency in the entire production chain of the exported product, and agreements could be structured similarly to the EU FLEGT Action Plan's VPAs.

The suggested approaches are consistent with the principles and goals of the ACT. They do not violate the principle of national sovereignty over natural resources, present in Article 4. It directly aligns with the main purposes of sustainable development of the Amazonian territories. It achieves environmental preservation and conservation of natural resources,¹⁷³ the rationally planned utilization of flora and fauna so as to maintain the ecological balance and preservation of species.¹⁷⁴ Moreover, the commitment of parties before each other is an extra incentive to duly implement the agreed policies, and the principle of cooperation is also an encouragement for the effective implementation of new policies and reforms.

Using ACTO as a vehicle to combat illegal logging has some advantages compared to conventional domestic instruments, since the risks of corruption and lobbyism are lower. Besides, its scope as a regional international treaty facilitates parties reaching agreement,

¹⁷² The Amazon Cooperation Treaty (“Article 18. Nothing contained in this Treaty shall in any way limit the rights of the Contracting Parties to conclude bilateral or multilateral agreements on specific or generic matters, provided that these are not contrary to the achievement of the common aims for cooperation in the Amazonian region stated in this instrument.”)

¹⁷³ The Amazon Cooperation Treaty, art. 1.

¹⁷⁴ The Amazon Cooperation Treaty, art. 7.

which is more difficult to achieve under global international treaties. It is an organization with diplomatic history, settled institutional bodies, and a permanent structure and financial system. However, the implementation of the proposed suggestions requires time, additional resources, and strong political support.¹⁷⁵

Brazil, as the ACTO's leader, performs a significant role in growing ACTO's presence in the forestry sector, and it should take advantage of this position to encourage other parties to engage in cooperation strategies. If it properly exercised its leadership role, it would have the power to influence the Organization's decisions. In order to do so, Brazil needs to act as an example for the other members in the fight against illegal logging because all the Amazonian countries face the same problems and challenges.

c. Necessary improvements in Brazil's existing illegal logging and associated trade control mechanisms

During the analysis of the Amazon timber industry, its deficiencies and most commonly practiced illegalities, several instruments already in use in the Amazon were noted. Some were found to be useful and well applied,¹⁷⁶ while others have promising effects in tackling illegal logging and associated trade but have been poorly implemented. For this latter category,

¹⁷⁵ BEATRIZ GARCIA, *THE AMAZON FROM AN INTERNATIONAL LAW PERSPECTIVE* 121 (2011).

¹⁷⁶ Environmental Law brings some innovative command and control instruments related to forestry sector, what has been developed over the last decades, as discussed in chapter 2. The promulgation of the current Federal Constitution was the momentum when Brazil had finally assumed a more clear interest in developing the national environmental legislation in favor of natural resources protection and conservation, thus causing a direct impact in the way the Amazon region is legally treated. In this regard, Roberto dos Santos Vieira asserts that "deforestation in the Amazon, in spite of all subsisting difficulties, has been defied by the federal government with a rigor never recorded before enactment of those Acts." *See* Vieira, *supra* note 170, at 107.

improvement and fostering of such tools might be necessary, which will be discussed in the following pages.

i. Full implementation of sustainable development and resilience principles

The Federal Constitution consolidated the principle of sustainable development as the basis of domestic environmental law, although sustainable development has been considered in the Amazon since long before the Constitution's enactment.¹⁷⁷ As observed by articles in the magazine *Acta Amazonica*, concerns were already being voiced by ecologists, scholars, and specialists during the 1970s regarding the degradation of the Amazonian Rainforest due to its deforestation. Studies from that time clearly advocate the concept of sustainable development as the solution to the problem, though without using it expressly and without any intimacy with the term.¹⁷⁸ The entire environmental regulatory system, including, for example, the National Environmental Policy, the Federal Forest Code, and other infra-constitutional laws have incorporated the principle. This feature distinguishes Brazilian Environmental Law as one of the most sophisticated and pro-environment legal systems worldwide.

However, analysis of the current aspects of timber industry activities in the Amazon demonstrates that the principle of sustainable development has not been fully applied in practice. Economic interests continue to prevail over the importance of limiting utilization of natural resources to ensure its use by future generations is not compromised. This is illustrated by the fact that illegally produced timber is considerably cheaper than legally sourced and

¹⁷⁷ See more on that matter at chapter 2, section c, ii.

¹⁷⁸ Luís Mauro Sampaio Magalhães, *Exploração florestal na Amazônia [Forest utilization in the Amazon]*, Estratégias para a política florestal na Amazônia brasileira [Strategies for a forest policy in the Brazilian Amazon], 4 ACTA AMAZONICA 142 (1979).

manufactured products. Further, consumer lack interest in the legality of forest products' origin, and primary concerns are still focused on the products' price and quality. This reality has resulted in the uncontrolled use of natural resources, without consideration of the environmental degradation caused and the risk of future scarcity of raw materials.¹⁷⁹

Furthermore, the Government has itself failed to ensure full implementation of the sustainable development principle. Corrupt environmental agencies and officers, deficient monitoring and law enforcement, and lack of investments in agencies' infrastructure and know-how for the effective execution of police power are just some of the various aspects identified in this research.¹⁸⁰ This confirms that sustainable development, despite being a constitutional principle, has not been fully recognized in the activities of timber industry actors in the Amazon region.

Additionally to the principle of sustainable development, both the forestry sector and the Government should respect the resilience principle when addressing utilization of timber resources. The principle concerns nature's capacity to cope with changes provoked by human actions and, in spite of them, to continue to develop.¹⁸¹ Resilience also acknowledges that humanity and the environment are strongly coupled and should be conceived as one social-ecological system, since there are no ecosystems that are not shaped by people and no people without the need for ecosystems and natural resources.¹⁸² Thus, timber industry activities should be required to accord with the understanding that humans and nature interact, adapt, and impact on each other amid change.¹⁸³ This is why nature should be exploited sustainably,

¹⁷⁹ See more on that matter at chapter 3, section g.

¹⁸⁰ See more on that matter at chapter 3, sections h and i.

¹⁸¹ STOCKHOLM RESILIENCE CENTRE, <http://www.stockholmresilience.org/> (Dec. 20, 2015).

¹⁸² *Id.*

¹⁸³ *Id.*

because humans are part of the natural world and what harms the environment will consequently strike humanity.

In Brazil's forestry sector, timber extraction in areas supposed to be preserved, negligence in implementing sustainable forest management, and use of techniques that cause negative environmental impacts are some examples of the lack of connection between the sector's actors and the ecosystem. In this regard, technical studies have asserted that such unrestrained exploitation of natural resources may cause irreversible damages upon the Amazonian biome.¹⁸⁴ Therefore, all timber industry operators and stakeholders should respect both sustainable development and resilience principles. This requires prioritizing sustainable measures along the production chain, proper enforcement of environmental law, and shifting consumer preference to legally and sustainably sourced timber products, along with the other recommendations made in this work.

ii. Regularization of land tenure – More efficient implementation of existing public programs

The complete regularization of land tenure in the Amazon region would have an immediate positive impact on the conservation of forest areas, since there would be no need to suppress vegetation to demonstrate possession over land, as it has been historically done. Violent disputes over land would drastically decrease. Furthermore, regular occupation

¹⁸⁴ See more on that matter at chapter 3, section f, i.

encourages farmers and loggers to apply sustainable forest management measures upon the land, among other benefits previously highlighted.¹⁸⁵

