From gold to carbon:

How narratives and discourses define environmental governance in the Brazilian Amazon

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Abstract

The current global context of climate change imposes great challenges for the management of social and ecological systems. In this context, the Amazon region in Brazil is both a "hotspot" for ecosystem conservation and a region with a history that may largely contribute to the deepening of our understandings of human-nature relationships and the construction of alternatives in the making of environmental policies. This dissertation investigates the evolution of imaginaries about the Brazilian Amazon and of the build-up and implementation of public policies towards the construction of an environmental governance regime for the region. Imaginaries and policies are analyzed using a mixed methods approach which combines bibliographical review, analysis of policy narratives and discourses, and open-ended interviews. Adopting a post-structuralist political ecology framework, I first take a historical approach to describe the imaginaries about the Amazon, as advocated by different actors from the early colonial period, and the XXth and early XXIst centuries. I discuss the relevance of these historical and social imaginaries about the Amazon in the shaping of current perceptions and policy interventions in the region. Second, I investigate how environmental governance for the Amazon has evolved during the last 60 years, in what Becker (2011) has referred to as the "era of Amazonian modernization". I identify the overlapping character of policy narratives and, particularly, I show that policies in the Amazon have evolved to progressively incorporate environmental concerns. However, I also show that such incorporation has not substituted previous (economic-oriented) policies but has instead resulted in an overlapping of both economic development *and* environmental narratives. Last, I assess REDD+, a specific forest governance international initiative aiming to reduce emissions from deforestation and degradation, which stems from the global climate change regime. Through the analysis of its early implementation in the state of Acre, I show that an ecological modernization discourse predominates among participant actors, and I argue that this limits the transformative potential that REDD+ actions may have in the region, for example in terms of addressing the uneven distribution of land rights and other incentives. These findings combined make evident the importance of imaginaries and policy narratives as key frames that constrain the mainstreaming of alternative development and conservation pathways for the Amazon, grounded on locally situated needs, knowledge and understandings of wellbeing. In a region greatly affected by the advancement of the 'development frontier', the ability of such alternatives to substitute the currently dominant development and conservation paradigms for the region will determine the future boundaries of the Amazon's environmental governance.

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CHAPTER 1. INTRODUCTION

Global strategies for mitigating climate change recognize the importance of tropical forests for regulating global temperatures (IPCC, 2018). The Amazon rainforest contains the largest tropical forest biome in the world and has been often portrayed as the "lungs of the world" (UNEP, 2017). Despite the recent emergence of the Amazon as a frontier of ecological preservation, since the mid-20th century, the region has been 'modernized' through predatory land use practices (Hecht and Cockburn, 1989; Becker, 2001). Since the 1950´s, when theories of development that aligned with nationalist discourses gained prominence in the Brazilian political context, the Amazon rainforest has experienced a severe pattern of biodiversity loss, increased rates of deforestation and environmental degradation as well as the marginalization of traditional livelihoods. In parallel, Brazil has made considerable advances in the design and implementation of social-ecological policies aimed at the governance of Amazonian ecosystems (Abramovay, 2020).

The research is grounded on the premise that such policies -and policymaking- are central tenets of governance processes, i.e. the set of regulatory processes, mechanisms and organisations through which political and non-political actors influence environmental actions and outcomes (Bridge and Perreault, 2009). Governance, therefore, is a broader and encompassing term than policy. I thus analyze the design and evolution of policies for the environment and I relate these findings to the ongoing development of an environmental governance regime in the Brazilian Amazon. Specifically, I investigate the evolution of public policies in the context of the Brazilian Amazon and pay special emphasis to the build-up and implementation of a forest or, a broader environmental, governance regime. I understand public policy as "anything a government chooses to do or not to do" (Dye, 1972:2), through governmental decision-making processes that affect and influence every member of a nation-state or a subnational jurisdiction. Thus, actions originated in public policy are based on government decisions to act, or not to act, to change or maintain some aspect of the status quo (Howlett and Cashore, 2014; Birkland, 2019). I understand that policy should not be taken for granted, but rather critically perceived and further problematized (Bacchi, 2009). Therefore, I understand that approaches to policy studies are inherently political and need to be treated as such. I analyze the political actions to shape spatial interventions in the Brazilian Amazon and I investigate how this process is embedded in wider social, political, and economic settings, located throughout the global to the local scale.

Brazil was chosen to explore the emergence and implications of environmental policies (and governance) in the Amazon for several reasons. First, the Brazilian Amazon is a key ecosystem in the human quest for planetary wellbeing and climate change mitigation, as the degradation of tropical forests contributes heavily to global warming (estimates vary from 12% to approximately 20% of total global greenhouse gases emissions, according to the IPCC (2019). Secondly, since the 1980s, the discursive evolution in the global ecological debate has crystallized in Brazil in the form of public policies. The Brazilian Amazon acquires in this regard systematic centrality, given its relevance as the largest tropical forest biome in the world, which is in turn a reservoir of biodiversity and a supplier of important ecosystem services, including climate regulation (Nobre, 2016). In addition, at least from a symbolic perspective, the Amazon rainforest has also become the archetype of the destruction caused by capitalist development (Brum, 2019), and the manifestation of the historical effects of what has been named the Anthropocene Era (Crutzen, 2006).

In recent decades, Brazil has developed a complex institutional structure – the National System for the Environment (SISNAMA, in the Portuguese acronym) aimed at conserving biodiversity and valuable ecosystems, while addressing climate change mitigation and adaptation needs (May et al., 2016). The establishment of SISNAMA was possible despite longstanding political contradictions between the government's commitment to socio-environmental issues and its quest for economic growth, largely based on the expansion of the natural resources extraction frontier, which has resulted in uneven benefits and burdens for local communities (Gudynas, 2014; Svampa, 2012). Recently, the country has shown the world that it is possible to reduce deforestation and forest degradation whilst increasing regional economic outputs (Arima et al., 2011; Soares-Filho et al., 2010). Therefore, Brazil and, more specifically, its Amazon region, are at the forefront of contemporary debates on ecosystem governance and conservation and development trade-offs.

The environmental governance agenda in Brazil has embraced, in theory at least, key pillars of political and development practice of the late 20th century, including social participation and a prevalence for multi-stakeholder policy approaches, designed both nationally and internationally. In this regard, Reducing Emissions from Deforestation and Degradation (REDD+) has been parachuted into the environmental policy agenda of many countries in the global South as a forest governance instrument for climate change mitigation. The implementation of REDD+ is a multi-stakeholder governance process (Corbera and Schroeder, 2011) that entails often divergent

interests and perceptions, from UN bodies down to local community organizations. Put simply, REDD+ involves valuing (mostly economically) the role that forests play in the capture and storage of carbon dioxide and organic carbon, respectively. REDD+ thus aims to reward countries (and potentially communities) for the verified capacity of their forests to either sequester carbon dioxide or avoid emissions from deforestation and forest degradation (Angelsen, 2017). As a policy initiative, REDD+ appeared in the agenda of United Nations Framework for Climate Change (UNFCCC) in 2005 and was presented as a cost-effective instrument to tackle expanding carbon emissions from land conversion processes and to transfer resources to the global South, on the basis of verifiable climate mitigation outcomes (at least in principle, see Angelsen (2009) for a description of the history and evolution of REDD+). REDD was expanded in 2007 to become REDD+, in order to include sustainable forest management, forest conservation and the enhancement of forest-carbon stocks as other strategies which countries and communities could also be rewarded for.

In this dissertation, I am inspired by critical scholars who have investigated Amazonian development (e.g. Ab'Saber 1994, Becker 1988, De Oliveira 1994, Hall 1991, Hèbette 1991, Hecht 1989, Ianni 1979, Leroy 1991, Martins 1994, Porto Gonçalves 1999, Ribeiro 2000, Velho 1982). I approach the study of environmental governance in the Brazilian Amazon through the lens of political ecology and critical policy analysis. Throughout the dissertation, environmental governance appears as a broader theme while forest governance is given special emphasis. I pay specific attention to the socio-cultural, geo-political and economic contexts that shape and enable the conditions for transformative actions over nature, envisioned through the governance of the environment (Leff, 2016; Forsyth, 2003). I show that political interventions oriented by ecological values must deal with historical struggles in the shaping of human engagement with nature. Moreover, I demonstrate how certain framings on the Amazon region have contributed to the historical adoption of specific policies over others and, more emphatically, I reveal the presence of longstanding path dependencies as obstacles for broader transformative changes in environmental governance envisioned through the specific study case of a REDD+ initiative in the state of Acre, Brazil. I suggest that the Amazon region in Brazil is an imaginary in continuous transformation, both materially through resource-extraction and new capitalist enclosures and, more critically, figuratively through the enactment of specific discourses and policy narratives grounded in turn on economic, managerial, and scientific knowledge regimes.

This argument unfolds in 3 distinct empirical chapters. Chapter 4 takes a historical approach to understanding the social imaginaries which have been put forward and promoted about the region by different actors, from the early colonial period, the XXth and early XXIst centuries. I locate the myth of *Eldorado* as an archetypal extra-regional representation about the Amazon region. This representation has travelled across time and has been constantly re-signified to fit different historical contexts. I argue that this representation reinforces representations of human engagement with Amazonian ecosystems akin to national and global beliefs and policy agendas, which tend to disregard local understandings of nature and development priorities. This representation remains vivid today in policies for the region and in the overarching ideas that compose contemporary environmental governance in the region, such as the current portray of the Amazon as the utmost frontier of the global conservation agenda.

Chapter 5 analyzes policy narratives associated with the evolution of environmental governance in the Amazon during the last 60 years, i.e. during the "era of Amazonian modernization" (Becker, 2011). In doing so, I investigate how policy narratives have been affected by different historical, political and economic contexts, both national and international, and how they have induced changes in the way Amazonian ecosystems have been governed and managed. As part of this historical policy analysis I show that the emergence of global environmentalism in the last decades of the 20th century led to the construction of a new array of policies for the region anchored to social and ecological concerns. In spite of this evolution, I show there is a continuous dominance of economy-oriented narratives in policies which tend to dominate the political arena and subdue policies framed by more ecologically oriented governance of Amazonian ecosystems. Along the timeline I develop in this second chapter, I locate REDD+ strategy as the most recent type of environmental policy focused on forest management and conservation in the Amazon.

Chapter 6, my last empirical chapter, investigates the presence of different types of broad environmental discourses in the implementation of the REDD+ ISA Carbono program in the state of Acre, Brazil. I identify what type of discourses of environmental governance find more space in the implementation of the program, based on the analysis of program documents and open-ended interviews with participant actors. I make evident the dominance of the discourse of ecological modernization in implementation, rooted in paradigms of economic efficiency and technological change, and I relate such dominance to the uneven power relations and land use inequities that permeate REDD+ implementation. In the light of these findings, I question the transformative role

of REDD+ and highlight the challenges of developing truly bottom-up and participatory approaches for forest conservation and management.

These three empirical chapters combined highlight the complexity of managing and conserving the Amazon, greatly affected by the advancement of the 'development frontier'. I acknowledge that the conservation of forest areas, in the Amazon and elsewhere, is further linked to their socio-cultural and biophysical importance for the reproduction of a society's metabolism. Furthermore, I problematize the continuous dominance of rationales of efficiency and market-based interests as relevant historical and current contingencies to the design and operation of governance towards sustainability. I argue that in the evolution from "Eldorado" to a "carbon sink", the Amazon has continuously been framed by economic interests and utilitarian logics. As this rationale finds presence throughout the thesis, I discuss in Chapter 7 how the making of politics for nature acquires centrality within a wider and overarching debate around the way "we", as societies, choose to progress or even, develop, through the engagement with the natural environment.

The research presented in Chapters 4, 5 and 6 is grounded on the analysis of imaginaries, narratives and discourses. In brief terms, I understand that imagination can be be defined as an organized field of social practices that serves as a key element in the making of social order (Taylot, 2004). Throughout this work, I understand that imaginaries act as underpinning elements to the construction of narratives. In turn, narratives can be understood as interpretations which give meaning to a sequence of events or actions (Magrini, 1995) – as a constructed combination of assumptions through a defined storyline, argument or statement (Roe, 1994). Discourses, in turn, are an ensemble of shared representations, concepts and ideas of a determined phenomenon, a consolidated knowledge or truth regime (Dryzek, 1998). Discourses operate in a broader and prior stage of enactment than narratives, insofar as discourses are based on the symbols, experiences and contexts which govern the way people think. As discourses hold the ability to frame any human issue, they create boundaries that include and exclude certain narratives, ideologies or even social groups over others. I thus consider narratives as socially shared storylines which are rooted in specific framings or existing discourses. These abilities to create boundaries and include or exclude specific narratives grant discourses relevant power in the political arena; power being understood as the ability to produce an effect or to influence or structure the way something happens. This dissertation, however, does not dwell in deeper investigations of power *per se*. Rather, the debate around the issue of power is broad and tends to appear as an overarching structure which defines

boundaries to environmental governance of the Amazon region in Brazil. In what follows, I present the research objectives and questions.

1.1 Research objectives and questions

This dissertation investigates the main characteristics of both historical and current policies aimed at the governance of the environment in the Brazilian Amazon. In doing so, it contributes to a better understanding of how environmental governance in the Brazilian Amazon has evolved and how such evolution has been affected by historical, economic and political considerations. The investigation is historical and multi-scalar. Initially, I focus on the Amazon region and the historical and overarching imaginaries about it. This focus is then narrowed towards one specific aspect of the Amazon's contemporary history: the evolution of development and environmental policies, from the 1960s to the present day. Subsequently, I zoom into the REDD+ policy initiative in the state of Acre, which has been implemented through the Brazilian Amazon Fund, to specifically assess the interplay between the discourses underpinning the initiative's implementation.

The thesis addresses three main research questions:

1) How do historical imaginaries of the Amazon rainforest influence present-day environmental governance of the region? (Chapter 4)
2) How did Brazilian policy narratives evolve in the last decades and determine environmental governance in the Amazon region? (Chapter 5)
3) What do distinct discourses on environmental governance reveal about the implementation of REDD+ initiatives? (Chapter 6)

1.2. Thesis structure

After this Introductory chapter, Chapter 2 introduces my analytical framework, grounded on post-structural political ecology, environmental policy and governance concepts and debates, and the concepts of imaginaries and narratives. Relevant contextual information, such as for example how the REDD+ framework originated and its implementation failures and successes, is presented in Chapters 5 and 6.

Chapter 3 describes the case study, (i.e. the Brazilian Amazon), and the methods employed to conduct the research, respectively. The former includes a description on the relevance of Brazil and its Amazon region to current debates on global environmental governance. The latter includes a

review of the key methods chosen, i.e., document analysis and open-ended interviews, as well as my research ethics and positionality.

The central part of the dissertation includes the three empirical chapters highlighted above, which are argumentatively linked to one another. Chapter 4 discusses the relevance of historical and social imaginaries about the Amazon in the shaping of present perceptions – and policy interventions – in the region. I argue that social imaginaries do not come out of "nowhere" and that the historical legacy of colonialism still plays a role in shaping contemporary developments in the region.

Chapter 5 reveals how policies in the Amazon have evolved to progressively incorporate environmental concerns. It shows, notwithstanding, that such incorporation has not substituted previous (economic-oriented) policies, but instead resulted in an overlapping of both economic development *and* environmental narratives. Struggles in the political arena play a decisive role in determining the possibilities for environmental narratives to find further ground into policy implementation.

Chapter 6 identifies the presence of contrasting broad environmental meta-discourses within the design and implementation of a REDD+ initiative, namely ecological modernization, green governmentality, and civic environmentalism. Drawing on the jurisdictional REDD+ program of the state of Acre, in Brazil's western Amazon, the chapter highlights the dominance of ecological modernization discourse over the other two discourses among participant actors. Such dominance can be explained by by the appeal of the idea behind the ecological modernization discourse which suggests that development and conservation are compatible and do not involve economic or socially unbearable trade-offs.

Finally, Chapter 7 discusses the overall findings of the research and concludes with some critical reflections on the nature of environmental governance in Brazil and the environmental fate of the country's Amazon region.

CHAPTER 2. THEORETICAL FOUNDATIONS

This chapter presents the theoretical foundations of the thesis. These are built from different theoretical perspectives and bodies of scholarship of the environmental and social sciences: post-structuralist political ecology; history; imaginaries; narratives, discourses and, in more superficial terms, theories of power. The sections of this chapter follow a hierarchical structure: I start from overarching scholarship debates and narrow my argument down to more specific theoretical foundations related to my dissertation. The overarching theoretical foundation of my research rests on a *post-structuralist* political ecology approach. I assume that environmental imaginaries, narratives, discourses and power are central to political ecology studies. I shed light on the differences between these concepts and how they are applied throughout the thesis. I also explain how the present study engages with discourse analysis and the issue of power.

2.1. Post-structuralist political ecology

Political ecology is a critical inter-disciplinary research field with a transformative political agenda behind it. Political ecology analyzes environmental problems through the lens of power relations and distributional issues (i.e., who benefits and who loses from environmental change and how), paying specific attention to the uneven processes through which environmental problems are discursively and socially constructed (Kallis, 2008). It explores the social and political conditions surrounding the causes, experiences, and management of environmental problems. Political ecology aims to counter simplistic and deterministic explanations of what causes environmental degradation and is thus forged from the blend of post-structural, deconstructionist, post-constructivist, post-colonial, and anti-essentialist studies (Escobar, 2010).

Many political ecologists have attempted to understand the social processes that affect, condition, and determine the unsustainability of life by influencing the transformation of ecosystems, global change, and the entropic degradation of the planet driven by techno-economic rationality (Escobar, 1996; Forsyth, 2003; Hecht and Cockburn, 1989; Leff, 2016; Martinez-Allier, 2002). These scholars have engaged with the environmental crisis that currently afflicts and challenges humanity by unravelling the power relations, and the power in knowledge which determine the ways of accessing, intervening in, appropriating, and degrading nature (Leff, 2016).

The early years of political ecology were inspired by historical materialism, structuralism, and Marxist studies (Frank, 1969; Wallerstein, 1974). These studies focused on unequal power relations and conflicts in a global capitalist political economy and aimed to reveal the interests at work in struggles over the governance of the environment, as well as the influence of scalar relations on environmental degradation processes and marginalized communities (Bryant and Bailey, 1997; Bullard, 1996). In the early 2000s, political ecology studies increasingly adopted post-structuralist perspectives, and many scholars drew on discourse analysis and were inspired by science and technology studies in the study of knowledge and power in environmental governance processes (Blaikie, 2008; Bridge and Perreault, 2009; Bryant and Bailey, 1997; Escobar, 1996; Forsyth, 2003; Hecht and Cockburn, 1989; Leff, 2016; Martinez-Allier, 2002; Peet and Watts, 1993; Robbins, 2011; Walker, 2005).

Political ecology research has focused on deconstructing theories and practices built on the foundations of scientific, political, and economic rationalities while understanding these rationalities as embedded within global to local institutions that govern socio-environmental relations (Escobar, 1996; Hecht and Cockburn, 1989; Leff, 2015; Martinez-Allier, 2002). When deconstructing the theories or practices of environmental governance, *post-structuralist* political ecology acknowledges that imaginaries, discourses, ideas, and knowledge about socio-environmental relations impact the ways in which societies and their environment are governed and, as such, can both constitute and be a source of power. Peet and Watts (1996) refer to 'framings' as a way to discuss the environmental imaginaries or narratives through which characteristics of environmental change are perceived by different actors. Policy analysis recognizes framings are not naturally fixed, but they reflect socially constructed representations of environmental problems.

Under a *post-structuralist* approach, frames give way to the constitution of discourses. Discourse analysis has been used by political ecologists to deconstruct the social and political conditions surrounding environmental problems, thus aiming to foster more complex understandings rather than simplistic and deterministic explanations of pressing socio-environmental issues. As argued by Escobar (1996), *post-structuralist* analysis of discourse goes beyond linguistic theory to become a theory of the production of social reality. Such understanding implies that representations can be accepted as social facts. In consequence, the *post-structuralist* tradition focuses on language as constitutive of the construction of social reality. In doing so, discourses acquire agency in the world as they are shaped by constructs of reality withdrawn from political and historical processes.

Discourses turn out the articulation of power and knowledge, and a process in which social realities are materialized. As further argued by Escobar (1996: 326), "through the lenses of discursive materialism, ideas, discourses, matter and power are intertwined in ways that defy dissection".

In this thesis, the assessment of discourses and narratives reaches out to the underlying meanings that shape policies for the environment. The relevance of engaging with discourses in environmental policy lies in the recognition that, as argued above, discourses shape environmental policies and institutions, as they are the materialisation of adopted and preconfigured socially constructed meanings (Hajer, 1995). In the case of environmental studies and policy interpretation, a pressing environmental issue or a phenomenon is less important than the way the phenomenon is itself understood. In this regard, discourse analysis is directed at the analysis of the symbols and experiences that govern the way people think and act (Beck, 1995).

This research is firmly rooted in a post-structuralist political ecology perspective. It critically interrogates the discursive foundations of environmental policies in the Brazilian Amazon and their interplay with social, economic, and political settings. In the empirical chapters (4–6), it is argued that discourses, narratives, and imaginaries matter for how policies are designed and implemented. It is also suggested that the evolution of Amazonian policies, initiatives, and interventions have unfolded through struggles and contestations in the Brazilian political and social arenas and it is shown that hegemonic discourses shade the existence of subaltern approaches which imagine and aim to promote new strategies for development and conservation in the region.

Specifically, in Chapter 4, I explore the historical imaginaries about the Brazilian Amazon. I acknowledge the importance of how specific framings about the region reflect the notions of ecological realities that were socially built during the periods I analyzed, namely the initial colonial period (the 1600s, the XXth century and early Amazonian modernization period, and the early 2000s. I argue there is a continuum of constant resignification of meanings about the region, and I recognize the inherently political character of such framings insofar as they imply the dominance of some discourses over others. Such discourses are built from specific institutional, political, and scientific rationalities that, in turn, shape how the region´s environment is governed.

In Chapter 5, I analyze the policy narratives which have shaped Amazonian environmental governance during the last 60 years. I explore the interplay between what "we" think "needs to change" and what "we" think the "problem" is. Since policies are a proposal for change, they

produce specific significations of the "problem" they are addressing. It is possible to interpret the implied "problem" — what is seen as in need of change — from specific policy proposals or plans of action (Bacchi, 2009). In this direction, I build a historical timeline of policies and dissect their narratives to come to an understanding of the "problem" and which policies were aimed at resolving it: such understanding matters for the types of institutions and political orders that are set in place to deal with the problem (Jasanoff 2004; Jasanoff and Kim 2015), and institutions and political orders matter for how a problem is perceived. The chapter thus explores the social and political orderings related to environmental governance that were reinforced and those that were disregarded.

In Chapter 6, I adopt a 'present-day perspective' and hypothesize that the social actors involved in REDD+ derive their discourses from broader environmental policy debates. I argue that these broad discursive frames give boundaries to on-the-ground practices of REDD+ implementation. Through a case study of a REDD+ initiative in the state of Acre, I investigate the interplay between different discourses on environmental governance at the organisation and implementation levels and in doing so I shed light on the extent to which such discourses find implementation grounds. This permits to arrive at a closer understanding of why or why not broader transformational changes in forest and land-use governance can be realized by REDD+ actors.

I acknowledge that there are limitations to the *post-structuralist* approach in the study of environmental governance and related challenges. Blaikie (2012:234), for example, argues that as "powerfully-persuasive as discourse analysis might be to like-minded academics", it might not be necessarily useful to a wider, shared platform for action with non-academic actors. He notes that at a certain level of rhetorical deconstruction, the researcher might overlook non-discursive phenomena that are relevant to the assessment. In this case, discursive analysis can end up over generalizing or down-sizing specific agencies or even treat with disdain more empirical, on-the-ground research. Moreover, researchers might run the risk of placing representations above practice. As critical political ecology engages with environmental science, findings from researchers are inherently judged by the researcher's own epistemological terms in regards to how "truth" is revealed (rigour and relevance, for example) as well as on broader political grounds (problem framing, selection of samples, personal interests, etc.). In conclusion, Blaikie argues that discursive approaches tend to be vague about what actions should be taken upon a determined identified or researched issue.

I take the above criticism as valid and serious, and it could be very well directed towards this present study, specifically as regards the risk of overemphasizing representations over practice, and a neglect of empirical, field-based practice. Indeed, the empirical, *critical realistic* approach content of this work is limited and brief in comparison to other political ecology studies; the research does not sufficiently engage with local contexts. However, the value of this dissertation lies on its level of depth concerning the discursive or *representational* level of environmental governance studies. My research is situated at the discursive (and indeed often, abstract) level of the current debate on the design and implementation of environmental governance, which emphasizes *representation* over *practice*. However, these limitations to my theoretical and empirical groundings have allowed me to better position myself (and my own epistemological terms) in relation to the subject of study. For more details, please see Section 3.2.3, on *Research ethics, positionality, and limitations*.

2.2. Environmental imaginaries and history

Imagination can be defined as an organized field of social practices that serves as a key element in the making of social order. Taylor (2004: 23) define social imaginaries as "the ways people imagine their social existence, how they fit together with others, how things go on between them and their partners, the expectations that are normally met, and the deeper normative notions and images that underlie these expectations". Taylor focuses on the way ordinary people "imagine" their social surroundings, and this is often not expressed in theoretical terms, but is carried in images, stories, and legends or myths. The social imaginary is the common understanding that makes possible common practices and a widely shared sense of legitimacy.

Through complex arrangements, social imaginaries incorporate a sense of the normal expectations that individuals have for each other, which constitute in turn the common understanding that enables society to carry out collective practices that make up for social life. This is the essence of what has been described by contemporary philosophers as the "background" — i.e., largely unstructured and inarticulate understanding of human life — within which particularities of our world show up in the sense they have. Imaginaries, however, cannot find full expression (of core doctrines) insofar as they are unlimited and indefinite by nature (Taylor, 2004).

Social imaginaries and individuals operate in a circular manner within what Spinoza (2000) emphasized as the primitive circle of the institution of society: society exists only if it can exist in the imagination of individuals who, in turn, cannot exist without the society of which they are part

of (Nadler, 2001). Castoriadis (1975) further argues that whatever collides with the imagined social order shall also be subject to a symbolic processing where a perceived transgression of the consolidated social rule becomes inherently "negative". In this way, foreign societies that are fundamentally incompatible with a certain social imaginary become "strangers", "savages". As an element of this dissertation´s theoretical foundations, my deeper understanding of social imaginaries lays in its elemental capacity to reach out to humans' subjectivity on representations of surroundings, nature, and the broader social environment in which one is embedded (Didi-Huberman, 2016).

