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**Deforestation and Modern Slavery in Brazil: Criminological Perspectives on the *Carne Legal*  
Programme**

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## Content

Acknowledgements.....	4
Abstract.....	5
1 Introduction.....	6
2 Brazilian history and legal system.....	8
3 Green criminology, modern slavery and corporate crime: explaining harms through offending opportunities theories .....	15
3.1 Green criminology.....	15
3.2 Modern slavery.....	17
3.3 Theoretical insights about ranchers, slaughterhouses and supermarkets.....	19
3.4 Green criminological perspectives on situational crime prevention theories.....	21
3.4.1. Rational choice theory.....	21
3.4.2. Routine activities theory .....	24
3.5 Is there anything to learn from the global South? .....	27
4 <i>Carne Legal</i> programme: Enforcing regulation through collaboration .....	30
5 Methodology .....	35
6 Findings .....	38
6.1 Introduction and analysis of the data.....	38
6.2 Is <i>Carne Legal</i> programme working?.....	44
6.3 What is next? .....	50
7 Conclusion .....	51
8 Bibliography.....	54
9 Appendix.....	64

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### Abstract

The *Carne Legal* programme was an environmental law enforcement strategy that reduced deforestation and modern slavery in Brazil, according to quantitative data from official bodies and Non-Governmental Organizations. Still, changes in legislation orchestrated by the Brazilian Congress and the agribusiness lobby with the inconsistency of Court decisions affected the effectiveness of the project, bringing new motivation for offending. As has happened in other countries, green criminology and environmental concerns face huge opposition from corporations and people in power who can actually bring a substantial shift in the regulation that is causing the majority of current environmental harm. The interaction between environmental offenses and perpetrators can be understood if we consider rational choice theory and routine activities theory through green criminological lenses. Furthermore, in order to develop effective solutions to issues in green criminology, criminologists from the global North must encourage research and researchers from the global South to contribute to knowledge, creating a horizontal and mutual share of knowledge, where global solutions are built by considering perspectives from various global contributors.

**Keywords:** *Carne Legal* programme; Brazil; Amazon forest; environment; cattle supply chain; ranchers; slaughterhouses; supermarkets; green criminology; deforestation; modern slavery; food crime; rational choice theory; routine activities theory; compliance; enforcement; global South.

## 1 Introduction

Brazil, the fifth largest country in the world and the largest country in South America, holds a population of over 200,000,000 people and is a country with a commodity-based economy and a promising emerging market in the 21<sup>st</sup> century (Crociti 2012:xxiii). Brazil also holds the largest biome of tropical forest worldwide, with 60% of its territory, almost 5,000,000 km<sup>2</sup>, covered by forest, an area corresponding to 64.3% of the Pan-Amazon, the “bigger” Amazon formed by Brazil, Peru, Colombia, Venezuela, Ecuador, Bolivia, Guiana, Suriname, and French Guiana (RAISG 2015:16; Margulis 2003:6; White 2010:26). Although very biodiverse and prosperous, Brazil shows alarming rates of deforestation, an anthropogenic action responsible for a great share of greenhouse gas emission. In addition, the development and growth of the country is at risk due to a hidden enemy present from the beginning of human history up to the present – forced labour, the modern-day slavery.

Therefore, Brazil’s fate as a developing country relies partially on how it tackles issues of sustainable development and the vulnerability of citizens falling victim to forced labour while pursuing fair conditions of living. Aware of these challenges, the Office of Federal Prosecution (henceforth *MPF*<sup>1</sup>) in Pará investigated how the cattle supply chain interacts with environmental crimes, contemporary slavery, land conflicts, and human rights violations of indigenous groups, traditional communities, and quilombos. Their efforts culminated in a strategy plan known as the *Carne Legal* programme (henceforth *Carne Legal*), used to control these harms and raise society’s awareness about the meat supply chain and associated crimes against the environment and vulnerable people<sup>2</sup>.

After six years in motion, the programme is being recognised nationally and internationally as an outstanding tool for social change and for controlling deforestation-related crimes and modern slavery in different states of the Amazon by involving the participation of ranchers, slaughterhouses and supermarkets to the management of the meat supply chain. Thereby, the strategies from the

*Carne Legal* are being reproduced in other environmental preservation strategies, such as the moratorium on illegal fishing of the endangered pink porpoises of the Amazon (Henrique 2014).

The innovative format of environmental law enforcement, which is already being studied by researchers from other fields, deserves criminological attention to bring comprehension of environmental harms through new perspectives, especially since criminology is poorly explored in Brazil, particularly green criminology, a field that only recently started to gain attention from criminologists elsewhere. Nevertheless, a gap exists in criminological knowledge on crimes directly or indirectly involving food trades, and the research here developed is meant to reduce this gap by answering the following questions about the *Carne Legal* (Beirne and South 2009:222; South and Brisman 2013:167):

- 1) As a crime control tool, does the *Carne Legal* have a deterrent effect that leads to a reduction in deforestation and forced labour?
- 2) Are those who signed the agreements complying with the terms established? If not, why is this happening?
- 3) Why have some ranchers, slaughterhouses and supermarkets decided not to settle?
- 4) Are economic sanctions, shaming and prohibition from doing business good solutions for the purposes of environment protection and crime control?

If we wish to answer these questions and understand what led Brazil to its current deforestation and modern slavery rates, first we must have an understanding of historical, cultural and legal aspects of the country. Chapter 2 will provide a framework of the Brazilian legal system and recent history, situating where the country currently stands in matters such as deforestation, modern slavery, availability of public lands and public policies regarding ranching. Chapter 3 will offer theoretical insights concerning modern slavery and deforestation while including considerations about corporate crime and current challenges for green criminology. The chapter will discuss rational choice theory and routine activities theory through green criminological



perspectives to give a solid ground for evaluating the *Carne Legal* whilst exploring deterrence in the case of harms that result in substantial profit for offenders. Without ignoring the existence of a predominant production of knowledge in criminology coming from the global North, the chapter will argue for the importance of criminologists developing an understanding of the experiences of the South to have a comprehensive picture of global-scale interactions.

Chapter 4 will shed light on the *Carne Legal*. By explaining how the *Carne Legal* began, the chapter will approach the challenges faced by the programme while highlighting the main events that shaped the initiative from its beginning in 2009 until today. In Chapter 5, the research methodology used for analysing the *Carne Legal* will be explained. Chapter 6 will present the findings considering the theoretical background established in Chapter 3 and the sequence of events from the programme to define the challenges faced by it and answer the questions raised on this introduction. Finally, in chapter 7, concluding with the main aspects of this research, insights for future researches in criminology about the topic will be offered.

## **2 Brazilian history and legal system**

This chapter will explain how ranchers arrived in the Amazon and why they remain there. By looking at historical facts and the legal system in Brazil, the aim is to address what drives deforestation and modern slavery rates in the country.

If we trace back Brazilian history to when Portugal colonised the country in the 1500s, much could be said about how Portuguese conquest and colonization resulted in a culture of imprudent use of natural resources. However, experts in deforestation and other crimes in the Amazon (e.g. Margulis 2003; Binswanger 1991; Prates and Bacha 2011) argue for a much more recent turning point in the history of deforestation of the Brazilian rainforest – the Brazilian military regime from 1964-1985 and the recent re-democratization of the country.

When Brazil was under a dictatorship in the 1970s, the government decided to initiate a colonization programme in the Amazon called *Polamazônia* due to fears of losing territory to other countries and undergoing financial turmoil. Believing that the *Polamazônia* programme would be a good strategy to retain territory and promote financial growth, the government granted generous fiscal incentives for large-scale cattle ranching in the Amazon (*Ibid.*, 610). To shape public opinion and get support for *Polamazônia*, the government used a rhetoric that cited the extensive political borders with eight other South American countries, and the necessity of monitoring and protecting the country from international trafficking of illicit drugs (Margulis 2003:34, 68).

As result of *Polamazônia*, the clearcutting of forest to convert natural ecosystems into cattle pastures devastated, within a period of 20 years, 587,000 km<sup>2</sup> of the Amazon. Besides the fiscal incentives, the government allowed ranchers to buy public lands at low cost, subsidizing the purchases through the regional agency *Superintendência do Desenvolvimento da Amazônia (SUDAM)*<sup>3</sup> (*Ibid.*, 49; Nepstad et al. 2006:1596; Pfaff 1999:28). More than encourage ranchers to migrate and colonize an Amazon already inhabited by indigenous groups and traditional communities, the military government approved laws authorizing deforestation at a large scale. For instance, Art. 2º, §1º, of *Decreto-Lei nº 1.106* (1970) reserved for land reform 10 km on both sides of each new road, therefore, in addition to the environmental impact caused to the rainforest by the roads, immigrants were legally allowed to clear more forest along these roads to build houses and ranches.

Amongst these policies, the distribution of unclaimed public lands was granted for the exploration of agriculture and ranching, as stated in Art. 24, III, *Lei nº 4.504* (1964). In other words, to secure the possession of a parcel of land, clearcutting 50% of the parcel of land was a necessary step, according to Art. 25, I, *Decreto nº 55.891* (1965) (Arima et al. 2014:466,471; Kohlhepp 2002:38; Macedo 2009; Nepstad et al. 2006:1596). Until today, no modifications were made to how a parcel of land could be considered productive under the law. A study carried out by Binswanger

(1991) shows these policies – low taxes, rules of land allocation, and provisions for credits – allow speculative activities in the Amazon.

In the 1970s, this prospect of opportunities attracted thousands of labourers from all over the country to the “gold rush of lands”. While public authorities fostered projects of colonization and ranching, these people were hired by contractors in a system of peonage. However, when they arrived at their destination, these labourers ended up with a substantial debt and were subjected to forced labour through deceitful strategies, similar to current known forms of recruiting people for human trafficking. Those who dared to try to escape or fight the situation were murdered, tortured, raped, and exposed to inhumane treatment (see *CNV* 2014 for a more complete discussion). Back then, the military regime denied the existence of modern slavery and condoned the practice, considering it to be the standard employment system and acceptable living conditions for labourers (*Ibid.*; Bischoff 2006:152; Figueira 2012:260,261).

Nevertheless, due to the failure of the military regime and the rebirth of democracy in Brazil, in the late 1980s, Deputies and Senators edited the newest Constitution of the Federative Republic of Brazil (1988). This new Constitution reformed the Judiciary, making the Federal Prosecution Service an independent branch of the government responsible for preparing accusations in cases where federal crimes were committed, according to Art. 129. Additionally, their duties involved defending ‘collective and diffuse’ rights (Arima et al. 2014:471). At the same time, judges were granted independence and judicial discretion to rule over cases according to the law. This reform gave the Brazilian Supreme Court the final say in constitutional matters and defined the jurisdiction of the Superior Court of Justice, of Regional Federal Courts, and of local Federal Courts.

Another significant statement from the Constitution was the right to an ecologically balanced environment and the recognition of intergenerational justice, according to Art. 225 (Walters et al. 2013:5). The same article also defined, in its §4°, the Amazon forest as national heritage that should

be protected by all, particularly the government; the Constitution also established a mandate for using natural resources rationally, considering the necessity of the preservation of biodiversity.

Consequently, in 1988, the *Instituto Nacional de Pesquisas Espaciais (INPE)*<sup>4</sup>, began monitoring deforestation rates in the Amazon with satellite imagery (Arima et al. 2014:466). *INPE* is an institute that is part of the Ministry of Science. The institute is responsible for gathering data on deforestation, but does not directly intervene in the environmental policies of Brazil, which are part of the duties of the Ministry of Environment. Consequently, *INPE* monitors forest loss and shares the information with the appropriate agency responsible for guarding the environment – *Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA)*<sup>5</sup>.

Throughout the years, the data gathered by *INPE* started showing a pattern in deforestation: ranching was the main cause of forest loss. The easiness in land titling and the lack of governmental oversight, in addition to archaic legislation that disregarded the constitutional protection of the environment, allowed disproportional land clearing. Ranchers used parcels of land until the latter were completely exhausted, and their activity was causing 70-75% of the deforestation in the Amazon (Arraes et al. 2012; Prates and Bacha 2011:623; South and Brisman 2013:199; White 2010:27; Margulis 2003:15). A survey from the World Bank also showed ranching in the Amazon produced low return rates of profit, but the activity persisted because the government fostered speculative profits of ranchers (*Ibid.*, 13).