Although the Federal and State Governments have launched policies to accelerate the regularization of land tenure in the Amazon – such as the Legal Land Program and the CAR – illegal occupation of rural areas remains one of the main causes of illegal logging. As previously explored in this work, such policies have been poorly implemented, as *grileiros*, local communities, large companies, and farmers still irregularly occupy considerable portions of public land, thereby contributing to illegal deforestation.¹⁸⁶ The Government's lack of control over public lands in the Amazon is worrying.¹⁸⁷

To regularize land tenure completely, several initiatives should be taken simultaneously, starting with the effective implementation of the existing ones. The Legal Land Program is a promising instrument to tackle illegal logging, although it needs to be effectively implemented in order to achieve its pre-established goals.¹⁸⁸ In reality, the Government is aware of the gravity of the problem and the improvements that need to be made to regularize land tenure.¹⁸⁹ However, it argues the lack of financial resources to implement such measures, although according to the think tank Imazon there are sufficient resources available. The Government is donating or selling public lands for lower than market price, resulting in losses to the public purse and land ownership being transferred to illegal settlers. To avoid such kind of losses, the competent public body should verify, before

¹⁸⁵ See chapter 2, section j, ii, on the benefits of land tenure regularization.

¹⁸⁶ See more on that matter at chapter 2, section j, and chapter 3, section j.

¹⁸⁷ Nusdeo, *supra* note 14, at 12.

¹⁸⁸ See chapter 2, section j, ii, 3 on the structure and goals of the Legal Land Program.

¹⁸⁹ Nusdeo, *supra* note 14, at 12.

conveyancing, whether land was legally occupied by the person who will purchase the land, and establish the true market value.¹⁹⁰

Additionally, Imazon observes that, if the Federal Government sells 8% of its federal lands in the Amazon (estimated to comprise 38 million ha) under the terms of Legal Land Program by an amount lower than the market value, it will accumulate sufficient funds to regularize land tenure in the entire Amazon region.¹⁹¹ Therefore, the Government has a considerable patrimony, but it needs to improve its management approaches. Another example of the Government's failure to manage finances in this field concerns environmental fines. Between 2009 and 2013, fines to the value of R\$15.4 billion (US\$3.85 billion) were levied; however, the Federal Government collected only 1.8% of this total value. Had it collected only 11%, that would have generated enough resources to regularize land tenure in the Amazon.¹⁹² These strategies should be more effectively pursued to regularize land tenure in the region.

With regard to the CAR, although it has been a useful tool in the regularization of land tenure, not just in the Amazon but also countrywide, the National Congress is currently exploring the possibility of postponing the deadline for rural landowners to register their properties on the system to 2018 (the current deadline is May 5, 2016).¹⁹³ This delay would undermine the executive and legislative powers' credibility before society, other nations, and international investors. It reflects their lack of commitment to enforce the law by postponing the predetermined deadline for compliance.¹⁹⁴

¹⁹⁰ Interview with Elis Araújo, Lawyer and Legal Researcher at Imazon, in Belém, Brazil (Jan., 2015).

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *Floresta Sem Fim*, *supra* note 136.

¹⁹⁴ *Id.*

For a successful regularization of land tenure in the Amazon, it is fundamental to take into consideration the social effects of applying the law to define the legitimate owners of the lands. This is because irregular land occupation may be the only option for many local families that have no choice for survival other than taking possession of a tract of land covered by native vegetation, on which they can subsist.¹⁹⁵ Therefore, there must be identification and registration of families living in areas owned by the Government, providing them with access to public policies and social benefits. Simultaneously, they must be taught the importance of preserving the environment and the legality of their economic activities must be supervised, thus, avoiding irregular occupation and illegal activities.¹⁹⁶

Additionally, the transformation of non-occupied public lands into conservation areas protected by law – to avoid illegal occupation by *grileiros* and *posseiros*¹⁹⁷ – monitoring of land occupation, and eradication of illegal schemes, are essential measures to tackle irregular occupation and consequential illegal deforestation.¹⁹⁸ There should also be a more efficient monitoring of activities held in rural settlements by INCRA and the competent environmental agency, even after their regularization, due to the high levels of illegal logging in these areas.

Overall, there is an urgent need for the Federal Government to demonstrate willingness to improve and accelerate the public land tenure regularization programs, thereby confirming ownership of the entire Amazon Rainforest. It should also make better efforts to conclude the mapping of the region. Furthermore, INCRA, as the federal public body responsible for land

¹⁹⁵ Fearnside, *supra* note 63, at 125.

¹⁹⁶ Videotape: *Amazônia – A Última Fronteira* [Amazon – the Last Frontier] (MPC & Associados 2011).

¹⁹⁷ SÉRGIO ADEODATO, *AMAZÔNIA, A FLORESTA ASSASSINADA: FALTA MUITO POUCO PARA MATÁ-LA DE VEZ* [AMAZON, THE MURDERED FOREST: IT WILL TAKE JUST A LITTLE BIT TO KILL IT ONCE FOR ALL] 47 (Mostarda, 2006).

¹⁹⁸ *Id.* at 42.

tenure regularization, should have its infrastructure improved and its internal corruption eliminated.

iii. Fostering of mechanisms for management of public forests in the Amazon

Management of public forests, as governed by Federal Law 11.284/2006, is a beneficial tool for fostering sustainable forest management in the Amazon and, consequently, for tackling illegal logging.¹⁹⁹ The three modalities offered by this law – direct management of National, State, and Municipal Forests by the Public Administration, the management of public forests by local communities, and the concession of public forests to private parties – are all useful tools in encouraging legality in the timber sector,²⁰⁰ especially in the Amazonian territory, which mostly comprises public forests.

The direct management of National, State, and Municipal Forests by the Public Administration results in the creation of Conservation Units of Sustainable Use, in which only the sustainable use of natural resources is allowed.²⁰¹ Therefore, environmental conservation is a priority, and unsustainable logging is unacceptable. The management of public forests by local communities allows the most significant portion of loggers from the Amazon region to legalize their forest activities in public lands and also to regularize their land tenure. Concerning the concession of public forests, which is the main instrument introduced by this law, it contributes in several ways to the fight against illegal logging. It restricts illegal activities and those harmful to the environment in public forests by implementing sustainable

¹⁹⁹ See more on that matter at chapter 2, section e.

²⁰⁰ Interview with Hugo Américo Schaedler, *supra* note 13.

²⁰¹ See chapter 2, section d, iii, 1.

forest management. It internalizes the environmental impacts through the “forest price” paid by the grantee; moreover, it gives purpose and social and environmental functions to *terras devolutas*, eliminating inefficacy and corruption associated with logging activities in unoccupied public lands.

The concession of public forests is also beneficial to tackle illegal logging as it requires public forest utilization to be licensed, thereby forcing compliance with the law, taking affected stakeholders into consideration. It also requires the maintenance of an absolute reserve that will not be subject to any kind of utilization. When correctly applied, the forest concession also provides an economic incentive for sustainable forest management by offering a discount bonus on the “forest price” where a grantee’s socio-environmental performance is outstanding. Furthermore, they are usually negotiated for long periods, which is beneficial to environmental conservation by avoiding anticipated logging that undermines forest regeneration. Furthermore, access to the public forest concessions is open to big and small businesses, avoiding economic concentration and enabling large companies to generate around 140,000 direct job positions.²⁰²

Notwithstanding their several benefits, there are just a few projects of management of public forest in the Amazon region.²⁰³ Therefore, the Government should strongly encourage such mechanisms to promote sustainable forest management and appreciation of the standing forest, and consequently to combat illegal logging and associated trade in the Amazon. This would give a determined purpose to unoccupied public areas, not harmful to the environment and economically beneficial to local societies.²⁰⁴

²⁰² Interview with Hugo Américo Schaedler, *supra* note 13.