From the perspective of science and technology studies, Jasanoff (2004: 29) argues that "imaginaries should not be seen as static or tightly bounded belief systems. It would be rather naïve, too, to think that there are unique imaginaries guiding the production of knowledge or knowledge-based technologies in the contested spaces of democratic policymaking". Rather, as will be made evident throughout this research, imaginaries are constantly re-framed and adapted to new contexts as objects of dispute of political and social struggles. As opposed to Taylor, Jasanoff defines imaginaries as collectively held visions. Socio-technical imaginaries are "collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through and supportive of, advances in science and technology" (Jasanoff, 2015: 4). Drawing on Jasanoff (2004), I argue that public policies are a way of giving institutional stability and public performance to such imaginaries. These imaginaries operate in the frontiers between imagination and action, between discourse and the decision-making process in policymaking, but also in the construction of social relations. My inquiry focuses on discursive imaginaries, the framings or narratives that are filtered and repackaged into dominant thinking about the Amazon region, thus shaping public and private corporative actions.

Environmental imaginaries are drawn from the concept of social imaginary. Following Davis (2011: 323) , I understand an environmental imaginary as "the constellation of ideas that groups of humans develop about a given landscape, usually local or regional, that commonly includes assessments about that environment as well as how it came to be in its current state". Environmental imaginaries are made up of ideas about how the environment arrived at its current, observed state. Narratives of environmental change and environmental history are closely bounded to environmental imaginaries. Underpinning these narratives is a historical setup of power relations that have been transformed across time and space. An accepted or dominant narrative about environmental

change held by a determined social group allows these social actors to impose their own imaginary and narratives through the materialization of environmental interventions (Davis, 2011).

Davis (2011) offers a thorough assessment of environmental history, imaginaries, and the practices of colonial development in the Middle East. In particular, her work provides a detailed account of the influences of colonial environmental imaginaries in the shaping of landscapes in the Middle East and North Africa, a must-read reference on the subject where I found close parallelisms to the case of the Amazon region of Brazil. The rise of Anglo-European imperial power in the Middle East and North Africa during the XIXth and early XXth centuries resulted in the development of an environmental imaginary which considered these regions "situated in the verge of ecological viability, as a degraded landscape facing imminent disaster". Local inhabitants were mostly blamed for environmental degradation, deforestation, overgrazing, overirrigation, among others. Such environmental imaginary allowed, consequently, the telling of stories, or narratives, that facilitated development and colonial ruling in the name of "improvement" and, later, of environmental "protection".

Important work has been done towards a critical analysis of the social constructions of colonialism (Fanon, 1970; Said, 1991; Spivak, 1985). In Latin America, for example, several scholars have problematized the colonial imaginaries that have been reinforced over time though economic, socio-political, and spatial interventions (Grosfoguel, 2007; Gudynas, 2011; Mignolo, 2011; Quijano, 2007). Among these, some have interrogated the prevalence of colonial environmental imaginaries and epistemologies in research and writings about the Brazilian Amazon (Albuquerque, 2019; Krenak, 2020; Neves 2015; Pizarro, 2012; Silva e Mascarenhas, 2018; Steinbrenner, 2018). These studies address how the narratives about the Amazon spawned through the persistence of its social and political colonial heritage that remains vivid but constantly gaining new forms. As for other regions of the 'colonial world', the Brazilian Amazon has been mostly narrated from a European perspective: necessarily white, Catholic, and patriarchal (Albuquerque, 2019). Material and symbolic violence and the suppression of local knowledge are the outcomes of these socially built colonial imaginaries. Throughout this dissertation, I briefly relate to these works, and only to the extent they allow me to enrich specific arguments derived from other analytical observations.

As noted earlier, a *post-structuralist* political ecology approach invites the researcher to *deconstruct* or *dissect* how established discourses and narratives about the environment have been forged. This means to question: under what socio-political conditions and historical contexts and informed by

what epistemic terms, through what type of lenses (or to what ends?), has a certain storyline about nature or the environment been developed? Through the examination of historical and contemporary environmental discourses, narratives and environmental science, political ecologists commonly argue that the environment is *constructed* (Forsyth, 2003).

As questioned by Robbins (2011: 139), what do political ecologists mean when they say the environment or nature is "constructed"? Political ecologists assume that environmental processes, concepts, and ideas are not inherently 'natural' nor should these be taken for granted. RA specific interest from political ecologists lays in identifying the effects that a certain environmental narrative holds to local dwellers: who is winning and who is losing within the observed process? As studies in political ecology have revealed, the politics that govern the fate of natural systems are at times secured without resistance insofar as the "constructedness" of the process remains hidden (Fairhead and Leach, 1996). Revealing or unmasking such hidden agendas serves may permit to identify alternative narratives for a better and more equitable future (Robbins, 2011).

This dissertation is predominantly based on the assessment of narratives and discourses. Narratives are a means to express specific accounts from concrete cases, which have been previously framed through a broader discursive framework. When telling their stories, actors enact a storyline through the construction of a narrative – with beginning, middle and end – rooted in broader understandings or representations of the world, I.e. a discourse. As shall be further explored, I analyze environmental and policy narratives (Chapters 4-5) and discourses (Chapter 6). Specifically, I scrutinize the making of policies for the Amazon region by assessing the full narrative construction of policy: (i) the beginning: how the problem was framed?; (ii) the middle: what actions or measures are understood to offer solutions to the identified problem? and; (iii) the end: what type of envisioned goal are these measures supposed to generate?. This is an example of the construction of a policy narrative which, in its making, is rooted to broader environmental discourses. In what follows, I further define narratives, discourses and power and explain how they are applied in the thesis.

2.3. Environmental narratives, discourses and power

As noted earlier, a *post-structuralist* political ecology approach invites the researcher to *deconstruct* or *dissect* how established discourses and narratives about the environment have been forged. This means to question: under what socio-political conditions and historical contexts and informed by

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2.3.1. Environmental narratives

Based on the idea of socially constructed realities, I understand that narratives represent an act of interpretation which gives meaning to a sequence of actions (Magrini, 1995). Narratives can refer to both the individual act of sensemaking and sociocultural artefacts through which social orders

are enacted (Cronon, 1992). Narratives, therefore, are close to stories because they have beginnings, middles, and ends that serve a purpose in ordering social actors (and sometimes physical items) into a causal structure. Environmental narratives, subjected to spatially bounded interpretations, can reveal stories that are closely tied to the narrator's observations and experiences, or their sense of belonging to a certain place. Such narratives may emerge in multiple forms, including oral environmental history, local or tacit knowledge, anecdotal information (Robertson et al., 2000), or formal policy messages (Crow and Lawlor, 2016).

More specifically, the study of narratives has been useful in environmental politics (see Hajer and Versteeg, 2006), as narratives are disputed in a very political space: the power to frame problems (Sconfienza, 2017). In this political space, narratives might be sustained to drive the implementation of certain policies and secure the exclusion of others. Narratives about the environment or environmental problems in particular —hereafter referred to as environmental narratives — can eventually define how administrative and political relations for governing nature (and also people) are enacted. This means that an actor who tells a dominantly accepted story of environmental change might hold the power to determine the current and future winners or losers from the implementation of specific measures of environmental governance or policies (Davis, 2011). As a result, environmental narratives have the potential to shape the ecological and social order into a determined form, and, for this reason, it has been argued that the governance of the environment is forged fundamentally by disputed knowledge claims, discourses, and narratives (Hirsch, 2019). As noted earlier, the interrogation of environmental narratives, and their constitutive elements, lies at the core of post-structuralist political ecology.

Overall, scholarship anchored in the construction and implications of environmental narratives has been conducted within the disciplines of political ecology and environmental sociology (Blaikie and Mundalvin, 2004; Fairhead and Leach, 1996; Forsyth and Walker, 2008; Hajer, 1995; Leach and Mearns, 1996; Walker, 2005). Some authors have scrutinized how communities and societies make decisions regarding natural resources that are based on dominant narratives thus rooted in biased interests, epistemologies, or outdated knowledge claims (Warner, 2010). An implicit objective of this type of research is finding the necessary ingredients for the construction of alternative counter-narratives (Berkes, 1999; Fairhead and Leach, 1996; Robbins, 2000; Roe, 1994). To do so, researchers should primarily comprehend how social conditions have reproduced dominant and biased ways of thinking. Narratives built from this condition (biased, serving vested interest of determined groups) can lead to the marginalisation of specific groups of people and of natural

spaces and resources. Such understandings contribute alternative narratives that are scientifically robust, socially equitable, and can sustain and liberate both humans and nature (Forsyth, 2003). These studies therefore serve the purpose of challenging specific discourses that were constructed to marginalise nature and specific groups of people and of building alternative narratives for environmental governance (Arts and Buizer, 2009; Fairhead and Leach, 1996; Kull, 2000).

Analyzes of environmental narratives have sprawled in recent years to investigate what local perceptions might reveal about certain challenges for the governance of the Amazon. For example, the assessment of local smallholders perceptions on the use of fire in land clearing processes, reveals not only its culturally rooted characteristic, but argues the severe implications it holds for land governance arrangements as it has shown to possibly perpetuate both land degradation and poverty in the region (Cammelli, 2019). Local stakeholders narratives have also been most important to reveal that the longstanding presence of cattle as a main economic activity is not explained merely for its economic viability, but rather for its strong cultural relevance which over the years has spawned throughout the region as an intrinsic aspect of local Amazonian livelihoods (Hoelle, 2014). The historical importance of rubber-tappers in the shaping of Amazonian territorialities has also been investigated through the lenses of local narratives and is argued to hold important implications for alternative governance mechanisms in the region (Carey-Webb, 2018; Hecht and Cockburn, 1989; Schmink et al., 2014). Moreover, the reappearance over the last decades of great infra-structure in the region has led scholars to investigate the local perceptions from stakeholders directly impacted through infrastructure build-up and construction efforts. In special, indigenous populations who have been displaced by the construction of dams in hydroelectric powerplants (Bingham, 2010; FASE, 2020). As sustainable development has gained prominence in the region as the way to go for regional development, studies have also scrutinized local narratives to understand how the concept of sustainable development appoints to a broader discourse on the internationalization of the Amazon and the means to which it is governed (De Sartre and Taravella, 2009; Duchelle et al., 2017).

More specifically, on the governance of the REDD+ initiative, studies have proliferated recently to debate the institutional level of REDD+ implementation by identifying clashing interpretations of REDD+ results within the institutional spheres, between donors and program managers (Van der Hoff et al., 2015), or within the sphere of program managers which have contrasting interpretations of ´the way to go for REDD+´ in Brazil between results-based financing or private projects (Van der Hoff et al., 2018). With regards to on-ground stakeholders of REDD+ project implementation, others

have identified that while increasing household incomes is a dominant expectation from local stakeholders, they also revealed a preference for non-monetary forms of compensation over the direct cash payments and recommended that projects should help improve their production systems through access to technical assistance, machinery and training, while valuing local production (Cromberg, et al., 2014). Others have problematized this offer of 'incentives', by discussing how such process intends to make rural people produce more whilst deforesting less and resonates with the neoliberal commodification of carbon and the dominant valorization of intensive agriculture (Greenleaf, 2020). Furthermore, studies have investigated the extent to which local narratives diverge from global narratives on climate change and the green economy and the implications this holds for program implementation processes (Evans et al., 2014; Duchelle et al., 2014; Di Gregorio et al., 2017). In common, these studies tend to argue "the need for participation that goes beyond passive consultation with local people to develop REDD+ interventions that best reflect local knowledge, land use practices and aspirations" (Cromberg et al., 2014: 579).

Chapters 4 and 5 use narratives as their analytical concept, while in Chapter 6 I use discourse analysis. In Chapter 4, the examination of historical and current narratives on the Amazon reflect the evolution of imaginaries about the Amazon across time. My analysis reveals how seminal, constructed narratives seem to have found grounds to be maintained in their essence while being constantly re-adapted to new historical contexts. *From gold to carbon* means that the Amazon of Brazil has evolved from "being" archetypal *Eldorado* in the XIXth century (Castro et al., 2012) to become the utmost representation of global green conservationism since the 1990s (Bull and Aguilar Støen, 2015). In Chapter 5, I argue that by tracing the evolution of policy narratives in historical terms, one can observe which social and political orderings have been reinforced and which have been disregarded over time. I also identify the extent to which ecological narratives find implementation ground against a historical background where economy-oriented narratives are rather hegemonic. I also come to an understanding of how historical advances made by global ecological discourses (through social movements, academia, governments, NGOs, media, and civil society) have contributed to shape the character of Amazonian policies.

2.3.2. Discourses

Discourse is defined in this dissertation as an ensemble of concepts, ideas, and classifications through which meaning is given to phenomena: an explanation of the world that attempts to make sense of reality (Hajer, 1993). The material world can be understood and reshaped through

discourses insofar as discourses can provide the framings through which problems are interpreted. Discourses may differ in character and assume the form of analytical or normative beliefs; they may be rooted in historical references or even manifest myths about nature (Fischer and Forrester, 2013).

The construction of discourses enables shared terms about phenomena or issue which can be interpreted collectively. Without these shared meanings, it would be difficult to conduct an interpretation of problems and elaborate the means to solve them (Dryzek, 1998). Therefore, discourses should be understood in relational terms. This means to say, its operation must be situated in terms of context, culture, epistemology, paradigms, theory, and assumed opinions. Discourses operate in a broader and prior stage of enactment than narratives, insofar as discourses are based on the symbols, experiences and contexts which govern the way people think. This means that discourses operate through the enactment of broader knowledge or truth regimes to which narratives, in their own terms, are consequentially bred from within.

As discourses are relational, they differ in terms of their main assumptions – what they choose to leave in or out of their representations and interpretative elements. This means that some discourses about environmental conservationism may attribute a certain degree of importance to a certain element while others do not consider the same element in the same way. For example, certain discourses on how to govern the environment may recognize the importance of preserving nature, ecosystems or regions, but not recognize the importance of addressing the needs of local people (i.e. preservationist discourses). Other discourses of environmental conservation may be rooted in ´win-win´ solutions for solving environmental issues, where both preservation and social economic interests are mutually met. Other discourses radically oppose these previous ones to argue only a radical transformation of the political and economic model may address the needs for natures conservation and society. Thus, contrasting discourses on the environment are also rooted onto different paradigms, epistemologies and theories.

Embedded within relations of power, the production of knowledge is bound to the exercise of power (Foucault, 1972). In these terms, science plays a fundamental role as a widely accepted knowledge regime able to sustain certain discourses within the arena of environmental politics (Young, 2011). Discourses turn out the articulation of power and knowledge, and a process in which social realities are materialized. As argued by Escobar (1996: 326), "through the lenses of discursive materialism, ideas, discourses, matter and power are intertwined in ways that defy dissection".

Laclau and Mouffe (2014) advance this claim by arguing that the "social" is set up by a discursive field within which elements from linguistic and material practice are disposed upon (Howarth, 2000).

According to Hajer (1995), discourse analysis reveals three particular strengths that have been widely perceived as a powerful investigation tool: (i) it demonstrates the role of language in politics; (ii) it shows the embeddedness of language in practice; and (iii) it sheds light on the mechanisms within policy. Discourse analysis has proliferated in the assessments of global environmental change, especially within the fields of sociology, political ecology, and policy studies. Categorically, in environmental studies, Hajer (1995) and Dryzek (1997) have introduced discourse analyzes that have been used and elaborated by political ecologists and others (Adger, 2001). Furthermore, the seminal work of Roe (1994) has been most influential in introducing a focus on narratives and storylines as parts of broader discourses to analyze specific cases of environmental conflicts (Leach and Mearns 1996; Scofienza, 2017).

The relevance of discourse assessment in the environmental policy arena lays in its capacity to reach out to the underlying meanings that shape environmental policies and institutions. Under these terms, policies and institutions turn out the materialisation of a full set of adopted and preconfigured socially constructed meanings (Hajer, 1993). As such, the institutionalization of discourses refers to the transformation of discourse into an institutional element. Since institutions play an important role in consolidating specific practices as legitimate or illegitimate, they establish relationships of power and resource access, thus determining who has the right to speak and in what capacity (Luke, 1999). In practical terms, political institutions are then able to construct boundaries to shape and constrain agents' actions as well as their discursive strategies (Hajer, 1995; Hirsch, 2019).

In Chapter 6, I investigate how the beliefs and perceptions of local stakeholders involved in the implementation of REDD+ adhere to broader meta-discourses of environmental governance, namely ecological modernization, green governmentality, and civic environmentalism (Bäckstrand and Lövbrand, 2006). In doing so, I draw from previous studies that have engaged with the analysis of discourses about REDD+ or the Clean Development Mechanism (Bäckstrand, 2016; Bäckstrand and Lövbrand, 2006; Spiric et al., 2016; Di Gregorio, 2017; Duchelle et al., 2014; Hajer and Veersteg, 2005; Van der Hoff et al., 2015) and I make evident how specific interpretations of what the Amazon is and what REDD+ programs should do adhere mostly to an ecological modernization discourse,

and to a lesser extent to a civic environmentalism. This fact determine implementation and constrains the transformative potential that REDD+ may be able to have.

2.3.3. Power

Power in this dissertation is defined as the ability to produce an effect or to influence or structure the way something happens. Power holds an important role in the studies of political ecology and critical environmental governance studies (Morrison et al., 2019). The study by Svarstad et al. (2018) claims there is a broad range of power perspectives that are applied when theorizing power in political ecology. The authors identify three main theoretical approaches used in political ecology that are usually conceived in combination or in an overlapping manner. They are, actor-oriented perspectives of power, neo-Marxist power perspectives, and variations of discursive perspectives on power drawing from poststructuralism, such as discursive power, biopower, and governmentality (Foucault, 1972).

This research does not develop a deep, methodologically driven, investigation of power. Insights on the notion of power appear throughout the research findings as a recurrent element in the shaping of environmental governance of the Amazon region. Insofar as my analysis is focused on the representational level of environmental governance, then the presence of power rests in discursive power. I am particularly interested in discursive power and how the exercise of power is observable through consolidated discourses around environmental governance. Throughout the work, however, I also make reference to a more structural view of power, closer to a Marxist analysis of power, by discussing how determined social actors are enabled or hindered from participating in decision-making processes within the structure of the broader system (Harvey, 2004). Ideologies from slavery and feudalism have used the prejudice of religion and race to establish the basic social relations within the historical formation of Brazil (Sodré, 1997). The Brazilian seminal structures of power, shaped by authoritarian control, are characterized by a "top-down" structural accommodation (Faoro 1993). All historical transition periods, from the passage of the (colonial) Empire to the (independent) Republic, were directed by political elites. It was no different with the so-called democratic transition, which oversaw the exhaustion of the civil-military coup (1985) to the Constitution of the Republic (1988). This transition was shaped by concession of power and, as such, supervised by the regime that aimed to replace it (Casara and Melchior, 2013).

In the Amazon region, despite transformations established by the Constitution of 1988, the spatialization of Amazonian policies maintained the epistemological basis that traditionally characterizes the ideal of authoritarianism in Brazil, including: weakened control of state power devices; elimination of popular participation mechanisms in the build-up of environmental public policies; the destruction of local, traditional cultures; continued attacks to agrarian and indigenous rights, and the substitution of dialogue by violence against leaders of social movements fighting for land (Faoro, 1993; Loureiro, 2005; Ianni, 1979; Hecht and Cockburn, 1989). Obstacles faced by the consolidation of democratic environmental policies, as observed in other governance domains (e.g. public health, social development), are related to the institutional formation of the country (Ribeiro, 1995). Hence, they are directly influenced by historical challenges and contingencies for producing structural ruptures with an authoritarian and inquisitorial past (Sader, 1990; Hecht and Cockburn, 1989). In the field of environmental policies and land use conflicts, authoritarian epistemology is characterized, in particular, by the empowerment of local forces that integrate the *status quo* and exercize positions of dominance in power relations (e.g. loggers, land grabbers, local oligarchies, among others) (Ianni, 1979). Such a structure favours a bureaucratic system constituted by a historical model of social control exercised by the State, the Church and local oligarchies (Furtado 2013). As argued by Wolkmer (1990), proprietor elites wish to maintain their privileges through permanent, constant domination.

The issue of power, and how these historically uneven power relations continue to permeate in environmental policy and governance, permeates throughout the three empirical chapters. In Chapter 4, I relate to how imaginaries have constructed power relations that can be traced back to colonial powers specifically, drawing from the example of Edward Said's acclaimed criticism of orientalism as a discourse, which was socially constructed in the "Western world" about the inferior "others" in "the Orient" and, consequently, applied more broadly to what is referred to as the Global South (Svarstad et al., 2018; Said, 1978). I argue that colonial power inaugurated an extra-regional imaginary about the Amazon, the *Eldorado*, which continues to be present across time and it still vivid in contemporary environmental governance of the region. Moreover, I discuss the exertion of colonial power through capitalistic enclosures (from both international and national structures of political and economic power) has historically weakened the possibilities for other worldviews and knowledge to find means into the spatialization of development in the region. I address the debate from the perspective that the Amazon region has been dominantly shaped through a single understanding or knowledge basis of human engagement with nature. I debate

the importance to broaden the power and knowledge basis towards the sustainable governance of the Amazonian environment.

In Chapter 5, I identify the historical evolution of policies aimed at the development and governance of the Amazonian environment. In doing so, I make evident the dominance of economically oriented policies over ecologically oriented approaches. The possibility of ecologically oriented narratives to find grounds for implementation is conditioned to uneven power struggles in the political arena of Brazil. As an extractive economy of the Global South, there are vested economic and political interests in expanding the Amazonian commodity frontiers. I show that economic and political power intertwine to expand their interests while neglecting the broader adoption of policies aimed at sustainable social ecological governance of the Amazonian environment. Moreover, I argue that REDD+ - the most recent forest governance mechanism which I located at the end of the timeline of policies for the Amazon in this chapter – must deal with these longstanding power structures as it aims to find further ground for implementation in Brazil.

In Chapter 6, and as noted in the previous sub-section, I focus on the discourses that underpin the implementation of a specific REDD+ initiative in the state of Acre in Brazil. I argue that the ecological modernization discourse and the green governmentality discourse, which are rooted to broader global spheres of geopolitics, knowledge and power, dominate over the civic environmentalism discourse. The former discourses are based on global mainstream assumptions where conservation of ecosystems and economic growth are not mutually exclusive. Rather, they are tools which may lead to a combination of preservation of ecosystems to poverty alleviation. In this way, these discourses are less radical, and demand less transformations from the established *status quo*. Civic environmentalism is more critical and reflects the necessity to address the governance of social ecological systems through broader and more radical transformations. In synthesis, the discourse which *preserves* the present structures of power finds more presence within the implementation of the studied REDD+ initiative.

2.4. Environmental governance

Environmental governance is an important concept in this research. The three empirical chapters problematize and discuss the underpinning historical elements, advances and challenges that characterize the environmental governance of the Brazilian Amazon. This study understands environmental governance as the set of regulatory processes, mechanisms and organisations

through which political and non-political actors influence environmental actions and outcomes (Bride and Perreault, 2009). Environmental governance can also be understood as the process in which contesting images and narratives are implemented through practices that shape the access and use of natural resources within society (Lemos and Agrawal, 2006). Studies of environmental governance are often framed around social-ecological sustainability and the construction of sustainable policy solutions to urgent environmental problems (Berkes et al., 2017).

As observed in the Table 1, the environmental governance literature can be divided in four main themes. These themes compose the wider emerging trends in studies of environmental governance, namely: globalization; decentralization; markets/agents; and cross-scale governance (Lemos and Agrawal, 2006). These themes, as in the case of this present dissertation, are often connected, linked and at times overlap across environmental governance research. Figure 1 also presents the main concepts of environmental governance which can be found under these 4 main overarching categories of studies on the subject, namely: globalization decentralization, markets and agents and cross-scale governance. According to Pattberg and Zelli (2015), the underpinning conceptual assumptions of environmental governance include: the recognition of the Anthropocene (Crutzen, 2006) and planetary boundaries and limits (Galaz et al., 2012); the interconnectedness of the Earth´s ecosystem through Earth system governance (Biermann, 2017); the concept of sustainable development (Brundtland, 1988); the emergence of and the need for global mechanisms and arrangements to tackle ecosystem degradation through global environmental governance (Pattberg and Widerberg, 2016); the necessity to combine ecosystem preservation, development and poverty alleviation enacted through the concept of inclusive development (Gupta and Pouw, 2017); the recognition of risk as an underpinning element of governing the environment (Beck, 1995); (neo) liberal governance and norms as the latest trend (yet not necessarily desirable) in mechanisms for the management of social and ecological systems (Adelman, 2017); and the importance of consumerism as a driver of ecological degradation (Lister et al., 2015). These assumptions underpin multiple studies to date across a broad range of issues, with forestry (Agrawal et al., 2018) and climate change (Muiderman et al., 2020) related studies being closer to the focus of this dissertation. In what follows, I thus briefly define and explain these thematic areas of environmental governance and indicate how the three empirical chapters of my dissertation relate to them.

Table 1. Main themes and concepts in studies of environmental governance

Environmental governance: themes and concepts	
Main themes	Globalization; decentralization; markets and agents; cross-scale governance.
Main concepts	Earth system governance; The Anthropocene and planetary boundaries; Sustainable development; Global environmental governance; Inclusive development; Risk; Neo (liberal) governance; Governance norms; Consumerism.

Source: Lemos and Agrawal, 2006; Pattberg and Zelli, 2015)

The theme of globalization is understood as the process of increasing interconnectedness of societies, economy and ecosystems. Globalization is often associated to diversity, flows of materials and communication, and generally of a global interdependence (Newell, 2002). Globalization and the environment are combined though the understanding bred in the 20th century that the spatial distribution of environmental problems, such as acid rain, ozone depletion, and transboundary water pollution, transcends national borders and adds to the challenge of designing and implementing solutions (Beck, 1995).

The theme of decentralization draws from globalization insofar as since the 1990s, global environmental governance has taken the form of multi-stakeholder partnerships (Pattberg and Widerberg, 2016). Partnerships emerged as an innovative tool, bred from international intergovernmental cooperation structures for the integration of global agendas in global development. In analytical terms, the concept of governance contested the conventional ways of policy analysis via the displacement of the State as the focal point of power to multiple nodes of power in networks where the State appears as just another political actor (Rose, 2004). As further explained by Hacon (2018), this does not mean that the State is weakened or the legitimacy and authority as well as the repression management capacity of the State is to be underestimated (Ferguson and Gupta, 2002). Rather, it suggests a transfiguration from the theoretical infrastructure that is usually state-centered, to a new set of political power in the configurations of neoliberal globalisation (Rose, 2004).

In parallel to decentralization, the decline of the state since the 1970s – and the related process of neoliberal globalisation (Rose, 2004), displaced the state as the only major agent of environmental governance and led to the creation of market and voluntary incentives-based mechanisms (Lemos and Agrawal, 2006). This process further intensified the displacement from hierarchically organized, regulatory control and exclusive State-centered power structures to decentralized incentives for environmentally led initiatives. Marked-based mechanisms and agent focused efforts are rooted to the idea that the market orientation of incentives encourages environmental compliance (Dasgupta and Wheeler, 2000). At the national level, the popularity of these instruments and frameworks has increased quickly and is influenced by the new governance paradigms based in neoliberal institutionalism and free trade agreements within a globalizing world (Lemos and Agrawal, 2006).