Considering these facts, the Forestry Code of 1965 (*Lei n° 4.771*) and the outcry of environmentalists to protect the Amazon, the former President Cardoso took an executive action to increase the forest reserve to 80% (Arima et al. 2014:466). Two years later, President Cardoso also sanctioned the Environmental Crimes Act (*Lei n° 9.605*) (1998), a law that aimed to punish criminal and civil perpetrators that caused harm to the environment. Considered innovative, this Act included strict liability and the ‘polluter-pays’ principle as part of its text. It also dedicated Chapter V, Section II to discussing harms caused to the flora.

Years later, in 2004, the government of President Lula launched the first Action Plan to Prevent and Control Deforestation in the Amazon (PPCDAm-I). Even so, from 2007 to 2008, deforestation rates grew by 12%, leading the government to institute PPCDAm-II. By that time, the boom of commodities and the increased profit-making opportunities from supplying beef became important drivers of forest loss (Cacho et al. 2014:322).

The process of deforestation and invading lands for claiming titles here explained starts as a mere speculation of transforming native forest and vacant land into titled properties through the actual occupation of the territory without the need for any documentation. Indeed, under the Brazilian system, building houses, clearing the land and cutting trees are more important than having proof of ownership. To gain legal possession of the land, it is only necessary to have a usufruct right over 100 hectares of property for at least one year and one day and five years using and living on the land to acquire a title, according to the previous Brazilian Civil Code (*Lei n° 3.071 de 1916*) (Alston et al. 2000; Binswanger 1991:822-823). With the new Brazilian Civil Code (*Lei n° 10.406 de 2002*), the property can still be granted after five years of uninterrupted possession, if the squatter lives on the land, making it useful.

In a vicious cycle of crime, gunmen and squatters hired by big ranchers secure the possession of the parcel of land until it is possible to legally claim it, or, if that is not the case, ranchers bribe corrupt agents from governmental bodies to commit fraud to grant land titles (Margulis 2003:43; White 2010:28). This ongoing method is resulting in the killing of members of traditional communities and indigenous groups, and human rights and environmental activists. The aftermath of unclaimed public lands invasion is more than 1,150 deaths due to land conflicts (*Ibid.*, 43,44; South and Brisman 2013:199). From these cases, not even 10% went to court, only 80 hired gunmen were convicted, and just 15 people who paid for the killings faced charges.

Despite several commitments made by the country for reducing greenhouse gas emissions and deforestation rates, in 2012, 3 years after the *Carne Legal* began, the government of President

Rousseff ratified the New Forestry Code (*Lei n° 12.651*). Facing strong opposition of national and international environmentalists and human rights activists, due to an intense lobbying of agribusiness and politicians from the Rural Caucus<sup>6</sup>, the piece of legislation gave amnesty for a significant number of offenders who had caused deforestation of the Amazon in the past (South and Brisman 2013:178).

Notwithstanding all these facts, Brazil is the second largest producer of beef in the world and one of the biggest suppliers to other countries like the United States, China and the United Kingdom, with estimates suggesting that over 50% of the beef produced globally comes from multinational industries funded by Brazilian capital (*Ibid.*, 209; Amigos da Terra 2009:30). Additionally, the majority of Brazilian population consumes meat as their main course during most meals, and it is a food group with a significant place in the Brazilian diet (Avila et al. 2016:139). Even so, the majority of Brazilians do not consider the origin of their eaten meat nor ponder the impact of their eating habits on the environment or other humans.

Within this supply chain, the association between ranching and forced labour did not change much from the 1970-1980s. The number of current people enslaved is unknown, and estimates are based only on cases discovered. Despite this, to try to identify contemporary slavery in its many forms, Art. 149 from the Brazilian Penal Code (*Decreto-Lei n° 2.848*) expanded the definition of forced labour to encompass, among other possibilities, impractical working hours, inhumane treatment, and debt bondage. Stopping short of calling people slaves, the Penal Code defines the crime as “reducing someone to a condition akin to slavery”.

To increase enforcement against modern slavery, in the 2000s, Brazil ratified the United Nations’ Palermo Convention, the Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, the Protocol against the Smuggling of Migrants by Land, Sea and Air, and the Protocol against the Illicit Manufacturing of and Trafficking in Firearms, their Parts and Components and Ammunition. This effort led the government to encourage national and

multinational corporations to sign a National Pact for the Eradication of Slave Labour, which consisted of a commitment to not negotiate with people perpetrating forced labour.

Still, research carried by the International Labour Organization (ILO) showed that modern slavery remains as part of Brazilian agroindustry. Citing the survey from Margulis (2003) and its conclusion about the connections of ranching and deforestation, the ILO's research used data from the Non-Governmental Organization *Comissão Pastoral da Terra (CPT)*<sup>7</sup> to claim that people enslaved represent a significant number of the workforce used for clearcutting, ranching and other agricultural activities (Andrees and Belser 2009). Other research on modern slavery suggest that the areas with more people enslaved are also the areas with the highest rates of deforestation, and a great number of these labourers are involved in ranching (*Repórter Brasil* 2015; *Repórter Brasil* 2015a).

A documentary from *Repórter Brasil* showed how one of the biggest slaughterhouses profits from modern slavery. Through reports from employees interviewed, the documentary confirms the correlation between forced labour, deforestation, and ranching are current (Locatelli 2016). In this documentary, one of the employees stated:

*“The only thing that we don't have to go through is being whipped at a post, since it's forbidden by the law. However, if the rancher could, he would beat us.”*<sup>8</sup> – Citation translated freely

As seen, the reality of the Amazon challenges public policies that try to control modern slavery, and this intricate framework could not be ignored while preparing an action plan to break this cycle. In the midst of this bloodshed, conflicts, deforestation, corruption and fraud, the *Carne Legal* started.

### **3 Green criminology, modern slavery and corporate crime: explaining harms through offending opportunities theories**

The previous chapter explored how Brazil came to be a developing country with substantial forest loss and an unknown but significant number of people enslaved. In the last 40 years, harm is happening because in addition to people willing to offend, state-level mechanisms exist for offending. Therefore, this chapter will define the theoretical framing to interpret these issues. To facilitate the explanation of the content, the chapter will be divided in sections, the first being green criminology.

#### **3.1 Green criminology**

Green criminology is a dynamic sub focus of criminology that seeks to respond to local and global environmental issues. Offering new perspectives to mainstream criminology, this innovative approach examines practices of contemporary life to theorise and offer solutions to current environmental concerns. It studies environmental harms beyond strictly legal definitions, looking at laws and regulations to accomplish its purpose as a field of inquiry; it is not a theory in itself: rather, it is a perspective (McLaughlin and Newburn 2010:411; Walters et al. 2013:1,19; South and Brisman 2013:43).

Whilst the study of environmental harms is unique for criminology, it is a quite recent disciplinary development when compared to traditional science. Due to the newness of green criminology and a common lack of interest in the topic, even the terminology “environmental criminology” refers not to the ecological aspect of the word but to traditional criminological theories from the positivist school concerned with criminal patterns in particular environments (*Ibid.*, 28).

Additionally, the action of the state as an offender or its leniency for others to commit such crimes should gain more criminological attention, but the reality is much different: criminologists



bypass the need to research the effectiveness of environmental laws (*Ibid.*, 2,35; McLaughlin and Newburn 2010:419; White 2011:3; Walters et al. 2013:20,22). The awkward silence from the majority of scholars is allowing potentially destructive activities to become normalized, leaving these activities in a limbo between legality and illegality (*Ibid.*, 22,25,219).

This absence of clear boundaries affects how we respond to environmental harms (Tonry 2009:325,327). Furthermore, the definitions used by traditional and green criminology vary in concepts of “crime” and “harm,” making it hard to capture within the conventional science some concerns for green criminology (South and Brisman 2013:27).

From an anthropocentric concept, green criminology seeks to offer a better quality of life for humans now and in the future, and from a non-anthropocentric perspective, it expands the disciplinary focus and concern of criminology beyond the traditionally conceived to include non-human species and natural ecosystems within its scope (McLaughlin and Newburn 2010:414; Walters et al. 2013:4,5). Hence, one of the main critiques green criminology has to offer is how environmental law handles concepts, definitions and assessments of harm. Although environmental laws are meant to protect and preserve the environment, they assign value to harms already caused, prescribing sanctions according to the consequences (*Ibid.*, 5,6; McLaughlin and Newburn 2010:415). This anthropocentric view of punishment for environmental harms, if compared to crimes against human life or sexual dignity, hardly results in severe sanctions, and when it does, other crimes which cause threat or harm to human life are involved (White 2011:135).

Without any association with other crimes, where exactly do offenses against ecology stand? All the critiques offered so far suit the Brazilian experience. The Brazilian Environmental Crimes Act is embedded with an anthropocentric perspective. As is the case with other similar legislation from other countries, the Act uses a sustainability discourse based on economic and developmental concerns, instead of focusing in protecting the environment for ecological reasons. The protection

of natural resources and ecosystems is being restricted to matters where humans can extract resources and gain benefits (Walters et al. 2013:6,7,19).

This questionable approach for protection of the environment allow for perpetrators of harmful human activity to “get away with murder” because harm becomes just the cost of doing business (Tonry 2009:325; White 2011:103). With awareness of the inexistence of a capable guardian to react to the harm perpetrated, offenders rationally choose to carry on with their practices knowing that the benefits will outweigh the costs.

Issues in green criminology are not restricted to those mentioned here, but trying not be overly simplistic with the field, this section aimed to outline the major unrests for green criminologists, introducing the lenses through which the rest of this research will be developed.

### **3.2 Modern slavery**

According to scholars who extensively study forced labour and the global criminal economy, human trafficking and human rights violations, in many identified cases of forced labour, victims' site of exploitation and the purposes for which they were subjected to modern slavery were directly related to ongoing environmental degradation activities (Walters et al. 2013:228,229). These people enslaved are usually victimised because they live under hazardous environmental conditions or live in underdeveloped neighbourhoods. One way or another, both situations lead them to seek new and better life conditions, making them vulnerable to the actions of forced labour recruiters.

Therefore, in many cases, the global criminal economy has strong links to harm against the environment, and incidents of forced labour should not be analysed without first considering possibilities of interaction between these offenses. As mentioned on Chapter 2, the Brazilian experience of deforestation in the Amazon shows that modern slavery is intrinsically connected with Amazonian environmental harms.

Moreover, the Brazilian case study shows that global trades in foods and forest clearance remain part of the criminal economy of servitude. In reality, slavery, exploitation of natural resources and trade in food always walked hand-in-hand throughout history, taking on new forms and reinventing relationships that maintained their ties to each other (South and Brisman 2013:168,171). As new studies prove, slavery is not a part of the past of human history but is very present in our days (Figueira 2012:252; Datta and Bales 2013:205). Dirty, dangerous and demeaning work opportunities ranging from mining activities to domestic service are still current and have not changed much from their past forms. In most cases, the biggest difference nowadays is their illegality, with estimates from the ILO suggesting this criminal market makes about 44,000,000,000.00 USD/year with up to 30,000,000 people enslaved (*Ibid.*, 206,207,212; Data 2014:21).

Currently in Brazil, the practical realities of modern slavery remain very similar from the 1970s, especially in the agribusiness sector. Desperate urban and rural workers predominantly from a poor background willingly place themselves on the hands of recruiters after being deceived. Believing they are being recruited for good job positions, these people are taken into the forest to places out of sight, and are held under violence and subjected to inhumane working hours and conditions (Figueira 2012:252,253). With no money to buy their way back home and rarely getting paid enough, they are charged with unpayable debts that are supposedly the costs of transportation, accommodation and food.

Denied their basic labour rights, these labourers have no control over their working conditions or the debts they continue to incur. Gunmen responsible for watching over these people under ranchers' orders charge workers with unreasonable debts and expenses that vary from the cost of tools to the price of broken and lost equipment. Others forms of keeping employees under servitude, such as seizing or destroying identification documents, leave employees no other option but to stay (Datta and Bales 2013:208).