²⁰³ See chapter 3, section c, iii.

²⁰⁴ Interview with Elis Araújo, *supra* note 190.

iv. Wide adoption of sustainable forest management by operators in the Amazonian forestry sector, and its incentivization by the Government as an instrument to appreciate the standing forest

1. Appreciation of the standing forest

All the mechanisms this work explores and proposes as means to tackle illegal logging are based on a common principal purpose: appreciation of the so-called “standing forest.” The effort of this study is to encourage the use of tropical timber that bears guarantees of origin and of sustainable production, aiming to keep jobs and income in the forest, in addition to encouraging good practices and minimizing the risk of predatory activities.²⁰⁵ Appreciation of the standing forest can be understood as the development of an economic forest activity, able to generate profit from the area without the need to exploit natural resources unsustainably. It involves activities such as environmental services, sustainable forest management, and carbon sequestration.²⁰⁶ It means to inhabit a living forest.²⁰⁷

Appreciation of standing forests can be represented by several measures:

- the regeneration of damaged lands with the plantation of natural vegetation;
- the increase of timber and agricultural productivity;
- soil conservation; and

²⁰⁵ ADEODATO ET AL., *supra* note 50, at 101.

²⁰⁶ Interview with Elis Araújo, *supra* note 190.

²⁰⁷ Videotape: Amazônia – A Última Fronteira, *supra* note 196.

- the plantation of trees with ecological characteristics that are economically lucrative.²⁰⁸

By appreciating the standing forests, preserved areas are expanded and the pressure for utilization of native forests for agricultural purposes, such as annual crops and intensive timber exploitation, is reduced, thereby lessening the negative impact on the environment. Moreover, making sustainable use of native forests more economically lucrative discourages illegal logging. This is the only way to successfully develop an economy in the rainforest, without bringing misery for local people as victims of uncontrolled and unsustainable economic growth.²⁰⁹

However, the concept of a standing forest economy is far from being fully consolidated in the Amazon region. Unsustainable projects that cause deforestation of vast areas, such as the *Madeira-Mamoré* Railroad and the *Transamazônica* Highway, continue to be developed, and the size of the areas in which native vegetation is illegally cleared for crops and pasture is still considerably expansive.²¹⁰ The technique of sustainable forest management should be widely adopted by operators in the Amazonian forestry sector and encouraged by the Government as an instrument to appreciate the standing forest.

2. Sustainable forest management as an instrument to appreciate the standing forest

Operators in the Amazonian timber sector should apply ecological, environmental, social, and cultural values, as well as trade and development goals, to put into practice the

²⁰⁸ Videotape: *Amazônia - Heranças de uma Utopia* [Amazon – Heritage of Utopia] (MPC & Associados 2003).

²⁰⁹ *Id.*

²¹⁰ See more on that matter at chapter 3, section d, i.

appreciation of the standing forest.²¹¹ Sustainable forest management considers all such factors and all rights and interests over it. Therefore, it is a viable instrument to put appreciation of standing forests into practice. As demonstrated in this work,²¹² sustainable forest management is the most feasible utilization method of forest resources – taking into account the impacts caused to the environment – due to its maximum similarity with the natural ecosystem’s regeneration and the possibility of maintaining self-sustainable production in the long-term.²¹³ It decreases the impacts on forests, helps to maintain genetic stock, and allows for future harvesting.²¹⁴ Moreover, it reduces the pressures from illicit incursions into indigenous territories, national parks, ecological reserves, and other conservation areas.²¹⁵

Sustainable forest management also creates abundant opportunities in the carbon market. According to research published by Imazon, forest management cuts greenhouse gas emissions by 36%, since the harvest of timber from mature forests opens up space for the development of younger trees, which absorb carbon and release oxygen to grow.²¹⁶ The National Forum on Forest Activities indicates that one ton of wood contains 1.4 tons of CO₂. Down the supply chain, carbon remains locked into the products made with wood from adult trees: if these products are employed in the construction of durable buildings, the efficiency of carbon capture is doubled.²¹⁷

When absorbing and implementing values and principles of sustainable forest management, local communities dependent on illegal logging to survive begin to understand

²¹¹ MAGUIRE, *supra* note 114, at 72.

²¹² See more on that matter at chapter 3, section c, i.

²¹³ Judy McKean Rankin, Manejo florestal ecológico [Ecological forest management], Estratégias para a política florestal na Amazônia brasileira [Strategies for a forest policy in the Brazilian Amazon], 4 ACTA AMAZONICA 117 (1979).

²¹⁴ ADEODATO ET AL., *supra* note 50, at 36.

²¹⁵ *Id.*

²¹⁶ *Id.* at 48.

²¹⁷ *Id.*

that they provide a service to the environment by preserving it and sustainably exploiting its natural resources. Thus, they comprehend they provide a service to the entire world.²¹⁸

For the reasons detailed above, sustainable forest management should be widely adopted among operators in the entire timber supply chain in the Amazon, as a mechanism to appreciate the standing forest and, thus, discourage illegal logging and associated trade. The Forest Code already requires Sustainable Forest Management Plans to be duly approved by the competent environmental authorities in several situations. For example, it requires plans for utilization of native forests by private parties, concession of public forests, and utilization of areas of Legal Reserve.²¹⁹ Nevertheless, the legal requirement is not sufficient to ensure sustainable forest management's wide execution. Utilization of native forests without a proper plan, with violation of the limits of an existing plan, or with fraudulent plans, remains commonplace in the Amazon region.²²⁰ Therefore, the Public Administration should better enforce the law and monitor logging in the Amazon, and it should also incentivize the timber sector to replace illegal logging with sustainable forest management. The instruments recommended along this work serve these purposes.

A successful example of appreciation of the standing forest and implementation of sustainable forest management is the forestry sector of the Amazonian State of Acre. During the 2000s, the State adopted the forest's economy as its cultural identity and as a driver for development.²²¹ With money from the Pilot Program to Conserve the Brazilian Rainforest (PPG7) – an initiative funded by rich countries – timber companies invested for two years in

²¹⁸ Videotape: *Amazônia – A Última Fronteira*, *supra* note 196.

²¹⁹ See more on that matter at chapter 2, sections d and e.

²²⁰ See more on that matter at chapter 3, section e.

²²¹ ADEODATO ET AL., *supra* note 50, at 27.

training people, upgrading their businesses, and disseminating forest management practices.²²² Timber companies also received financial support from the Government and NGOs to stop deforestation and shift to sustainable wood production. As a result of the move towards forest management, as well as the increased demand for sustainable timber, production in the State of Acre doubled from 170,000 m³ in 2008 to 350,000 m³ of logs in 2010.²²³

Acre's model is based on logging by private parties, with the State responsible for auctioning the timber to sawmills and industry for processing. Families that live in the forest receive part of the auctions' revenues and are allowed to sell the logs they harvest in their parcels, in addition to receiving training in forest management. Harvesting is only allowed during the dry months (July to December) and generates between R\$ 6,000.00 (US\$1,500.00) and R\$ 8,000.00 (US\$2,000.00) for these families.²²⁴ Furthermore, the system has stimulated communities to seek certification by the FSC and a fair trade label, which attests the product's origin and ensures the producers are paid 10% more than their conventional competitors.²²⁵ Acre's model should be used as a benchmark by the Public Administration to foster sustainable forest management in the other Amazonian states and, consequently, to encourage the appreciation of the standing forest.