The cross-scale theme refers to the multi-scalar character of environmental problems—spatially, sociopolitically, and temporally— which is argued by scholars to add significant complexity to their governance (Adger et al., 2001; Chafflin et al., 2015). The existence of multiple scales for environmental governance implies the possibility of a decoupling across scales of the causes and consequences of environmental problems and introduces major concerns about the unequal distribution of costs and benefits of environmental issues (Pattberg and Widerberg, 2016). The case study within this dissertation reported in Chapter 6 is an example of cross-scale governance. The REDD+ initiative in Acre relates to a phenomenon - global climate change – mostly caused by historical emitters of greenhouse gases in the developed world. However, most efforts and effects to keep the forest standing, as REDD+, are undertaken by historically low emitting countries of the Global South. In these terms, cross-scale environmental problems are guided through institutionalized decision making at local, subnational, national, and global levels. Environmental governance, in these terms, addresses the multilevel character of environmental problems thorough the design of governance mechanisms across levels of social and institutional aggregation. In so doing, environmental governance aims at decreasing possible fragmentation processes of design and decision making in policies that are sectorally based: territorial, social or political. The involvement of public-private networks in multilevel governance can enhance the representation of the diversity of interests that are affected by environmental problems. Increasingly, cross-scale governance mechanisms are being shaped by nonstate actors including NGOs, transnational environmental organizations, intergovernmental and multilateral organizations, market-based relations or epistemic communities (Biermann, 2002: Lemos and Agrawal, 2006; Pattberg and Zelli, 2015).

Overall, this work relates to environmental governance literature in different ways. In assessing historical social imaginaries about the Amazon, I argue that the REDD+ experiment in Brazil articulates with these "extra-regional" imaginaries about the Amazon region as a new frontier for green global conservationism. I engage further with the theme of decentralization in Chapter 4, through a debate on the need to broaden the basis of how the Amazonian environment is governed. By narrating the specific case of the rubber-tappers resistance in the State of Acre in the 1980s, I argue for a decolonized and complex perspective for policymaking in the region, which finds connection the defining characteristics of decentralization of environmental governance.

The theme of decentralization is also present in Chapter 5, as I reveal the historical backdrop in which environmental governance mechanisms are rooted in Brazil: they are linked to the boom-and-bust of the military dictatorship period in 1985 when the re-democratization process in Brazil brought forth the possibility to decentralize policy making across multiple social stakeholders. Only then, mechanisms of governance, such as the PPG7 and REDD+, could find way into Brazilian environmental policies spheres. Based on this evidence, I discuss along the chapter how ecologically oriented narratives in Brazilian policy making were substantially influenced and empowered by global environmental concerns. Thus, they were rooted in the same global agenda which has led to the proliferation of the concept of environmental governance as an increasing global trend.

Finally, Chapter 6 engages more directly to environmental governance as its main objective is to identify the presence of broad global meta-discourses on environmental governance within a specific initiative of REDD+ in the state of Acre, Brazil. The theme of globalization is present through global climate science (green governmentality discourse) and the technocratic character of the programs implementation (ecological modernization discourse) anchored to the process of globalization. As I engage with multiple stakeholders, I am also addressing the complexity of cross-scale and multi-level governance mechanisms as a possible way forward for sustainability governance.

CHAPTER 3. CASE STUDY AND METHODS

This chapter introduces the case study and the methods used in my empirical chapters (Chapters 4-6). I justify why Brazil and the Brazilian Amazon were chosen as reference case studies to analyze the evolution of environmental governance and REDD+'s early implementation in the Amazon biome. I describe the qualitative methods employed, which include document analysis (qualitative content analysis) and open-ended interviews.

3.1. The Brazilian Amazon

Brazil, and the country's territory which overlaps with the Amazon biome, was chosen for this research given its significance in the global environmental governance debate. The Amazon is the largest tropical biome forest (Lovejoy and Nobre, 2019) and hosts a quarter of the world's terrestrial species and is responsible for approximately 15% of the planet's terrestrial photosynthesis (Dirzo and Raven, 2003). The Amazon is also a net supplier of important ecosystem services, such as climate regulation (Pereira and Viola, 2019), and it plays a central role in regulating the water cycle across South America by the process and transport of water vapor from the Atlantic Ocean, within the phenomena known as the 'flying rivers' (Marengo, 2006). Brienen et al. (2018) have argued that the Amazon is key for the sustainability of life in the Earth system and its degradation could possibly trigger a catastrophe upon alterations of global climate. The Brazilian Amazon is highlighted in Figure 1.

Figure 1. The Brazilian Amazon´s global dimension.
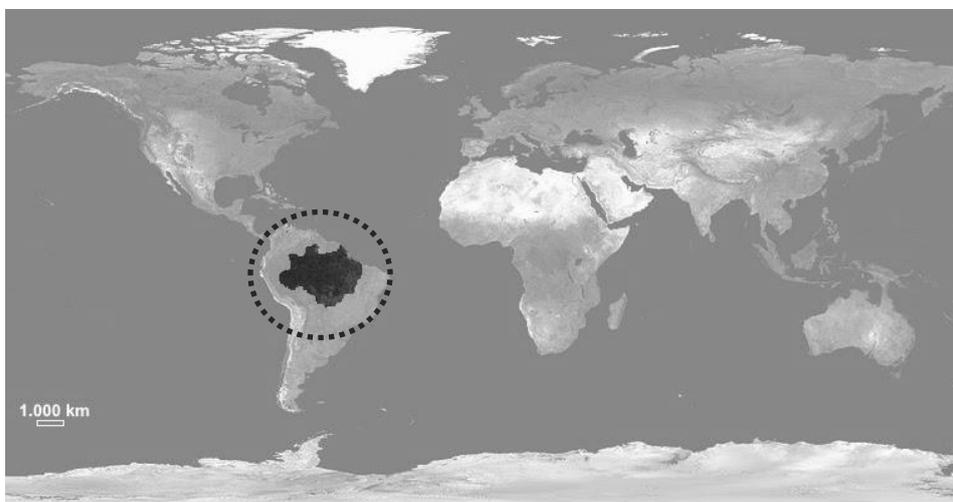
Source: notasgeo.com.br/2020/02

Since the 1950´s, however, the rapid development of the Amazon region sparked urbanisation processes and large-scale deforestation, reducing the forest cover in approximately 20% (INPE, 2020). For some, the 20% loss of total forested area in the Amazon region might mean a tipping point for the Amazonian ecosystem (Nobre et al., 2016). The degradation of the Amazonian rainforest has not implied fair and improved human development standards in the region (Fearnside, 2009) and it has led to the 'epistemicide' of traditional livelihoods and culture (Porto-Gonçalves, 2009). The Amazon biome is quite often portrayed as an archetype of destruction: an outcome from decades of impetuous capitalist development (Becker, 2008) and, more broadly, of the historical effects of what has been coined the Anthropocene Era (Crutzen, 2006).

From the 1980's onwards, the emerging global environmental debate crystallized in Brazil in the form of public policies, such as: the National Policy for the Environment (1981); the "*Nossa Natureza" Program* (1989) as well as the insertion of the *environment* - with specific mentions to the Amazon – in the new National Constitution drafted in 1988. Not too long afterwards, Brazil was chosen to host the 1992 Earth Summit, inaugurating a period where the concept of sustainable development gained further recognition in development plans across the globe. Simultaneously, the concept of environmental governance began to flourish; the growing complexity of multi-scalar policies aimed at regulating development and environmental conservation led to the increasing participation of civil society (e.g. businesses, NGOs, indigenous peoples organisations, etc.) in regulatory processes.

Brazil and, more emphatically, the Brazilian Amazon, have increasingly acquired a central role in the global environmental and climate policy arena. Pressures from the international community have also played a role in Brazil´s development of a legal-institutional framework to address social-environmental conservation. The pressures from economic demands for commodities, where the Amazon is a main global commodity frontier under constant and intensive land use transformation, situates the region under the spotlight of the global environmental debates. Furthermore, in light of the climate change phenomenon, where Brazil emerges as the 5th largest global contributor of CO_2 emissions (2,17 billion tonnes of CO_2 in 2019) - and the significant contribution which land use transformation processes including Amazonian deforestation has for Brazilian total emissions (approximately 45%) - efforts to combat degradation processes in the Brazilian Amazon have increased in the past decades (Observatório do Clima, 2020). The Amazon has become a natural recipient for global environmental governance mechanisms to find grounds for implementation.

I argue throughout this dissertation that the governance of the environment in the Brazilian Amazon reflects an evident contradiction between Brazil's increasing political commitments to the wellbeing of local, indigenous and peasant communities, at the level of policy-making (Silva, 2012) and the facilitation of (often government-led) resource extraction for economic growth, with uneven benefits and burdens for local communities of the region (Thaler et al., 2019; Gudynas, 2013; Svampa, 2014). The constant build-up of the Brazilian institutional framework for the governance of the environment, envisioned through the National System for the Environment (SISNAMA in the Portuguese acronym), has achieved considerable results (Abramovay, 2019). This process has run in parallel to the country's leading role in international environmental conventions. For example, Brazil was the first country to ratify the Paris Agreement under the United Nations Framework for Climate Change, and one of the first submitting its "Nationally Determined Contributions" to reduce global greenhouse emissions (La Rovere et al., 2018). Other examples of Brazil's engagement with international environmental governance processes are explained throughout this dissertation, and they are particularly developed in Chapter 5.

In order to empirically address the state-of-the-art of environmental governance in the Brazilian Amazon, it is necessary to examine the implementation of these activities on the ground. As Chapter 5 identifies REDD+ as the most recent type of mechanism aimed at the management and governance of the Amazon forest in Brazil, I chose to focus on a REDD+ initiative in Chapter 6. Although when the research started there were several examples of on-going REDD+ initiatives in Brazil, the more advanced program for ecosystem services and REDD+ oriented policy in Brazil is Acre´s System of Incentives for Ecosystem Services (SISA) (Moutinho et al. 2011; May et al., 2016). This program became a global reference to discuss the early shortcomings, challenges and opportunities of the global REDD+ initiative (Korhonen-Kurki et al., 2018). The program was initiated almost a decade before this research started thus providing a sufficient time-frame for an informed analysis of its evolution and its development outcomes. Furthermore, through my own prior experiences in the state of Acre, I understand that the ISA Carbono program is also the by-product of years, perhaps even decades, of social-ecological struggles, which is an element of special interest for me and this thesis, which engages with the historical dimension of social and ecological processes in the Amazon of Brazil.

3.2. Mixed Methods

3.2.1. Literature review and document analysis

The collection, review and selection of policy documents is the central research method in this dissertation. The aim of doing an extensive bibliographic review is to grasp the existing ideas and arguments built around a topic. The capacity to synthesize the historicity and evolutions on a given issue allows the researcher to make advances into a given research. In this specific case, the literature review allowed for the exploration of the historical settings, political contexts and actions in the policy arena across Brazil and its Amazonian rainforest, where environmental policies have been formulated and implemented. In the three empirical chapters, documents were analyzed according to a set of topics and questions which I defined *a priori* for each set of objectives involved in the thesis chapters.

Document analysis is a systematic procedure for reviewing or evaluating documents, both printed and electronic (computer-based and Internet-transmitted) material. Like other analytical methods in qualitative research, document analysis requires data to be examined and interpreted in order to clarify meaning, gain understanding, and build empirical knowledge (Corbin and Strauss, 2008; Rapley, 2007). The combination of extensive bibliographical review and the analysis of policy documents was thus employed to grasp the complex evolution of policies for the Amazon and how they refer to the build-up of a contemporary forest governance regime. I constantly iterated theory and data from the collected documents to redefine my research questions and to contest and reconstruct the theoretical framework.

The material used in the analyzes offered throughout this dissertation are synthesized in Table 2. The documents listed in Table 2 include legislative and policy documents proposals for legislation and policies; documents from NGOs and public authorities; policy and projects from the national and subnational levels. They are accessible online in the following One Drive folder: https://1drv.ms/u/s!AkGCEgnY-QYHwmxOABI_rlS5nyVh?e=1OvPoh. In what follows, I explain how documents were selected and which analytical criteria were employed according to the specifics of each chapter.

Table 2. Documents assessed in this dissertation

Chapter 4	
Research objective	Understand how historical imaginaries of the Amazon rainforest influence present-day environmental governance of the region.
Key documents	(i) Policy documents from the early Amazonian ´modernization´ period: 1. "O Discurso do Amazonas" – Getúlio Vargas (1941); 2. Seminal document of the Amazonian Economic Valuation Superintendence (1954); 3. First National Development Plan (1971). (ii) Document from the most ´recent´ environmental governance policies, envisioned through REDD+: 4. REDD+: Protecting forests and climate for sustainable development. Federal Ministry for Economic Cooperation and Development / GIZ (2015)
Document assessment	Documents were manually analyzed and aimed to identify how the Amazon region is framed throughout the documents. Specific quotes from these documents were extracted. For synthesizing purposes, the quotes which were found to be most relevant in terms of its overall representation of the Amazon were used to compose the arguments of Chapter 4.

Research objective	Identify and establish the significance each policy, Plan or Program had in the evolution of political efforts towards the Amazonian region when cross-checked to a broader political-economic in both national and global contexts.

Key documents read	1. Seminal document of the Amazonian Economic Valuation Superintendence (1954); 2. First National Development Plan (1971); 3. Amazon Development Plan (1971); 4. National Integration Program (1971); 5. Second National Development Plan (1974); 6. Second National Development Plan (1974); 7. Poloamazônia (1975); 8. Programa Grande Carajás (1980); 9. National Environmental Policy (1981); 10. PMACI - Project for the Protection of the Environment and Indigenous Communities (1985); 11. Calha Norte Project (1985); 12. New Constitution (1988); 13. "Nossa Natureza" Program (1988); 14. PPG7 – Pilot Program for the Protection of Tropical Forests in Brazil (1991); 15. Brasil em Ação (1995); 16. SNUC: National System for Conservation Units (2000); 17. ARPA: Amazonian Region Protected Areas Program (2002); 18. PDS: Sustainable Amazon Plan - 2003/2008; 19. PPDCAM: Plan of Actionto Combat Deforestation in the Legal Amazon (2004); 20. National Policy for Climate Change (2009); 21. National Strategy for REDD+ (2016).

First, each document was categorized to a specific time period: (i) the 1960s – 1980s; (ii) the 1980s; (iii) the 1990s and; (iv) the 2000s. In what followed, through a systematic text analysis based on Bacchi´s (2009) the analysis aimed at critically questioning the representations of problems that underpin policy solutions. Some key questions serve as guidelines: 1. What is the problem represented to be?; 2. What assumptions are embedded in this representation?; 3. What/who is left out in this problem representation?; 4. Which policies are based on this representation of the problem?; 5. Does the problem representation have a long-term effect on policy formulation?;

Document assessment	6. Which logics/disciplines support the problem framing and it's related policy interventions?; 7. Which social actors are involved or taken into account by the problem framing?

Chapter 6	

Research objective	Investigate the presence of different types of broad environmental discourses throughout the implementation of the ISA Carbono program in the State of Acre, Brazil.

Key documents read	1. Programa Jurisdicional de REDD+ do Acre do Sistema de Incentivos ao Serviço Ambiental do Carbono (ISA Carbono) – A Report on the ODS Brazil Prize 2018 / Written by IMC - Instituto de Mudanças Climáticas do Acre; 2. REDD+ in SISA – Acre / Brazilian Ministry of the Environment Presentation on REDD+; 3. Program REM Acre Monitoring / Monitoring Report: IMC - Instituto de Mudanças Climáticas do Acre; 4. Social and environmental safeguards - REDD+ Program in Acre: implementation and learnings – 2018 / IMC - Instituto de Mudanças Climáticas do Acre - Program Report; 5. Research, Analyzes and Recommendations to the System of Incentives for Environmental Services - ISA Carbono 2012 / IPAM - Instituto de Pesquisa Ambiental da Amazônia : External Report; 6. Description of the ISA Carbono Program 2013 / IMC - Instituto de Mudanças Climáticas do Acre: Institutional Presentation; 7. REDD+ for Early Movers - Acre (The stock and flow approach for benefit sharing) 2017 / IPAM - Instituto de Pesquisa Ambiental da Amazônia: External Program Assessment; 8. REDD+ in the State of Acre, Brazil: Rewarding a pioneer in forest protection and sustainable livelihood development 2017 / Federal Ministry for Economic Cooperation and Development / KFW / State of Acre: Donor´s Presentation Report; 9. Acre´s State Decree nº 6184 DE 07/08/2013; 10. REDD+: Protecting forests and climate for sustainable development. Federal Ministry for Economic Cooperation and Development / GIZ (2015); 11. REM ACRE Program Phase II / IMC - Instituto de Mudanças Climáticas do Acre: Institutional Presentation.

Document assessment	To investigate the presence of different types of broad environmental discourses within the implementation process of ISA Carbono, documents were assessed in two steps. As a first step, I identified the main characteristics of the program and its subprograms: (i) types of beneficiary; (ii) contribution to the overall results of the program; (iii) land categorization and; (iv) incentivized activities. In a second step, I performed a document analysis to the discursive orientations of each subprogram to the broad environmental meta-discourses presented in Section 6.2: ecological modernization, green governmentality and civic environmentalism.

For Chapter 4, I initially divided my review in three categories: (i) Studies discussing the early representations of the Amazon, with special emphasis to: Castro et al (2012) and Vieira (2016). These studies led me to their bibliographical references, which were mostly based on early, colonial studies, or manuscripts describing about the Amazonian representations; (ii) Then, I moved onto the analysis of policy documents from the Amazonian ´modernization´ period, as coined by Becker (2011), which encompasses the National-Developmentalist period (1950s-1970s); (iii) Documents from the most recent environmental governance policies, including REDD+; and (iv) Studies addressing a decolonial and alternative representations of the Amazon.

In Chapter 5, I constructed a timeline with policies and public planning efforts (plans and programs) aimed at the Amazonian region of Brazil. My analytical boundaries were established as the nine Brazilian Federative States which compose the *Amazônia Legal* region. I used the Brazilian dataset of historical public policies and online national archives to perform a full overview of proposed planning efforts to the region across the last six decades. The analysis of historical policy documents and literature on Brazilian development planning assisted specifically in the attempt to establish the level of significance each policy, plan or program had in the evolution of policies focused on the Amazon region. Through a systematic text analysis based on Bacchi´s (2009) the analysis aimed at critically questioning the representations of problems that underpin policy solutions.

The documents analyzed for Chapter 5 often reflected multiple narratives, which in turn suggested the multiplicity of actors, discourses and interests that have shaped the management of the Brazilian Amazon over the last 60 years. Texts were also analyzed by considering the historical context in which they were embedded and the similarities and differences between them. The selected texts are official documents of the Brazilian government obtained in libraries and in Brazilian public institutions or online. Texts were then selected according to the historical significance of the policies or plans. Significance was determined by cross-checking bibliographical work on Amazonian development for numbers of citations of official documents and level of novelty in narratives or in the stated objectives with respect to previous policies, plans or programs. The final selected texts are representative of changes in the narratives of policy-making for the region and have materialized as political or economic interventions.

In Chapter 6, for the analysis of the different types of broad environmental discourses within the implementation process of ISA Carbono, I selected online official documents either from the state of Acre or program reports from partnerships between the State and scientific research institutions

(i.e.: IPAM - Instituto de Pesquisa Ambiental da Amazônia : External Report – 2012). These documents were selected according to the thoroughness of their contents to reflect the design and implementation of ISA Carbono and its sub-programs. The assessment was performed in two steps. First, I identified the main characteristics of the program and its subprograms: (i) types of beneficiary; (ii) contribution to the overall results of the program; (iii) land categorization and; (iv) incentivized activities. Subsequently, I performed a document analysis to identify discursive orientations of each subprogram to the broad environmental meta-discourses presented in Section 6.2 namely ecological modernization, green governmentality and civic environmentalism. This analytical approach was combined with open-ended interviews (see below).

3.2.2. Case study approach and open-ended interviews

To assess how discourses of environmental governance influence the implementation of REDD+, the state of Acre's ISA Carbono program was chosen as a case study. A case study approach is understood here as research used to build in-depth understanding of a complex issue in its context (Yin, 2014). It is an established research design that is used in a wide variety of disciplines, particularly in the social sciences, and serves as an adaptable methodology of qualitative inquiry (Stake, 1995). Case studies can be used to explain and explore events or phenomena in the contexts in which they occur. They can further explain the outcomes resulting from the implementation of policy or enacted measures. In studies of policy, researchers can draw on a critical, reflective stance in seeking to account for wider social and political contexts with respect to the case under analysis. Case study research is also most relevant to contribute to qualitative research characterized by interpretative paradigms. It suits the understanding of complex issues (phenomena, events scenarios, institutions, individuals, or groups) in context, where the boundary between the context and issue is unclear and contains many variables.

Further, the selected method for data collection were open-ended interviews. I understand open-ended interviews as an interview technique which serves mainly exploratory purposes and where questions are answered through narratives and accounts, sometimes through informal conversations (Haguette, 1997). The process of open-ended interviews relies, first, on the researcher opening the interview session through a brief, but careful, explanation on the objectives from the research. In what follows, the researcher must allow for the interviewee to freely develop their narrative or account. As themes or issues emerge, new questionings are inserted with the aim of deepening the interview towards nodes of interest or relevancy (Lakatos and Marconi, 1996). In

comparison to semi-structured interviews, the open-ended approach might allow for previously unknown issues by the researcher to find development through narrated accounts. Thus, the order in which the conversation is led does not necessarily imply a strict order. Rather the opposite as the researcher needs to be attentive enough to perceive the relevant threads in story-telling that allow for deepening dialogues (Haguette, 1997). With regards to the quality of material produced from such meetings, they are understood to often reveal more reflexive terms on the explanation of issues or phenomena than questionnaires or semi-structured scripts (Minayo, 2012).

Furthermore, open-ended interviews might allow the researcher to achieve several objectives. First, drawing from personal accounts, specific findings or perspectives may be mobilized which were not previously predicted - the "unknown-unknowns" (Funtowicz and Ravetz, 1993). The reflexive terms in which findings may be revealed contribute to a further understanding of cultural specificities of determined social groups to which the individual belongs. But also, detailed accounts might also serve the purpose of addressing relational or complimentary terms to other interviews (Minayo, 2012). I understand that applying open-ended interviews in this specific case study was more appropriate than other types of interviewing methods (i.e.: semi-structured interviews; questionnaires). Due to the exploratory character of the fieldwork conducted, I sought a broader understanding of how the REDD+ initiative operated on the ground through quite open and unstructured conversations.

Field research was conducted between August and November 2017 and included open-ended interviews and conversations with local community members, NGOs, and state members. To better grasp what was done in along this period of on ground assessment, it is important to elucidate the overall context in which this round of field work was done. I set out to Acre in 2017 to initiate my explorations for this dissertation. At the time, basically less than one year into the thesis, I felt I needed to 'find my groundings' on what type of research was actually possible taking into account the local context: access to stakeholders, which research questions could be answered, the scale of data, among other practical research terms such as financial resources and the total available time for the assessments. As an exploratory fieldwork, I directed my discussions and interviews towards a broader understanding of stakeholders' engagement with the REDD+ initiative in Acre. Originally, I believed this first round of exploratory fieldwork would be the first of two rounds for a detailed "on-the-ground assessment" of the ISA Carbono program, which would have included discourses (current Chapter 6) and practice (an additional empirical chapter). However, as I indicate below in

the section *Research Positionality* (Section 3.2.3), the second round of data collection was not possible -due to the global COVID-19 pandemic-.

Under these conditions, my lenses for analysis on Chapter 6 are also quite shallow and broad, insofar as they are limited to discourses of implementation and not an analysis of full implementation of the ISA Carbono initiative. My research is thus limited to the identification and cross-check of local claims to the presence of broad environmental discourses on environmental governance. From what local stakeholders revealed about their own, wider perspectives and engagement to the ISA Carbono´s program, I managed to understand the extent to which each of the three environmental governance discourses (ecological modernization, green governmentality and civic environmentalism) was present or relevant to stakeholders understandings of REDD+.

The interviewees were selected using a snowball sampling approach, which uses a small niche of initial informants to locate, through their social networks, other participants who might be under the criteria for the research and have the potential to contribute to the study. This sampling approach permits to identify specific populations for a given study, who can be more easily identified by others' social networks. I needed to make sure that I interviewed both state officers and community members engaged with the four subprograms of ISA-Carbono, which is a pre-condition linked to my research objectives in Chapter 6. My process for the identification of possible interviewees was greatly determined by two elements: first, the connections I had previously made (in previous years working in the area), in special among the State government and NGOs, provided relevant indications of possible interviewees. Second, the possibility to gain access to the interviewees, which was in turn influenced at times by logistics, other times by the availability of interviewees to be opened for conversations, among other more practical terms. Furthermore, local NGO´s were left out of this exploration through open ended interviews because I did not engage with local NGO´s operating within the four sub-programs of ISA Carbono. Rather, they either engaged directly with one or two subprograms through local projects. Hence, I chose to focus mainly on specific subprograms (through community members) and State officers with a broader picture of the program´s overarching operation. The final list of interviewees includes 10 community members from 5 municipalities in Acre: Rio Branco, Xapurí, Mâncio Lima, Cruzeiro do Sul, and Tarauacá, and 6 state officers working directly with operational management of ISA Carbono (Table 3).

The community members whose interviews were selected and analyzed in this study were either managing local projects supported by the ISA Carbono initiative or were directly engaged with the operation of local projects as active cooperative members. The intention of focusing on members with direct involvement with local projects was rooted on my understanding that these people could reveal a more in-depth understanding of the ISA Carbono program. State Officers accessed for this study were directly engaged with the ISA Carbono´s operation and worked mainly within the Secretary for Sustainable Development – SEDENS (in the Portuguese acronym). The community-based individuals interviewed are people who were contacted upon the indications from my snowball sampling approach which initiated through people directly engaged with the ISA Carbono program. The communities these people belonged to are only a sub-sample from ISA Carbono´s overall efforts. I avoided lay-members of the community with more limited accounts of local projects since they had little experience with direct implementation and lacked knowledge on the means and ends of REDD+. Table 3 presents the categories of interviewees, place and date of the interviews.

The interviews addressed issues such as livelihood activities, local stakeholder´s understandings about REDD+, prospective use of REDD+ benefits, and finally how REDD+ may affect local communities. These issues were treated more or less in depth depending on the pathways for conversation which the open-ended interviews led to. While I could gain a better grasp of the overall objectives, rationale and operational challenges with policy makers, information about what type of discourses were enacted through the implementation of REDD+ oriented projects was collected in greater detail with local communities' representatives. All notes and information from the interviews and conversations used in this dissertation can be found in the following folders in One Drive: https://1drv.ms/u/s!AkGCEgnY-QYHwmxOABl_rlS5nyVh?e=1OvPoh.

Table 3. Interviewees involved in open-ended interviews.