The products of this labour are sold on the national and international markets. The latter is usually located in the global North, which often does not recognise its role in this global criminal economy nor take actions to respond appropriately to the issue. Regardless of the final destination of the product – in this case beef – once in the regular market, meat from ranches with a slave workforce cannot be distinguished from meat from slave-free ranches (*Ibid.*, 209,210; Beiguelman 1978:78). Obviously, the benefits for the former are much higher with regard to the cost of beef production, enhancing the incentives for others to engage in the activity.

The existence of forced servitude shows that some ranchers make a calculated choice to increase their opportunities of profit. Before engaging directly with situational crime prevention, there is another feature of the case study that we must look at – perspectives on crimes committed by people in power.

### **3.3 Theoretical insights about ranchers, slaughterhouses and supermarkets**

Green criminologists affirm there is a link between environmental deviance, modern slavery and social power contexts, where corporations and upper-class stakeholders play a dominant role in harms committed against natural ecosystems while exploiting other humans (McLaughlin and Newburn 2010:413; Payne 2012:395). In a capitalist society with unhealthy patterns of consumption, profiting from every opportunity is the rule, even if it breaks other rules or is of doubtful morality. However, capitalism in itself as an economic system and a form of control is not entirely the issue; more relevant is how most of corporations encourage society's consumption while selling products manufactured at expenses of the environment and of people enslaved.

Although many cases and researchers have demonstrated the ties between corporations and harmful activities, one of the main sources of disagreements among practitioners who should be prosecuted, or on what grounds prosecution should be. In this scenario, scholars discuss the challenges of punishing corporations and introducing effective enforcement, and these two

challenges certainly suit the Brazilian case (Friedrichs 2010:361; Pearce and Snider 1992:73; Croall 2001:107).

Offenses committed by the powerful are usually complex and hard to detect. They are also very time-consuming to prosecute. The *Carne Legal* demonstrates this for deforestation and modern slavery in the Amazon and its association to the meat supply chain (*Ibid.*, 110), reinforcing what some criminologists defend – corporate compliance is achieved when the path of non-compliance jeopardises reputation and increases the dangers of facing formal accusations (*Ibid.*, 117,118). This is part of a rational process of choosing the most beneficial and the least costly option for continuing in business.

Since ranchers, slaughterhouses and supermarkets are also drivers of the economy, a softer approach of self-regulation and self-education is preferred by the government. Some researchers agree corporate deterrence is minimally influenced by threats of legal sanctions, and no evidence of deterrent effects can be connected to stronger enforcement (Tonry 2009:335; White 2011:129). However, when the possible capable guardian, in this case the government, refrains from exerting its role, the environment is appropriate for crime to thrive. Consequently, the government should be doing more enforcement. To support this view, Pearce and Snider (1992:82) recall the existence of the axiom “where penalties are high, individuals will fight while firms will settle,” suggesting enforcement still is a better path. Those involved with environmentally harmful activities need to be persuaded that refraining from these practices is best and that compliance is widely supported by their peers and the society (Friedrichs 2010:354; Simpson et al. 2007:149).

This chapter defined concepts and challenges primarily for green criminology but also showed how other activities such as modern slavery and corporate crime can be connected to the first. Until this point, the Chapter already demonstrated interactions between those harmful activities and criminological theories. Thus, it is time to delve into the theories.

### **3.4 Green criminological perspectives on situational crime prevention theories**

The core of this research is to look at criminological affairs with an environmental perspective. Broadly, a lot has been said to explain environmental harms, and many theories used to explain general concepts of crime were applied to green criminology, such as strain theory and social control theory (see South and Brisman 2013).

Although many different theories could be used to look at the interactions between deforestation rates, modern slavery and the *Carne Legal*, the grounding theories to evaluate these issues will be rational choice theory and routine activities theory, which ironically or not are traditionally referred as “environmental criminology.” Whilst the importance of criminological theories that explain crime focusing on criminality is undeniable, these theories were chosen because situational crime prevention is more appropriate to enlighten the matter, since the programme focused on crime prevention (see Clarke 1980; Clarke and Felson 1993; Heal and Laycock 1986; McLaughlin and Newburn 2010). Therefore, the first theory to be discussed will be rational choice theory.

#### **3.4.1. Rational choice theory**

Rational choice theory argues that perpetrators go through a rational process bounded to the amount, quality, and type of information they receive about an opportunity. Considering the capacity of perpetrators to deal with the information at disposal, they measure the probability of success of engaging in a criminal activity. Taking into account the amount of time at their disposal to make decisions, perpetrators calculate risks and might choose to violate the law if the benefits outweigh the costs – “the principle of the least effort” – (Benson and Simpson 2015:85-88; McLaughlin and Newburn 2010:218; Payne 2012:440; South and Brisman 2013:65; Tibbetts and Hemmens 2015:80; Tonry 2009:335). This process of rational choice is what builds a bridge

between situation (crime) and disposition (criminality) through a series of decisions made (Burke 2014:150; Gilling 1997:60).

Thus, engaging in ordinary harmful activities is considered the result of benefits minus the costs of a choice, an equation applicable even for environmental law violations (Edwards et al. 2010:41). When the benefits are lower than the costs, the apprehension of punishment might deter the likely offender from acting (Cavadino and Dignan 2007:37). Using an adaptation from a model developed by economists, criminologists argue this rational choice considers official or formal forms of deterrence, as well as informal factors to decide if the criminal behaviour should be carried on. These informal factors consist of emotions of shame and remorse, loss of self-esteem, ethics, morality, guilt, and denial of personal, religious or cultural values, among others (Tibbetts and Hemmens 2015:78). In many studies on rational choice theory, conclusions suggest official forms of deterrence play a relatively unimportant role compared to informal factors (see Cornish and Clarke 1986; Grasmick and Bursik 1990; Pogarsky 2002, Tibbetts 1997; Tibbetts and Herz 1996).

Thus, individuals consider much more than the threat of punishment to decide if they will commit a crime; internal values and self-perceptions also matter. According to this theory, removing the opportunity of offending through an increase in the costs to the offender involves shaping both official and informal deterrence (Burke 2014:145). From this point of view, it becomes clear why the challenges for green criminology and the study of corporate crime are big. Although enhancing official punishment for people in power is already a hard task, it is much harder to change the perception that the profit of environmentally harmful activities has long-term consequences for next generations, including the descendants of these offenders. Hence, considering that most of the consequences of environmentally harmful activities are not seen in the short-term, the benefits of these activities can be seen as powerful motivators in the process of decision-making (*Ibid.*, 149).

Notwithstanding how simple rational choice theory might look, we would expect to find a higher level of rationality in decision-making by corporations because important decisions in corporations are usually made by a group of experienced people or by a person with enough qualification to make better choices. However, scholars have found that not all organizational decisions are explicitly coherent and logical (Tonry 2009:336). As mentioned, rational choices can broadly be influenced by emotions and value commitments. Therefore, as human beings, decision-makers in corporations are not exempt from being subject to the influence of their emotions, cultural background, values, and morality, which are all part of the informal social costs in the process of decision-making (Cornish and Clarke 1986; Friedrichs 2010:233; Wilson and Herrnstein 1985).

On the one hand, environmental awareness is not a main concern in most of the countries according to some surveys (Harju-Autti and Kokkinen 2014:188-194; Lee et al. 2015:1014-1020). Yet, other studies present diametrically opposed findings that environmental awareness rank among the main concerns of nations (Hsu et al. 2016). Still, for the Brazilian case, according to a national poll, only 36% of its population considers environmental degradation as one of the most severe issues in the country today (CNI 2016:2). Therefore, the lack of information on the topic associated with the shortage of empathy with the environment further reduces the social costs for individuals and corporations to commit environmental crimes, adding more incentive to engage with this sort of offense. Indeed, the informal costs of green crimes are almost none when most of society perceives the interaction between the environment and humans from an anthropocentric perspective (White 2010:9). If ecological systems serve their purpose when humans are profiting from them, why should there be any remorse or shame for harming them?

On the other hand, issues related to forced labour have a bigger cost, both officially and informally, but due to the hidden nature of the crime and the financial benefits obtained from this criminal activity, some still choose to perpetrate the offense. Advocates of rational choice theory



tried, over time, to move from theories of criminality to explain crime from a stance where it was postulated that any individual can commit offenses, regardless of background, when presented with the perfect situation. Albeit very criticized for moving from theories of criminality, rational choice does not neglect their importance. Rather, it argues these theories alone do not sufficiently explain all criminal behaviour nor do they sufficiently offer solutions for prevention.

For the phenomena of deforestation and modern slavery in the Amazon, rational choice theory with a “green touch” offers a good foundation for understanding the case study, but to give a more accurate comprehension of the situation, routine activities theory, a theory inspired in rational choice considered an enhancement for the latter, will be introduced.

### **3.4.2. Routine activities theory**

According to routine activities theory, the rational choice required to commit a crime starts with a motivated offender, meaning a person who has an incentive to consider the benefits and social costs of a crime. This likely perpetrator, when presented with a suitable victim and no capable guardian to protect, will have the perfect scenario to commit a crime (Benson and Simpson 2015:96-100; Burke 2014:152; Edwards et al. 2010:43,46; Friedrichs 2010:234; Gilling 1997:57-58; Tibbetts and Hemmens 2015:80; McLaughlin and Newburn 2010:210). To choose the suitable target, besides considering the absence or weak presence of the capable guardian, the likely perpetrator considers the value the suitable target has (benefit it can produce), its inertia (incapacity to resist the action of the offender), visibility (the possibility of being seen by the perpetrator) and access (capacity of being reached) (*Ibid.*, 213; Burke 2014:153). Thus, considering the insights from rational choice theory, the absence of a capable guardian and the presence of a suitable target, a choice to commit crime likely will be made.

The probabilities of a likely perpetrator to commit a crime are much more complex and less straightforward than it seems. In fact, the strengthening or weakening of any of the elements of the

crime triangle (offender-target-guardian) can potentially increase crime rates (McLaughlin and Newburn 2010:212). At first, this theory of crime was developed to explain criminality in urban environments, focusing primarily in seeing personal belongings as the suitable targets, and the owners and neighbours as the capable guardians (see Cohen and Felson 1979).

Without the need of large modifications, routine activities theory offers a reasonable explanation for forced labour. However, the traditional framework of routine activities theory does not consider the implications of the crime-triangle to environmental harms. In fact, even with the evolution of criminological thought and scholars who theorised about other suitable victims and capable guardians, most of the studies on routine activities theory do not discuss environmental crimes (see Bennett 1991; Bernbug and Thorlindsson 2001; Braga et al. 2012; Hawdon 1996; Massey et al. 1989; Miethe et al. 1987).

In green criminology, much can be said concerning routine activities theory. Within this new perspective, capable guardians can be everyone involved on the protection of environmental heritage, from law enforcement officers to ordinary citizens who witness harmful activities. This guardianship requires strong regulation because without an adequate response for criminal behaviour, the presence of a capable guardian becomes ineffective, decreasing the social costs of engaging in criminal activities (Edwards et al. 2010:44-45). Moreover, stronger regulation is required because many of the current environmental regulations are being influenced by individuals and corporations responsible for environmentally harmful activities. As a result, environmental regulation ends up being a poor attempt of enforcement and of enhancing the presence of guardianship (*Ibid.*, 45).

The Brazilian recent history of amnesty for deforestation crimes presented on Chapter 2 is a good example of how this interaction between environmental offenders and legislators can make the presence of capable guardians ineffective. A “green view” for routine activities theory is innovative when compared to the traditional routine activities theory since the latter only sees law enforcement

agents as capable guardians when they are the ones who witness a criminal activity. Additionally, in this new perspective to routine activities theory, when considering environmental crimes, the suitable targets range from humans victimised by environmentally harmful activities to non-human species and natural ecosystems. Considering the value, inertia, visibility and access, it is fair to say that a natural ecosystem, like the Amazon, is an easy target. Its value for holding a variety of commodities is undeniable. Its inertia, visibility and access as an ecosystem are obvious, once the lack of capable guardians facilitates the rainforest to become a target.