²²² ADEODATO ET AL., *supra* note 50, at 28.

²²³ *Id.* at 29.

²²⁴ *Id.* at 30.

²²⁵ *Id.* at 34.

v. **Improving the Public Administration's performance on monitoring and law enforcement**

1. Increasing environmental agencies' financial resources – investment in infrastructure, staff, and capacity building – and strengthening and modernizing the judiciary

Illegal logging and associated trade are directly related to the Public Administration's deficient performance in monitoring and enforcing the law governing the Amazonian timber industry, in both the administrative and the judicial branches of Government. The flaws of the executive power – federal, state, and municipal environmental public agencies – are directly connected with poor infrastructure and low numbers of and non-qualified staff. There are also corrupt bodies and officers among agencies, lack of technological innovation, and low remuneration of staff that discourages them and creates an environment conducive to corruption.²²⁶ To improve the environmental agencies' performance in executing their functions in the timber sector, there should be the implementation of public policies that increase and direct the necessary financial resources to eliminate the said deficiencies and improve the effectiveness of monitoring and law enforcement.

Furthermore, regarding both the administrative and judicial systems, there is an urgent need to strengthen and modernize them and to accelerate their procedures, denying violators the opportunity to dissipate their patrimony and avoid fines, indemnification, or attachment. The final goal must be to exterminate impunity and recidivism prevailing under both systems,

²²⁶ See more on that matter at chapter 3, section h, ii.

and to increase the levels of fine collection. These are presently low due to corruption, high mortality risk to officers when charging fines, high insolvency levels, and difficulty finding the real culprits.²²⁷

There should be investment in capacity building to strengthen public environmental agencies and the courts. A highly qualified staff is certainly able to work more accurately and efficiently. This would also repeal corruption and address the lack of accountability in the judiciary, police, and military systems. Capacity building is necessary to equip agencies to deal with environmental offenses, monitoring activities that may harm the environment, raising awareness of environmental law, and to gain public and political support to tackle the entrenched corruption which is often associated beneath illegal logging.²²⁸

As for the judiciary, one of the approaches to be adopted may be incentivizing state judicial institutes and associations to hold courses for judges to gain qualification in forestry matters. The challenge would be training them to implement environmental law in a holistic way, considering other subjects besides law, since environmental matters are usually linked with other social and economic aspects. The same approach could be adopted at the administrative level, to enhance the capability of staff from municipal, state, and federal environmental agencies to enforce the law more efficiently.

²²⁷ See chapter 3, section i, on the deficiencies of law enforcement by the administrative and judicial systems.

²²⁸ Commission of the European Communities, *supra* note 6, at 7.

2. Enhancing political will to eliminate illegal logging and its associated trade: Government's participation in international events, and pressure from non-governmental organizations

The accomplishment of the above suggestions depends on indispensable political will to confront the complex multitude of problems. This is because it involves questions related to institutional reinforcement, the overall organization of society, and improvements in both general educational levels and generalized perceptions about environmental problems.²²⁹ However, the Public Administration has exhibited little interest to date in tackling illegal logging and associated trade. This is confirmed by the recent cancelation of investments in the field and the concentration of the Government's attention on corruption scandals and the economic crisis in Brazil over the past few years. Moreover, it is traditional in most states and municipalities, where there is not a strong and prominent industrial and agricultural private sector, to expect all initiatives to come from the central power. In poorer states, including those in the Amazon region, governments usually depend on decisions taken by bureaucrats of the federal administration.²³⁰ Therefore, political will has an even heavier influence in eliminating illegal logging in the Amazon region.

One of the strategies to enhance political will to endeavor to reduce illegal logging levels in the Amazon region is the intensification of Brazil's participation in international events for the reunion of nations' representatives, such as conventions, meetings, and symposiums. The Brazilian delegation would be composed of national politicians, representing the country's will and ability to participate in international settlements regarding

²²⁹ Vieira, *supra* note 170, at 128.

²³⁰ *Id.* at 126.

forestry issues. In this regard, Brazil already engages with some renowned organizations, such as the UNFF, the International Union for Conservation of Nature (IUCN), FAO, and ITTO. The presence of politicians within the country's delegation is strategic, since it will increase these individuals' popularity both internationally and nationally. This will, thereby, stimulate other public figures to engage with the problem and, thus, capture the attention of voters, meaning society. This approach also increases the country's international popularity and involvement with combatting illegal logging and associated trade.

The adequate use of natural resources and the preservation of the environment are two of the requirements established by the Federal Constitution to ensure that the social function of the property is met (Art. 186, II). States should also exercise their planning functions regarding real estate properties in the same manner as the Federal Government, due to the autonomy given to them by the Federal Constitution. The same applies to municipalities that, according to the Federal Constitution, are empowered to promote the control of land use and zoning. If most municipalities and states made use of these powers to prioritize promotion of sustainable use of natural resources in their localities, some positive results could have been seen by now. However, Brazil's territory, especially the Amazonian region, presents an opposite reality, in which most of the municipalities lack the infrastructure, proper capacity building, and willingness to effectively implement the constitutional principles and the applicable environmental norms.

NGOs' pressure on the Public Administration can also provide a strategy to stimulate its willingness to tackle illegal logging. Their support in favor of sustainable practices and linking communities and businesses,²³¹ in addition to their engagement in national forest

²³¹ ADEODATO ET AL., *supra* note 50, at 32.

policy formulation, have steadily become more substantive and influential. This is to the point that bodies of government officials now include several former NGO specialists in forest management and certification.²³²

Regarding the adoption of control mechanisms of illegal logging by State Governments, the State of Pará has demonstrated higher efforts recently. Since 2007, when deforestation reached a peak, the Pará State Government enacted new legal instruments to tackle illegal logging, including, for example, tax incentives and a liability imposition to all supply chain actors for dealing with illegally harvested timber.²³³ Furthermore, the Green Municipalities Program and *TAC da Madeira* are successful mechanisms introduced by the state of Pará. However, state environmental agencies in particular, especially in the state of Pará, are prone to deceive themselves when assuring the public that the problem with illegal logging in the Amazon is already almost entirely solved, when in truth the problem is far from being completely solved.

The Government's negligence in other environmental crises in Brazil should be used as a lesson to avoid future critical situations in the Amazon region. For instance, the recent water crisis in the State of São Paulo is a situation that, a decade ago, most people could not foresee occurring in the near future; even nowadays, many people refuse to believe it is already happening. This scenario is the current one for the Amazon. Most of the world's population refuses to acknowledge the serious risk of the Amazon becoming a savannah within the next century. Due to its huge proportions, people tend to perceive that the Amazonian natural resources are endless. On the contrary, as already noted, 19% of the forest has been

²³² May, *supra* note 97, at 348.

²³³ Interview with Elis Araújo, *supra* note 190.

destroyed.²³⁴ People usually contend that the Amazon will never face such environmental problems as scarcity of water and other natural resources. However, only a few remember the episode when the Amazon River had its greatest drought in 2010.²³⁵ This could easily become a permanent state in the future should forest destruction maintain its current pace. Therefore, the water crisis in São Paulo could be used as an example to avoid the same crisis striking the Amazon. State Governments should communicate and exchange experiences and strategies, stimulating themselves to adopt new behavior when facing environmental problems.