Category	Interviewee	Place and date
Local community members	Community member 1	Rio Branco, Acre (September 3, 2017)
	Community members 2 -3	Xapurí, Acre, (September 12, 2017)
	Community members 4 - 5	Tarauacá, Acre (September 24, 2017)
	Community members 6 – 7	Mâncio Lima, Acre (October 10, 2017)
	Community members 8 - 10	Cruzeiro do Sul, Acre (October 23, 2017)
State officers	State officers 1 - 2	Rio Branco, Acre (August 25, 2017)
	State officer 3	Rio Branco, Acre (September 16, 2017)

State officers 4 - 5	Rio Branco, Acre (November 02, 2017)
State oficer 6	Rio Branco, Acre (November 07, 2017)

3.2.3. Research ethics, positionality, and limitations

This research was conducted in compliance with the ethics guidelines at Universitat Autònoma de Barcelona (UAB), which can be assessed online on: https://www.uab.cat/doc/Bones-Practiques-Recerca-en. These guidelines consider the obligation of the researcher to address the psychological, physical, and moral well-being of research participants. In this regard, I have ensured the anonymous character of participants and the disclosure and maintenance of collected data. Responses from local actors in Acre were recorded and stored on my notebooks and computer with my own exclusive access to protect participants' identity and confidentiality. Along Chapter 6, which engages with interviews and external participants, I avoid mentioning participants' names and positions to maintain anonymity. All qualitative data is available for verification (following the replicability principle in quantitative research) in a repository, in the following One Drive repository: https://1drv.ms/u/s!AkGCEgnY-QYHwmxOABI_rlS5nyVh?e=1OvPoh.

 I acknowledge that my "positionality" as a researcher influenced my overall process for producing this dissertation. Positionality refers to the extent to which the characteristics of the researcher might influence data collection and the epistemological lenses of the researcher (Bourke, 2014). For Chapters 4 and 5, I reckon my position as a PhD researcher with a broad interest in dissecting policy narratives and the broader discourses they uphold has perhaps limited the type of questions and the depth to which I engaged with this work. I also acknowledge that throughout this thesis I struggled to limit my main focus of analysis through a process of constantly changing and re-assessing the research questions, particularly during the first year. I believe this factor has greatly influenced the abstract and at times vague terms into which my overall work is presented. Moreover, I also acknowledge that my access to participants and the data collection process for Chapter 6 has largely influenced the extent and characteristics of my research.

Fieldwork in Acre involved people with contrasting characteristics: educational levels, political influence, economic conditions. My position as a PhD researcher, affiliated to the UAB, facilitated my access to all kinds of participants. I also acknowledge that I had had a previous contact with Acre's state government, the Federal University, and local NGOs during my MSc dissertation, which made it easier to interview a few people within these institutions. Some of these contacts grew to

be personal acquaintances and friends, which facilitated this present study. This aspect was also a reason for my selection of Acre as a study case. Research in Brazil can be limited by security concerns, which means that working conditions and accessibility is an important element to the practice of field work activities.

There are also relevant limitations to this study. Most significantly, I understand that, as previously discussed in Section 2.1, robust studies of political ecology and environmental governance combine bibliographic review and the analysis of documents with intensive on-the-ground, often qualitative, assessments (Blaikie, 2018). This work falls short in gaining an in-depth, empirical understanding of how governance of the environment materializes on the ground in the specifics of a local culture, municipality, or community, for example of the state of Acre. As noted above, in my initial research plan, I was committed to conduct a second round of fieldwork to write a fourth empirical chapter that would investigate local stakeholders perspectives on benefit sharing from local REDD+ implementation This fieldwork was to be conducted between March and May 2020, but the COVID-19 pandemic made access to Acre almost impossible and risky from a public health perspective. As I am writing these lines in September of 2020, the pandemic is re-gaining strength in some regions of the Brazilian Amazon as the virus continues to spread in urban centres, smaller communities, and indigenous territories. In response to these circumstances and the uncertain future of the pandemic, I decided to proceed with the submission of my PhD including only three empirical chapters.

PREFACE TO CHAPTER FOUR

The following chapter is a single-authored, peer reviewed, chapter included in the book '*Peoples, nature and the environment: learning to live together*', edited by Cambridge Publishing Press - (2019), (ISBN (10): 1-5275-4131-2/ISBN (13): 978-1-5275-4131-3). The book explores the "growing interest of the impact of humans on geological, biotic and climatic planetary processes which is a sign of an important shift in how humans are coming to understand the relation with the environment" (pp. 15). As such, the book identifies the need for a critical reflection on "the *status* of our planet, on human subjectivity and actions, and on their inextricable entanglement" (pp. 16). The book brings together contributors with different scientific backgrounds, perspectives, and expertise.

My own contribution was initially motivated by the specific studies of Berta Becker (2003), who argues for the need to provide a more complex perspective on the social, environment and political issues interacting in the Amazon region of Brazil, drawing specifically on complex systems theory. Her work led me into identifying Amazonian spatial development as a frontier between two major broad social categories, namely: Western-capitalist institutions and Amazonian traditional livelihoods. Subsequently I got inspired by Taylor (1968) to study such intersection and I thus drew on social imaginaries as the theoretical foundation for the chapter, therefore also exploring the works of Vieira (2015) and Castro (2014), as well as the works of Gaspar de Carvajal and Oviedo (1622). The research was then performed as a building block of main historical events. I engaged with the identification of Amazonian perspectives present at each specific time through the analysis of policy documents from different time periods. I used these results to articulate with the body of literature on complexity, but also briefly articulating with literature on de-colonialism.

CHAPTER 4. AMAZONIA: IN SEARCH OF A COMPLEX AND DECOLONIZED HUMAN ENGAGEMENT WITH NATURE

4.1. Introduction: the "Eldorado"?

The objective of this chapter is to discuss human engagement with the environment in the Brazilian Amazon from an historical perspective. We start by briefly discussing the construction of the initial Eurocentric imagery, which began influencing the modern perception of Amazonia. We then present a critical analysis of possible alternatives to a future pathway for the region; one that would be characterized by socio-ecological fairness and harmony. Human engagement with the Amazon rainforest dates back thousands of years (Castro, 2010). For a long period of time, people and the Amazonian environment evolved in harmony with the movements of nature. Indigenous realities were thus conceived in oneness with the motions of natural events. This interconnectedness refers to an ontological vision of the forest as the locus for the reproduction of life, in both its material and spiritual dimensions. However, this relation was eternally changed by the arrival of the Europeans to this sacred environment, to which they referred as "the New World" in the 1500s.

The trail-breaking crossing of Spanish explorer and conquistador Francisco de Orellana (1540) through the Amazon River, narrated by Gaspar de Carvajal (1955, modern edition), perhaps constituted the basis of Eurocentric narratives regarding the Amazon. Following Orellana, the next centuries saw many other distinguished pioneers envision the territory from a similar perspective. As one can read in diary entries of voyagers or fictional stories, early Amazonian travellers built narratives composed by socially constructed imaginaries made up of the region's features, the perceiver's own senses and fear of the unknown. Examples of such narratives could be read in Carvajal's diaries from 1542 which describe Orellana's initial voyage, as well as in Levi Strauss's or Humboldt's scientific accounts centuries thereafter, or in the works of Brazilian fictional writers, such as Euclides da Cunha or Milton Hatoum. The following extract from Carvajal´s diaries (1955, modern edition) narrates a conflict between the Spanish and Amerindians whose leaders in the battlefield were named Amazonas after Greek mythology. Thus, giving name to the river:

> They (Spanish) fought the indians who had women in the lead of battle (…) These women were very white and tall and had long hair, wrapped around their heads, they were muscular and walked naked, keeping their shame covered with leather. Bows and arrows in the hands fighting like ten indians.

Under similar terms, the following extract from Padre Cristóbal de Acuña´s Nuevo descubrimiento del gran Rio de las Amazonas (1641) ratifies the claim of fantastic reports about endless riches and mythical views around Amazonia.

> If the golden lake has the gold that the general opinion ascribes to it, if the Amazons indeed inhabit among the greatest riches of the planet, as many have hold witness; if Tocantins, so famous by the French for its precious stones and abundance of gold; (…) then, in this Great River everything is enclosed: the golden lake, the Amazons, the Tocantins and the rich Omáguas (…) In it is deposited the immense treasure which the majesty of God has preserved to enrich with it that of our great king Philip the fourth (Acuña, 1994, 103).

What is the Eldorado? There are multiple and contrasting meanings of Eldorado. When narrating the enterprises of Francisco de Pizarro and Gonzalo de Orellana, for example, Gonzalo Fernandes de Oviedo (1522) claims that, besides searching for Indian spices, these adventurers were also in search of the ruler of a marvellous country, a prince named Dorado. Sozina (1982) claims that the origin of the Eldorado resides in the discovery and looting of Aztec gold. After holding an expedition to the region, Walter Raleigh (1595) believed that the Eldorado was located at what is now the Brazilian state of Rondônia. To name but a few authors. In any case, despite the disputed veracity of its meaning and origins, the colonization of the Amazon remains tied to the implications of the mythical subjection embodied by the multiple ideas of Eldorado. In modern days, the ideology within State policies and economic enterprises is still accompanied by such mythological elements (Castro, 2010).

The immense proportions of the Amazon intimidate newcomers. Logistical difficulties posed by natural and geographical features have historically been well documented and described, even in the most heroic and oftentimes embellished tales. The archetype constituted in the myth of Eldorado is perhaps the initial Western vision projected on the Amazon. In this mythical symbolic space, dreams of abundance dwelled in the promise of a fertile land filled with natural resources and riches (Castro, 2010). This vision was intensely pursued in the mercantilist undertakings initiated by Europe's advances into the New World. Nevertheless, geographical obstacles as well as resistance from local populations culminated in hostile situations faced by settlers. Such difficulties served two purposes: on the one hand, they hindered colonial insertion and progress, which preserved the livelihoods of local inhabitants and the conservation of the Amazonian ecosystem in general terms; on the other, they consolidated the leitmotif of the territory to be conquered, broken in, and tamed by colonial powers.

One could attempt to explain the rationale of Eldorado by reading Vieira's (2016) surveys on the different stories created by humans to make sense of the daunting Amazonian environment. For her, these stories serve as portraits of the Western engagement with the region and constitute a response to an utterly foreign landscape, where the interconnectedness of humans within the rainforest— humans, fauna, flora and natural events—emerges as the utmost appeal to Western perceptions. As argued by Vieira, the interconnected character of human interaction within the ecosystem signifies a breakdown of the processes of individuation, delimitation and demarcation, which compose the modern illusion of man as a unified independent subject. Nevertheless, the impossibility of taming and ruling over the Amazonian immensity and complexity is also embedded in the subjectivities concerning this perception.

In psychoanalytic terms, it evokes the Freudian death drive, at the liminal point where life and death, being and non-being, converge. In contemporary philosophical language, it could be equated to Deleuze and Guattari's idea of a "body without organs", where all hierarchies and totalizations collapse. In political terms, it would amount to pure anarchy, a state in which various elements converge and diverge without any predetermined rules or stable structures (Vieira, 2016, p. 119). Under such terms, a dichotomic character was also assumed by early perceptions of Amazonia, which either identified it as a "green hell" or a "heavenly paradise". The author claims that the vilification and idealization of the Amazon, its representation as either an inimical or a friendly space, are but two sides of the same coin. Faced with the proliferation of fauna and flora in the forest, Western colonizers, intellectuals, and later various governments of Amazonian nations, superimposed upon the region the readymade religious fables of hell and paradise, enemy and friend, good and evil, as a response to their inability to come to terms with the complexity of Amazonian life. The very proliferation of travel narratives and fictional literature about the region testifies to its fetishizing as a symbol of wild nature (Vieira, 2016).

In addition, we claim that the concept of otherness, as proposed by Bauman (1991), also makes up the mythical psychoanalytical framework within which the Amazon is perceived. Bauman (1991) argues that social identities are set up as dichotomies representative of the power dynamics present in the social order. In this dichotomous framework, one side turns out to be the oppressed or degraded side of the other. The rule of power is reflected differently on each side, as the group enjoying greater political power controls the construction and representation of majority and minority identities within the society. Hierarchy is therefore present in this framework, in which certain groups are socially constructed as being superior to others. In the case of Amazonia,

dominance of colonial narratives has led to the creation of the subordinate other. This other might even dwell in a racist conception of sub-people, portrayed in the symbolically constructed figure of the savage—the non-civilized, as coined by Ribeiro (1995). The other is constantly re-framed into the dialectics of the social construction of Amazonian space and frontiers. The forest ecosystem is at times portrayed as the other that needs to be broken or excluded, so that modernity can emerge. Thus, traditional knowledge and indigenous livelihoods as the other do not represent the culture and epistemological models present within the social and cultural identities of hegemonic powers. Consequently, the most recent views on the rainforest (capitalistic conservationism) also address it in a simplistic manner. An example is the economic and utilitarian view present in the modern concept of environmental or ecosystem services (Wilson and Matthews, 1970; Ehrlich and Mooney, 1983). Narratives reflected in the above-mentioned works reduce Amazonian complexities to economic or tokenized visions. In turn, such visions are representative of a homogenized Amazonia that is deprived of its structural, cultural and social complexities. It excludes other perceptions that account for the longstanding cultural and historical spatial interaction of humans within the Amazonian milieu. Reductionisms create a dichotomy or a binary division, in Foucaultian terms (see Foucault, 1977), between: (a) what is accepted by market-oriented political, social and human-constructed institutions—which in most recent times came to be known as neoliberal governmentality—and (b) identified obstacles for the spatial implementation of capitalist or mercantilist enterprises.

4.2. Colonial power and knowledge

Colonial knowledge and epistemologies are a social grammar embedded within the construct of public and private spaces, culture, mentalities and subjectivities. Not only do they facilitate a way of living for those benefitting from them, but they also reveal the harsh realities of those who suffer the effects of their implementation (Santos, B., 2010). Consequently, to decolonize means to break the condition of subordination that resulted from supplanting local knowledge with foreign epistemologies. Edward Said's Orientalism (1991) is a seminal research in this connection. His work deals with the West's structuring of the East, or Orient, as the global other. For Said, it was this conception that prepared the backdrop for the cultural, social and political take-over of non-Western regions by hegemonic European powers. Said's concept of Orientalism points out that, even if political independence has been reached in Oriental nations, the systems of representation and thinking—and thus the basis of colonial power relations—are greatly maintained. For him, this

represents an ontological and epistemological distinction between the European West and the Orient.

The colonial dominance of a capitalistic narrative is value laden. Under its own terms, it establishes the dominant cultural meaning or understanding of poverty and wealth; what is modern and what is archaic; what is civilized and what is un-civilized. Other means of livelihood and forms of human interaction are therefore subject to be classified through the notions of material scarcity, and the absence of relevant knowledge or civilized manners. It automatically designs and assigns its meanings to poverty, ignorance or incivility. Rather than perceiving other cultures as abundant and plural, inventive and rich the capitalist perception will define them as poor and disenchanted. In practical terms, Eliane Brum (2018) claims that in Brazil and throughout Latin America such reversal of values is pre-conditioned by colonial dominance. If a large-scale land-grabber is called a "farmer", "land grabbing" becomes part of "agribusiness" and the criminal origin of the deed is erased. The protagonists are perceived as performing an important activity for the common good of society, and agricultural producers as solely guided by common sense of capitalistic production. This so-called "common sense" was instrumental in constructing Brazil's social identity. Such identity legitimates determined elements as positive while casting away others as negative elements in Brazil's social fabric.

Looking at this process from an upper scale, particularly in view of the dominance of neoliberal governments across the global political economy, poverty and disenchantment in the region are closely linked to processes of historical enclosure. The capitalistic appropriation of land causes massive dispossession of local populations and deprives local inhabitants from accessing the land (Bollier, 2003), precluding the metabolic reproduction of local livelihoods. As explained by Harvey (2004), accumulation by dispossession is a primitive form of capitalist accumulation. It is a process that involves the elimination (dispossession) of rights and establishes capitalist control of collective forms of property - such as nature, water and knowledge - thereby increasing accumulation. He emphasizes how this current expansion is a form of robbery, the "original sin" of primitive accumulation, whereby the current over- accumulation does not cease. Blinded by the multiple narratives that compose human engagement with the Amazonian environment, what is left is a desert of unfulfilled promises for progress. Unfortunately, this is a common reality in today's Amazonia.

Elements within the foundational myth of Eldorado have been present throughout different historical periods and constantly reframed to fit new historical contexts. The maintenance of a colonial imposition of knowledge was present in the era of mercantilism (1500–1750), through national developmentalism (20th century), and later towards present neoliberal conservationism (21st century). One central argument in this chapter is that this symbolic dimension provides the necessary elements for the making of Amazonian spatial policies. Narratives are constantly evolving to fit new agendas of intervention. In the case of the Amazonian space, they are created by dominant powers to exploit it for private interests. Such narratives emerge from two disparate visions of the Amazon region. Either as an eternal expanding frontier for economic growth (Greenpeace, 2017) or as the lungs of the planet (UNEP, 2017). In both cases, the structural elements of Eldorado are present in the imagery of a vastly green territorial void, abundant in natural resources and open for the taking.

The issue of conservationist narratives of the Amazon requires further discussion. Since the 1970s, environmental concerns have led to an increase in ecological movements worldwide and their empowerment. Such movements question and challenge the impacts of capitalism on the environment and, in some cases, even impede businesses indefinitely. Sustainable development as a concept has been the most practical outcome in development policies emerging from such movements—under the narrative that there are limits to economic growth. For Passetti (2012), sustainable development is the conservative conductor for solving the environmental crisis, the most grievous issue of which is climate change; moreover, it is guided by a consensus on the dilemma between environmental conservation and economic growth. Sustainable development is a solution embedded within capitalism's dominant narratives: economic growth, top-down initiatives, languages, and structures. By applying different forms and instruments, the emergence of sustainability within policy maintains the colonial aspects of previous models of development. An example of such a claim is reflected by the international initiative of "Reducing Emissions from Deforestation and Forest Degradation" (REDD+), a rainforest conservation strategy proposed at the United Nations Forum on Climate Change. Applied to several Amazonian nations localities over the past decade, it maintains certain colonial aspects: the rainforest is commodified and used to compensate CO_2 emissions elsewhere; foreign guidelines to halting deforestation are applied to local policies; it affects local peoples and their livelihoods; outcomes are not necessarily representative of local empowerment bred from bottom-up strategies. Changes in Brazil's political arena, from right-wing governments of the past decades to the most recent progressive "Partido dos Trabalhadores", have not altered the capitalist, colonial aspects of spatial development in the

Amazon region. A most recent example of colonial interests is the construction of the dams of Belo Monte, Pará—an enterprise that has caused great socio-environmental impacts, such as an egregious disregard for local populations and massive displacement of people.

The following passages from different historical periods exemplify the perception of the overall structure of Amazonia as Eldorado. First, Euclides da Cunha in his famous series of essays Um Paraíso Perdido: ensaios amazônicos (written from 1904 to 1909), claimed that "the Amazon is the last page, to be written, from the Genesis". Later, President Getúlio Vargas, in a notorious speech addressed in Manaus, also envisioned the Amazon as the next frontier for Brazilian progress, while proclaiming man's rule over nature in Brazil's Amazonia. Perhaps such notion of progress could also mean the utmost realization (or the Genesis) of modern development. In President Getúlio Vargas (1941, 229) words:

> All of Brazil has eyes turned to the north (of Brazil), with the patriotic desire to assist in the emergence of its development—not only Brazilians, but also foreigners, technicians and businessmen. They will come to assist in this endeavour, applying their experience and their capital in order to increment commerce and industries…. Amazonian legends have deep roots in the soul of its people´s race and history, marked by heroism and virile audacity. They reflect the tragic majesty of the fights against destiny. To conquer the land and to subject the forest have been our duties. In this secular fight, we have obtained victory after victory.

The First National Plan for Development introduced by the military dictatorship (1964–1985) was precisely utilitarian in its vision for Amazonian future, as observed below (PND I, 1971, 29):

> The strategy for the Amazon is to integrate its territory for development…. Economic occupation and development will take advantage of the expansion of economic frontiers, to absorb populational surplus from other Brazilian regions and raise income and welfare levels of the Amazon region.

In the dawn of the 21st century, well-intentioned proposals for the conservation of the Amazon rainforest are still representative of economic interests placed by foreign agendas. This is the case of the REDD+ implementation. The following excerpt is withdrawn from a report by the German Federal Ministry for Economic Cooperation and Development. Currently, a major funder for anti-deforestation projects in the Brazilian Amazon, such as REDD+. The global and economic rationale present within this narrative represents well the present discourse for rain-forest conservation in the midst of the climate change phenomena.

The Brazilian Amazon hosts a quarter of the world's terrestrial species, carries out 15% of terrestrial photosynthesis and contains an enormous carbon stock - all of which contribute significantly to global social and economic benefits (BMZ,2015).

4.3. Fundamental changes in knowledge and possible alternatives for Amazonia

The Amazon rainforest entered the 21st century with great importance in political, cultural and scientific dimensions. In general, narratives continue to describe its immense stock of natural resources and the living experiences of its peoples. These perceptions can be observed in descriptions of the Amazon as "the lungs of the world" - as it is widely regarded as the most biodiverse tropical forest on the planet, with the greatest stock of minerals and the largest river, constituting one third of the world's fresh water. Such claims strike the most diverse interests, from environmentalists to scientists, politicians or corporate executives. The context of climate change has also added pressure on the path that the Amazon might take in the coming future. It reaffirms the imminent necessity to halt deforestation and secure the world's carbon absorption and climate regulation "services" provided by the Amazon rainforest.

However, there is far more complexity in understanding Amazonia than such discourses or mottos can clarify. As claimed by Milton Santos (1997), the geographic space is an accumulation of different times. Different temporalities are thus co-inhabiting within the space (Porto Gonçalves, 1999). Over 180 different indigenous populations with their own dialects, hundreds of communities of quilombolas and ribeirinhos, or settlers from the Brazilian south or the northeast, compose the rich socio-cultural diversity that constitute different Amazonian realities, apart from the millions of people dwelling in urban centres—centralities that emerged from massive dislocation of peoples and regional environmental depletion. For this reason, it is imperative to assess the plurality of realities, visions and perceptions that constitute the Amazon as a region.

The work of geographer Berta Becker (1988) regarding the social production of space in the Amazon is particularly relevant to this discussion. In line with her considerations, to understand the actual frontiers in the social production of space, one should move beyond the dichotomies between capitalist worldview and its conceptualized Baumanian other. Doing so would require a move towards complexity, which can be assessed by applying systems theory. Systems theory was initially conceived in the fields of theoretical physics and quantum mechanics. While analysing complex phenomena at the microscopic level, unusual systems and dissipative structures were observed in

the processes of breaking the conservation of constituent elements at a larger scale. This concluded in the interpretation that molecular disorder had led to irreversible growth. The evolution of the system had reached new states of probability. The historic notion of a linear irreversible growth was counteracted, insofar as micro-scale processes had influenced its redirection. For Becker, such properties might also be inherent and applied to social bodies in the field of social sciences. Hence, the social sciences should be able to incorporate such discoveries to enrich their analytical power (Becker 1988).

Rather than thinking of such a reduced epistemic divide in the development of Amazonian territorialities, as observed with the Foucaultian binary divide, one should assess the dynamics of frontiers as a non-linear process, wherein ongoing tensions in the chain of actions and reactions among the multiple stakeholders are constantly reshaping social relations. Spatial frontiers are in constant motion; they are subject to contexts and uncertainties. The issue of scales is particularly important, as local realities are also shaped by movements on multiple scales. Therefore, thinking merely of a binary conflict, for instance between peasants and capitalist agendas, would be insufficient for a thorough approach. Under a larger scale of analysis, one might observe how the peasant resistance movement is already embedded within the dominant global neoliberal governmentality. It exerts its dominance to influence regions, states and localities worldwide, both materially and subjectively. Assessments at the local level might not sufficiently allow one to observe and understand how the actual frontiers are being shaped and contoured along upper scales—for example, the changes and evolutions of global geopolitics or the constant tensions set in the Brazilian political arena.

Frontiers function as complex adaptive systems, as they are shaped by different temporal, spatial and social scales, nested hierarchies, irreducible uncertainty, multidimensional interactions and emergent properties (Giampietro et al., 2011). In other words, the social production of space and how we assess frontiers in Amazonian territorialities should take into account the imponderable as well as the uncertainties emerging in the Amazonian social fabric. An assessment must pay careful attention to the interplay between scales and how they influence or alter the dynamics in which local realities are developing. In turn, they should also bear in mind the feedback loops emerging from local events exerting pressure on the national or global arenas. Chico Mendes's claim for an eco-socialist approach to human engagement with the natural environment could also play a significant role in addressing the construct of Amazonian social frontiers. In the 1980s, the so-called "empates" were established by rubber tappers as a means of resistance against the imminent

takeover of the forested land by cattle ranchers and loggers. In northern Brazil, the construction of highway BR-364 had already proven its destructive effects along the states of Mato Grosso and Rondônia. The plans to continue its construction into Acre raised even more pressure on local social movements to secure their land and access to the rainforest.

The rubber tappers' defence of the forest began locally as a workers' syndicate movement. As claimed by Porto-Gonçalves (2009), the resistance's success in the long run can be partially explained by their newly established connection to other scales of power, some even reaching far beyond the forest's frontiers. Chico Mendes understood the formation of a worldwide ecological movement as a break in the dominant system of world power and knowledge. The "Limits to Growth Report" proposed that capitalism's dynamics could not go on as usual. The scarcity of resources and the total failure of global ecosystems became a worldwide concern. Under global narratives for sustainable development and the adherence of international ecological movements, the rubber tappers' movement out of Xapurí, in the state of Acre, gained great prominence. But most importantly, it led to new alliances in the political scenario by broadening social and power relations in the region, and reshaping frontiers and socio-political boundaries (Porto Gonçalves 1999).

In this present discussion of potential future pathways for Amazonia, we might find certain resonance with the process of decolonization, as proposed by authors such as Boaventura dos Souza Santos, Enrique Dussel and Edward Said. As we have pointed out, the maintenance of a colonial imposition of knowledge was most present in the era of mercantilism (1500–1750), through national developmentalism (20th century), and towards present neoliberal conservationism (21st century). The influence of colonialism is further accentuated in a global context that imposes a series of added pressures on the environment (e.g. land grabbing, extractive resources, and corporate political alliances). As advocated by Boaventura do Souza Santos (2010), it is necessary to decolonize knowledge and reinvent power in order to facilitate the emergence of new epistemologies, particularly originating in the global South. For Boaventura, the most advanced struggles of the last thirty years were carried out by indigenous peasantry, female activists and afro-descendants residing in remote locations, like Amazonia. However, their demands were not translated into colonial languages. Terms such as "socialism", "human rights", "democracy" and "development" were absent in their respective vernaculars. Instead, they spoke of "dignity", "respect", "territory", "self-government", and "buen vivir" ("good living") in Mother Earth.

The Amazonian case is not different from other regions of the world that were also profoundly colonized. An imposed model of development designed by top-down dynamics is the historical backdrop of Amazonian contemporaneity. To invert such logic could mean a move towards local empowerment. Important examples of attempts to resist against the impositions of the development model have historically been present, not only within the Amazonia of Brazil, but also in other nations of South America. In 2017, most environmental conflicts involving assassinations of local leaders and activists occurred in South America (Global Witness, 2018).