Routine activities theory does not focus much on the offenders and their motivation (Burke 2014:158) but adds two components to understand opportunity and disposition for offending. It can be said that while rational choice theory focuses on explaining disposition, routine activities theory attempts to comprehend opportunity. Hence, considering both theories, strategies for crime prevention can be planned to reduce crime rates (Tibbetts and Hemmens 2015:80-81). In the crime triangle, for reasoning actors such as ranchers, slaughterhouses and supermarkets, the low probability of being detected doing business related to environmentally harmful activities decreases deterrence. Thus, this might indicate that increasing the presence of capable guardians multiplying the number of those interested in a clean supply chain enhances deterrence (Cohen 2000:1; Croall 2001:119).

The aim of rational choice theory and routine activities theory, both part of situational crime prevention, is to reduce the opportunities for crime to occur. This is a meaningful shift from classical criminology as the focus of prevention policies does not lie in social milieu and in criminal behaviour (Edwards et al. 2010:46). Undoubtedly, criminal behaviour matters and theories of criminality are important if enforcement is supposed to be effective, but denying that harms can be mitigated from a different perspective would be naive.

South and Brisman (2013:200) affirm deforestation rates worldwide indicate that in every 2 seconds, clear-cut logging victimizes an area of forest from the size of a football field. In addition,

the activity of forest clearance is mostly undertaken in areas of low population density and limited governmental presence, being the result of “low levels of law enforcement, high levels of corruption, and an abundance of natural resources.” These facts reinforce the idea that the absence of capable guardians is an important element for deforestation and related activities to happen. Furthermore, these uncontrolled patterns of deforestation are largely happening in the global South (Bouekhout van Solinge 2010:274; Rice 2008:6). Yet, voices from those countries are rarely heard in scholarly discourse, and the production of knowledge coming from these places seems not to be flowing from the global South to the global North.

### **3.5 Is there anything to learn from the global South?**

*“It is also problematic that the majority of information we have comes only from developed countries that do not bear the brunt of environmental harms.”*

Hall’s statement (2015:74) is part of a discourse about the lack of official information on crime rates from countries in the global South, but it might also be used to claim that criminological knowledge is mostly coming from the global North. This is problematic as many of the issues that concern criminological inquiry take place beyond the borders of either the so-called ‘developed world’ or ‘the global North’<sup>9</sup>.

The global criminal economy has a big share of its enterprise happening in the global South (Carrington et al. 2016:4; Lee and Laidler 2013:141). Yet, in the limited instances, when criminological studies have not focused on experiences from the North, they are the result of research conducted by “outsiders,” foreigners who may not be well enough immersed in the local culture and history to understand regional patterns and behaviours (White 2010:5). Theories from the North are applied in the global South using the same standards of analysis, disregarding the possibility of non-applicability within these different social and cultural contexts (Carrington et al. 2016:2; Fraser 2013:252).

This western-centric perspective lacks insight into the particularities and realities of the South. For instance, South and Brisman (2013:45) argue green criminology is a “marginalized area of criminological research, more so in the U.S. than elsewhere.” This argument fails to recognise how underdeveloped green criminology is in the countries of the global South, neglecting them as sites of production of knowledge. Moreover, until recently the majority of countries from the global South were called pejoratively as Third World countries. This term can still be found in recent green criminology papers and books (see Edwards et al. 2010:250; South and Brisman 2013:249; White and Heckenber 2014:15) and prove that post-colonialist ideas are more present in criminology than acknowledged within criminological discourse.

The aim here is not to fragment criminology, but it must be called to attention that it is worrisome that the perspectives of those in the global South who should be heard are not influencing criminological knowledge on the same level as the voices of the researchers from the global North who are already offering new perspectives and solutions during the last centuries (Fraser 2013:252; Carrington et al. 2016:1,3).

Encouraging the production of knowledge and publications from the global South should be a priority for criminology, as the field demands horizontal collaboration instead of vertical interaction to offer new insights (*Ibid.*, 3,4). Crime is still seen within the discipline as an urban phenomenon, while the Amazon case study shows that is not entirely true. Despite having a reality that challenges the traditional concepts of crime, the South is expected to uncritically apply the same crime theories as the North.

The current limited view fails to understand how crime interacts with particularities from the South. Furthermore, it is allowing leaders from nations of the global North to remain with a naive assumption that an event occurred in Brazil would have its collateral effects restricted within national borders, or that the solution for environmental harms in the South should simply be importing effective public policies from the powerful and developed countries of the global North.

However, in both cases, we are lacking a view of the broader picture: in a world of networks and flows, what happens in the global North impacts the global South and vice versa (White 2010:9; White 2011:1).

In Brazil, estimates suggest there are 213,000,000 cattle in pastures, a number that can significantly affect climate change due to the increase in greenhouse gas emissions from ranching and deforestation. While the collateral effect is felt worldwide, the cause of this issue, considered to be local, also has global contributors, such as countries that purchase Brazilian beef without requiring measures for securing sustainable development and “clean meat” (Amigos da Terra 2009; Barreto 2015:7; Cacho et al. 2014:321).

Therefore, the importance of a criminology strengthened by a real contribution from the global South is evident. It is essential to acknowledge that global powers also have a share of responsibility for the events happening in the Amazon. However, while the North is suggesting theories of crime and criminality, it neglects its contribution to deforestation and to modern slavery, creating an insurmountable obstacle for achieving sustainability, equality and eradication of poverty in the South (Datta and Bales 2013:210).

It is undeniable that green criminology needs to be part of mainstream criminology if we wish to have a better comprehension of the field. As demonstrated here, there are more connections between green crimes and other criminal activities, such as corporate crime and modern slavery, than it is traditionally recognised. Additionally, the perspectives given by rational choice theory and routine activities theory were meant to reinforce this statement and aimed to provide the necessary background to analyse the *Carne Legal*. It was also highlighted that issues regarding the global criminal economy will progress if the field does not acknowledge the voices coming from the global South.

#### **4 *Carne Legal* programme: Enforcing regulation through collaboration**

This chapter shall offer a good understanding of *Carne Legal*. Here, the events that shaped the initiative and have implications for comprehending how the theoretical framework discussed in Chapter 3 is related to the research will be discussed.

According to Greenpeace (2009), the agribusiness industry in the Amazon is the second biggest vector for deforestation in the world because the Brazilian government “awards” crimes through its public policies, a situation that endured from the 1970s until the present. In addition, in 2009, 40% of the processed meat bought in the United Kingdom came from Brazil, and 90% of that meat came from slaughterhouses involved in deforestation. Besides the United Kingdom, countries like the United States and China purchase beef from Brazil.

Although it was known that ranching caused deforestation in the Amazon, until 2009 the *MPF* had no documentary evidence to build a solid case in court. Encouraged by reports from Greenpeace and Amigos da Terra, a partnership between *IBAMA* and the *MPF*-Pará began to investigate the records of purchases and sales in the meat supply chain to identify those involved in commercializing cattle raised in illegally deforested areas. Reconstructing the supply chain from ranches to consumers’ houses, the investigation showed how the cows were negotiated between ranches and slaughterhouses to be later sold on the retail market (Mendes 2009).

The results revealed, among other things, that the second biggest slaughterhouse in the country was found to be negotiating the purchase of cattle illegally ranched in native lands belonging to the ethnicity *Apiterewa*. Additionally, all the ranches caught engaging in illegal activity had previously been embargoed by *IBAMA* for deforestation activities and had prohibitions against making any transactions until their case with the environment agency was solved. Still, commercial activities of these ranches continued. The precise number of cows negotiated was unknown, since the related business documents were unreadable or incomplete (Magalhães 2009). Although the illegal characteristic of the activity was known, since it was prescribed as a crime by

the Art. 54 from *Decreto nº 6.514 (2008)*, the majority of those involved in the supply chain saw it just as normal business.

In the meantime, due to the social pact signed by several companies who pledged not to purchase goods originated from slavery, a listing published by the Ministry of Labour and Employment provided the names of land owners engaging in various activities who were considered to be subjecting people to slavery. Once in the list, these landowners were barred from accessing public funds (Figueira 2012:267). Based on this index, the *MPF* connected ranchers caught committing forced labour crimes to the meat supply chain. According to the data collected, about 60% of farms fined for modern slavery were dedicated to ranching (Cassimiro 2009).

In the aftermath of the *Carne Legal* investigation in Pará, the prosecution opened 20 civil actions against ranchers for violations of the Environmental Crimes Act relating to the protection of the flora. Additionally, 11 slaughterhouses that purchased meat from these ranches were sued for the same violations under the argument of strict liability. The prosecution required fines that totalized R\$ 2,100,000,000.00, an amount based on a policy from *IBAMA*, which prescribed that fines in such cases should be calculated using as parameter the penalty for 100m<sup>3</sup> of wood per hectare destroyed. Simultaneously, 69 supermarket chains and other buyers of cattle products received a recommendation<sup>10</sup> issued by the Federal Prosecutor advising them not to purchase meat from the suppliers implicated in environmental crimes. If they decided to continue purchasing meat from suppliers implicated in environmental crimes, because of strict liability they would also be liable for those crimes (Arima et al. 2014:467; Magalhães 2009; Mendes 2009; Miranda 2012:3).

By the time *Carne Legal* reached the news, another fact caught reporters' attention. The state-run *Banco Nacional do Desenvolvimento Econômico e Social (BNDES)*<sup>11</sup> funded the biggest four agribusiness companies also accused of deforestation and modern slavery (Almeida 2009; Amigos da Terra 2009:6). This fact showed the government remained as one of the main funders of deforestation and modern slavery, even after several commitments. Besides *BNDES*, a branch of the



World Bank financed the biggest Brazilian meat exporter, which is the second biggest company in the agribusiness industry worldwide, and was involved in the scandal (Instituto Humanitas Unisinos 2009). The World Bank was the same organization that funded a study in 2003 to understand how ranching interacted with deforestation but was now involved in the same activities they previously denounced (Instituto Humanitas Unisinos 2009a).

In the midst of these events, the Office of the Prosecutor General decided to replicate the programme in the other states of the Brazilian Amazon, creating a taskforce to integrate and standardize the actions (Barros and Rocha 2009). With the potential replication of the programme in the other states of the Brazilian Amazon, politicians involved with agribusiness came to the aid of ranchers and slaughterhouses to press the *MPF* to revoke the requirements (Macedo 2009).

In spite of the attempts to suspend ongoing legal actions, the *MPF* required an agreement with targeted ranchers where reparation for the offending would be made. Ranchers were required to:

- 1) Implement a tracking system for cattle;
- 2) Not deforest more land for creating pastures, raising livestock only in already cleared and legalized lands;
- 3) Apply for the *Cadastro Ambiental Rural – CAR*<sup>12</sup>, a database used by the Environmental State Secretariat;
- 4) Provide a georeferenced map with their property limits;
- 5) Present a restoration plan for the illegally deforested land;
- 6) Regularize their land ownership situation with the appropriate agency.

The slaughterhouses were required to:

- 1) Boycott ranches involved with forced labour, environmental crimes, false land titles and illegal occupation of lands, land conflicts, invasion of the lands of indigenous groups, invasion of the lands of traditional communities and invasion of the lands of *quilombos*;

- 2) Buy cow meat only from suppliers who have ranches free from *IBAMA*'s embargo, that are not on the Ministry of Labour and Employment's list of people accused of forced labour, and who were not sentenced for invading natives' lands, violent crimes related to land, illegal occupation of lands, and deforestation;
- 3) Not acquire cattle from ranchers prosecuted civil or criminally by the Prosecution Service for forced labour, environmental crimes or land conflicts, nor acquire land from suppliers who are being investigated by the *MPF* for violating rights from indigenous groups, *quilombos*, and traditional communities beneficated by land reform;
- 4) Not acquire any cattle from properties deforested from January 2006 on;
- 5) Provide complete information of the origin of their product to supermarkets and the agribusiness industry, auditing periodically the activities' control system;
- 6) Provide information to their buyers and on all packages of commercialized products, about the ranch and area that the meat is coming from;
- 7) Demand from suppliers the implementation of the tracking system and complete an audit to evaluate if the system is working;
- 8) Demand from suppliers the georeferenced map of their property and ensure that the same map is presented to the *MPF*;
- 9) Demand from suppliers the proof of application for *CAR*, and for regularization of their land with the appropriate agency;
- 10) Demand a restoration plan for the illegally deforested land;
- 11) Do an independent annual audit to evaluate the restoration plan.