3. Eliminating corruption in public bodies – National community's intolerance to corruption

Together with the augmentation of Brazil's political will to improve monitoring and law enforcement of timber industry activities, there is urgency to eliminate corruption in public administration. Brazil has high levels of corruption in almost every governmental sector. According to the Corruption Perceptions Index 2014 provided by the NGO Transparency International, Brazil is the 69th most corrupt of 175 countries.²³⁶

Currently, the country has been facing one of the most polemic episodes of its history regarding corruption, under which millions of dollars have been embezzled for politicians' personal interests. As detailed in chapter 3, the Amazonian timber sector is not immune to this

²³⁴ *Floresta Sem Fim*, *supra* note 136.

²³⁵ *Rios Solimões e Amazonas têm a maior seca da história* [*Solimões and Amazonas Rivers have the worst drought in history*] <http://noticias.uol.com.br/cotidiano/ultimas-noticias/2010/10/22/rios-solimoes-e-amazonas-tem-maior-seca-da-historia.htm> (Apr. 20, 2016).

²³⁶ *Corruption Perceptions Index 2014*, TRANSPARENCY INTERNATIONAL, <http://www.transparency.org/cpi2014/results> (Dec. 2, 2015).

trend.²³⁷ Corruption of environmental agencies' officers is one of the main causes of illegal logging and associated trade in the region, being usually linked to insecure and uncertain land tenure arrangements, combined with weak governance and monitoring systems.²³⁸ Due to such political, economic, and moral crises, the Government's credibility has been undermined before both the national population and other countries. Therefore, elimination of corruption in the sector would significantly decrease illegalities and would restore citizens' trust in the environmental public agencies and other institutions endowed with the power to enforce environmental law.²³⁹ The current high watermark of people's intolerance to corruption, together with other nations' attention to the matter, is an opportunity for public pressure on the Government to eliminate corrupt officials in all sectors, the forest included.²⁴⁰

Hence, several factors must be improved to make the Public Administration's monitoring and law enforcement work satisfactory, from investment in capacity building to elimination of corrupt schemes. Nevertheless, as it has been emphasized throughout this work, none of the mechanisms herein suggested will successfully tackle illegal logging and associated trade if implemented alone. On the contrary, the strategy proposed by this research consists of multi-faceted approaches.

²³⁷ See chapter 3, section e.

²³⁸ MAGUIRE, *supra* note 114, at 22.

²³⁹ Vieira, *supra* note 170, at 128.

²⁴⁰ Speech of Eduardo Viola, *Seminário Floresta Sem Fim [Seminar Endless Forest]*, FOLHA DE SÃO PAULO (São Paulo, Jul. 2015).

CONCLUSION

The purpose of this work is to provide instruments to achieve the complete elimination of illegal logging and illegal tropical timber trade in the Brazilian Amazon Rainforest as well as to recommend strategies to improve control mechanisms already in use. Both legal and practical aspects of the Amazonian timber industry were analyzed to yield the recommendation of consistent and effective solutions.

The elimination of illegal logging in the Amazon is crucial for the maintenance of the global environment. It allows the growth of local and national economies, and contributes to social well-being and the subsistence of local communities. Today, 19% of the Brazilian Amazon has been destroyed. An estimated 70% of tropical timber from the Rainforest is currently illegally harvested, and around 5,000Km² of native forests are cleared per year. If this constant destruction continues, it will cause irreversible environmental damages and consequences beyond the Amazon.

If illegalities in the timber sector are eradicated through full enforcement of and compliance with the law, the sustainable utilization of its forest resources will prevail. This is because Environmental Law is a comprehensive set of rules and principles that value and promote environmental preservation and the sustainable use of natural resources. The law is based on the principle that native forests must be kept as they were created by nature, making their alternative use possible only in some specific cases well defined by law.

Uncontrolled deforestation in the Amazon is a consequence of historical negligence in regulating and controlling the destruction of native forests for colonization purposes and for

the use of natural resources. Today, although the logging and timber trade are widely regulated by national law, illegalities in the timber sector are so systemic that schemes have taken innumerable forms. These forms include logging in unauthorized areas, falsification of sustainable forest management plans and environmental licenses, fraud of control systems of the origin of forest products, illegal occupation of Specially Protected Areas and public forests.

Illegal logging and its associated trade are consequences of deficiencies in public governance, law enforcement, and monitoring of timber industry activities. There is lack of political will to tackle the issue and to provide financial resources to do so. There are also high levels of corruption in the Public Sector, due to underpayment and lack of technical qualification of governmental officials. The Government also lacks full control over occupation of public and private forested areas, which is worsened by their difficult access in the Amazon and the vastness of areas to be monitored. Unsatisfactory performance of the administrative and judicial systems in enforcing the law is cause to the high levels of recidivism and impunity of law oppressors. Additionally, trade of illegally sourced timber is stimulated by its competitive advantage in comparison with legal timber. Furthermore, the law provisions for administrative and criminal offenses related to the timber supply chain are unclear and imprecise when specifying the environmental good being protected. This results in overlapping offenses and loopholes. Penalties are also rarely proportional to the gravity of the crimes. These factors mean punishment lower than merited by the conduct's gravity and also undermine law enforcement.

Therefore, a multi-faceted approach that overcomes the said deficiencies and that ensures that outcomes will be sustained in the long-term is needed to tackle illegal logging and

illegalities in the timber supply chain. The law must be adjusted to make enforcement more effective. Monitoring must be better executed. Land occupation must be regularized. Corruption should be eliminated from environmental agencies. The judiciary should be more effective. There should be economic incentives for compliance with the law by all operators of the timber supply chain. Above all, the Government should make more significant efforts and investments to implement this approach. The following mechanisms are recommended as solutions for the deficiencies mentioned above:

a. Mechanisms from the US Lacey Act and the EU FLEGT Action Plan:

i. Creation of an environmental felony and an administrative infraction for trade of illegal timber within Brazilian Law

Administrative and criminal offenses for environmental damages caused along timber supply chain are unclear and imprecise about the incriminating conducts and the environmental goods being protected. Their descriptions overlap or leave loopholes in the law. This makes its comprehension and enforcement more difficult, resulting in punishment lower than the merited by the conduct's gravity, impunity and recidivism.

To solve these problems, provisions designating the trade of illegal timber as a criminal offense and an administrative infraction should be incorporated in the law, including a specific definition of the term. The following addition is recommended:

It is an environmental felony/administrative infraction to import, export, transport, sell, receive, acquire, or purchase timber and byproducts from native forests harvested, cut, logged, removed, possessed, transported,

manufactured or sold in violation of any federal, state, or municipal applicable law, regulation or treaty, without prejudice of any other applicable sanction.

Paragraph 1. Timber byproducts are products originated from timber manufacturing.

These recommendations would give the environmental legal system a more comprehensive description of a criminal and an administrative offense, capable of covering any activity related to illegal logging and its associated trade, simplifying its enforcement, and making it more effective.

The offense for trade of illegal timber should be added to Brazilian Law through initiatives of international organizations to which Brazil is a party, such as the Amazon Cooperation Treaty Organization or the United Nations Forum on Forests. This strategy would avoid slow domestic bureaucratic procedures.