Under these terms, "to decolonize" means to deconstruct the historical myths that have historically shaped the imagery of Amazonia. In addition, it means to rethink the engagement between humans and nature. A new rationale of this relation should demonstrate how far more complex and interconnected is the relation of man and nature after it has long been driven away by the so-called Age of Enlightenment's idea of anthropocentric control over nature. Capra (1996) contributes to this discussion by stating that modernity suffers from a crisis of perception, in which global leaders and the dominant institutions they govern do not realize the interconnectedness between problematic issues currently faced by the global community—i.e. poverty, inequality, climate change, social conflicts, and environmental depletion, to name but a few. The world is not a collective of isolated elements, but rather a complex network of phenomena in total interconnection and interdependence. As Capra claims, only a radical change in perception, incorporated through systemic thinking, might allow humanity to perceive the operation of global systems in a more holistic manner. In other words, we must begin perceiving the interconnectedness of issues faced by humanity at the dawn of the 21st century. Capra could not be closer to Amazonian ancient knowledge: the other, as conceptualized earlier in this chapter, historically oppressed by hegemonic power and knowledge. The words of Krenak, an important indigenous leader in Brazil, adheres to the idea of crisis of perception as pointed out by Capra:

> For me, there are still visions of life that sing and dance to raise the sky. When the sky is putting pressure on the world, some humans are singing and dancing to raise the skies…. I don't accept the check-mate, the end of the world or the end of history. In this hard, contemporaneous moment, is when I evoke the necessity to sing, dance and raise the sky (Milanez, 2016).

4.4. Conclusion

This chapter discussed aspects related to changes in human engagement with the Amazonian environment since the arrival of Europeans in the 1500s. First, we argued the importance of the myth of Eldorado as the initial Eurocentric vision of Amazonia. Over time, human engagement evolved into a psychoanalytical framework that is most present in Western epistemologies and ontological perceptions—i.e. the inability to perceive humans and nature as one. Further, we claimed that such epistemological reductionism in envisioning the Amazon is reflected on the construction of the other. This construction established relations of power by generating hierarchical social identities, where the other is but the inferior of the dominant side. Dominance through hegemony is applied through the effectiveness of a dominant social grammar embedded within the construct of social space and subjectivities. Such application of power and knowledge has been historically present in human engagement with the Amazon.

Most importantly, it has determined a model of development by which social relations perceive local forms of knowledge as subordinate, while depleting the rainforest ecosystem. We then moved on to present possible alternatives to such reduced epistemes. In this connection, we offered two key elements: the importance of viewing social production of space under the prism of complexity, and the importance of decolonizing power and knowledge. We pointed out how complexity theory (within systems theory) might allow us to perceive the social construction of Amazonian frontiers from a broader perspective. Such complexification might allow us to better grasp the actual subjectivities and materialisms shaping Amazonian reality. Moreover, we offered the idea that in addition to complexifying the way Amazonian reality is assessed, we should also attempt to decolonize the spatialization of colonial knowledge. Decolonization might assist the emergence of local solutions and the adoption of bottom-up visions for constructing the future. The crisis of perception, as conceptualized by Capra (1996), showed us how indigenous Amazonians have always thought of their lives and their interaction within the Amazonian space—where human engagement with the environment is complex, interconnected and interdependent.

PREFACE TO CHAPTER FIVE

The following chapter has been published as the following peer-reviewed journal article: *Bidone and Kovacic (2018). From nationalism to global climate change: analysis of the historical evolution of environmental governance in the Brazilian Amazon - The International Forestry Review Vol.20:4; DOI: 10/1505/14654818825240656.* I led the design of the article, the data collection process, and the writing of the article. My co-author and principal supervisor provided invaluable suggestions to each stage of these stages.

The article was motivated by the need to historically assess how environmental governance emerged in the Brazilian Amazon. I reckoned that in order to understand contemporaneous governance of the Amazonian environment, it was most necessary to understand how the current state of affairs came into being. To do so, I constructed a timeline with major policies and public planning efforts (Plans and Programs) aimed at the Amazonian region of Brazil through the assessment of the Brazilian dataset of historical public policies and online national archives. This allowed for a full overview of proposed planning efforts to the region across the last six decades. The analysis of historical policy documents and literature on Brazilian development planning assisted specifically in the attempt to establish the level of significance each policy, Plan or Program had in the evolution of political efforts towards the Amazonian region. Texts were also analyzed by considering the historical context in which they were embedded and the similarities and differences between them. The article reveals how policies in the Amazon have evolved to progressively incorporate environmental concerns. It shows, notwithstanding, that such incorporation has not substituted previous (economic oriented) policies, but instead resulted in overlapping of narratives: economic oriented policies are constantly negotiated in parallel to more ecologically oriented policies. Most importantly, the study discusses how struggles in the political arena play a decisive role in determining the possibilities for environmental narratives to find further ground into policy implementation.

CHAPTER 5. FROM NATIONAL DEVELOPMENTALISM TO GLOBAL CLIMATE CHANGE: AN ANALYSIS OF THE EVOLUTION OF ENVIRONMENTAL GOVERNANCE IN THE BRAZILIAN AMAZON

5.1. Introduction

Home to the world's largest rainforest, Brazil has been among the planet's leading deforesters since the 1970s. The main causes of deforestation are land use transformations for agricultural production, cattle ranching and extraction economies (Arima, 2011, Fearnside, 2003, Nepstad, 2009). Federal efforts to halt deforestation reduced deforestation by 80%, in the 2000s (Nepstad, 2009). One main tool in forestry governance for climate change mitigation efforts, is the Reducing Emissions through Deforestation and Forest Degradation program (REDD+). However, subsidies for key commodities driving deforestation outweigh subsidies for forest conservation such as REDD+ by over 10 times (ODI, 2015). In the Amazon, the fluctuating success of deforestation reduction can be linked to low levels of economic and human development. This factor characterizes the Amazon region, albeit to varying degrees across states. As a consequence of dire economic conditions, deforestation emerges when economic opportunities for natural resource extraction arise. The failure of development policies to trickle down to the local population and to enable movement towards a more sustainable management of natural resources has been explained as a problem of (mal)adaptation of policies to the local context, as the result of colonialist power dynamics that persist under the agenda of economic development (Ab'Saber, 1994; Becker, 2001; De Oliveira, 1994; Escobar, 2008; Gudynas, 2014; Ianni, 1979; Kohlhepp, 1990) and the lack of political power of local populations to implement their own narratives of societal progress (De Sousa Santos, 2006; Mendes, 1989; Pereira, 2015; Viveiros de Castro, 2011).

Significant research has been devoted to identifying and characterizing the dynamics, limitations and effects of REDD+ in Brazil. In this paper, we focus on the analysis of REDD+ as a forest governance mechanism. While REDD+ is seen as beneficial, the existing literature analyzes the challenges for the implementation of REDD+ in Brazil with regard to (i) the involvement of local communities and the distribution of benefits, (ii) financing and land reform and (iii)the interaction of REDD+ with existing policies and institutions. Benefit sharing is an important topic of discussion within REDD+ (Luttrel, 2014; May et al., 2016; Gebara and Agrawal, 2017; Gebara et al., 2014). The Amazon region has endured a long process of marginalization of traditional populations and settlers. In such a context, benefit sharing within the REDD+ strategy is a crucial aspect that may determine the success or failure of project interventions. The inclusion of indigenous populations,

smallholder families and local populations in participatory governance processes and transparent decision-making plays a major role in benefit distribution. The analysis of Duchelle et al. (2014) contributes to the literature on social safeguards for REDD+ through analysis of empirical data. The paper argues that finding the right balance between disincentives and incentives is crucial if REDD+ is to foster the sustainability of local livelihoods. Building on this discussion, Gebara and Agrawal (2017) critically discuss practical applications of REDD+ and argue for the importance of local perspectives in modelling on-ground policy.

REDD+ has also been analyzed with reference to its eco- nomic benefits and costs. Börner and Wunder (2008) analyze the costs of avoided deforestation and possible schemes for the implementation of REDD mechanisms. Piffer Salles et al. (2017) discuss the effects of different funding strategies for REDD+. Palmer et al. (2017) estimate returns from REDD+ interventions in three different scenarios in the State of Acre, as an attempt to model the economic optimization of the state's subnational REDD+ program. Ezzine-et-Blas et al. (2011) are critical about the effectiveness of land reform in distributing economic benefits, due to the complex historical context involving land use rights. CIFOR's 2013 Global Comparative Study on REDD+ represents perhaps the most complete research done on REDD+ to date. Although CIFOR is supportive of REDD+ strategies, there are important references to understanding on-ground REDD+ mechanisms and their interactions within the Brazilian context of institutions, politics and socio-economic reality.

In the context of governance, May et al. (2016) propose a characterization of the state of the art of REDD+ in Brazil with attention to the interactions of agents, institutions and policy within the Brazilian context. Identified bottlenecks are the lack of federal regulation and governance structures, the disagreements between the federal and state spheres regarding the REDD+ framework and the capacity for generating co-benefits for multiple stakeholders through REDD+ implementation. Toni (2011) discusses the complexities associated with the decentralization trend in environmental governance and its possible role in boosting REDD+ experiments in the country. Toni argues for the importance of previous environ- mental policies in the setting up of present and future REDD+ implementations. This paper builds on the analysis of the policy context by providing a historical analysis of policy narratives used for the governance of the Brazilian Amazon. The success of REDD+ relies not only on the soundness of its scientific premises or on its implementation, but also depends crucially on its interaction with existing institutions, on the susceptibility of policies to economic and political changes and on the social mechanisms it may

reinforce or play into. The objective of this paper is to identify the narratives that under- pin public policy in the Amazon, and to ask how REDD+ interacts with, and is influenced by, existing narratives.

REDD was first discussed during by the UNFCC of COP 11 in 2005. At COP 13, in 2007, the first substantial decisions on REDD were adopted. The term REDD was broadly defined by COP13 as the local, subnational, national, and global actions whose primary aim is to reduce emissions from deforestation and forest degradation and enhance forest carbon stocks (increase removals) in developing countries. REDD+ may include conditional payments, which was a core idea when REDD+ was first launched, and the term refers to the set of policies or actions necessary to reduce deforestation and forest degradation (Sills et al., 2014, The REDD Desk 2018). The paper is organized as follows. First, we introduce the theoretical framework used to analyze the evolution of policies through narratives. The second section presents a brief contextualization of Amazonian development. The third section explains the methodology and data sources used for the analysis. The fourth section presents the results of the analysis of selected policies, plans and programs for the Brazilian Amazon over the last 60 years, through a categorization of narratives that aims to identify how policy narratives have changed over time. The following section is a discussion of: (i) the overlapping of policy narratives, (ii) the contextual factors that affect environmental governance in Brazil and that affect REDD+ and (iii) the role of scientific information in policy formulation. An overall conclusion follows.

5.2. Theoretical foundations

This paper uses the analytical tools of policy analysis and science and technology studies. Based on policy analysis and science studies, we know that REDD+ initiatives were not introduced into a policy void. Institutional and situational approaches to science studies both stress the importance of considering the social and political contexts in which new forms of knowledge are advanced. According to Jasanoff (2004), institutional, political and scientific orderings are mutually constituted: how a problem is represented matters for the types of institutions and political orders that are set in place to deal with the problem, and institutions and political orders matter for how a problem is perceived. We argue accordingly that the success of REDD+ depends not only on the soundness of the scientific evidence on which REDD+ is based and on its implementation, but also, crucially, on its interaction with existing institutions and ways of knowing. In order to understand the context in which REDD+ is placed, we use the historical perspective of the political, social and economic governance logics that have characterized forest governance in Brazil since the 1960s.

We analyze governance logics through narratives. Narratives are defined as a way of making sense of a variety of contrasting perceptions when building commensurate experience. Narratives represent an act of interpretation which gives meaning to a sequence of actions" (Magrini, 1995). Narratives can refer both to the individual act of sense- making (Cronon 1992) and to sociocultural artefacts through which social orders are enacted. Narratives help individuals build commensurate experience and, when publicly per- formed, create a shared perception of the external world. In this sense, narratives create knowledge through story-telling (Kovacic and Giampietro, 2015). Therefore, we argue that narratives give a special insight into the institutional, political and social orderings that underpin policy formulation. As argued by Sconfienza (2017) the stories told by people are vehicles of values or blueprints for action. By tracing the evolution of policy narratives in historical terms, this analysis allows us to observe which social and political orderings have been reinforced and which have been disregarded.

In operational terms, we draw from Bacchi's "What is the problem represented to be?" (WPR) approach. The initial premise of the WPR approach is that what one proposes to do about an issue reveals what one thinks is problematic. Following this approach, policies and policy proposals are assessed by inherent representations of what the problem is considered to be. Problem representation sets the basis for policy formulation. The WPR approach questions the assumption that "problems" are self-evident starting points for policy development. Bacchi argues that both "the problem" and its "solutions" should not be taken for granted and left unquestioned. Problem framing is value-laden and carries meanings that are themselves representative of a determined context in time and space. The WPR approach allows us to question problem framing and representation "in an era when a problem-solving motif is near-hegemonic – think here of evidence-based policy and contemporary Western eagerness" (Goodwin, 2015) to produce solutions. The mixed success of REDD+ and the poor performance of development policies in the Amazon can be related to the failure of normal scientific activities, as described by Kuhn (1962), "which foster expectations of regularity, simplicity and certainty in the phenomena and in our interventions" (Funtowicz and Ravetz, 1993). Social and economic development in the Amazon is not resolved only by the application of the so-called right measures. By focusing on context, this paper contributes to the assessment of REDD+ from a policy perspective.

5.2.1. Context

For the historical contextualization of development policies in the region, this paper draws from the work of previous researchers (Ab'Saber, 1994; Becker, 2001; De Oliveira, 1994; Hall, 1991; Hèbette, 1991; Hecht and Cockburn, 1989; Ianni, 1979; Leroy, 1991; Martins, 1994; Porto Gonçalves, 1999; Ribeiro, 2000; Velho, 1982). It is important to bear in mind that Amazonian development is very heterogeneous. Very different realities make up the contemporaneous Amazonian context. The "Amazônia Legal" region is composed of nine different and very diverse states. For example, the political and economic dynamics that are present in the State of Pará (stretching from mid- Amazônia to the Atlantic) are responsible for 40% of the North Region's GDP, i.e., around 2.2% of Brazil's overall GDP (IBGE, 2017). The diverse and robust economic system in Pará is vastly different from the low economic production in an enclave economic system such as that of the State of Acre (in the far west). Based on agriculture and forest-based production, the State of Acre contributes far less than 1% of national GDP. The dynamics of mineral, soy and cattle production in Mato Grosso (in Amazônia's south) bear very little similarity to the low aggregate farming production and extensive mineral and forestry extraction that characterize the economy of Roraima, Brazil's lowest GDP area (IBGE, 2017). Our work, therefore, is based on policies, programs and plans that are aimed at tackling Amazonian problematics. This paper does not attempt to differentiate policies in different Amazonian states. Rather, we analyze policy narratives at the scale of "Amazônia Legal" as a Brazilian macro-region.

The exploitation of natural resources and economic production currently account for 5% of the overall Brazilian GDP (IBGE, 2017). According to the National Institute for Spatial Research (INPE, according to the Portuguese acronym), by 2016, approximately 17% of the Amazon's forested territory had been depleted. Since the 1950s, the population of the Amazon region has grown from 1.8 million to 18 million (IBGE, 2010). Population growth has been driven by massive dislocation of populations from other Brazilian regions (Fearnside, 2009). Establishing this massive contingent of people in new urban and rural centres has caused significant damage to the environment and has not necessarily led to better living conditions. Public infrastructure intended to guarantee basic living conditions, such as transport, education, health and security, still falls short of becoming an overall reality in the region (Bidone, 2015). Regional deforestation rebounds on its population in terms of low standards of living in comparison to Brazil's more developed regions, irreversible damage to fauna and flora (Becker, 2001) and the loss of ancient traditional livelihoods and knowledge (Porto Gonçalves, 1999).

One significant aspect of the deforestation process is the long history of federal credit and tax exemptions. Tax exemptions for mining companies, (e.g., "Lei Kandir" of 1996, a federal law which exempts mining companies from paying full taxes on extractive production) and transfers of rural credit to finance large monocultural production are two examples of federal incentives that have enabled predatory land use. Land use in the Amazon is submitted to a cycle which starts with illegal timber exploration, followed by implementation of pasture for extensive cattle ranching or agricultural production. The historically low taxes on land property through ITR (Rural Territorial Tax), allow landowners to maintain large properties. Large properties, in turn, have enabled cattle production. In 2006, 79% of land use in the Amazônia Legal region consisted of pasture for cattle production. A study by Greenpeace from 2007 argues that 75% of the increase in deforestation between 2006 and 2007 was linked to cattle ranching. The World Bank (Margulis et al., 2003) found a strong correlation between increases in the price of cattle and increases in deforestation from cattle activities.

On the other hand, there have been significant changes in the way rural credit and subsidies for Amazonian economic activities are allocated. Resolution 3545, introduced in 2008, resulted in concessional rural credit only being awarded based on compliance with legal and environmental regulations. It is estimated that the resolution led to USD 1.4 billion failing to be loaned between 2008 and 2011, which corresponds to USD 350 million per year that was previously loaned to farmers that were breaking environmental regulations. It is estimated that without these provisions, 90% of this finance would have supported beef production and led to an additional 2,700 km2 of forest loss (Assunção et al., 2012), increasing the rate of forest loss by around 15%. Measures to decrease deforestation and ecosystem depletion in the Amazon have resulted in a decrease in the rate of forest loss in Brazil, by about 80% from its peak in 2004. More recently, Brazil has become a model for how REDD+ countries could potentially turn around high deforestation scenarios to mitigate forest carbon emissions substantially. State governments, such as those of Amazonas, Acre and Mato Grosso, played proactive roles in achieving these conservation gains, including through the participation of six Amazonian states in the Governors' Climate and Forests Task Force (Sills et al., 2014). Additionally, over 50 Brazilian subnational REDD+ initiatives emerged, the highest among all tropical countries although probably with some turnover.

Many of these initiatives are supported by the Amazon Fund, funded by USD one billion from Norway in 2008–2015 (in addition to smaller contributions from Germany and the national oil company Petrobras). The significance of the fund can be gauged by comparison with the yearly

budget of the Ministry of the Environment, which is about USD 300 million (MMA, 2017). The Amazon Fund was launched in 2008, is managed by the Brazilian Development Bank (BNDES) and supports projects by government agencies, NGOs and universities that demonstrate a direct or indirect contribution to reducing deforestation and forest degradation (Amazon Fund, 2014). Various state governments also participated in subnational initiatives or have since created jurisdictional REDD+ programs. The context in Brazil is therefore mixed: recent success in reducing forest loss directly attributable to some of the government's policies is contrasted with continued government efforts to open market access and facilitate investment in agriculture, which is a key driver of forest loss (Assunção et al., 2012). All this establishes a context in Brazil where on the one hand there has been significant commitment to addressing forest loss and on the other hand economic development plans include subsidies to facilitate investment in commodities, driving forest loss. In spite of domestic and international support in the last decades, Brazil may be losing ground in addressing forest loss. The exceptional economic results from the Brazilian agrobusiness in the last decade have led to an empowerment of the lobbies of large rural producers in the Brazilian congress. This factor gained even more prominence after the ousting of President Dilma Roussef (2010–2016) and since then exceptional efforts to curb deforestation policies have been made. The relative success of REDD+ policies is thus far from being a fait accompli. In 2017, the Norwegian government significantly reduced its pledges for the Amazon Fund due to the exceptional rise in deforestation from 2016 (ISA, 2017). A better understanding of the institutional, political and social context will be a crucial part of REDD+ assessments, if this instrument is to contribute to more sustainable forest governance.

5.3. Methodology

The present work is based on: (i) a text analysis through coding of policy documents, plans and programs for the Amazon region of Brazil over the last 60 years and (ii) bibliographical research into the history of the political and economic context in Brazil and the Amazon in the 20th century. The text analysis is based on Bacchi's (2009) analysis of problem framing and problem representation as being central for policy definition. The central objective of the "What is the problem represented to be?" approach is to critically question the representations of problems that underpin policy solutions. The approach is not a formula, but rather an open interrogation regarding problem framing and the consequent representation of problems. Under this logic, some key questions serve as guidelines in the approach:

1. What is the problem represented to be?

2. What assumptions are embedded in this representation?

3. What/who is left out in this problem representation?

4. Which policies are based on this representation of the problem?

5. Does the problem representation have a long-term effect on policy formulation?

6. Which logics/disciplines support the problem framing and it's related policy interventions?

7. Which social actors are involved or taken into account by the problem framing?

Documents were often found to present multiple narratives, reflecting the multiplicity of actors, discourses and interests that have shaped the management of the Brazilian Amazon over the last 60 years. Texts were also analyzed by considering the historical context in which they were embedded and the similarities and differences between them. The selected texts are official documents of the Brazilian Government obtained in libraries and in Brazilian public institutions or online. The first step of the textual analysis on policies involved identifying the sources of information. We collected federal and regional planning documents as well as officially published laws that supported policies, plans and programs. Texts were then selected according to the historical significance of the policies or plans. Significance was determined by cross-checking bibliographical work on Amazonian development for numbers of citations of official documents and level of novelty in narratives or in the stated objectives with respect to previous policies, plans or programs. The final selected texts are representative of changes in the narratives of policymaking for the region and have materialized as political or economic interventions.

5.4. Results

5.4.1. 1950s–1970s: National Developmentalism

The period from the 1950s to 1964 is characterized by political instability following the fall of the Vargas regime in 1945, fervent political activity, strong unions, and debates about social security legislation. In 1960, Brazil entered an economic recession, aggravating the political crisis. Various interests and fear of social instability on the part of "influential property owners, industrialists, bankers and the US State Department, since 1959 vigilant against another Castro-like takeover in the hemisphere" (Levine and Crocitti, 1999: 226), created the basis for the coup d'état. In 1964, the military took control of the government. During this period, Brazil underwent a process of import substitution industrialization and experienced relative isolation from global economic and political pressures. The international context is of secondary importance. Spatial evolution in the Amazonian

region has historically been subject to the logic of appropriation and over-exploitation of natural resources. This economic model started with the first development policies and planning for the region during the 1950s (Becker 2001). These policies are marked by the national developmentalism model, where the "government emerged as the prime investor in partnership with its corporate partners, thus orienting development through great infrastructure projects" (Safatle, 2017). The starting point of our policy analysis is the creation of the Superintendence for the Valorization of the Amazon (SPVEA according to the Portuguese acronym) in 1956. According to Berta Becker (2001), the implanting of SPVEA constituted the initial phase of regional planning in the Amazon. The SPVEA centralized the decisions regarding planning and spatial development of Brazilian Amazon federative states and territories. Its general objectives were:

i. to ensure the occupation of the Amazon;

ii. to establish in the Amazon an economically stable and progressive society, capable of providing, with its own resources, for the execution of its social needs;

iii. to develop the Amazon region in parallel with, and as a complement to, the Brazilian economy (SPVEA 1953).

In 1971, the military government created the First National Plan for Development (Plano Nacional de Desenvolvimento I). The Amazonian Development Plan I (Plano de Desenvolvimento da Amazônia I) is drawn from this plan. The stated main objective of PND I was to move from an underdeveloped to a developed nation (PND I 1971). Further objectives were:

i. to achieve rapid and high-level GDP growth;

ii. to gain ground in the competition with fully developed nations;

iii. to promote social openness, through the distribution of opportunities and the application of large-scale capitalism;

iv. to promote national integration (geographical, cultural and economic), through the introduction of large infrastructure projects;

v. to enhance the capacity of human resources;

vi. to achieve the modernization of the financial sector (PND 1, 1971).

These objectives relate to integration into the global economy, economic and demographic growth and state-corporate partnerships for development. Most significantly, the plan determined the role

of the state as a sponsor of pro-corporate policies. In addition, the plan mentions the need to "increase the vitality of private companies through fiscal exemptions, incentives and monetary expenses" (PND 1, 1971), providing the basis for the long-lasting fiscal benefits that drive corporate intervention in the Amazon to date. The most significant program within PND I, with a specific focus on the Brazilian Amazon, is the National Integration Plan (PIN). Its objectives were to expand the agricultural land frontiers and to incorporate the humid valleys of the north-east and new areas in the central plains and the north (PIN 1971). The first step for PIN was the immediate construction of the Trans-Amazonian and the Cuiabá-Santarém highways. The former crossed the Amazonian territory from east to west. The latter geographically/physically integrated the central plains to the north of Pará. These two highways represent major infrastructural interventions, which allow for better transportation of primary resources from the Amazon to the rest of the country. Integration is closely linked to the extractivist model of economic growth.

In 1975, the second version of the Development Plan was published. It adopted a different and more pragmatic tone in relation to the first version. The introduction of the plan saw the emergence of new elements, such as the mention of the democratic aspirations of the population and the influence of humanitarian and environmental discourses. The Amazon was still portrayed as a "frontier of development and growth" (PIN, 1971) to be further integrated and its resources extracted. The new strategy for development promoted by PND II is the creation of development poles strategically placed within the territory. Its objectives are to:

i. promote national integration

ii. promote the adequate demographic occupation of the region, absorbing economically marginalized populations from other regions and providing jobs

iii. increase the region's production and its population's income

iv. favour the reduction of regional development disparities

v. ensure that production growth is in harmony with pre- occupations about nature conservation and protection of local indigenous populations.

Poloamazônia is the main program directed towards the Amazon giving continuity to a predatory extractive model highly impacted by external demands and to short-term planning (Gutberlet, 2002). According to the framework used in this paper, environmental governance in the Amazon

can be characterized as falling under the national developmentalism agenda. The main characteristics of the period are summarized in Table 4.

Table 4. Characteristics of the national developmentalism period

Characteristics	National developmentalism
Problem framing	The Amazon lacks modern civilization and needs to be further integrated geographically and economically into the rest of Brazil.
Assumptions	The Amazon is a void: there is an absence of people, culture and economic activity. The rainforest and its indigenous peoples are viewed as an obstacle to the development of modern civilization, or as marginalized populations in need of integration.
Silences	Forced migration, displacement of local populations.
Policies	SPVEA: Superintendence for the Valorization of the Amazon - 1955 PND I: National Development Plan I - 1971 PDA I: Amazon Development Plan I - 1971 PIN: National Integration Plan - 1971 PND II: National Development Plan II - 1975 PDA II: Amazon Development Plan II - 1975 Poloamazônia - 1975
Effects on later policies	Programa Grande Carajás – 1980 Calha Norte Project - 1985 Brasil em Açao - 1995 PAC: Growth Acceleration Program - 2008
Disciplines	Structuralist economics Neoclassical economics
Social actors	State Officers; scientists, such as economists and engineers supportive of the military regime; national and international corporations in infrastructure construction and natural resources extraction; international development agencies, such as the World Bank.