After one month of negotiations, ranchers and slaughterhouses started to sign the agreements (Balazina 2009; Cassimiro 2009; Diário do Pará 2009; Ministério Público Federal 2009; Portal ORM 2009a). Another actor in the first agreements was the State of Pará, which turned into a strong ally afterwards. The government of Pará released the *Green Counties* programme to encourage

environmental registration and since then has been publishing a constantly updated index about the areas that have been illegally deforested. From 2009 until 2016, 107 of the 144 counties in Pará signed agreements with the *MPF* to become “Environment Friendly.”

In 2010, the *Carne Legal* was already functioning in Mato Grosso, another state of Brazil. By then, the *MPF* decided to release a publicity campaign on TV, through leaflets and on the internet to raise consumers’ awareness on the origin of the meat they buy, explaining how the meat supply chain was connected to deforestation and modern slavery. As almost immediate backlash, the Lower Chamber of the Congress approved a motion against the campaign, openly criticizing it (Agrosoft Brasil 2010).

Regardless of this backlash, new agreements were signed, including, besides those in Pará and Mato Grosso, ranchers and slaughterhouses in the state of Acre in 2011 (Globo Natureza 2011; Natal and Arruda 2011). Yet, after the apparent engagement in these new agreements, Greenpeace accused one of biggest slaughterhouses of continuing to conduct business with ranchers involved in deforestation and modern slavery. Among the supermarkets buying the “dirty meat” were three British supermarket chains (Dantas 2011; Barros 2012). Far from the realities of Brazilian lands, British consumers and many other elsewhere were unknowingly contributing to the perpetuation of environmental crimes, human rights violations, poverty and inequality.

The *Carne Legal* agreements were replicated in the states of Amazonas and Rondônia in 2013 and currently includes two-thirds of the federally inspected slaughterhouses in the five states (Barreto and Gibbs 2015:11; Gibbs et al. 2016:33). Additionally, the Brazilian Supermarket Association signed an agreement committing to the programme and the Brazilian Association of Meat Exporters decided to sign the same kind of pact in 2014.

In practice, this plan from the *MPF* aimed to transform slaughterhouses and supermarkets into capable guardians against environmental and forced labour crimes (Pegurier 2016). However, once the listing of individuals and corporations caught subjecting people to working conditions

analogous to slavery became widely used, in 2014, due to an injunction from the Association of Real Estate Developers, the Brazilian Supreme Court suspended, through monocratic decision, the disclosure of the list allegedly because it violated employers' rights and constitutional principles (*ADIn n° 5.209 – ABRAINC v. the State*).

After an attempt from the Ministry of Labour and Employment and the Secretariat of Human Rights from the Presidency of the Republic to publish the list again in 2015, the Supreme Court allowed the propagation of the list only in 2016, but only because the previous ordinance that established the publication of the index was revoked. Therefore, it was unnecessary to proceed with the injunction (*ADIn n° 5.209 – ABRAINC v. the State*). In the new list, the infringement record used to tie individuals and corporations to slavery is specifically due to working conditions akin to slavery. This is a setback that benefitted perpetrators, as the previous format allowed a set of infringement records to show that modern slavery was present (Sakamoto 2016).

For a country like Brazil, the *Carne Legal* was a new strategy to try to change old public policies that encourage crimes in the Amazon. Throughout the last couple years, it is visible how ranchers, slaughterhouses and supermarkets (likely offenders) made rational choices about committing or not crimes because there were capable guardians exerting their role, or abstaining from acting, resulting in an increase or reduction of the benefits to harm the suitable targets, which, in this case, were the environment and victims of forced labour, among others.

## 5 Methodology

Methodology in this research consists of the overall approach to examine the case study, comprising of the use of traditional criminological theories with an environmental outlook to analyse data gathered through quantitative methods, and answer the questions raised in Chapter 1 (South and Brisman 2013:85; White and Heckenberg 2014:79).

Using a definition where effectiveness is measured by a reduction in the levels or severity of crime committed, a 10-year series from 2005 to 2014, the last year with a definite rate of deforestation published, will be used to see the trend of forest loss and cases of forced labour in Brazil (King and Wincup 2008:25). The states analysed are only those where the programme was implemented: Acre, Amazonas, Mato Grosso, Pará e Rondônia.

The use of this case study to employ the research will be used to give descriptive information and contemporary facts of a form of harm that is presently evolving (Davies et al. 2011:57; South and Brisman 2013:86; White and Heckenberg 2014:81). Although there are scholars who criticise the case study approach (most notably Miles 1979), this is a necessary step if we wish to move forward into an unexplored territory for rational choice theory and routine activities theory, and, in the future, produce a large-scale survey with a more solid grounding (King and Wincup 2008:29).

By looking at quantitative data from official and NGOs sources concerning deforestation and modern slavery levels, the questions raised in the introduction will be analysed and answered by taking into account the theoretical background developed so far (South and Brisman 2013:92; White and Heckenberg 2014:88). Although the value of a longitudinal study for this case is recognised, this research will employ a cross-sectional design (King and Wincup 2008:25). In addition, to give more context to this study, the number of overall slaughterhouses in each state, the slaughterhouses that settled, and number of cattle in each state throughout the years will be used to complement the analysis. Rational choice theory and routine activities theory with a green criminological component will be employed to understand this case. Although these cannot explain all criminality, the hope is that they can provide a fair explanation for the case study (*Ibid.*, 82,117).

The data used for analysing deforestation rates will be various official statistics from *INPE*. Although some argue official statistics are just symbolic tools used to show how an offense is taken serious by the government (Tonry 2009:327), in this case, a secondary analysis of official data, and

data produced by professional research agencies is the most reliable source of information (Davies et al. 2011:67,68; King and Wincup 2008:33).

Three different sets of data from *INPE* will be used: *PRODES*, a satellite monitoring system that gathers data from new clearcutting in the Amazon, providing annual rates of deforestation in the region; *DETER*, an alert system designed to provide fast information of any alterations on forest coverage in the Amazon, used by *IBAMA* to detect current environmental harms; and *TerraClass*, a set of data that qualifies deforestation caused in the Amazon (Almeida et al. 2016). For all three, deforestation is considered to be “the act of converting old-growth forest into lands through anthropogenic activities dedicated to the development of agricultural activities detected by orbital platforms” (Margulis 2003:25). Although machines are also subject to mistakes, different from a survey or a questionnaire applied and synthesized by a human, the data are reflections of satellite imagery. Thus, the margin of error is significantly reduced, particularly because the satellites used are very accurate (*INPE* 2016; *INPE* 2016a; *INPE* 2016b).

As for the data used concerning forced labour, due to the hidden aspect of this crime, there is a predominance of qualitative studies that do not allow statistical modelling, as well as little substantial information from official bodies (Datta and Bales 2013:206). Still, using a triangulation from data gathered by the reports of confirmed cases of modern slavery from the Ministry of Labour and Employment from Brazil and the NGO *Comissão Pastoral da Terra – CPT*, the goal is to give a clearer image of servitude in Brazil (CPT 2016; MTPS 2016).

Ethical approval was not necessary for this study. All quantitative data used to analyse the *Carne Legal* are available online and were previously published by the organizations that collected them. The information about the initiative was carefully chosen to match only what was released in the media or were available on the court cases; none of them are protected by secrecy. In addition, although there are several media reports mentioning names of individuals and private corporations involved in environmental and forced labour crimes, their names were omitted from this study.

The independent format of this research guarantees that the findings were not subject to any alterations or manipulation to match the expectations of sponsors. Thus, I did not face this kind of dilemma, a positive fact that enhances the validity and reliability of the survey (King and Wincup 2008:24). On the other hand, *Carne Legal* was an initiative that I was part of until the end of 2013. My role, as an intern at the *MPF-Amazonas*, was to identify the ranchers involved in deforestation and modern slavery, linking them to the meat supply chain. Thus, it might be argued I am biased about its effectiveness. Still, every attempt has been made to distance myself from the programme and to take an impartial position.

## 6 Findings

This chapter will explore the collected quantitative data regarding deforestation and modern slavery, offering insights about the correlation of the information provided below, the *Carne Legal*, the theories previously introduced and the questions raised in the introduction.

### 6.1 Introduction and analysis of the data

According to data collected concerning the number of slaughterhouses that decided to sign the conduct adjustment agreements, the following results were obtained (Pegurier 2016):

State	Number of Slaughterhouses		
	Settled	Total	% of the total
Acre	10	22 <sup>(a)</sup>	45.4%
Amazonas	6	13	46.2%
Mato Grosso	31	120	25.8%
Pará	88	115	76.5%
Rondônia	11	22	50.0%

(a) Updated till 2013

**Table 1.** Slaughterhouses part of *Carne Legal*.

As observed, in Acre, 10 slaughterhouses settled, all in 2011 after the case was brought to Court. This number corresponded to 45% of all slaughterhouses in the state, according to

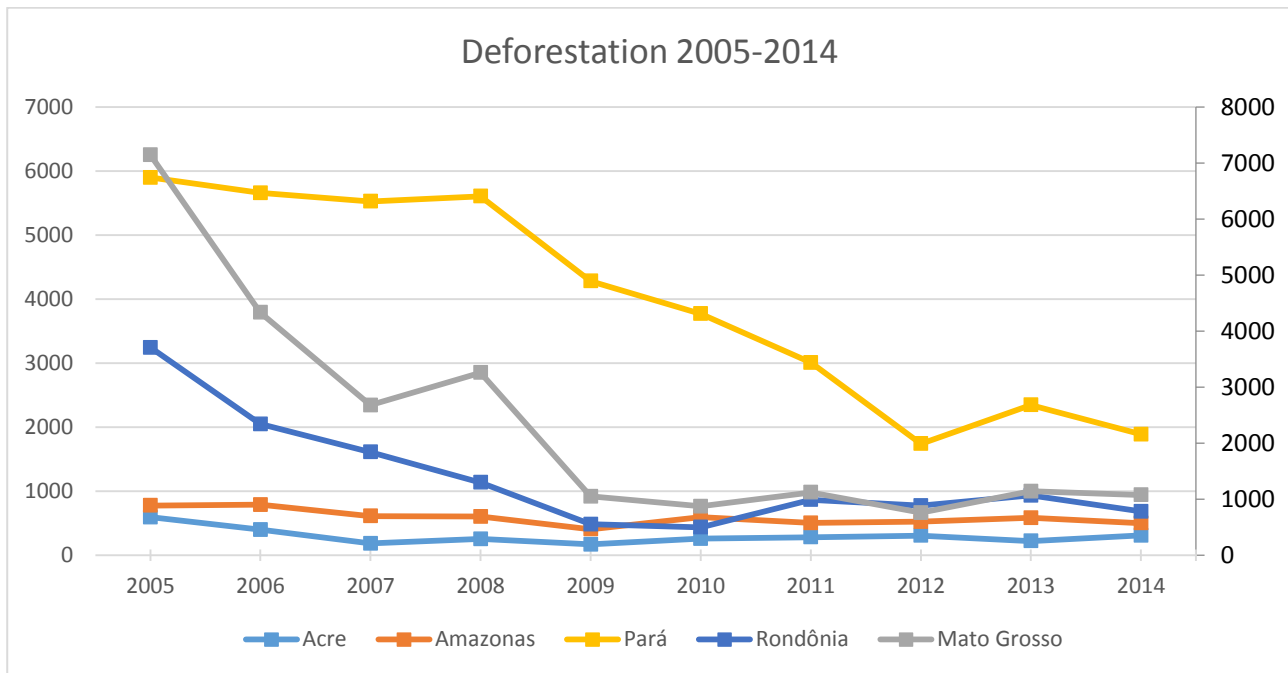
information from 2013. In Amazonas, one of the slaughterhouses settled in 2016, three in 2014 and two in 2013. At the moment, this number corresponds to 46.2% of all slaughterhouses in the state. In Mato Grosso, 31 out of 120 slaughterhouses pledged not to deforest the Amazon, corresponding to 26% of the overall number, while in Rondônia 50%, 11 out of 22, of the slaughterhouses agreed to reduce deforestation.