**ii. Adjustment of penalties to a level superior to the economic gains from illegal activities and proportional to the gravity of the committed offenses -
Measurement of penalties' levels based on the violator's state of knowledge of the illegality, and on the degree of due care taken to assert the product's legality**

Penalties are disproportional and obsolete in comparison with the profits that the illegal timber market can provide and the illegal conducts' gravity. Therefore, fines should be increased to a level significantly higher than economic gains from illegal activities based on the current market value of timber products and byproducts. Imprisonment and restriction of rights should be proportional to the gravity of committed crimes and infractions based on

consequences to public health and the environment. This would make illegal logging unprofitable and discourage its continuation.

The law should determine the degree of due care taken by the operators to assert products' legality to influence the level of penalty in case of any legal violation. Penalties' levels should also be based on the violator's state of knowledge of the illegality, thus encouraging legal compliance and awareness of the products' origin. This would give timber sector's actors conscience that the more due care they take to avoid illegal timber, the less chances they will have to deal with it in the market, and consequently to be held liable for it.

iii. Encouragement, through governmental economic incentives, of timber industry operators to adopt due care initiatives to verify timber products' legality

All timber supply chain operators should take the degree of care that a reasonably prudent person would exercise under the same or similar circumstances to ensure the legality of the timber's origin. Adoption of due care should be encouraged via governmental economic incentives to those who adopt such measures. These incentives are essential for law compliance because they stimulate the execution of logging and commercial activities in compliance with the law. They increase people's commitment to assure the legality of timber's origin, and raise awareness of the importance to acquire and consume legally sourced products.

iv. Implementation of a fact-based monitoring policy

Environmental agencies should adopt a fact-based policy to monitor and enforce the law on illegal logging and associated trade. Monitoring should be based on actual legality of the timber supply-chain activities, instead of documents solely, as the current national monitoring policy works. This would avoid fraudulent schemes such as forged papers, on which a considerable portion of illegal timber in Brazil is based. Additionally, investments and improvement should be focused on source-tracking systems, risk management, and on-the-ground audits to diminish the dependence on paperwork and make legality verification of tropical timber more efficient.

v. The adoption of the FLEGT Action Plan's parameters into the Brazilian regulatory system and governmental policies to combat illegal logging and associated trade

1. Promotion of sustainable public procurement

The Government acquires a considerable portion of Amazonian native wood. However, price is the defining factor in public procurement, and sustainability is not a requirement. This puts sustainable producers at a disadvantage because compliance with environmental standards usually makes goods and services more expensive. Therefore, sustainable public procurement for acquisition of timber products should be promoted in Brazil by limiting it to legally sourced timber and those originated from sustainable forest management. This would stimulate legal and sustainable logging. In this regard, state and non-governmental organizations have taken initiatives to encourage sustainable public procurement. These initiatives should be broadly implemented in the country.

2. Encouragement of corporate social and environmental responsibility within timber sector

Corporate social and environmental responsibility initiatives are not common in the Brazilian timber sector. These initiatives tackle trade of illegally sourced timber, bring competitive advantage to companies, better credibility before society, and higher profitability in addition to social and environmental benefits. Therefore, they should be encouraged through governmental and non-profit policies and projects. Governmental technical and financial assistance for implementation of social and environmental responsibility initiatives should also be provided.

3. Effective enforcement of the legal requirement for forest finance institutions to execute risk assessment

The financial sector has been struggling to restrict financing solely to legally held forest activities. Therefore, there should be a more effective enforcement of the law regarding the finance of forestry sector activities in the Amazon by both private and public financial institutions. This will lead the regulation of forest finance to better serve its purpose of preventing finance of illegal timber production, thus contributing to the tackling of illegal logging.

4. Broader implementation of the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES) to tree species utilized in the Brazilian timber sector

The major portion of timber produced in Brazil is not subject to CITES due to the fact that most of Brazilian timber production is consumed nationally. Nevertheless, the Government should work on including the species mainly commercialized in the current national market in Appendix III of CITES. This would be a strong tool against illegal logging in the future if the species range of the country's timber exportation ever increases. Additionally, broader enforcement of CITES over the country's timber exportation would influence the national market in the long-term. It would stimulate compliance with the law by domestic traders interested in increasing their competitiveness.

vi. Signature of a Voluntary Partnership Agreement by Brazil and the European Union

A Voluntary Partnership Agreement (VPA) should be executed between Brazil and the European Union. It would tackle illegal logging and its associated trade by requiring timber export companies in the country to comply with the European market requirements. It would also result in the European Union's support to the implementation of a Legality Assurance System (LAS) in Brazil, improving quality and efficiency of the already existent control systems of the timber industry. It would guarantee a strong presence of independent monitoring authorities to audit the FLEGT License Scheme in the country and consequently the national control systems in order to ensure their integrity and credibility. Independent monitoring organizations would combat corruption within public agencies. They would also

maintain the desirable level of expertise of public officers and encourage their commitment.

Being part of a VPA would result in the improvement of Brazil's competitive advantage in international timber trade due to an increase in its market confidence. It would also bring alleviation of poverty, safeguarding of employment and competitiveness, and an increase in government revenues in general. There would also be an improvement in the professional skills of governmental officers and the private sector operators, the strengthening of the rule of law, and the security of the rights of people who are dependent on forests for their livelihoods.

vii. Implementation of a due diligence system requirement within Brazilian Law, based on the EU Timber Regulation

There is no due diligence requirement under national law for timber supply chain in Brazil. Therefore, a system similar to the EU Timber Regulation's due diligence should be implemented in order to assure the legality of the origin of the timber and its byproducts. The system should require all operators involved in the native tropical timber supply chain to present periodic due diligence reports to competent authorities. Thus, the system would control the national market instead of controlling only the entrance of imported timber, as is the case with EU Timber Regulation. Federal, state, and municipal environmental agencies would be competent to monitor the issued due diligence reports or nominate independent monitoring organizations to do so. The due diligence system would be required by law and stimulated by financial incentives to operators that comply with it, such as tax exemptions. This instrument gives more transparency to the timber supply chain and can minimize operators' risk of acquiring illegal timber.

b. Fostering of forest certification schemes and elimination of obstacles to successful implementation

Forest certification schemes have shown positive results when it comes to increasing sustainable forest management and combating illegal logging in Brazil. However, they are not broadly adopted in the Amazon region due to obstacles that undermine their implementation. The permanent promotion of forest certification schemes and overcoming implementation obstacles would increase their effectiveness. There should be full enforcement of land tenure rights, and creation of public policies focused on raising consumer awareness regarding the importance on purchasing certified products to improve their competitive power on the domestic market.

Chain of custody certification, provided by both the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC), should be prioritized. It demonstrates that the company's suppliers are also subject to certification. This is especially important in the Amazon region, where third party timber suppliers are vital to business. The PEFC certifications and FSC Standard for Small and Low Intensity Managed Forests (SLIMF) and Group Certifications should also be intensively encouraged. They are more accessible to community forests, which comprehend the majority of timber extractors in the Amazon. These schemes will increase smallholders' revenues from timber extraction, decreasing illegal logging and encouraging the sustainable use of forest resources.