5.4.2. The 1980s

The 1980s was a decade of economic and political instability in Brazil, marked by the end of the military regime in 1985 and the democratic transition. The end of the military regime was accompanied by the evolution of socio-environmental narratives in Amazonian policies. The change in regime revealed that the previous decades of rapid economic and spatial growth had caused considerable damage to local populations and to the ecosystem (Serra and Fernandez 2004). At the international level, the 1980s also saw the growing influence of global political concerns. Following publications by The Club of Rome and the Declaration of Stockholm of 1972, the environment acquired greater importance in the worldwide policy agenda, culminating in the sustainable development paradigm of the 1980s. The national developmentalism agenda remained present with plans such as the Calha Norte project (1985) and Programa Grande Carajás (1980). The former was informed by the National Security Doctrine (1968) and constituted a series of infrastructural

interventions to protect the Brazilian northern borders in the states of Amazonas, Roraima, Acre and Amapá. The latter, Programa Grande Carajás, represented the integration of several development projects intended to support economic development in the region. It integrated several massive infrastructure projects such as the hydroelectric power plant in Tucuruí, the iron mine in Carajás connected by Carajás Railway and a steel industry park.

The National Policy for the Environment's objectives were adopted under a technocratic rationale and aimed at preventing/controlling pollution and natural resources depletion, promoting the use of technology for adherence to anti-pollution standards, promoting polluter-pays legislation and centralizing sectorial environmental laws into one national policy. The Project for the Environment and the Indigenous People (PMACI according to the Portuguese acronym) had as its overall objective to research and identify how to order the territory and prevent negative outcomes from possible excessive migration flows, disordered growth and environmental depletion. In the attempt to move away from the 21 years of military dictatorship, a new citizen's constitution was drafted in 1988. Some important points from the Brazilian Federal Constitution of 1988 concern the importance of "preserving and restoring ecological processes and ecosystems and criminalizing environmental offenders" (Brazilian Constitution 1988). Directed at the Brazilian Amazon, the federal program "Nossa Natureza" was elaborated in the same year with the objective of establishing viable conditions for use of natural resources and environmental preservation, in a joint effort by the state and other segments of society.

Most importantly, the 1980s mark the end of the national developmentalist era and the inauguration of a new era for the emergence of social movements and alternative development models. One example of such emerging social movements was the fight of Chico Mendes in the State of Acre. Chico Mendes led a resistance movement that emerged through the syndicate of rubber-tapping workers against the devastation of forests in Acre. Through the creation of the National Council of Rubber-Tappers, Chico Mendes' fight aimed at securing the livelihoods of those who made the forests their home. The outcome of the worldwide repercussions from his activism and his assassination, was the development of extractivist reserves (in Portuguese, *reservas extrativistas* or *RESEX*). RESEX Chico Mendes, in Xapurí, Acre, was the first RESEX, replicated throughout the Amazonian territory in the following decades. The 1980s are best characterized as a period of technocratic conservationism. The emergence of social environmental movements and the importance of Chico Mendes' work in Acre were restricted to the local level and did not immediately impact policy narratives. The assassination of Chico Mendes gained international

visibility and led to policy readjustments in Brazil only in the 1990s. The characteristics of this period are summarized in Table 5.

Table 5. Characteristics of the technocratic conservationism period

Characteristics	Technocratic conservationism
Problem framing	Natural resources depletion Problem framing Ecosystem depletion High deforestation rate Failure of previous policies Lack of economic development
Assumptions	Land, forests and other natural resources use must be rationalized
Silences	Social impacts of conservation policies
Policies	National Environmental Policy - 1981 PMACI: Project for the Protection of the Environment and Indigenous Communities - 1985 Calha Norte project - 1985
Effects on later policies	SNUC: National System for Conservation Units - 2000 ARPA: Amazonian Region Protected Areas Program - 2002
Disciplines	Development economics Environmental studies and environmental economics
Social actors	National and international environmental NGOs; civil society; international agencies, such as the UN or the World Bank; scientists and experts in environmental studies; the Ministry of the Environment

5.4.3. The 1990s–2000s

The first elected president of the decade, governing through- out the 1990s was President Fernando Henrique Cardoso, whose government was marked by political-economic adherence to the Washington Consensus, therefore adopting neo-liberal-oriented economic policies. The Rio-92 summit played a special role in giving voice to the sustainable development discourse. As consequence, in the 1990s the Brazilian government created the highest number of natural conservation units and indigenous territories to date. In the 1990s policies withholding ecological or environ- mental claims were further implemented. The Pilot Program for the Protection of Tropical Forests (PPG7) is perhaps the first and one of the most significant examples of such policies. The concept of sustainable development gained ground within policy planning for the region.

PPG7 was elaborated in the aftermath of the 1988 Constitution and the first democratic elections in decades, under the international pressure resulting from the assassination of Chico Mendes. PPG7 was an initiative of the Brazilian government and society, in partnership with the international

community, whose purpose was the development of innovative strategies for the protection and sustainable use of the Amazon forest and the Atlantic Forest, with improvements in the quality of life of local populations (PPG7, 1999). The National System of Conservation Units (SNUC according to the Portuguese acronym) emerged in response to civil society claims regarding decades of the state's lack of interest in effectively putting an end to deforestation (Quintslr *et al.*, 2012). SNUC aimed at the conservation of forested and natural spaces as well as assuring the rights of traditional populations. The Amazon Region Protected Areas Program (ARPA according to the Portuguese acronym) implemented in 2002 is a regulation strongly inspired by ecological rationality (Quintslr *et al.*, 2012). In addition to expanding and strengthening the SNUC in the Amazon, the program ensures financial resources are available for the management of protected areas and promotes the sustainable development of the region.

In 2003, the Ministry of the Environment elaborated the Sustainable Amazon Plan (PAS). The plan was intended to set the benchmark for a new model of economic development for the Amazon – "one that could encourage economic growth, meet the demands of local populations and discontinue previous models" (Madeira, 2014). The increasing awareness of climate change in the 2000s allowed the sustainable development narrative to evolve. Global climate change mitigation became an essential aspect of global development (Friedman, 2009). This evolution in narrative affects policies for the Amazon, as will be further described. The Action Plan for Prevention and Control of Deforestation in the Legal Amazon (PPCDAm in the Portuguese acronym) was created in 2004 and aimed to tackle and reduce deforestation in the Legal Amazon, providing the basis for a sustainable development model (PPCDAm, 2005). The plan was aimed at: i. land and territorial planning; ii. environmental monitoring and control; and iii. promotion of sustainable production activities.

Further, the National Policy for Climate Change (2009) and the subsequent National Plan for Climate Change (2009) were established as the pillars of the Brazilian strategy for climate change. The National Plan presented voluntary measures for mitigation related to land use transformations and energy sector efficiency. The recession that followed the 2008 financial crisis required measures to be taken by the Brazilian Federal Government. Inspired by Keynesian economics (PAC, 2008) Brazil introduced a series of programs to maintain economic growth. The intention of the Growth Acceleration Program (PAC according to the Portuguese acronym) was to maintain job generation and reactivate infrastructure investments. Its main objective was therefore to overcome the bottlenecks in the economy and stimulate increased productivity and reduction of regional and

social inequalities (Governo Federal, 2008). The significance of PAC in the Amazonian context resides in the fact that its major energy projects were hydroelectric power plants built in Amazonian rivers such as *Belo Monte, Jirau, Santo Antonio* and *Rondon*, amongst others. Damming Amazonian rivers results in high socio-environmental impacts, which have deprived entire villages of their homes and livelihoods. The dams reproduce the mega-infrastructure development model of the military governments of the 1960s - 1980s (Brum, 2014). The period starting in the 1990s is characterized by the ideal of sustainable development. Table 4 summarizes the characteristics of this period.

Table 6. Characteristics of the sustainable development period

Characteristics	Sustainable development
Problem framing	Natural resources depletion Ecosystem depletion High deforestation rate Low human development Low economic performance Non-sustainable economic activities Failure of previous policies
Assumptions	Natural resources must be maintained for future generations
Silences	Continuity of mega-infrastructural projects and extractivist activities in the Amazon
Policies	Constitution - 1988 "Nossa Natureza" program - 1988 PPG7 – 1991 SNUC: National System for Conservation Units - 2000 ARPA: Amazon Region Protected Areas Program - 2002 PNPCT: National Policy for the Sustainable Development of Traditional Communities and Peoples - 2007 PDS: Sustainable Amazon Plan - 2003/2008
Effects on later policies	(yet to be seen)
Disciplines	Sustainable development Ecology
Social actors	National and international environmental NGOs; civil society and social movements; international agencies, such as the UN, the World Bank and German GIZ; scientific experts; Amazonian research institutes such as INPA, Imazon and Instituto Museu Goeldi; local consultation processes involving local leaders in the states of the Amazon

5.4.4. The case of REDD+ in Brazil

In the 2000s, the Brazilian national context included a major economic crisis and the consequent election of *Partido dos Trabalhadores* to the Federal Executive sphere, in the figure of President Lula. Within the international context, President Lula's election was part of a wider politically

progressive agenda in Latin America which saw the rise of other "progressive" governments (De Sousa Santos, 2006). In parallel, the start of the century saw the rise of emerging nations, in the form of BRICS (Brazil, Russia, India, China and South Africa). The robust economic growth of emerging nations resulted in a boom in commodity prices with subsequent pressures on the demand for Amazonian resources throughout Latin America. In addition, the climate change agenda gained prominence within environmental science and policy formulation. The emergence of REDD+ in the 2000s signaled the efforts of the Brazilian Federal Government to decrease deforestation rates. The following section synthesizes the chronological evolution of deforestation mitigation efforts to date.

2004 - PPCDAm.

2006 - Law 11.284 which established the Brazilian Forestry Service and instituted public forest conces- sions for sustainable forestry extraction.

2007 - The State of Amazonas is the first state to authorize REDD+ projects.

2008 - Revision of land ownership from illegal deforesters and institution of environmental collaterals for rural credit lending (Resolution 3.545 of the Brazilian Monetary Council). Federal Decree 6.527 created the Amazonian Fund, intended to raise funds for prevention, monitoring and anti-deforestation actions. The National Plan for Climate Change was established and the GCF Task Force created.

2009 - National Law on Climate Change and the National Fund for Climate Change Mitigation approved. National Policy for Climate Change presented. Brazil presented its national climate mitigation efforts at COP 15 in Copenhagen.

2010 - Working groups on REDD+ strategies were instituted under the Ministry of the Environment. Brazil was elected proxy country for the Climate Investment Fund. National Policy for Payment of Ecosystem Services was developed.

2011 - Brazil initiated the drafting of its National Strategy for REDD+. The Bolsa Verde program was launched: the first national program of payments to families in extreme poverty living in deforestation hotspots.

2012 - The New Forest Code was enacted.

2014 - Amazonian states interacted with GCF Task Force by presenting their own mitigation programs.

2015 - ENREDD+ was published by the Ministry of the Environment – MMA.

2016 - CONAREDD+, the national committee for REDD+ was instituted by the MMA.

The period starting in 2000 is characterized by both advances and setbacks in forest governance. While policies such as PPDCAm and ENREDD+ represent steps forward in forest conservation, the 2012 New Forest Code can be seen as a setback. As mentioned, the backdrop to REDD+ implementation in Brazil is characterized by decades of observed high deforestation rates and implemented policies to tackle deforestation. The Federal anti-deforestation program PPDCAM is perhaps the most important program to date in attempting to do so. According to Arima et al. 2014, a combination of regulatory policy instruments such as: the declaration for protected areas, operations for law enforcement, embargos to municipalities and companies commercializing deforestation-origin products from the Amazon. Such policy mix, according to the authors, these policies have shown to be successful in reducing deforestation rates. Under their findings, forest conservation policies have avoided 10,653 km2 of deforestation in a subgroup of priority districts over the period from 2009 to 2011. In addition, as mentioned by the authors, evaluations on the role of determined policies in effectively halting deforestation attests to their importance. Authors mention the investigation by Soares Filho (2014) where findings attributed 44% of decrease in deforestation rates between 2004 and 2006 to slowdown in agricultural production, 37% to the expansion of protected areas and the remaining 18%, can be explained by other policies.

PPDCAm (the action plan for prevention and control of deforestation in the Amazon) inaugurated a series of successful measures to reduce deforestation depletion to record low rates. Specifically, PPDCAm built the institutional and technical capacity to monitor deforestation, and this has great importance for modern forest governance in the region. Although deforestation reduction saw intensive political effort at the start of the decade, the federal government was still skeptical about REDD+ implementation. Brazil, for example, never adhered to UN-REDD or FCPF (Forest Carbon Partnership Facility). Lack of federal regulation and a national framework for REDD+ resulted in Amazonian state governors leading the first REDD+ initiatives in the country via subnational programs. In 2011, in the Governors' Climate and Forest Task Force (GCF), governors from all Amazonian states presented their subnational projects for REDD+ implementation in a call for decentralization of REDD+. As a consequence, some Amazonian states have acquired more experience to date in implementing REDD+ strategies than the Brazilian Federal sphere. The states of Acre and Mato Grosso were granted entrance into REDD Early Movers, an initiative of the BMZ (German Federal Ministry for Economic Cooperation and Development). The objective of REM is to

reward the climate change mitigation efforts of REDD pioneers who are already active in forest conservation for climate change mitigation.

In 2015, the Brazilian government launched the National Strategy for REDD+ (ENREDD+), a formalization of how the federal government structures efforts for coordinated actions to prevent and control deforestation and forest degradation, promote forest recovery and promote sustainable development. The overall objective established by ENREDD+ is to contribute to mitigating climate change by eliminating illegal deforestation, conserving and restoring forest ecosystems and developing a low-carbon sustainable forest economy and generating economic, social and environmental benefits. To achieve this goal, the following specific objectives were established:

i. improve the monitoring and effectiveness analysis of public policies seeking to maximize their contribution to the mitigation of global climate change

ii. integrate the management structures of policies for climate change, forests and biodiversity, seeking to promote convergence and complementarity among them at the federal, state and municipal levels

iii. contribute to the mobilization of resources on a scale compatible with the national voluntary commitment to mitigate greenhouse gas emissions in the Brazilian biomes by 2020, established in the National Policy on Climate Change.

The Amazon Fund also plays a role in financing and implementing of anti-deforestation policies. Managed by the State's Brazilian National Bank for Development (BNDES) its objective is to support projects related to tackling deforestation. To receive funds, projects must adhere to PPDCAm (Action Plan for Prevention and Control of Deforestation in the Brazilian Amazon) and to the National Strategy for REDD+ (ENREDD+).

Uncertainty about REDD+ is linked to the controversy over policies such as the reduction of the CRA (Environmental Reserve Quota), the amnesty for pre-1988 deforesters and the 2012 Forest Code, criticized for weakening regulations on forest preservation to the benefit of agrobusiness or deforesters (Soares-Filho, 2014). The dominance of economic interests and the volatile character of environmental conservation praxis illustrate the susceptibility of environmental governance to political tensions. Other signs of setbacks in environmental governance can be observed in the paralysis of indigenous land demarcation processes as well as a decrease in creation of new

conservation units. Furthermore, the boom in commodity prices in the 2000s placed Brazilian agrobusiness as the country's main contributor to GDP. As such, an empowerment of agrobusiness economic elites has shaped the most recent Brazilian Congress, via heavy lobbies. This factor contributes to a confrontational rhetoric against environmental conservation. In summary, such lobbies argue for the necessity to further expand agricultural frontiers and against the further creation of conservation units or demarcation for indigenous populations.

5.5. Discussion

5.5.1. Overlapping of narratives

As observed throughout our analysis, there are strong continuities in policies for the Brazilian Amazon. The historical analysis shows that modern-day policies have not overthrown older narratives. This paper argues that Amazonian governance is better understood as the overlapping of multiple narratives, rather than the substitution of new narratives for old ones. For instance, the policies of the 1990s are in stark contradiction with each other. PPG7 intended to maximize the environmental benefits of tropical forests, in a way that was consistent with Brazil's development goals, through the implementation of a sustainable development methodology that would contribute to the continuous reduction of deforestation rates (PPG7 1991). This objective contrasts sharply with the federal plan Brazil in Action (Brasil em Açao, 1995) which represents a return to the economic narrative that supported the creation of logistical road corridors for the commercialization of natural resources and agrolivestock production. This contradiction suggests that new narratives were simply added to previous ones and did not emerge as the consequence of changes in institutional and political culture.

Environmental governance can be understood as the result of oscillations between two axes: (i) the economic and the environmental logics articulated as opposing poles in policy narratives and (ii) centralization and decentralization tendencies revealing opposing poles in governance. We explain the two axes in turn. The construction of environmental and economic logics as opposite poles has deep historical roots which can be traced back to a colonial legacy and the imaginary of the Amazon as "Eldorado" – a land to be conquered. The environment was initially framed in terms of wilderness and backwardness, and placed in opposition to expansion, modernity, and economic growth. Environmental governance during the military dictatorship was based on the representation of the Amazon as a frontier of economic growth. The sustainable development narrative of the 1980s is

indicative of a change in the representation of the environment, which is no longer associated with backwardness but with preserving resources for future generations. However, in the reframing of the problem, the logic of conservation is used to pose limits to economic growth. Sustainable development can be seen as a rehearsal of the juxtaposition of the environmental and economic logics, in which opposing logics must be reconciled.

REDD+ today must deal with this historical tension. The political choice to foster primary economic activities has led to the formation of economic enclaves in the Amazon. Although the Amazon has some dynamic economies, (e.g., those of Pará, Amazonas and Mato Grosso), there are several enclaves within the region characterized by low levels of human development, low incomes and high fiscal dependency on federal funds (Bidone, 2015). Low-income conditions are favourable environments for the proliferation of predatory land use (Arima, 2011; Fearnside, 2003; May et al., 2016; Nepstad, 2014), which in turn reinforces the perception that economic growth is opposed to conservation efforts. We argue that REDD+ also falls under the umbrella of overlap- ping narratives in Amazonian development policies. As forementioned, political and economic contexts do play a major role in either fomenting or halting funds destined to anti- deforestation policies, where REDD+ falls into. An example of such claim can be observed in the Brazilian Government's adherence to previously signed global treaties for the environment, such as the Kyoto Protocol. In one hand, the successes from PPDCAm, mentioned earlier, are linked to the Federal Government's commitment to decreasing deforestation rates and carbon emissions. On the other hand, an increase in deforestation rates observed since 2016 can also be traced back to a remission in investments and policies against deforestation. Under this premise, we argue that tensions in the political arena are significant in defining the possibility for REDD+ policies to find ways into implementation. The empowerment of conservation policies against narratives for the expansion of agricultural frontiers in the Amazon are represented in the political debate. A rhetoric and political struggle for/against environmental governance policies are especially vivid in the Brazilian Congress where lobbies for agrobusiness have gained power in the previous decade.

The second axis along which policy narratives are articulated can be described by the tension between centralization and decentralization. As characterized by our analysis, environmental governance in the Amazon has evolved from a strictly autocratic and exclusive model to a more open and inclusive model. This evolution is linked to the redemocratisation of Brazilian politics starting in 1985. Until the end of the 1970s, only the military regime's narratives for development were present in the political arena. Voices and perceptions from groups sitting outside the regime

were suppressed by the authoritarian military regime. Hence, centralized and autocratic governance shaped the regime's way of implementing its policies. Under nationalist mottos such as "Brazil: love it or leave it" and "Brazil the Great", the regime advanced its plans to open up new frontiers for economic growth, while completely neglecting local populations and the ecosystem (De Oliveira, 1994). The political dispute that marked the end of the military regime was made evident in the formulation of policies. The end of the regime opened the way for ecological and environmental narratives to make their way into the policy debate. The 1988 Constitution included a full chapter on the environment and natural resources. The oscillation between modes of governance thus impacted on the diversity of narratives and the number of social actors considered.

In contrast with the historical legacy, a central feature of REDD+ in Brazil is decentralized governance. REDD+ initiatives have invested in the inclusion of a plurality of actors in policy processes. An example is the State of Acre's subnational REDD+ program. Adopting participative governance processes is perhaps the reason why the project has been successful so far in tackling CO2 emissions while generating sustainable economies within forested systems (Gebara et al., 2014). On the other hand, lack of local governance capabilities or infrastructure might pose great difficulties for project implementation. Governors from all Amazonian states within the GCF Task Force claimed that resources for REDD+ could assist in developing the necessary capacity for decentralization processes (Toni, 2011; May et al., 2016). REDD+ funding reinforces the multilevel character of conservation governance. Financing anti-deforestation strategies depends on a variety of state-led and international initiatives. The Amazon Fund, managed by BNDES, the Brazilian Bank for the Development of the Amazon, has raised about USD one billion for rainforest conservation projects, including REDD+. International funders include the German international development bank KfW and the Inter-American Development Bank (IDB). Regarding private REDD+ initiatives, funding comes strictly from private corporations seeking to mitigate carbon emissions. In Brazil, there are over 20 privately managed carbon-offset compensation projects, most of them in the Amazonian region (MMA, 2016). Forest governance takes into consideration the multiple levels (federal, state, and municipal) at which policy is negotiated, implemented and monitored. State governors have claimed that ENREDD+ centralizes governance at the federal level. On the other hand, national regulation may reduce uncertainty regarding the country's juridical framework for project development. The constant tension within this debate increases uncertainty around regulation and poses a threat to advances in REDD+ (May et al., 2016).

5.5.2. The influence of economic and political contexts

The overlapping of narratives makes environmental governance in Brazil particularly susceptible to changes in context, as the balance shifts between the economic and environmental logics and between centralizing and decentralizing tendencies, providing windows of opportunity for new narratives to emerge and for old narratives to regain ground. We argue that some of the contextual elements that have shaped policy changes in the period analyzed are: the military dictatorship; the economic context; national and international demands for commodities; and the global climate change agenda.

As shown in our analysis, although development planning in the Amazon started in the 1950s, it was the military dictatorship (1964–1985) that implemented the most radical changes in spatial intervention in the Brazilian Amazon. The rationale of this period left a long-lasting legacy in Amazonian governance. We argue that this legacy creates difficulties for the emergence of green policies in the region. Some examples can be observed in: (i) the relationship between the state and private corporations, and the formation of regional oligarchies, (ii) the failure to provide settlements and fair distribution of land, (iii) lack of local empowerment and (iv) technocratic environmental management logics that lead to a preference for mega-infrastructure as a means of intervention and integration. The legacy of the military dictatorship is clearest with regard to land ownership and distribution. Data on land ownership in the Amazon are quite unclear. There are severe information gaps; illegal land grabbing and documentation legitimacy are historical issues. Oligarchical power structures contribute to land-related conflicts. Land redistribution is a major social claim in the region but strong historical ties   to authoritarian and elitist power dynamics maintain land concentration at high levels (Ianni, 1979). Induced migration and settlement during the military dictatorship have been responsible for land-related conflicts in the last decades. In the Amazon, the fast-growing urban sprawl and the constant marginalization of peripheric populations (a Brazilian phenomenon in general) have their roots in the national development plans put forth by the military.

Secondly, the economic context plays an important role in policy oscillations along the economic-environmental narrative axis. The 2008 economic crisis led the Brazilian Federal Government to take anticyclical economic measures to maintain GDP growth. These measures included the reinforcement of PAC in the Amazon, with large volumes of federal funding assigned to mega-infrastructure projects and high levels of credit for agrobusiness producers. The hydroelectric

power plant of Belo Monte, along the Xingu River in Pará, is a massive project for energy generation within PAC. After projects for river dams were abandoned in the 1980s, Belo Monte was resurrected and put forward with considerable state credit by a pool of private contractors, through quite polemic business contracts. To accelerate construction, socioenvironmental impact assessments and local consultations were either ignored or modified. In a similar way to projects from the national developmentalism period (1950s–1970s), the benefits of the energy generation are destined for the southern regions of Brazil.

Overthrown by economic rationales, socio-environmental policies in the Amazon acquire a less practical and meaningful character. Environmental policies are cast away as mere political rhetoric in times of crisis. Environmental governance strategies are in a constant political struggle with narratives for economic development. Thirdly, demand for natural resources (both national and international) was a major driver behind policies implemented throughout the six-decade context of this paper. Development plans from the 1950s through the 1970s were more specific about the priority given to extracting natural resources and producing commodities to meet economic demands. Several decades later, a process of commodification of exports (CGEE 2015) places great pressure on Amazonian land use (Fonseca et al. 2018) and the region continues to be a global supplier of low-value-added commodities. This policy contributes very little to regional and local development (Gutberlet, 2002b). In the contemporary phase of capitalistic globalization, Latin America is permeated by what Maristella Svampa (2012) calls commodities consensus: the implementation of massive natural resources extraction projects under both progressive and neo-liberal governments. This contemporary extraction model is better defined by Eduardo Gudynas as the appropriation of natural resources by force and violence, breaking with human and environmental rights (Pereira, 2015). Recently, international pressures and growing concerns about climate change have placed huge pressures on the governance of the Amazon. Global concerns over climate change have increased the interest in the implementation of environmental conservation projects, where REDD+ assumes a significant role in policy strategies. Once again, the Brazilian Amazon is conceptualized as a frontier for rainforest conservationism.

Figure 2. Rationales and decision-making in Amazonian governance

CENTRALIZATION

SPVEA
PND I,II,III
PDA I,II
Poloamazônia
Grande Carajás Program
Brasil em Ação
PAC

National Policy for the Environment
PMACI
Calha Norte Project
Constitution of 1988
"Nossa Natureza" Program

ECONOMIC RACIONALE — — — — — ECOLOGICAL RACIONALE

ENREDD+

PPG7
SNUC
ARPA
PNPCT
PDS

DECENTRALIZATION
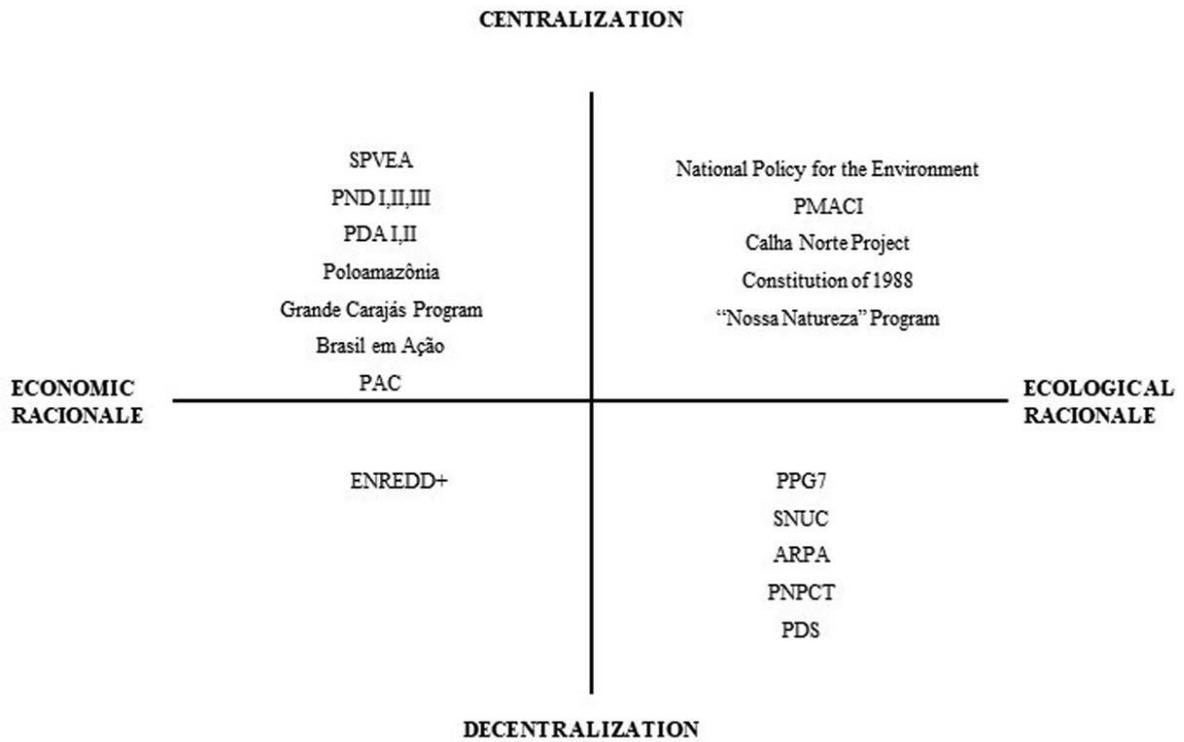
5.5.3. Science for governance

Social and environmental concerns have acquired significance in policy, but narratives do not necessarily translate into changes in the praxis of Amazonian governance. The persistence of the economic narrative points to the stability of interests and the influence of actors such as corporate representatives and government officials. Our analysis shows that the types of evidence and disciplinary knowledge bases that informed policy evolved over the decades. Development economics informing development plans in the 1950s eventually gave way to environmental economics and ecological concerns in Amazonian policy formulation. The technocratic approach towards natural conservation observed in the 1980s was complemented by an ecological approach that is realized by sustainable development. The new context, marked by the global climate change phenomenon in the 2000s, includes climate science as a discipline informing environmental governance and policy for the Amazon.