Table 1 demonstrates that Pará, the state where the *Carne Legal* started, held the highest number of slaughterhouses that settled. Factors that contributed to this were the longevity of the programme in the state when compared to others, little prospect of changes in the Forestry Code back in 2009, the absence of potential modification in public policies, court decisions favourable to the programme and the engagement from the state and counties with the preservation of the Amazon. Later on, with the perspective of the New Forestry Code and the bet on different decisions from local Federal Courts, benefits for not complying could seem more attractive for slaughterhouses in the other four states.

Data about ranchers and supermarkets was not publicly available since a system for compiling all registered producers do not exist and registries from supermarkets can be requested only by official bodies. Therefore, it was not possible to have estimates on the percentages of individuals and retailers who pledged not to deforest nor it was possible to consider how these numbers could affect deforestation rates.

Still, with the number of slaughterhouses in mind, regarding the data of deforestation, the following results were obtained:

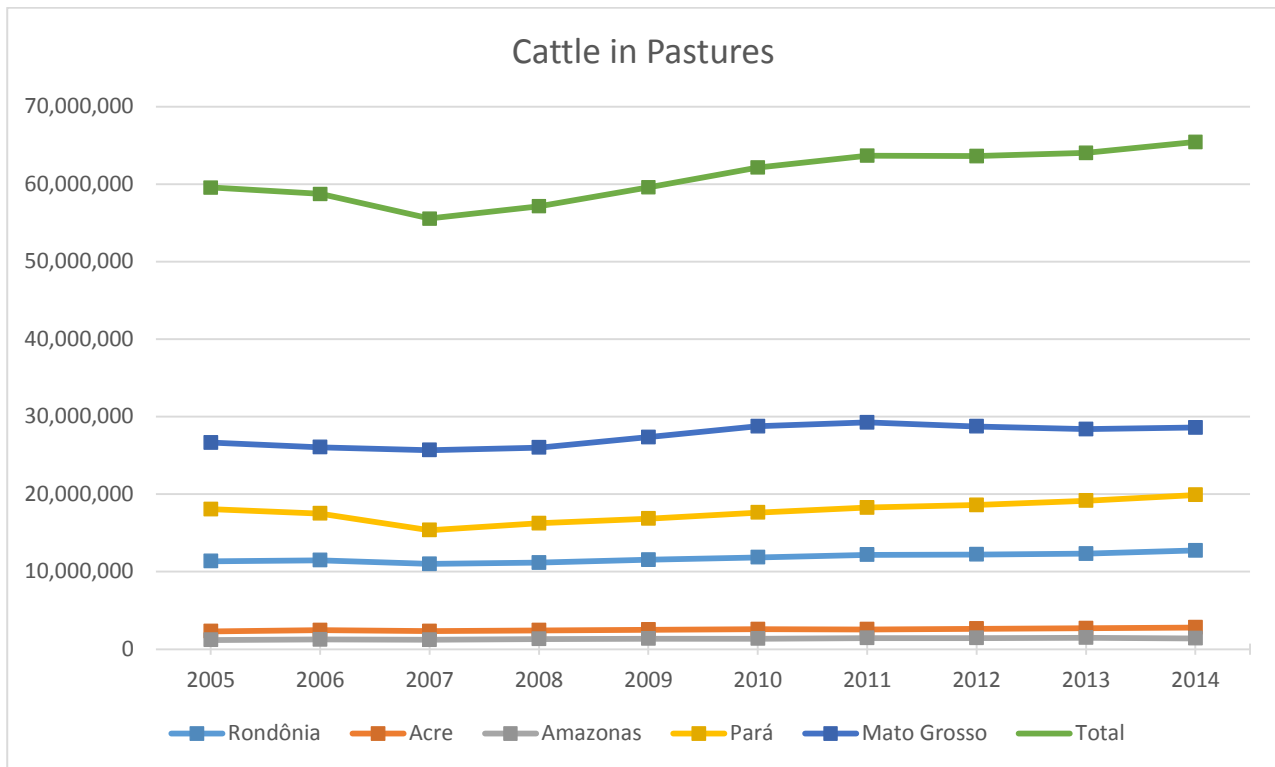




**Figure 1.** Deforestation rates in the Amazon (2005-2014), divided by each State where the programme is functioning (the data used to create this chart are available at the Appendix).

It can be observed that since 2005 the rates decreased after the PPCDAm-I. The numbers kept dropping until 2012-2013, when deforestation increased. The increased rates do not necessarily mean alarming levels of deforestation; rates between 2012-2013 were also the second lowest since *INPE* started monitoring the Amazon. Additionally, the expectation of amnesties through the New Forestry Code, which included new infrastructure projects such as dams, road asphaltting and port constructions, with all the implications they bring, were important drivers of deforestation in the Amazon for this period (Abranches 2011; IPAM et al. 2014:1). While the *Carne Legal* started in 2009 in Pará, it began in 2010 in Mato Grosso and Acre, and in 2013 in Amazonas and Rondônia. Consequently, it is fair to say that even where there was a slight increase in deforesting levels, the patterns did not have a drastic shift.

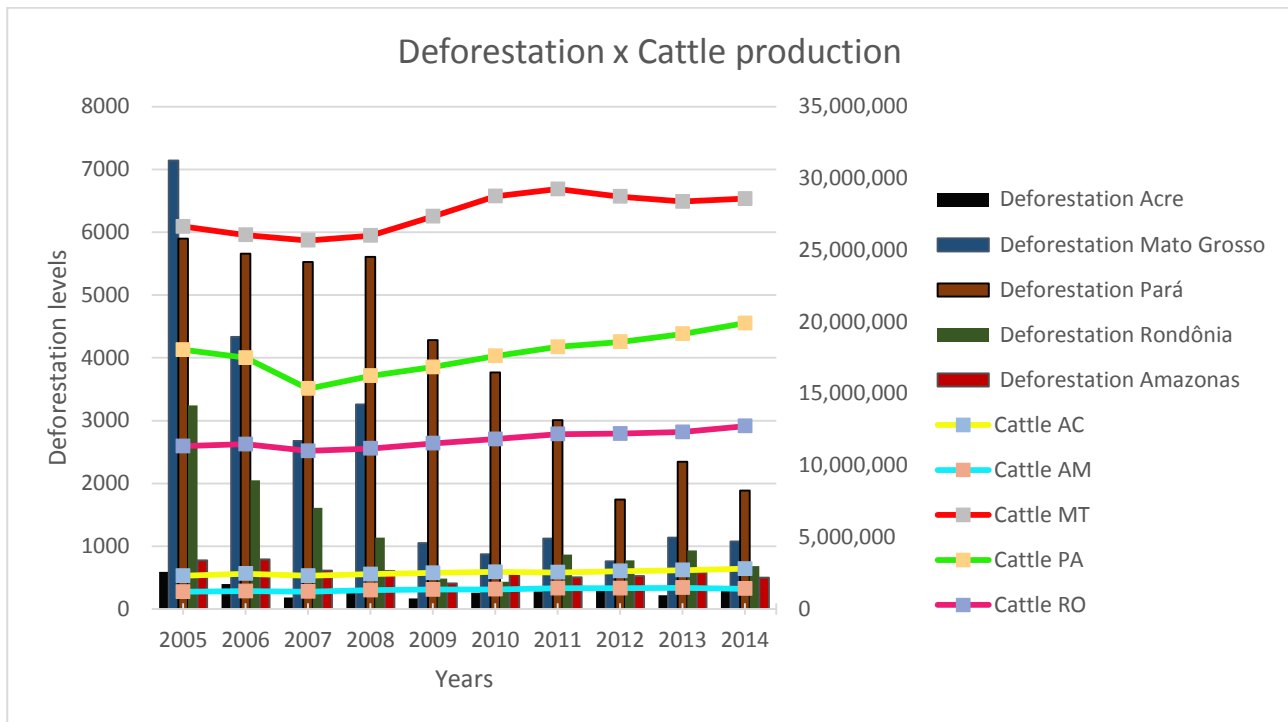
Moreover, it is important to contrast deforestation rates with the growing number of cows in pastures:



**Figure 2.** Cattle production in the Amazon from 2005-2014, divided by each State where the programme is functioning (the data used to create this chart are available at the Appendix).

Taking into account that the increased number of cattle in the Amazon was responsible since the 1970s for deforestation, a statement confirmed through analyses of statistical regression (Margulis 2003:33), it was expected that increasing the number of cows would increase deforestation rates. That was not the case. Hence, considering the current number of slaughterhouses and the unknown number of supermarkets and associations involved with *Carne Legal*, the logical conclusion is that strategies of enforcement, including the programme, are effective for reducing environmental offenses in the Amazon.

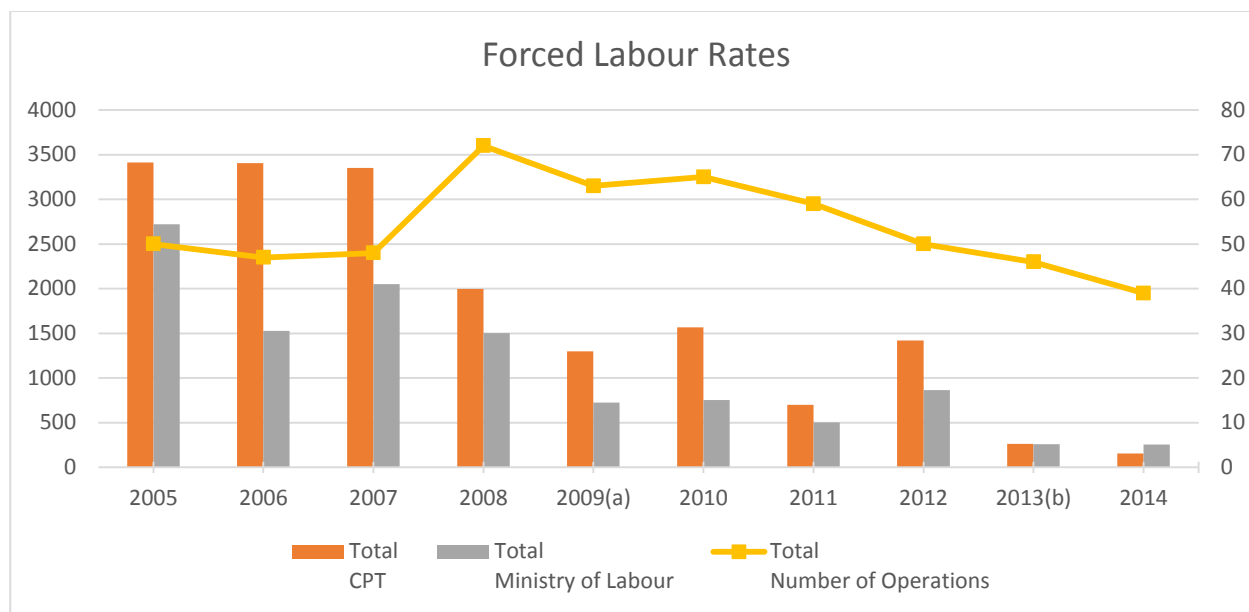
Furthermore, it is an accepted fact that, as mentioned previously, ranching was not the only driver of deforestation. While this specific factor out of many for environmental harms was reduced, others such as mining, construction of dams, new roads, and logging, were not subject to the same strategies of enforcement, which may explain the continuation of forest loss. The contribution of the programme to the prevention of forest loss becomes even clearer in Figure 3 by putting together the data about deforestation and cattle production in a single chart:



**Figure 3.** Deforestation x Cattle production in the Amazon from 2005-2014, divided by each State where the programme is functioning (the data used to create this chart are available at the Appendix).

From 2005-2014 it can be observed that deforestation levels decreased while the cattle production levels kept increasing. If there were ineffective ongoing strategies of enforcement to control environmental and forced labour crimes in the Amazon, such as the *Carne Legal*, it would be expected, considering the Brazilian history, that rates in deforestation increased in accordance to the increase in number of cattle. Thus, the correlation between the success of the programme and the prevention of forest loss and modern slavery is very likely to be true. It is also possible to conclude that the high beef production levels can be maintained without clearcutting more forest, but a challenge to this sustainable model is the cost of recovering degraded land when compared to the cost of creating new pastures through clearcutting. Recovering degraded land is at least 1/3 more expensive to implement than clearcutting (Prates and Bacha 2011:621). For ranchers, increasing the overall cost to make degradative activities more expensive than complying with the environmental legislation can be a strong factor to help reduce deforestation.