The fostering of forest certification should be done through governmental financial incentives. Non-governmental organizations and representatives of the forest sector should support the creation of a certified products market and provide capacity building. Further, forest certification should be a requirement within public procurement policies.

c. Mechanisms from the International Forest Regime:

i. Enhancing Brazil's participation at the United Nations Forum on Forests

Brazil should participate more assiduously in the United Nations Forum on Forests (UNFF). This would strengthen the country's political commitment and action to effectively implement sustainable forest management. Brazil should intensify the use of instruments provided by the UNFF, such as the submission of voluntary reports at UNFF Sessions regarding the country's improvement of national forest governance. This would encourage the Government to show better results and to increase its credibility in both national and international timber markets. Further, both Government and private sector should fully implement the Forest Principles from 1992 and 2007, which introduce values and criteria that enhance the adoption of sustainable forest management, thus combating illegal logging and associated trade.

ii. Promotion of CDM and REDD+ projects, and elimination of obstacles that undermine their implementation

The Clean Development Mechanism (CDM) and the Reduced Emissions from Deforestation and Forest Degradation combined with conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks (REDD+) initiative are useful instruments for the encouragement of forest conservation and sustainable forest management. However, there are only a few pilot programs of REDD+ and a modest

number of CDM projects in the Amazon. They should be strongly promoted as a form to tackle illegal logging.

Obstacles should be eliminated for their successful implementation and effectiveness. The Public Administration must ensure law enforcement, elimination of corruption, efficient monitoring of logging activities, attribution of land ownership and assurance of land use rights, and rights to the use of natural resources. There should also be improvement in capacity building of the forestry sector's public officials and participation of stakeholders on governmental decision-making regarding the projects' implementation and benefit sharing. REDD+ projects should also be designed in a way that is equitable for indigenous, poor, and forest-dwelling communities.

iii. Reform of Brazil's Zero Deforestation Policy

Brazil's Zero Deforestation Policy presented at the UNFCCC 21st Conference of the Parties states the Government's commitment to eliminate illegal deforestation in the Amazon region and restore 12 million ha of forests by 2030. These goals are similar to those set by the National Plan on Climate Change in 2008 to be accomplished by 2020. This represents a setback on the country's efforts to solve the problem.

Ending illegal activities in the forestry sector should be treated as an urgent matter. Therefore, the Zero Deforestation Policy should be reformed to present a stronger commitment to eliminating illegal deforestation. The Government has already acknowledged that the goal is achievable before 2030 when it defined a shorter period at the National Plan on Climate Change. Thus, a more ambitious period should be proposed. The policy should also be more specific as to how the proposed goals will be achieved. It should clarify whether

reforestation will be of native or exotic species. The reforestation proposal should be more ambitious, since it represents only half of illegally deforested private areas that need to be reforested, according to parameters given by the Forest Code. The mechanisms recommended along this work should be considered in Brazil's Zero Deforestation Policy for a successful elimination of illegal logging and associated trade in the Amazon.

iv. Use of the Amazon Cooperation Treaty Organization to encourage its parties to implement measures against illegal logging and associated trade

The parties to the Amazon Cooperation Treaty Organization (ACTO) should encourage the adoption of policies and legislative reforms between them to decrease the national levels of illegal logging and to combat trade of illegal timber and byproducts. This could be done by the enactment of bilateral and multilateral agreements between them. Furthermore, as ACTO's leader, Brazil needs to act as an example for other parties in the fight against illegal logging, as all the Amazonian countries face the same problems and challenges. Thus, the country's leadership could also encourage other parties to engage in cooperation strategies.

d. Necessary improvements in the illegal logging and associated trade control mechanisms already existent in Brazil

i. Full implementation of sustainable development and resilience principles

The principle of sustainable development has been incorporated by the entire Brazilian environmental regulatory system. However, it has not been fully applied in practice. Economic interests still prevail over the importance of limiting the use of natural resources to

preserve their use by future generations, ensuring a healthy and balanced environment in decades to come. Neither has the resilience principle been fully applied, according to which humanity and the environment should be conceived as one social-ecological system.

Both the private forestry sector and the Public Government should respect the sustainable development and resilience principles when it comes to utilization of timber resources. This should be achieved with the prioritization of sustainable measures throughout the production chain, proper enforcement of Environmental Law, and consumers' preference for legally and sustainably sourced timber products, along with the application of the other recommendations made in this work. Thus, it would contribute to reduction of illegal logging.

ii. Regularization of land tenure – More efficient implementation of existing public programs

Illegal occupation is one of the major contributors to illegal logging activities in the Amazon, since the ownership of more than half of the region is still uncertain. In this regard, the Government implemented policies to regularize land tenure (Legal Land Program and CAR). However, their implementation has not achieved the expected results.

The Government should treat land tenure regularization as a priority. It should increase its control over the Amazonian territory and enforce the law to regularize land tenure and ownership rights. It should improve infrastructure and eliminate corruption within competent bodies for land tenure regularization. Financial resources for such measures could come from collection of environmental fines, if the law is fully enforced. Agrarian reform should be based on lands' fair market prices in order to avoid depreciation of public lands. Social impacts should also be mitigated.

Land tenure regularization will have an immediate, positive impact on the conservation of forest areas since there will be no need for land takers to suppress vegetation in order to demonstrate possession over the land as was historically done. Violent disputes over land would also drastically decrease. Furthermore, regular occupation encourages farmers and loggers to apply sustainable forest management measures in the land to secure their ownership rights. It is also the basis for the correct implementation of other instruments recommended herein, such as forest certification, public forest concession, and the punishment of right violators.

iii. Fostering of mechanisms for management of public forests in the Amazon

Management of public forests promotes sustainable use of natural resources and establishes control over unoccupied public lands. The three management systems – direct management of National, State, and Municipal Forests by the Public Administration, the management of public forests by local communities, and their concession to private parties – help to eliminate inefficacy and corruption related to illegal logging and irregular occupation of forested areas. They allow both small loggers and large companies to use public forests, avoiding economic inequity and acting as a tool for the achievement of the socio-environmental function of properties. However, their implementation is still modest when comparing the areas granted so far with the vast Amazon. Therefore, the Government should strongly encourage the management systems of public forests in the Amazon.

iv. Wide adoption of sustainable forest management by operators of the Amazonian forestry sector, and its incentivization by the Government as an instrument to appreciate the standing forest

The appreciation of the standing forest is the main principle on which all the mechanisms highlighted so far are based, and it should be completely incorporated by the timber sector. A constant incentive for sustainable forest management is one of the most feasible instruments to consolidate appreciation of the standing forest and thus to tackle illegal logging in the Amazon region. It should completely replace conventional timber exploitation, which has been proved to be an unsustainable technique and significantly harmful to the environment.

Nevertheless, some challenges must be overcome in order to widely implement sustainable forest management in the Amazon. This depends on land tenure regularization as well as on a solid economic and political foundation, transparent and corruption free, provided by the Public Government. As sustainable management is more costly than clear-cutting, the Public Administration should also provide a necessary infrastructure to ensure processing and trade of sustainable forest products. Instruments recommended along this work should be adopted by the Public Administration to serve these purposes and to assure the wide employment of sustainable forest management – for example, fostering of forest certification, financial incentives and improvement of law enforcement and monitoring of timber industry activities. Furthermore, the State of Acre's project should be used as a benchmark to foster sustainable forest management in other Amazonian states.

v. Improvement of the Public Administration's performance on monitoring and law enforcement

1. Increase in environmental agencies' financial resources – investment in infrastructure, staff, and capacity building

The deficient performance of monitoring and law enforcement by state environmental agencies is a consequence of their poor infrastructure, which is insufficient to cover all illegal activities in timber industry. Lack of sufficient officers and a shortage of investments on capacity building are also an issue. This is due to lack of political will to improve environmental agencies' structure. Officers are usually underpaid, which discourages commitment and stimulates corruption. With respect to the federal environmental agency (IBAMA) specifically, although well structured, it lacks enough officers to monitor the entire Amazon. Municipal environmental agencies are not common because municipalities usually do not have the financial resources necessary to invest in a capable infrastructure or the know-how to implement effective municipal agencies. Therefore, public policies should be implemented to increase and direct the necessary financial resources to environmental agencies to eliminate the said deficiencies and make monitoring and law enforcement more effective.