The shift from an economic logic closely tied to political concerns for territorial integration and control to the emergence of REDD+ which addresses the climate concerns of the international community, may help to explain why narratives are overlapping rather than integrated. The

economic logic speaks to the political and economic needs of the federal government. The ecological logic speaks to the global issue of climate change. The two logics talk past each other, as they refer to different levels of governance and different institutional contexts and have different beneficiaries. The distribution of benefits can also be understood as a challenge of reconciling diverging narratives. Adding to the pluralism of narratives, the democratic transition allowed for more voices to be included in policy- making. Sustainable development plans, especially since the 1990s, have attempted to introduce diverse perspectives in their creation. However, there is relative skepticism about consultation processes. The possible appropriation of debates by dominant elites as well as the post facto character of consultations raises questions about how far local participatory processes are able to influence the dynamics of policymaking (Bidone, 2015, Fiocruz, 2013).

We therefore suggest that the democratization of forest governance may be adding uncertainty to the fragmented knowledge base and narrative space in which environmental policies are negotiated. The implementation of REDD+ tells us that the success of REDD+ is uncertain and its ability to speak to local needs is limited. The increasing number of disciplinary knowledge claims that inform environmental governance has led to a proliferation of types of evidence and related policies. In this context, REDD+ is subject to political and economic contingencies.

5.6. Conclusion

This paper categorizes the evolution of policies for the Brazilian Amazon from a historical perspective. It has shown how policy narratives are bred from specific historical contexts. Policy evolutions are representative of changes in political, economic and social thinking, at national and international levels. While economic and development needs were prevalent up to the 1980s, national policies were influenced by international environmental concerns linked firstly to sustainable development and more recently to climate change. Results show that the implementation of policies in the region does not occur as a process of substitution of new narratives in policies for existing ones. Rather, contemporaneous Amazonian policies are better understood as an overlapping of multiple narratives. Overlapping results in contradictions and inconsistencies between policies, in the re-emergence of narratives over time and in correspondence with economic and political events. We explain this overlapping with reference to the divergent logics that inform policy, in which national and global concerns talk past each other. REDD+ lacks a strong support base in the political system, and deforestation reduction policies are

subject to availability of external funds, economic crises and fluctuations in the demand for natural resources.

The historical analysis shows that REDD+ interacts with existing policy narratives by reinforcing the separation between economic and environmental concerns. REDD+ is subject to a model of development that represents the Amazon historically as a frontier for natural resources extraction and a frontier for the preservation of natural resources, characterized as the green lungs of the planet. At the same time, given Brazil's historical legacy of technocratic governance, in which conservation logics reinforce social exclusion mechanisms, REDD+ may run the risk of playing into the dynamics of tokenist participation rather than local empowerment (Arnstein, 1969). The association of REDD+ with international interests and with environmental narratives historically dissociated from economic narratives, creates significant uncertainty about the long-term sustainability of deforestation reduction policies. The availability of funds allows for the advancement of REDD+ policies in the short term, among other things, thanks to the economic opportunities that such funding schemes offer to the poverty-stricken states of the Brazilian Amazon. However, in the long term, other international interests and investments, such as China's increasing demand for natural resources and increasing investment funds, may play a significant role.

PREFACE TO CHAPTER 6

Chapter 6 is a single authored peer-reviewed article submitted to the Journal of Sustainable Forestry in August 2020 (under review: Submission ID: 200702471).

The article shows how contrasting and broad environmental meta-discourses find their way into the REDD+ initiatives on-ground operation. The underlying assumption for the research rests in the belief that the REDD+ operation is linked to coupled social-political and economic contexts, which tend to follow social contingencies, and historical dependencies. The article explores the specific case of the ISA Carbono jurisdictional REDD+ program in the state of Acre, located in Brazil´s Western Amazon region. Informed by discourse analysis, the study identifies broad environmental meta-discourses within the arena of climate and forests policy as proposed by Bäckstrand and Lövbrand (2006). The assessment places REDD+'s discursive orientation at the organizational and implementation level in the center of the enquiry as the study understands that stakeholders engaged with REDD+ extract their discursive lines from broader debates on environmental policy. In this chapter I perform an analysis of policy-related documents focused on locating multiple environmental narratives and discourses within the scope of ISA Carbono´s four subprograms. Documents and reports from ISA Carbono (from its subprograms and projects) were assessed to identify the characteristics which are underpinning the main programmatic assumptions, objectives, and the instruments chosen for tackling deforestation and forest degradation.

CHAPTER 6. INVESTIGATING THE IMPLEMENTATION OF A REDD+ INITIATIVE THROUGH ENVIRONMENTAL DISCOURSES: AN AMAZONIAN CASE STUDY

6.1. Introduction

Environmental discourses have gained relevance in studies of forest governance and climate change policies such as REDD+ (Bäckstrand and Lövbrand, 2006; Cromberg et al., 2014; Den Besten et al., 2014; Di Gregorio et al., 2017; Hajer, 2011; Hiraldo and Tanner, 2011; Angelsen et al., 2012; Milne et al., 2016; Van der Hoff et al., 2018). The assessment of discourses is a way to study the meanings which lie beneath policies for the environment. Environmental policies and institutions are the materialization of preconfigured socially constructed meanings (Hajer, 1995). This study draws upon social constructivist discourse analysis to identify broad environmental meta-discourses in the domain of climate and forests policy. More specifically, this investigation is interested in REDD+ policy´s discursive orientation at the organizational and implementation level. The present research hypothesizes that the discourses of stakeholders engaged with REDD+ are influenced among other things by broader debates on environmental policy.

Policymaking should be understood as the outcome of discursive struggles between actors within society (Bacchi, 2009; Forsyth, 2003; Foucault, 1972). Policies are the consequence of specific representations of reality, which structurally empower determined worldviews while marginalizing others. Underpinning these interpretations of reality are socially constructed meanings that make their way into politics through the enactment of determined rules and norms which give order to social life (Hajer, 1995). Policymaking is a part of broader governance processes, where governance is understood as the set of regulatory processes, mechanisms and organisations through which political and non-political actors influence environmental actions and outcomes (Bride and Perreault, 2009). The present paper explores how three environmental governance discourses, namely ecological modernization, civic environmentalism, and green governmentality (as proposed by Bäckstrand and Lövbrand, 2006) employ different mechanisms (discursively and through policy instruments) within the operation of REDD+ initiatives.

The present research builds on previous studies which have addressed the analysis of discourses in the context of forest governance or more specifically REDD+ (Bäckstrand and Lövbrand, 2016; Den Besten et al., 2014; Di Gregorio et al., 2017; Angelsen et al., 2012; Gebara et al., 2014; Hajer, 2011; Van der Hoff et al., 2018; Milne et al., 2016; Cromberg et al., 2014; Hiraldo and Tanner, 2011; Zelli et al., 2019). Global REDD+ debates have engaged with discourses which can be categorized within

the broad environmental discourses proposed by Bäckstrand and Lövbrand (2006). Previous research has documented dominant REDD+ discourses across countries and reveals a tendency to foster opposing ideas around the initiative´s operation (Di Gregorio et al., 2017). The role of communities and local knowledge runs the risk of being toppled by defenders of expert-based monitoring (Holmgren, 2013; Evans et al., 2014; Gupta et al., 2012); privately based projects are criticized by advocates of jurisdictional results-based financing as the way to go for REDD+ (Duchelle et al., 2018; Irawan et al., 2019), while others argue that REDD+ initiatives are a neoliberal commodification of nature which necessarily implies specific complications to its capacity to be taken forward (Sheng, 2019; Zelli et al., 2015; Corbera, 2012). Di Gregorio et al. (2017) summarize how these meta-discourses have been embedded within the REDD+ trajectory so far by arguing that the original picture drawn for REDD+ resonated mostly with ecological modernization´s win-win narrative by imagining the initiative as able to achieve grand-scale through quick and cheap processes (Den Besten et al., 2014; Di Gregorio et al., 2017). Through engagement with green governmentality themes, however, experts started to point out the challenges in the monitoring and verification of emissions—a core issue in the initiative´s operation (Gupta et al 2012). After the early experiences from REDD+ implementations revealed their initial outcomes, civic environmentalism critiques were enacted to contest the rights and livelihoods of forest-dwelling peoples (Brown and Corbera, 2003; Hiraldo and Tanner, 2011; Angelsen et al., 2012; Gebara et al., 2017).

The aim of this study is to investigate the interplay between different discourses on environmental governance and to what extent these discourses find grounds in policy implementation. By assessing to what extent certain discourses are enacted through policy, this study sheds light on the constituencies for broader transformational changes in global forest governance and, more specifically, the REDD+ debate (Korhonen-Kurki et al., 2019). The focus of the analysis is the case of ISA Carbono—a jurisdictional REDD+ program in the state of Acre, in Brazil´s Western Amazon. REDD+, which stands for reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks—is a possible example of relevant on-ground policies to be explored through the prism of environmental narratives. Jurisdictional REDD+ means that the program is state-based and composed by means of multiple subprograms and projects within the jurisdiction of the state of Acre. The paper addresses two main questions: (i) to what extent do different environmental meta-discourses find a presence within ISA Carbono?, and (ii) what implications does the presence of such meta-discourses have for different constituencies and the governing of REDD+?

The study explores these questions by first presenting an analysis of policy-related documents which locates multiple environmental narratives within the scope of ISA Carbono´s four subprograms. Documents and reports from ISA Carbono (from subprograms and their projects) were assessed to identify the presence of the environmental meta-discourses in the program´s main assumptions, objectives, and the instruments chosen for tackling deforestation and forest degradation. The next step focused on the assessment of local project sites and open-ended interviews with stakeholders from the state and communities engaged in REDD+. On-ground assessment was aimed at identifying the adherence of local stakeholders to broader meta-discourses within environmental governance. Findings from this assessment were important to perform a cross-check between the analysis of policy documents and local stakeholders´ claims.

The relevance of this study is two-fold. First, the study identifies the extent to which different meta-discourses influence the implementation (or not) within the REDD+ initiative. Second, the study shows a dominance of ecological modernization in its weak sustainability version, which is quite revealing about the (limited) degree of transformational change towards which REDD+ is driven in practice. This article proceeds as follows: section 2 introduces the theoretical framework, which provides the basis for this research. Section 3 explains the methodological approach used in this research, while Section 4 provides an overview of the ISA Carbono program in the state of Acre. Section 5 presents the results by first pointing out the presence of different environmental narratives and discourses within the distinct subprograms. Results are cross-checked by an on-ground assessment which aimed at an in-depth look into the presence of meta-discourses from each subprogram. Section 6 discusses the presented results and argues that ecological modernization discourses are dominant in contrast to a minor presence of discourses of civic environmentalism, followed by section 7, which concludes the study.

6.2. Theoretical framework

The present section aims to define and explain how environmental discourses are relevant to studies of forest governance and to climate-change policies such as REDD+. Research is based on social constructivist discourse analysis, which is used to identify broad environmental meta-discourses within the arena of climate and forests policy (Bäckstrand and Lövbrand, 2006; Hajer, 1995). The present study understands that the discourses of the stakeholders engaged with REDD+ are influenced by broader debates on environmental policy. Social constructivist theory recognizes policymaking as the outcome of discursive struggles within society. These struggles are set up by

contesting representations of reality, which tend to reinforce determined worldviews while suppressing others (Foucault, 1972). This paper examines the usefulness of following discourses in environmental policy, as they are the materialization of socially constructed meanings that find their way into institutions and on-ground policymaking (Bäckstrand and Lövbrand, 2006). Discourses are instruments for scrutinizing the underlying meanings that shape policies for the environment.

6.2.1. Defining discourses and their contribution to environmental policies

The material world can be understood and reshaped through discourses. Since discourses can produce and give meaning, they hold social power to enable ideas to materialize. Insofar as discourses hold power to define, and create boundaries and understandings, they also become instrumental and might serve specific interests and build social stratifications (Foucault, 1972). Discourse analysis originates from social science´s theory of social constructivism (Hajer, 1995). Social constructivism understands that much of what we perceive as reality depends on shared assumptions. This implies a critical approach towards the conception of truth, and because reality is seen as socially constructed, the analysis of meaning becomes central. In the case of environmental studies and policy interpretation, a pressing environmental issue or a phenomenon is less important than the way the phenomenon is itself understood. From this line of thinking, discourse analysis is directed at the analysis of the symbols and experiences that govern the way people think and act (Beck, 1995).

The study of discourses has been very useful to environmental politics (Hajer & Versteeg, 2006) as the implementation of certain policies and the exclusion of others is related to how certain discourses are sustained and others are suppressed. In these terms, governance of the environment is forged fundamentally by disputed knowledge claims (Bacchi, 2009; Svarstad et al., 2018). Discourse analysis has also proliferated in the assessments of global environmental change, especially within the fields of environmental sociology, political ecology, and policy studies (Forsyth, 2003; Robbins, 2008). According to Hajer (1995), discourse analysis tries to make sense of these struggles and reveals three particular strengths in doing so: (i) it demonstrates the role of language in politics; (ii) it shows the embeddedness of language in practice, and (iii) it sheds light on the discursive mechanisms within policy.

Power dynamics can be studied through the analysis of discourses. Discourses define how the political and managerial governing of nature is promoted as solution to environmental problems. Discourses provide insights into the institutional, political, and social orderings that underpin policy formulation. The analysis of discourses can be used to identify the link between what we think needs to change and what we think the problematic issue is. As policies emerge as ideas for change, they develop a specific representation of the problem they wish to address. Specific policy proposals or plans of action reveal what the problem is understood to be (Bacchi, 2009). Bäckstrand and Lövbrand (2006) highlight relevant dimensions of discourse analysis. As discourses are embedded in power relations, the exercise of power is closely tied to the production of knowledge. In these terms, science plays a fundamental role as a widely accepted knowledge regime (Young, 2011) to sustain determined discourses within the arena of environmental politics. Such perspective conceives discourses as a collective understanding of phenomena where global environmental politics is permeated by a struggle over meanings, symbols, and representations, which are then enacted into a set of practices.

Discourse institutionalization refers to the transformation of discourse into an institutional element. In general terms, institutions play an important role in consolidating specific practices as legitimate or illegitimate, setting relationships of power and resource access thus determining who has the right to speak and in what capacity (Luke, 1999). Political institutions give boundaries to shape and constrain agents' actions as well as their discursive strategies (Hajer, 1995; Hirsch, 2019). This implies that institutional path dependence might serve as an obstacle to reformist discursive orientations and therefore make it difficult for transformational change to emerge (Korhonen-Kurki et al., 2019). This is especially true in the present study where institutionalized discourses map onto different meta-discourses. As shall be further discussed, the program´s activities in this case study at hand are linked to a design and implementation of REDD+ schemes which are closely aligned with win–win market-based environmental approaches (Di Gregorio et al., 2017).

6.2.2 Environmental meta-discourses on REDD+

The present study is based on Bäckstrand and Lövbrand's (2006) definition of global environmental governance meta-discourses. The three meta-discourses the authors propose are ecological modernization, green governmentality, and civic environmentalism. The authors also argue that these three categories should be identified according to how weak or strong their sustainability discourses are. In broad terms, weak sustainability assumes the possibility of trade-offs between

social, economic and ecological terms where mild reforms from the status-quo are manageable terms towards achieving sustainability. While under stronger terms of sustainability, more radical transformations are necessary, as these terms assume the necessity of broader systemic transformations (i.e.: anti-capitalistic solutions; radical democracies and civil rights). However, the authors also argue the necessity to move beyond a simplistic binary framing of forestry projects to articulate more critical debate on the problems and trade-offs related with global environmental governance. Thus, the above categories are also found to overlap or bridge over their pragmatic and more reflexive (or radical) versions. In determined cases, the civic environmentalist may find parallels to more reflexive ambitions from strong ecological modernization or green governmentality (Bäckstrand and Lövbrand, 2006).

The three discourses reflect contrasting overarching modes of how to foster governance of the environment. The ecological modernization discourse should be understood as a win–win discourse, in which economic growth and environmental protection are joined through institutional changes. The civic environmentalism discourse is centered on the importance of public participation in environmental governance and the need for more diverse voices in environmental politics. Green governmentality discourses are focused mainly on technoscientific governance, in which state, scientific, and policy experts in positions of authority govern both human and non-human systems. In its stronger versions, ecological modernization understands the importance to enact changes in institutions and economic structures, thus allowing for opened and democratic decision-making. In its weaker version, focus in centered on technological solutions and modest governance reforms. The stronger sustainability forms of green governmentality entail a more reflexive stance, while its weaker form is oriented by top-down approaches. Civic environmentalism, in turn, calls for excluded and disenfranchised groups to be active participants in environmental projects through its weak sustainability version while not addressing radical transformations. In its stronger approach, adherents from civic environmentalism argue that the existing global order is inherently inequitable and unsustainable, thus necessitating more dramatic transformation (Bäckstrand and Lövbrand, 2006; Dryzek, 1998; Scofienza, 2017). Table 7 below synthesizes the broad environmental meta-discourses used in this study.

Table 7. Environmental meta-discourses: following the conceptualizations proposed by Bäckstrand and Lövbrand (2006)

Meta-discourse	Description	*Weak sustainability*	*Strong sustainability*
Ecological modernization	Free-markets and environmental protection are mutually attained objectives.	Technological advances and modest governance reforms.	Open and democratic decision-making is enacted through broader changes in institutions and economic structures.
Green governmentality	State and scientific experts are situated in positions of authority.	Favours top-down, globalizing processes.	Assumes more reflexive approaches.
Civic environmentalism	The need for more diverse voices in environmental politics: public participation is fundamental condition for environmental governance.	Excluded and disenfranchised groups are called to be active participants in environmental projects.	Global order is inherently inequitable and unsustainable, and calls for more radical, structural transformations.

As observed above, the discourses for environmental governance proposed by Bäckstrand and Lövbrand (2006) are articulated through the dichotomy of efficiency vs justice. As argued by Scofienza (2017), on one hand, advocates of market-oriented environmental policies are more likely to build their argumentative lines on a rationale of efficiency, which resonates with the ecological modernization discourse. On the other hand, advocates of social and environmental rights are more likely to build their arguments on rationales of justice, which mobilize the civic environmentalism discourse. These normative presuppositions find resonance in the implementation sphere and, most probably, resounds through the further analysis of this present study. In syntheses, conflicts within modes of governance for the environment can be understood in terms of struggles between a drive for more cost-efficient forestry policies and the demand for broader social participation.

6.2.3. Implications for REDD+ and forest governance

Previous studies also reveal the dominance of ecological modernization and green governmentality discourses in the thinking and policy practice of land use and forestry projects, while currently civic environmentalism discourses remain minority discourses in the REDD+ arena in terms of political influence (Di Gregorio et al., 2017; Angelsen et al., 2012 Gebara et al., 2017). Bäckstrand and Lövbrand (2006) argue that early experiences of the international carbon market provided relevant

reasons to resist the instrumental sense of technocratic management and the commodification of nature embedded in the green governmentality and ecological modernization discourses; however, they add that the reform-oriented version of civic environmentalism can foster more constructive efforts for climate governance than a full rejection of policy instruments commonly associated to the liberal market order and institutions as defended by more radical critics. Under this argument, the reform agenda fosters a more pragmatic shift towards more just or equitable terms in policy implementation and a reflexive use of science through the adoption of the democratic visions from strong ecological modernization and green governmentality. This present assessment on the REDD+ initiative in Acre articulates with this finding as it reveals the program´s design and implementation processes option for a less radical agenda.

6.3. Research methods

6.3.1 Case study approach

A case study approach is used to build in-depth understanding of a complex issue in its context (Yin, 2014). It is an established research design that is used in a wide variety of disciplines, particularly in the social sciences, and serves as an adaptable methodology of qualitative inquiry (Stake, 1995). Case studies can be used to explain and explore events or phenomena in the contexts in which they occur. They can further explain the outcomes resulting from the implementation of policy or enacted measures. In studies of policy, researchers can draw on a critical, reflective stance in seeking to account for wider social and political contexts with respect to the case under analysis. Case study research is also most relevant to contribute to qualitative research characterized by interpretative paradigms. It suits the understanding of complex issues (phenomena, events scenarios, institutions, individuals, or groups) in context, where the boundary between the context and issue is unclear and contains many variables.

Field research was conducted during the months of August to November 2017. Field research included open-ended interviews and conversations with local community members, NGOs, and state members. In open ended interviews, the order in which issues emerge does follow a rigid sequence. Rather, the researcher´s interest rests on the relevance and emphasis given by the interviewee to specific themes or discussions as they emerge along the conversations. In these terms, it is believed that the material produced through open ended interviews are presented in more reflexive terms than to what questionnaires or semi-structured scripts could possibly provide

through direct question-answer schemes (Haguette, 1997). This type of investigation attends to specific interests from this study: (a) a description of the meanings and interactions which each interviewee holds with ISA-Carbono. Descriptions were elicited by debating local stakeholder´s understandings about REDD+, the prospective use of REDD+ benefits, and finally how they might impact upon the community; (b) further understanding cultural characteristics from individual´s social groups. To this purpose, questions referred to livelihood activities. The collection of data from the open-ended interviews was done either through notes or recording. Recordings were transcribed (in Portuguese, to avoid the loss of meanings through translations) and notes were classified according to the subprogram they referred to (Minayo, 2012).

The selection of interviewees was done through snowball sampling technique. This technique in qualitative research uses a small niche of initial informants to locate, through their social networks, other participants who might be under the criteria for the research and that have the potential to contribute to the study. Especially addressing this present research, a significant advantage of the employment of snowball sampling rested in the method´s capacity to locate specific populations, who can be more easily identified by others in their social networks in comparison to a ´newly arrived researcher´ to a determined locality/region/etc. This study´s selection of interviewees was anchored on initial contacts working at State and local NGO´s level. A limitation of the method rests in a possible bias in the selection of subjects. This occurs because the indication of subjects for interviews is not random. Rather, it is conducted through a thread of social connections. However, for the purposes and objectives of this study, the snowball technique allowed for the selection of stakeholders which responded to the necessity to include a certain plurality of perspectives from within state institutions and civil society. This study involved 16 state and community members from 5 municipalities in Acre: Rio Branco, Xapurí, Mâncio Lima, Cruzeiro do Sul, and Tarauacá. The list and groups of stakeholders selected for this study can be found in Table 3, Chapter 3.

6.3.2 Document analysis

The process of documental analysis initiated with a thorough bibliographical review of ISA Carbono's design and implementation, and of the seminal documents about the consolidation of the REDD+ initiative in the State of Acre. The overview of federal and state decrees was important to gain a better grasp of the main assumptions behind REDD+ policies in the case of Acre. Documents were selected with regard to their relevance as official documents from which the operation of ISA Carbono is either anchored on or reflecting its early implementation reports.

Bibliographical review led into official reports from both the State of Acre, donors, and institutions interested in environmental studies. This study considers all the reports from donors and environmental studies institutions as relevant to the work hereby performed, as they relate to the experiences drawn upon the early implementation of REDD+ in Acre. Some reports were excluded from posterior analysis due to their lack of additional information in comparison to more robust assessments with more detailed content.

Like other analytical methods in qualitative research, document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge (Corbin & Strauss, 2008). The analytic procedure performed in this study entailed the finding, selecting, making sense of, and synthesising data contained in documents. As such, the selected documents for this assessment were coded manually to identify the main characteristics of ISA Carbono and its branching subprograms. The codes used regard: the identification of objectives, selected policy instruments, the framing of problems to be solved through policy, and the social actors engaged. Importantly, documental analysis also aimed at assessing the presence of the three main discourses outlined in section 2, as enacted through policy with regards to the operation of the program and its local projects. The process of documental assessment was performed in 11 different documents: documents include policy oriented (Plan/Program/Project) documents, legislations, and program reports. The list below details the assessed documents and describes the assessment.

Methodological limitations arise as the nature of interpretative studies of discourses leads to challenges for the replicability of results. Discourses are idealised constructions that extract key features from reality to explain social phenomena. In so far as key features are recognisable, interpretative processes rely mainly on the investigator´s capacity to guide them appropriately to allow for future generalisability of results (Lezaun and Soneryd, 2007; Scofienza, 2017).

Table 8. Documents assessed

Research objectives: Investigate the presence of different types of broad environmental discourses throughout the implementation of the ISA Carbono program in the State of Acre, Brazil.

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1. Programa Jurisdicional de REDD+ do Acre do Sistema de Incentivos ao Serviço Ambiental do Carbono (ISA Carbono) – A Report on the ODS Brazil Prize 2018 / Written by IMC - Instituto de Mudanças Climáticas do Acre;
2. REDD+ in SISA – Acre / Brazilian Ministry of the Environment Presentation on REDD+;
3. Program REM Acre Monitoring / Monitoring Report: IMC - Instituto de Mudanças Climáticas do Acre;
4. Social and environmental safeguards - REDD+ Program in Acre: implementation and learnings – 2018 / IMC - Instituto de Mudanças Climáticas do Acre - Program Report;
5. Research, Analyzes and Recommendations to the System of Incentives for Environmental Services - ISA Carbono 2012 / IPAM - Instituto de Pesquisa Ambiental da Amazônia : External Report;
6. Description of the ISA Carbono Program 2013 / IMC - Instituto de Mudanças Climáticas do Acre: Institutional Presentation;
7. REDD+ for Early Movers - Acre (The stock and flow approach for benefit sharing) 2017 / IPAM - Instituto de Pesquisa Ambiental da Amazônia: External Program Assessment;
8. REDD+ in the State of Acre, Brazil: Rewarding a pioneer in forest protection and sustainable livelihood development 2017 / Federal Ministry for Economic Cooperation and Development / KFW / State of Acre: Donor´s Presentation Report;
9. Acre´s State Decree nº 6184 DE 07/08/2013;
10. REDD+: Protecting forests and climate for sustainable development. Federal Ministry for Economic Cooperation and Development / GIZ (2015);
11. REM ACRE Program Phase II / IMC - Instituto de Mudanças Climáticas do Acre: Institutional Presentation.