On the other hand, Figure 4 shows the obtained results regarding the number of people subjected to forced labour in those States:



(a) Terminology from the Ministry of Labour changed from "Workers Rescued" to "Workers found in conditions akin to slavery"

(b) Year where the workers' activities started to be qualified.

**Figure 4.** People subjected to forced labour from 2005-2014 in the states where the programme is functioning (the data used to create this chart are available at the Appendix).

Total CPT corresponds to the number of workers involved in agricultural activities, according to *CPT*. The rates above were calculated using the location where people enslaved were found. If the location was referred as a farm or ranch, the number of workers was included in the results. However, in 2013, the data provided by *CPT* started to specify not just the location but also the activity undertaken by these people. Thus, the estimates from previous years are not as accurate, since the data are based only on location. Although the location suggested ranching-related activity, that may not be the case, with registries showing mining or logging activities taking place on ranches/farms.

While data from *CPT* tries to qualify forced labour incidents, the Ministry of Labour's data only quantifies it without specifying where and how the victims were found. Moreover, the terminology used by the Ministry of Labour to publish their data changed from 2009 onwards, a modification that might affect the statistics. Also, the number of people enslaved according to *CPT*

seems higher because not all complaints registered with the NGO are investigated by the official agency, or, sometimes, when they are, the information leaks and the operation is unsuccessful. This may be a reason why the Ministry of Labour does not count them. In both records, the number of workers involved decreased.

With these observations in mind, the decrease in the number of people under forced labour over the years does not necessarily mean that there are fewer victims, particularly because this sort of crime is hidden, and annual estimates only help to find out how many victims were identified. From the data currently available, it is not possible to affirm when the workers were victimised nor what is the actual number of people who are currently enslaved. Yet, if estimates of forced labour incidents are taken into account with the deforestation levels, once there is a link between the two activities, it could be argued that indeed the numbers indicate a reduction, especially in 2013-2014, but claiming this would require more empirical information.

## **6.2 Is *Carne Legal* programme working?**

There is a strong component of rational choices made by offenders when deciding whether to commit or not commit environmental and forced labour crimes. The unthoughtful use of natural resources is part of ranchers' culture, who learned predatory practices of ranching, but were/are also encouraged through public policies to deforest the Amazon (Tonry 2009:334; White 2011:11). Counties that are part of the Deforestation Arc, the region with the most deforested area, show that the activity was happening due to the lack of enforcement and capable guardians, with estimates suggesting that the surrounding areas of the Deforestation Arc are more likely to be deforested (Margulis 2003:26). Where there was engagement not only from private actors but from the government, like as happened in Pará, crime rates decreased more than where institutions were lenient. Therefore, the "green" routine activities theory discussed on this research indicates that the presence of the capable guardians helps deter the progress of criminal activities on those places

because this side of the crime triangle is reinforced, while another side of this triangle is weakened – the likely perpetrator. Rational choice theory explains disposition to offend affirming benefits minus social costs results in a decision of the likely perpetrator to offend. Consequently, the increase in the social costs of offending caused by the *Cane Legal* reduced the disposition to engage with environmentally harmful activities.

On the other hand, many ranchers affirm that public policies facilitating the titling of illegal lands are among the biggest incentives for the agribusiness industry to continue deforesting the Amazon. They are further encouraged by the Brazilian judicial system that grants titles for squatters who remain on unclaimed land after a period and the lack of governmental presence and law enforcement (*Ibid.*, 64; South and Brisman 2013:209). These statements were collected by Barreto and Gibbs (2015) and also Pegurier (2016) during interviews with ranchers, showing that a clear pattern of rational choice is being made due to the complete absence or lack of effectivity of capable guardians, enhancing the possible benefits offenders get, although they are aware of the illegality of invading unclaimed public lands and of deforestation. Even so, the *Carne Legal* increased incentives for ranchers to abide by the law and reduce deforestation levels. The coerciveness of the strategy and the information provided certainly tapped into the morality of some previous offenders about the necessity to change their harmful activities (*O procurador que laçou o desmatamento* 2016; Tonry 2009:335).

The strategy of the *Carne Legal* looked at the problem of deforestation and modern slavery in a way that perpetrators and those who had profited from these harmful activities had their opportunities for committing crimes reduced (Edwards et al. 2010:48). Using a situational crime prevention approach, this study elucidated the existence of two novel components into the process of rational choice of environmentally harmful activities in the Amazon. First, if the perpetrator committed any of the offenses prescribed in the agreements and recommendations, the outcome would nullify or at least drastically reduce possible benefits of harmful activities, since the penalties

for non-compliance result in severe financial consequences, shaming and increased difficulties to conduct business. In addition to decreasing benefits, the recommendations and agreements increase the social cost of these crimes affecting disposition of offending. Second, the increased enforcement signified more capable guardians to prevent environmental and forced labour crimes from happening, allowing these guardians to establish a more solid presence to protect the suitable victims such as the rainforest and enslaved people from the harms that can be caused when ranchers, slaughterhouses and supermarkets engage in environmentally harmful activities. This commitment to a clean meat supply chain proved to have more effect on reducing deforestation and modern slavery than certification policies (Meijer 2015). For 85% of 56 suppliers from one of the biggest slaughterhouses in Pará, registering with *CAR* was a consequence of the agreement, as they still wanted to do business with this particular company (Barreto and Gibbs 2015:14). Thus, the agreements reduced the number of suppliers involved in offending from 36% to 4% between 2009 and 2013 in Pará (Barreto 2015:33).

This corporate compliance is in accordance with theories of corporate crime, which state that in addition to the high fines required by the *MPF* for environmental and modern slavery crimes, the possibility of damage on the reputation of slaughterhouses and supermarkets, and the possibility of facing formal accusations are a high social cost to be paid, especially when compared to the benefits of continuing to engage in criminal activities. Consequently, it is easier to settle and commit to preserve the Amazon and to abstain from subjecting people to forced labour (Croall 2001:117, 118; Pearce and Snider 1992:82).

The informal costs of not complying with environmental and penal laws also increased. With the agreements and recommendations, ranchers and slaughterhouses were subjected to the possibility of financial loss when big supermarkets were connected to the supply chain, forcing the supermarkets to take action and pay attention to who their beef suppliers were. The stigma of being accused of activities that use slavery was a big incentive to settle. Although awareness of Amazon

preservation is not a consensus within society, there is no doubt that the abhorrence to slavery is. Forced servitude is part of Brazil's history, and although abolished in 1888, it is continuously reinforced in public policies as an activity that has to be eradicated (Tonry 2009:336). This idea that forced labour must be denounced more severely than environmental crimes is also reflected in the way the legislation treats them. While forced labour is part of the Brazilian Penal Code (Decreto-lei n° 2.848), the main compilation of criminal offenses in Brazil, the Environmental Offenses Act is a separate law that is not included in the Penal Code and thus is not really considered to be part of "serious crimes."

The number of people engaging in modern slavery was already small from the onset when compared to environmental crime incidents. This shows that it is a common sense that other humans should not be harmed, but applying the same values for non-human species and the natural ecosystem is not a consensus within society. According to green criminologists, legal systems are designed from an anthropocentric perspective where humans are at the top of the hierarchy in the relationship between themselves and the ecosystem. Consequently, sanctions prescribed for forced labour are harsher and the formal deterrence is higher than those for environmental crimes (McLaughlin and Newburn 2010:419). Also, the informal deterrence of crimes against people is higher, since as seen in rational choice theory, emotions of shame, loss of self-esteem and remorse are major factors in the scale of decision-making in regards to harm to other humans (Tibbetts and Hemmens 2015:78).

As for deforestation, offenders experience little regret, since no serious consequences are usually seen in the short-term. Let us not forget that deforestation in Brazil was normalized through public policies, reducing the previous informal factors of deterrence, which include personal values and, as shown, can be more important than official deterrence. From an anthropocentric view, the ecosystem serves its purpose when humans achieve their goals, hence, there is little reason to be ashamed or feel remorse for degrading the environment.



Therefore, it can be argued that *Carne Legal* has a deterrent effect that is helping reduce deforestation and modern slavery in the Amazon, with many ranchers, slaughterhouses and supermarkets complying with the terms established. However, studies also indicate that some ranchers are choosing not to comply to the terms of the agreement. Hence, the phenomenon of displacement is being detected in deforestation and forced labour crimes in the Amazon (see *O procurador que laçou o desmatamento* 2016; Barreto and Gibbs 2015). Harmful activities are being moved to different sites, such as “raising ranches,” which were not subjected to any similar control from the *MPF*. Cows raised in illegal ranches are later sold through “clean” ranches. These laundering strategies are confirmed by ranchers who affirm that the “pirate cows” are not embargoed, only the land, since “raising ranches” were not prohibited from doing business (*Ibid.*, 20; Barreto 2015:8; Boucher et al. 2014:11; Gibbs et al. 2016:39; White 2008:253). The attitude towards “raising ranches” indicates a component of a technique of neutralisation (see Sykes and Matza 1957) being used, once ranchers neglect the essence of the programme. Still, this does not reduce the importance or legitimacy of the programme. The analyses of techniques of neutralisation being used by those who engage in environmental crimes and modern slavery in the Amazon can be a topic for future research.

The conduct adjustment agreements were weakened by the amnesty granted by the New Forestry Code, the limitations that excluded “raising ranches” from the conditions of the agreements, and the conflicting court decisions that give hope to ranchers about the possibility of unfavourable ruling to the plead of the prosecution (Barreto and Gibbs 2015:9). According to a Greenpeace report (2015:2), till recently, a number of supermarkets that correspond to over 50% of the market were still not taking the necessary measures to secure the origin of the meat they sold as required by the *MPF*, though some of them started to publish the results of independent auditing in 2014. Studies show that less than 2% of the fines levied on offenders were collected by the government, showing that some of the legislation was enacted to show superficial commitment to

the environmental cause. Additionally, ranchers are committing fraud using scapegoats to be fined and take the responsibility in their place (Barreto 2015:28; Vialli 2011). Also, the government does not provide a unified system for land registry and ranching sites. It would be necessary for the Federal government to follow Pará's example and implement new enforcement measures to collaborate with efforts to reduce deforestation and modern slavery.

The enforcement of environmental laws faces opposition because corporate owners, in this case ranchers, supermarkets and slaughterhouses, threaten the government by claiming they will leave the country and go somewhere with less restrictive regulation if any harsher rules are implemented. An eventual exodus of corporations would result in less tax revenue, loss of jobs and unpopularity of the commander in chief who decided to take the measures. Thus, the agribusiness lobby demands less criminalisation of their activities, even if they are ecologically disastrous or violate human rights, indicating crime became endogenous to the State (Figueira 2012:270; South and Brisman 2013:27,177; Tonry 2009:327; White 2008:193; White 2011:6). In these interactions between private and public actors, one of the major unresets for green criminologists proves to be very real in Brazil – green crimes happen when the State shows leniency towards perpetrators of environmentally harmful activities. This concern from green criminologists is the same concern verbalized by scholars who study corporate crime – the strong links between the government and the private sector are obstacles to effectively punish people in power when they are responsible for criminal activities. Additionally, the lack of enforcement agents, prosecutors and judges, absence of inter-agency cooperation, and a short budget, increase the challenge of responding properly to environmental cases (*Ibid.* 103,129; Edwards et al. 2010:71; Walters et al. 2013:59; White 2008:192).

Previously, it was discussed how compliance is achieved when perpetrators have the guarantee that what is being asked from them is widely supported by the public or their peers. Hence, in addition to the issues discussed in the last paragraph, the instability caused by decisions

from the Supreme Court, the possibility of contradicting decisions from different local Federal Courts and the inconsistent support from society are factors that influence the outcome. These factors, which range from the cow laundering schemes to the instability of court decisions, influence the effectivity of the programme and explain why some ranchers, slaughterhouses, and supermarkets, have decided not to settle. The perpetrators that chose not to comply with the legislation still see benefits, or at least the prospect of benefits, which outweigh the social costs of offending in their process of decision-making.