2. Strengthening and modernization of the judiciary

Law enforcement is ineffective under the judiciary, as it has high rates of impunity, recidivism, and low collection of fines. The slowness of proceedings, difficulty in finding those truly responsible for illegal logging schemes, and flaws in the prison system must be overcome in order to make it more efficient.

The system should be strengthened and modernized through investment in capacity building. This should be done in order to increase the staff's efficiency, accelerating its performance. It would also improve law enforcement and increase the levels of fine collection, exterminating the sense of impunity and recidivism.

3. Enhancing political will to eliminate illegal logging and its associated trade: Government's participation in international events, and pressure from non-governmental organizations

The accomplishment of all the recommendations made above depends on the indispensable political will to face the complex multitude of problems surrounding illegal timber trade in the Amazon. Problems include questions related to institutional build up, the overall organization of society, and improvements in educational levels in general and perceptions of environmental problems. Public Administration should acknowledge illegal logging and its associated trade as an issue that needs immediate solution and make efforts to solve it.

Government's will would be enhanced by the intensification of Brazil's participation in international events, such as conventions, meetings, and symposiums related to forest governance. Public national figures such as politicians should be present in these events, representing the country. This would help to increase the persons' popularity internationally and also nationally as an advocate of forest governance. It would stimulate other public figures to engage with the problem and, thus, call the attention of voters and society to the problem. Furthermore, non-governmental organizations' pressure on the Public Administration is also a strategy to stimulate its willingness to tackle illegal logging.

4. Elimination of corruption in public bodies – National community's intolerance to corruption

Parallel to the enhancement of political will towards the elimination of illegal logging in the Amazon, the elimination of corruption, which is a generalized problem in Brazil, should be treated as a priority. As one of the most corrupt countries in the world, Brazil is experiencing its most serious crisis in this sense. Regarding the Amazon timber sector specifically, corruption of environmental agencies' officers is one of the main causes of illegal logging and its associated trade in the region. Therefore, there is an urgent need to rebuild the Public Sector's integrity and to rescue citizens' trust in the environmental public agencies and other institutions empowered to enforce Environmental Law. The current moment of the people's intolerance to corruption may be an opportunity for public pressure on the Government to eliminate corrupt members in all sectors, forest included. Public pressure should be added to other nations' attention to the matter.

If the Government applies all recommendations made within this work, illegal logging in the Amazon and associated trade will be successfully tackled, leading to its total elimination in the long-term. This is because the suggested multi-faceted approach targets the main causes of the problem simultaneously. It takes into consideration environmental, social, and economic aspects rather than simply focusing on one deficiency of the regulatory and monitoring systems, as the Government has been doing. For example, in creating the Legal Land Program to accelerate land tenure regularization, the Public Administration did not make

enough investments in infrastructure and capacity building of state environmental agencies to effectively monitor and enforce the law on land invaders.

The complete elimination of illegal logging and trade of illegally sourced timber in the Amazon is an ambitious goal but not an impossible one. If all of the recommendations made in this work are applied, there will be a gradual decrease in illegal logging until it is completely eliminated. The fight against illegal logging and associated trade in the Amazon has lasted for decades. Thus, a reasonable period should be set by the Government to reach their complete eradication. There has been a successful reduction of 80% in deforestation levels in the last decade. An additional decade of investments and efforts in the implementation of the mechanisms suggested would certainly be sufficient to eliminate illegal logging. Brazil is an emerging economy that can bear the costs of the suggested approach. Instead of economic cost, the biggest challenge is the enhancement of political will to treat illegal logging as a priority matter.

All outcomes for the forestry sector from the effective implementation of the suggestions contained herein will consequently benefit other fields. For instance, the elimination of corruption in the public agencies related to forestry matters may create an ethic throughout a wider range of public offices in which corruption is unacceptable, and so new cultural values may be established in the long-term. The same applies to other suggestions, such as better public policies and social programs. Simply addressing the forest problem can be a problem solver in others areas. By eliminating illegal logging, other criminal actions are also combated, such as money laundering and invasion of public forests and indigenous lands.

Ultimately, this work was produced with the expectation of showing a new path to end illegal exploitation of timber resources in the Amazonian Rainforest while always considering the intrinsic value of nature and the respect to which it is entitled. The greatest hope is that its purpose has been fully achieved and that it can serve as an inspiration for further research on the creation of a public policy inclusive of the recommendations made herein.

APPENDIX 2: CITES TREE SPECIES – 2015 UPDATE

CITES Appendix I Species
<i>Abies guatemalensis</i> (Guatemalan fir)
<i>Araucaria araucana</i> (monkey puzzle tree)
<i>Dalbergia nigra</i> (Brazilian rosewood)
<i>Fitzroya cupressoides</i> (alerce)
<i>Pilgerodendron uviferum</i> (pilgerodendron)
<i>Podocarpus parlatorei</i> (Parlatore's podocarp)

CITES Appendix II Species
<i>Aniba rosaeodora</i> (Brazilian rosewood)
<i>Bulnesia sarmientoi</i> (galacwood)
<i>Caesalpinia echinata</i> (pernambuco)
<i>Caryocar costaricense</i> (ajillo)
<i>Dalbergia spp.</i> (Madagasy rosewoods)
<i>Dalbergia cochinchinensis</i> (Thailand rosewood)
<i>Dalbergia granadillo</i> (Granadillo rosewood)
<i>Dalbergia retusa</i> (black rosewood)
<i>Dalbergia stevensonii</i> (Honduras rosewood)

<i>Diospyros spp.</i> (Madagasy ebonies)
<i>Gonystylus spp.</i> (ramin)
<i>Guaiacum spp.</i> (lignum vitae)
<i>Oreomunnea pterocarpa</i> (gavilan)
<i>Osyris lanceolata</i> (African sandalwood)
<i>Pericopsis elata</i> (afromosia)
<i>Platymiscium pleiostachyum</i> (cristobal graradillo)
<i>Prunus africana</i> (African rosewood)
<i>Pterocarpus santalinus</i> (red sandalwood, redsanders)
<i>Senna meridionalis</i> (taraby)
<i>Swietenia humilis</i> (Pacific Coast mahogany)
<i>Swietenia macrophylla</i> (bigleaf mahogany)
<i>Swietenia mahogani</i> (Caribbean mahogany)

CITES Appendix III Species
<i>Cedrela fissilis</i> (Argentine cedar)
<i>Cedrela lilloi</i> (cedro)
<i>Cedrela odorata</i> (Spanish cedar)
<i>Dalbergia calycina</i>
<i>Dalbergia cubilquitzensis</i> (Guatemalan rosewood)
<i>Dalbergia darienensis</i>
<i>Dalbergia glomerata</i>
<i>Dalbergia tucurensis</i> (granadillo, Yucatan rosewood)

<i>Dipteryx panamensis</i> (almendro)
<i>Fraxinus mandshurica</i> (manchurian ash)
<i>Magnolia liliifera</i> var. <i>obovata</i> (magnolia)
<i>Pinus koraiensis</i> (Korean pine)
<i>Podocarpus neriifolius</i> (podocarp)
<i>Quercus mongolica</i> (mongolian oak)
<i>Tetracentron sinense</i> (tetracentron)

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