Thus, economic sanctions, shaming, and prohibition, can have a deterrent effect to help control levels of environmentally harmful activities and modern slavery, but in order for these sanctions to accomplish their full purpose, perpetrators need to be sure that the government will not be lenient with their harmful activities anymore. Unfortunately, the Brazilian experience shows that although economics sanctions, shaming, and prohibition have a deterrent effect, their effect might diminish when official bodies do not give wide and full support to strategies of enforcement in environmentally harmful activities and modern slavery.

### **6.3 What is next?**

Brazil still has one of the highest absolute rates of deforestation worldwide, and measures need to be taken if the country wants to contribute actively to the reduction of greenhouse gas emission (Gibbs et al. 2016:33). The exportation of Brazilian beef to other countries from the global North with unsustainable meat consumption patterns is also causing deforestation and needs to be considered. While more commitment is required and demands for sustainable development are put into place, we must ask for more serious measures from other countries as well if we wish to change trends in beef consumption (Reichel and Albanese 2014:208; South and Brisman 2013:1,209; Walters et al. 2013:250). To open our eyes to this reality, a criminology built with contribution both from the global North and South is a good starting point to properly indicate the existence of these

issues and suggest new strategies of enforcement, overcoming post-colonialism within and outside the criminological field in the 21<sup>st</sup> century.

On the other hand, it will only be possible to discourage people to rationally make the decision to deforest new lands when the government gives a purpose for each part of the Brazilian territory, providing a chance for actual capable guardians to minimize the opportunity of the suitable targets – the environment and vulnerable people – to suffer from the actions of the likely perpetrators. For some, this means creating new Conservation Units or granting land titles to indigenous groups, traditional communities and *quilombos* (*O procurador que laçou o desmatamento* 2016).

## 7 Conclusion

The *Carne Legal* reinforced that the population has the right to know the origin of the meat they are consuming. Hence, it could be argued that the beginning of the programme already served a purpose, as sensationalizing environmental harms and forced labour helps in raising awareness in the society about how some issues can affect their daily lives much more than realised (Tonry 2009:328). Still, the evolution of the programme shows that preventing those harms requires contributions from both the private and public sectors. In this case, the state with the greatest governmental engagement was also the state with the highest level of success.

Thus, it is clear that the government cannot abstain from enforcing crime prevention when human rights violations and the future of the environment are at stake. Although it was possible to conclude that the *Carne Legal* is influencing deforestation-related and forced labour crimes, it cannot be ignored that Brazilian information regarding criminal activities is insufficient and poorly explored. This reality helps explain why disastrous policies that are completely disconnected from the real world are being created. There is a need for good quality data and research studies from official bodies to understand what is effective. Furthermore, it would be important to look at

initiatives like the *Carne Legal* throughout time. In this case, five years is not enough to definitively measure the success of the project, although the indicators show it is a great achievement. A longitudinal study to follow the progress of the programme would offer a greater validity to the perspective presented about rational choice theory and routine activities theory in addition to a deeper understanding of the project itself (King and Wincup 2008:26).

Besides, rational choice theory and routine activities theory were shown to be reasonable theories to aid in the comprehension of crimes in the Amazon. However, it would be valuable to look at theories of criminality in rural contexts to evaluate the role they play in crimes outside the urban context. For the Brazilian culture, considerations about masculinities would be a good perspective to start with, since the patriarchal figure in rural contexts of Brazil is still predominant (Ferreira 1996:234).

Finally, as South and Brisman (2013:102) suggest, to be truly global, green criminology needs not only to foster cross-disciplinary knowledge but also to listen to the voices from different parts of the globe. Thus, through this research, my hope is the Brazilian experience can be acknowledged not just as a successful experience but as a voice that needs to be considered in the field, especially because findings suggest that there are more contributions to environmental harms and crime rates coming from the global North to the global South than recognised, demanding international cooperation if we ought to tackle issues like climate change, equality and wealth.

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<sup>1</sup> Office of Federal Prosecution in Portuguese is *Ministério Público Federal*, usually referred as *MPF*.

<sup>2</sup> *Carne Legal* can be translated as ‘Legal Beef.’ The word *legal* means lawful but is also a slang that means ‘cool.’ Therefore, the programme was a strategy to call the society’s attention with a catchy and easy name that also brought the seriousness of the matter, smartly stating that only meat from ranchers who abided with the law was ‘ok’ to purchase.

<sup>3</sup> *Superintendência do Desenvolvimento da Amazônia – SUDAM*, can be translated as *Superintendency for Development of Amazonia*.

<sup>4</sup> The *Instituto Nacional de Pesquisas Espaciais – INPE* is the *National Institute for Space Research*.

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<sup>5</sup> The *Instituto Brasileiro do Meio Ambiente e dos Naturais Renováveis – IBAMA* can be translated as *Brazilian Institute of the Environment and Renewable Natural Resources*.

<sup>6</sup> The Rural Caucus is formed by Deputies and Senators who are ranchers themselves or receive funding for their campaigns from the agribusiness sector.

<sup>7</sup> *Comissão Pastoral da Terra – CPT* can be translated as *Pastoral Land Commission*.

<sup>8</sup> “*Aqui só não tem o chicote na mão e o tronco para amarrar você porque a lei ainda protege. Mas, se o fazendeiro pudesse bater na gente, bateria.*”

<sup>9</sup> The global North refers to countries from Western Europe and North America, while the global South relates to countries from Latin America, Africa, Asia and Oceania (Carrington et al. 2016:2).

<sup>10</sup> A recommendation from the Prosecution Service advises individuals or corporations concerning activities that do not comply with the law, but the recommendation is not binding. Still, if the individual(s) and/or corporation(s) decide(s) not agree with its terms, the Prosecution Service can prosecute them and demand harsher penalties. Based on the recommendation, the judge can impose more severe punishment if the individual(s) and/or corporation(s) chose to disregard the recommendation

<sup>11</sup> *Banco Nacional do Desenvolvimento Econômico e Social – BNDES* can be translated as *Brazil Development Bank* or *National Bank for Economic and Social Development*.

<sup>12</sup> *Cadastro Ambiental Rural – CAR* can be translated as *Rural Environmental Registry* or *State Environmental System*.

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## 9 Appendix

Forced Labour Data from 2005-2014																		
Year/State	Acre Workers Involved with Agricultural Activites CPT	Acre Workers Rescued Ministry of Labour	Number of Operations	Amazonas Workers Involved with Agricultural Activites CPT	Amazonas Workers Rescued Ministry of Labour	Number of Operations	Mato Grosso Involved with Agricultural Activites CPT	Mato Grosso Workers Rescued Ministry of Labour	Number of Operations	Pará Workers Involved with Agricultural Activites CPT	Pará Workers Rescued Ministry of Labour	Number of Operations	Rondônia Workers Involved with Agricultural Activites CPT	Rondônia Workers Rescued Ministry of Labour	Number of Operations	Total CPT	Total Ministry of Labour	Total Number of Operations
2005	12	62	3	0	0	0	534	1412	11	2826	1205	33	42	42	3	3414	2721	50
2006	8	8	1	8	14	2	918	444	14	2448	1062	29	25	0	1	3407	1528	47
2007	2	2	1	10	10	1	295	107	9	3044	1933	36	0	0	1	3351	2052	48
2008	0	0	0	70	85	6	541	578	29	1360	811	35	28	28	2	1999	1502	72
2009(a)	18	14	5	0	0	0	142	308	22	1121	328	31	16	74	5	1297	724	63
2010	8	8	1	60	24	3	88	118	20	1372	564	36	41	41	5	1569	755	65
2011	15	15	3	59	63	4	96	91	14	445	245	27	84	90	11	699	504	59
2012	0	0	1	162	177	6	59	83	12	1195	566	28	5	39	3	1421	865	50
2013(b)	13	13	1	0	0	0	36	86	17	201	140	25	13	19	3	263	258	46
2014	18	74	4	0	41	6	14	1	13	119	121	13	5	18	3	156	255	39
2005-2014	94	196	20	369	414	28	2723	3228	161	14131	6975	293	259	351	37	17576	11164	539

(a) Terminology from the Ministry of Labour changed from "Workers Rescued" to "Workers found in conditions akin to slavery"

(b) Year where the workers' activities started to be qualified

Deforestation Rates x Cattle Production from 2005-2014										
Year/State	Deforestation Acre	Cattle AC	Deforestation Amazonas	Cattle AM	Deforestation Mato Grosso	Cattle MT	Deforestation Pará	Cattle PA	Deforestation Rondônia	Cattle RO
2005	592	2.313.185	775	1.197.171	7145	26.651.500	5899	18.063.669	3244	11.349.452
2006	398	2.452.915	788	1.243.358	4333	26.064.332	5659	17.501.678	2049	11.484.162
2007	184	2.315.798	610	1.208.652	2678	25.683.031	5526	15.353.989	1611	11.007.613
2008	254	2.425.687	604	1.312.352	3258	26.018.216	5607	16.240.697	1136	11.176.201
2009	167	2.511.285	405	1.350.816	1049	27.357.089	<b>4281</b>	16.856.561	482	11.532.891
2010	259	2.578.460	595	1.360.800	<b>871</b>	28.757.438	3770	17.633.339	435	11.842.073
2011	<b>280</b>	2.549.497	502	1.439.597	1120	29.265.718	3008	18.262.547	865	12.182.259
2012	305	2.634.467	523	1.445.739	757	28.740.802	1741	18.605.051	773	12.218.437
2013	221	2.697.489	<b>583</b>	1.470.537	1139	28.395.205	2346	19.165.028	<b>932</b>	12.329.971
2014	309	2.799.673	500	1.405.208	1075	28.592.183	1887	19.911.217	684	12.744.326

Deforestation Rates 2005-2014																	
Year/State	Acre	% Km <sup>2</sup> /Total Area	Alerts	Amazonas	% Km <sup>2</sup> /Total Area	Alerts	Mato Grosso	% Km <sup>2</sup> /Total Area	Alerts	Pará	% Km <sup>2</sup> /Total Area	Alerts	Rondônia	% Km <sup>2</sup> /Total Area	Alerts	Total	Total Number of Alerts
2005	592	0,3608%	120	775	0,0497%	338	7145	0,7910%	3040	5899	0,4728%	814	3244	1,3659%	1009	17655,00	5321
2006	398	0,2425%	171	788	0,0505%	363	4333	0,4797%	1626	5659	0,4536%	890	2049	0,8627%	886	13227,00	3936
2007	184	0,1121%	98	610	0,0391%	248	2678	0,2965%	1883	5526	0,4429%	1441	1611	0,6783%	733	10609,00	4403
2008	254	0,1548%	83	604	0,0387%	233	3258	0,3607%	1716	5607	0,4494%	1991	1136	0,4783%	522	10859,00	4545
2009	167	0,1018%	57	405	0,0260%	269	1049	0,1161%	917	<b>4281</b>	0,3431%	1673	482	0,2029%	448	6384,00	3364
2010	259	0,1578%	108	595	0,0382%	409	<b>871</b>	0,0964%	751	3770	0,3022%	1439	435	0,1832%	556	5930,00	3263
2011	<b>280</b>	0,1706%	71	502	0,0322%	284	1120	0,1240%	849	3008	0,2411%	918	865	0,3642%	738	5775,00	2860
2012	305	0,1859%	14	523	0,0335%	289	757	0,0838%	833	1741	0,1395%	778	773	0,3255%	573	4099,00	<b>2487</b>
2013	221	0,1347%	77	<b>583</b>	0,0374%	476	1139	0,1261%	845	2346	0,1880%	628	<b>932</b>	0,3924%	480	5221,00	2506
2014	309	0,1883%	252	500	0,0321%	624	1075	0,1190%	1370	1887	0,1512%	1481	684	0,2880%	1081	4455,00	4808
<b>2005-2014</b>	2969	1,8092%	1051	5885	0,3775%	3533	23425	2,5934%	13830	39724	3,1839%	12053	12211	5,1415%	7026	84214,00	37493
<b>Total area/State</b>	164.101,88			1.558.967,43			903.246,70			1.247.638,73			237.498,12			4111452,86	