Document Assessment: To investigate the presence of different types of broad environmental discourses within the implementation process of ISA Carbono, documents were assessed in two steps. As a first step, I identified the main characteristics of the program and its subprograms: (i) types of beneficiary; (ii) contribution to the overall results of the program; (iii) land categorization and; (iv) incentivized activities. In a second step, I performed a document analysis to the discursive orientations of each subprogram to the broad environmental meta-discourses presented in Section 6.2: ecological modernization, green governmentality and civic environmentalism.

6.4. REDD+ in Acre: the ISA Carbono program

The state of Acre (Brazil) holds the most advanced jurisdictional REDD+ program to reduce emissions from deforestation (Alencar et al., 2012; Nepstad et al., 2014). In Acre, the Program for Carbon Incentives (ISA Carbono) acts within the broader umbrella of Acre's 2010 System of Incentives for Environmental Services (SISA). The jurisdictional approach for REDD+ implemented in Acre is anchored on results-based finance, where funding is allocated according to the program´s capacity to deliver its pre-established objectives to reduce GhG emissions. Benefit sharing in Acre occurs through a stock-and-flow approach which seeks to balance incentives between those

protecting and conserving forests and carbon stocks that are not under immediate threat (stock) and those considered drivers of deforestation whose emissions must be lowered (flow). Benefits here are referred to as the incentives distributed by REDD+ programs, e.g. cash distribution, technical assistance, or collective investments (FAO, 2018). In Acre, however, incentives are limited to technical assistance and collective investments (KfW, 2016).

Figure 3. The State of Acre is situated in the Western Amazon region in Brazil and shares borders with Peru and Bolivia.

The ISA Carbono Program consists of four key land-use policy subprograms, divided into two types according to their main contributions: stock-oriented projects, aimed at maintaining the existing forest stock, and flow-oriented projects, aimed at changing land-use management through the adoption of improved, sustainable practices, thus contributing to reducing forest degradation and emissions. There are four key subprograms directed at: (i) smallholder farmers in rural settlement areas, (ii) small- to medium-sized cattle ranchers (both aimed at reducing emissions from land-use activities – main drivers of carbon emission), (iii) rubber tappers and smallholders in extractive reserves (sustainable-use conservation areas), and (iv) indigenous territories (aimed at maintaining forest carbon stocks). ISA Carbono´s projects are complementary, that is, they add to previous existing policies, programs, and projects.

The most thorough assessments of the REDD+ experiment in Acre have their origins in governmental or program donors' reports (IMC, 2017; KfW, 2016) and in research institutions

interested in forest governance (May et al., 2016; Moutinho et al.,2017). Scholarly work published around the REDD+ experiment in the state of Acre holds relevant contribution by critically assessing the characteristics of REDD+ implementation in the state of Acre (De Paula, 2005; Duchelle et al., 2014; Greenleaf, 2020; Palmer et al., 2016; Schmink et al., 2014; Simonet et al., 2019; Vadjunec et al., 2011).

Results from the early implementation of REDD+ in the state have also led critics to claim that its policies reflect a mainstream, neoliberal governmentality which maintains business as usual without a radical commitment to addressing long-standing structural social inequalities. The objective of REDD+ is not to tackle structural inequalities; however, some authors argue that by maintaining business-as-usual practices, REDD+ might end up reinforcing existing inequalities (CIMI, 2012; De Paula, 2005). REDD+ in Acre, through the program ISA Carbono, governs according to people's individual choices—an example of neoliberal governmentality since the program´s rationale implements a shift in the valuation of forest carbon from being dependent on land to certain forms of labour through the adoption of sustainable practices in forest and rural production. Following Greenleaf (2020), this approach allows the government to allocate benefits from this initiative to poorer people without access to formal land tenure, a form of environmentally premised redistribution or tropical Keynesianism (Hecht, 2012). It also increases governmental control, incentivizes intensive land use, and risks to withdraw forest carbon management from struggles for rights (Greenleaf, 2020). Land tenure is a key issue for establishing a more equitable basis for sustainable development. In Acre, as in much of the Amazon region in Brazil, land tenure remains a severe and conflictive challenge (Fearnside, 2009; May et al., 2016; Cenamo and Carrero, 2012).

6.5. Results

In this section, findings reveal where the 3 discourses of ecological modernism, civic environmentalism and green governmentality show up – first in the documents and then in the interviews. The presence of these discourses serves as explanations of how discourses are guiding policy formulation and implementation. Documental analysis explain how discourses are guiding policy design and formulation. In addition, the assessment of local stakeholders fosters explanations on the implementation of policy. These findings allow for a better grasp on the empirical evidence on how contrasting discourses on environmental governance find presence in the different subprograms within ISA Carbono.

Initially, the study locates the main characteristics which make up for each subprogram of ISA Carbono, as revealed in the Acre´s Official Document for the REDD+ Early Mover´s global program (REM; 2017). Assessing the subprograms in their main characteristics is important since it allows placing each subprogram in context. As observed, each type of beneficiary is embedded within different categories of land as well as contrasting contributions to the overall program. As findings from this study reveals, the type of beneficiary also relates in different levels to specific environmental discourses. This argument shall be made empirically observable through the main identified characteristics from the subprograms below. The indigenous subprogram is made up by indigenous populations, while the sustainable forestry subprogram is made up of forest dwellers inhabiting forest conservation units. Their participation within ISA Carbono aims at the maintenance of existing carbon stocks (rain-forested areas which make up for their territory, broadly categorized as carbon sinks). In contrast, are the other two subprograms which address carbon drivers embedded in land-use transformation processes, such as cattle ranching and farming, the sustainable livestock subprogram and family farming subprogram. These subprograms are aimed at populations located at the forefront of Acre's rural production. The first is aimed at private land proprietors and producers while the latter addresses families within community settlement projects. The characteristics of the four subprograms are summarised below in Table 9. Data that feeds the table below was compiled from the following official documents and reports on the REDD+ initiative in Acre, mentioned above in Table 8: *REDD+ for Early Movers – Acre: The stock and flow approach for benefit sharing* – IPAM – Instituto de Pesquisa Ambiental da Amazônia (2017); *Social and environmental safeguards - REDD+ Program in Acre: implementation and learnings* – Instituto de Mudanças Climáticas 2018).

Table 9. Main characteristics of ISA Carbono´s four subprograms.

Main Characteristics	Indigenous subprogram	Sustainable livestock subprogram	Family farming subprogram	Sustainable forestry subprogram
Type of beneficiary	Indigenous populations	Small and medium holder´s rural producers	Family producers	Extractivists
Program contribution	Carbon sink (stock)	Carbon driver (flow)	Carbon driver (flow)	Carbon sink (stock)
Land category	Indigenous territories	Privately owned rural land	Settlement projects/ Privately owned land	Conservation Units

Incentivized activities	Forest conservation, restoration, and extractivism. Subsistence and family farming, and cultural/traditional livelihood empowerment.	Diverse livestock production for commercialization.	Strategic sustainable value chains in family farming and livestock production.	Forestry extractivism and diverse livestock and farming: small scale and aimed at local subsistence.

Findings revealed a cleavage between market orientation and traditional livelihoods. Subprograms addressing the maintenance of carbon stocks often relate to ecosystem conservation, subsistence farming, food security, and cultural heritage. Programs acting upon carbon drivers (farming and livestock activities) emphasize efficiency, competitiveness, and the creation of value chains while integrating such economic benefits into environmental conservation. The specific case of the sustainable forestry subprogram should also be highlighted, as results point out that its operation occurs in the frontier between the two opposing poles: on one hand, projects in forest conservation units are mostly directed towards preserving existing forests. On the other hand, the subprogram incentivizes production efficiency, market access, and the consolidation of value chains in the forestry sector.

Projects located at carbon sinks, driven by indigenous populations and forest dwellers, are also mostly linked to livelihood aspects, such as the integrity of population and territories, reinforcement of traditional culture, and the goal to increase living conditions. The subprograms aimed at deforestation drivers also maintain efficiency and market-governance logics: they finance further production chains, enhance overall production standards, and adapt to new technological advances. The case of the sustainable forestry subprogram, however, reveals a broader or even dual standard, as it adopts both the livelihood narrative as well as the market-orientation logics envisioned through increasing production efficiency and the adoption of professional techniques. In what follows, results from the second step, based on open-ended interviews and conversations which explored local stakeholders' conceptions of the REDD+ initiative are presented. Findings relate to examples in which the three meta-discourses (ecological modernization, green governmentality and civic environmentalism) were identified from conversations and interviews performed in this case study.

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6.5.1. Ecological modernization

Local stakeholders' claims revealed the dominant presence of ecological modernization among the four subprograms within ISA Carbono. The ecological modernization discourse in the program can be broadly categorized under its reformist version, which focuses on technological solutions and mild governance reforms. It was also identified, however, as incentivizing open and democratic decision-making, which adheres to a more radical agenda in environmental governance. In broad terms, there is an overall adherence to a common discourse of ecological modernization where free markets and environmental protection are not competing policy objectives; they can and should be mutually sustained.

The subprograms´ adherence to common aspects of the ecological modernization discourse was located through (i) the overall belief in increasing land-based productions through enhanced technological input and efficiency; (ii) the assumed necessity to increase market access and industrial production; (iii) the common argument that sustainable development of rural and forest dwellers should imply an increase in income from the adoption of low-carbon activities; and (iv) the capacity to engage with these three measures without necessarily addressing longstanding historical structures, such as pending land-tenure rights. It can be observed that the ecological modernization discourse falls heavily within the family farming and sustainable livestock subprograms. In the sustainable forestry subprogram, the same discourse is found to intertwine

with civic environmentalism as traditional livelihood and cultural heritage, local community empowerment, and the right to land are inherently linked to the program´s adherence to REDD+ activities. The indigenous subprogram observes less adherence to ecological modernization since efficiency narratives are less observable; however, the indigenous subprogram still engages, on a minor level, in market-oriented activities (handicrafts, tourism, and in some cases agriculture), which finds linkage to the ecological modernization discourse.

The overall discourse of ISA Carbono, as argued by State Officers and program managers, reflects mainly the capacity of the program to reshape rural activities into less predatory practices while increasing the efficiency of local rural or forestry productions through socially participative processes. One example that was commonly referred to by program managers described "the main challenge faced currently is to bring down small-holder´s deforestation from rural land transformation through the employment of more technical assistance and the right allocation of incentives"—State officer 2. From such a rationale, other program managers implied that sustainable development of Acre´s rural areas should "modernise production practices to find a way for it in broader markets"—State officer 1. This implies the withdrawal of forest dwellers and rural producers from traditional land-use practices, such as slash-and-burn, in a process driven by increased technical assistance, environmental education, market access, and financial credit loans. Program managers as well as State Officers described previous state-led efforts and upcoming plans to implement industries for the processing and benefiting of local productions: logging, rubber, fruits and vegetables, cattle, and fish, among others. It was argued that there is the necessity to generate a diverse "bag of options" of sustainable productions to address local communities´ selection of sustainable activities while abandoning ecologically harmful practices. As one state official argued "developing value chains of production will generate the resources needed to foster broader sustainable development"—State officer 1 .

The core discourse of ecological modernization —integration of market-oriented activities, techno-efficiency, and ecological preservation—was most present within conceptualisations of the sustainable forestry, family farming, and sustainable livestock subprograms. Local community members who engaged with the initiative adhered to the terminology aimed at techno-efficiency, environmental impacts, and intragenerational sustainability. In an elaborate manner, there was an overall understanding that bringing down forested areas would mean an inheritance of ecological degradation for future generations and that traditional land-clearing processes using fire should be abandoned, among other similar narratives. For community members in the family and sustainable

livestock subprograms, engagement with ISA Carbono´s projects meant the adoption of good practices in farming, aimed at productive efficiency and possible corporate certifications, as well as easier access to bank loans.

The sustainable forestry subprogram deserves further mention. Conversations led to an understanding that this subprogram operates on the fringes of ecological modernisation and civic environmentalism discourses. On one hand, community members in conservation units are drawn towards the production-efficiency discourse, abandonment of predatory land use from traditional practices, and market access driven by sustainable production. On the other hand, community members mentioned that their engagement with sustainable forestry also means returning to their cultural heritage, re-empowerment of lost traditions, such as rubber tapping and nut gathering. For some, measures such as subsidies for production, technical assistance, and incentives worked well to bring families back to these activities.

One community member in the municipality of Xapurí discussed how incentives for rubber-tapping activities had allowed him to "withdraw from extensive cattle ranching and nonprofitable production of vegetables while keeping my forest intact"—community member 3. Another community member was more sceptical about the capacity to fully engage in sustainable production alternatives and added that he would rather keep cattle ranching since his "cows are out in the fields to be guarded, all day". Unlike rubber tapping, where his "savings" were out in the forest to be fetched. Moreover, cattle ranching allowed him to benefit from "easier access to bank loans"— community member 2. His arguments connect to merely economic narratives from ecological modernisation, which finds critiques in the civic environmentalism discourse.

One pressing historical issue in the Amazon region, and consequently in Acre, is formal access to land. State officers stated that within ISA Carbono´s directives, resolving land rights was not the program's main attribution. Rather, the program´s goal was to foster change in land-use practices (a main driver of GHG emissions) into less carbon-intensive practices. Land tenure is a structural issue which was claimed to foster cross-sectoral, complex, and bureaucratic processes in a scenario driven by conflicts and messiness. Allocating too much effort into resolving land tenure rights risked "impacting the program´s drive in designing and implementing low-carbon activities"—State officer 4.

6.5.2. Green governmentality

Findings from local assessments noted that the presence of green governmentality can be predominantly categorized under its strong sustainability version. In this version, some more reflexive approaches like the acceptance of local, lay, and traditional knowledge are added on to the knowledge basis from state, scientific, and policy experts. Green governmentality is identified as the overarching framework for the program. Climate change is mobilized as a scientific fact and is embedded within the program´s objectives, design, and implementation. More specifically, the green governmentality discourse is most observable within three basic aspects from ISA Carbono's operation, according to local stakeholder's claims, namely, (i) the monitoring and verification of ISA Carbono´s results, (ii) the insertion of technical assistance as a fundamental instrument of sustainable development projects, and (iii) the inclusion of local knowledge to the design and implementation of local projects reveals a reflexive stance.

The presence of green governmentality is most significant within subprograms aimed at land-use transformations: sustainable livestock and family farming subprograms. Technical assistance is a fundamental instrument in the projects originating in these subprograms. Expertise knowledge from state institutions, NGOs, and international agencies is fundamental for local producers to engage with REDD+ oriented projects. For program managers, the failure of local dwellers to engage with the terms of expert know-how presents challenges for local projects to be successful in their objectives. One program manager referred to the "difficulties in addressing poor rural productions" existing in the challenges to fully transfer and consolidate technical assistance in communities— State officer 5. Community members from settlement projects and conservation units described workshops and classes they had attended in recent years and revealed the importance they discovered in enacting changes in their practices for rural production. Other community members mentioned difficulty in committing to certain practices as their adoption was highly dependent on continuous technical assistance, learning, and materials (machinery and tools). State officers agreed on such claims and discussed how challenging it is to promote low-carbon land-use transformation projects. In a quite sceptical tone, one state official stated that he would "rather have bad performance attempting to build low-carbon activities than allow for full land transformation from extensive cattle ranching"—State officer 3.

Green governmentality was found to be less present in the indigenous and sustainable forestry subprograms. In these two subprograms, the reflexive stance of green governmentality exists. In

the indigenous subprogram, traditional knowledge relegated scientific knowledge and policy experts to a smaller degree of importance. Local community members claimed that one significant benefit from adhering to ISA Carbono´s framework was the possibility to tailor projects to local knowledge. However, community members also reflected on the significance of complementing their projects with outside expertise. In the sustainable forestry subprogram, such a reflexive stance could also be observed. One community leader in RESEX-Chico Mendes was most emphatic in addressing the fact that his "sustainable forestry system has shown better results than any other, without him ever adopting the experts' suggestions"— community member 5. This claim is quite revealing, and its importance is two-fold: on one hand, local community members in the Sustainable forestry subprogram adopt the program's sustainable forestry core discourse. On the other hand, expert scientific knowledge is overthrown by local knowledge in its address of forest sustainability.

6.5.3. Civic environmentalism

Findings from local assessments that observed the presence of civic environmentalism can be predominantly categorized under its reformist (weak sustainability) version, which calls for historically marginalized groups to be active participants in environmental projects. Civic environmentalism was identified in three aspects of ISA Carbono's implementation according to the assessment of local stakeholders, namely, (i) the insertion of local voices in the program's design and implementation, (ii) the program distribution of benefits across multiple beneficiaries involved in land-use transformation as well as forest dwellers; and, (iii) the instruments and measures adopted in projects specifically in the indigenous and sustainable forestry subprograms.

Broader social participation is a pressing issue for REDD+ initiatives and was found to resonate across the four subprograms of ISA Carbono. State Officers stated the importance of bridging the initiative for further inclusion of local stakeholders in the design and implementation of projects. Program developers claimed to be aware that without local participation, measures proposed by the program would have little chance of succeeding. Such an element was also acknowledged to present significant challenges: State officers mentioned a recent study which revealed a reduced perception from local community members regarding their role in the program's design and implementation. State officers thus acknowledged the necessity of reinforcing local channels for dialogue, state-civil society cooperation, and more active social participation. Local cooperative members, in general, stated that a positive trend in participating in ISA Carbono was the possibility of tailoring their community projects according to their own options and decisions. This was found

to be innovative for community members who argued this was not usually possible, particularly to such an extent, in pre-existing state-led initiatives in which they had engaged.

The program's adoption of a program stock-and-flow approach was also found to contribute to the civic environmentalism discourse as program developers and managers shared their confidence in the "empowerment of sustainable development through the broadening of social participation" — State officer 2. Under this motif, the sharing of benefits is aimed at increasing isonomy of the allocation of resources across stakeholders, thus finding continuity across the territory in a fair manner. One common belief regarding this matter, as shared by some community members, lies in the acknowledgement that benefits and incentives from ISA Carbono could complement the state´s efforts to bring balance to historically skewed policies aimed at multiple and contrasting forest dwellers. This means that historically marginalized indigenous communities, as well as families in conservation units or settlement projects, would now have further access to state projects and incentives.

With respect to the motivations of community members engaged in indigenous and sustainable forestry subprograms, community members specifically brought forth arguments related to cultural preservation and revival, historical reparations (through territorial demarcation and rights), people´s empowerment, and social justice. From the perspective of indigenous community members, benefits from ISA Carbono´s projects served to further complement pre-existing programs/projects aimed at indigenous people´s development of their cultural roots and territories. In a similar manner, forest dwellers inhabiting conservation units argued that adherence to projects had allowed access to further resources to re-engage with historical traditional practices such as rubber tapping and nut collection, among other sustainable forestry activities. One common address from members of the sustainable forestry subprogram described state-led efforts as relevant for the empowerment of traditional activities because they perceived a broader recognition of their livelihoods and social identity, not as resourceless subsistence rural or forest workers but as forest dwellers engaged with a recognized sustainable, traditional forestry activity.

6. Discussion

In line with previous research on the assessment of forest governance and its discursive basis findings from this study indicate that the presence of ecological modernization discourse is dominant in comparison to the minor presence of civic environmentalism, while green

governmentality exists mainly as an overarching program discourse. In the present case study, ecological modernization is most present in its reformist or weak sustainability version, while green governmentality is found in its strong sustainability version. This means that although the program institutes a certain degree of open, democratic decision-making, governance reforms are quite modest. In general terms, subprograms within ISA Carbono find consonance in the findings of Bäckstrand and Lövbrand (2006) where forest governance envisioned through REDD+ fosters a more pragmatic shift, envisioned by more equitable terms of trade added to a reflexive scientisation vis-à-vis the adoption of the democratic visions of strong ecological modernisation and green governmentality. The link between discourses and policy analysis which this study aimed for, is envisioned through the REDD+ policy as a way of institutionalising the discourse of ecological modernism.

By scrutinizing the subprogram in their main characteristics and discursive orientations, findings reveal that subprograms aimed at maintaining existing forest stocks (indigenous and sustainable forestry subprogram) observe a more significant presence of civic environmentalism as local community members´ underlying values relate to narratives on traditional livelihoods, cultural heritage, and local empowerment in contrast to the subprograms mainly addressing land-use change, where objectives are centered on increasing economic production, efficiency, and market access – in line with the ecological modernization discourse. In geographical terms, subprograms aligned with civic environmentalism and the management of existing carbon stocks are located far from the most active and developed rural frontiers in Acre, in contrast to the subprograms aimed at carbon drivers, which necessarily sit within these frontiers. With possible overlaps and nuances, as reflected in this research, these specific conditions of locations indicate that environmental governance aimed at capitalistic frontiers of development is necessarily driven by market-oriented narratives, whereas outside such frontiers, other narratives manage to emerge and flourish, and even materialize through policy. Such dichotomic conditions reinforce the claim that institutional path dependencies can constrain the formation of more reformist discursive orientations necessary for broader transformational change required to address the drivers of forest loss (Korhonen-Kurki et al., 2019).

Moreover, if one considers that a program level of engagement in certain activities serves as a proxy indicator of policy core beliefs (Gamboa et al., 2020), the issue of land tenure becomes quite revealing. As argued by program managers, resolving land rights is not a central issue due to its complexity and multi-institutional character. By not addressing land tenure and assuming it as a

necessary objective, the program signals a possible withdrawal from addressing complex, structural issues (Gebara et al, 2016; Korhonen-Kurki et al., 2019). Addressing cultural issues could perhaps foster a stronger drive to overcome politico-economic path dependencies since land-tenure conflicts play a major role in defining Amazonian spatial and social development. Nevertheless, as local community members territorialize their activities, some of them incentivized through the program, resolving land rights might find its way in the future but most likely not without conflicts (Greenleaf, 2020).

By adopting multiple discourses, ISA Carbono addresses the considerable diversity of its local beneficiaries. This should not be any different in a territory rooted in past (and present) social struggles for land and rights to livelihood, mostly envisioned through the fights of rubber-tappers, rural settlers, and indigenous populations (Hecht & Cockburn, 1989; Porto Gonçalves, 2009). The case of the sustainable forestry subprogram holds important insights. Discourses within the subprogram are situated somewhat as though on a frontier between civic environmentalism and ecological modernization This factor is relevant as it points to possible overlaps between discourses and how discursive orientations are not immutable. In that sense, ISA Carbono adds to the existing literature on REDD+ in which the design and implementation of programs should be flexible enough to address broader categories of stakeholders and allow for the more equitable sharing of benefits while consolidating a broader perception of collective effort. In addition, these terms might contribute to a balance between the drive for more cost-efficient forestry policies and the demand for broader social participation, a nuanced equilibrium which can be most conflictive for REDD+ (Börner et al., 2010; Duchelle, 2014; Gebara et al., 2014).

In broader terms, findings from this study suggest a representation of the latest trend in REDD+-oriented programs to incentivise social participation while strongly adhering to the ecological modernisation discursive base. The case of Acre also illustrates an attempt to broaden the knowledge base for forest governance programs through locally informed, community-tailored projects (Corbera et al., 2015; Cromberg et al., 2014; Duchelle et al., 2014; Gebara and Agrawal, 2017). However, my analysis shows that due to the influence of the three meta-discourses, inviting more participation may not be sufficient to open up the debate, as stakeholder reproduce the meta-discourses themselves. In line with previous studies, findings indicate that path dependencies are obstacles to the way transformations in governance are rendered possible by forest program developers and managers of forestry governance. Following Vijge et al. (2016), the assessment of the case study of Acre also adheres to the dichotomic perceptions which have seemed to divide the

REDD+ discursive debate between the priority for market-based solutions from those that prioritise community development objectives, non-carbon benefits and distributive concerns. The analysis presented here provides an attempt to locate narratives from a specific REDD+ initiative and connect them to broader environmental meta-discourses.

7. Conclusion

With regards to the research questions – (i) To what extent do different environmental meta-discourses find a presence within ISA Carbono? (ii) what implications does the presence of such meta-discourses have for different constituencies and the governing of REDD+? - this research has highlighted the dominance of ecological modernization discourses in their weak sustainability version. In this version, ecological modernization assumes a win-win discourse in economic and conservation terms, aligned with the adoption of modest governance reforms, such as incentivizing broader social participation in decision-making processes. The minor presence of civic environmentalism suggests that path dependencies place barriers which condition the extent to which transformations are rendered possible (or desirable) by program developers and managers. Following Vijge et al. (2016), the assessment of the case study of Acre also adheres to a divide which has seemed to materialize in REDD+ discourses between the priority of market-based solutions from those that prioritise community development objectives and non-carbon benefits and highlight distributive concern. Findings from this study reveals that even when involving different people (from State Officers to community members), the presence of the same three meta-discourses is still observable. This factor might suggest that participation by itself is not enough to "open up" the policy space. New idioms must be allowed – but how? The how is subject for further research. In this area of research, the analysis of meta-discourses and local stakeholders´ narratives, remains a relevant contribution to generating knowledge on global environmental governance.

CHAPTER 7. CONCLUSION

This thesis has investigated the evolution and implementation of environmental policy and governance in the Brazilian Amazon. Using a mixed-methods approach, it has paid attention to the discursive characteristics of policy documents using a bibliographical review and document analysis (Chapters 4-5), and of actor discourses about REDD+ combining document analysis with open-ended interviews (Chapter 6). This final chapter concludes the dissertation by summarising its main findings (Section 7.1) and introducing areas for future research based on key research findings (Section 7.2).

7.1. Summary of findings and contributions

This dissertation was structured around three questions that taken together aimed to provide a comprehensive understanding of the evolution of environmental policy and governance in the Brazilian Amazon. Throughout the dissertation, I have acknowledged that discourses, ideas and knowledge about socio-environmental relations impact the ways in which the environment is regulated and governed. As such, imaginaries about the Amazon relate to how governance of the environment is historically understood and acted upon (Leff and Porto-Gonçalves, 2015).

7.1.1. Imaginaries about the Amazon are dynamic and powerful

I have shown how historical imaginaries of the Amazon rainforest influence present-day environmental governance of the region (Chapter 4). My contribution to the existing literature rests in the argument, developed in Chapter 4, that these colonial imaginaries, shaped through violence and relations of power (Krenak, 2020), have disseminated into an enduring framework which is constantly re-adapted to new historical contexts and in contemporary policies for the region. This finding matters because the making of forest politics is rooted in historical imaginaries, ideas and knowledge regimes which, in combination to specific contextual elements (i.e. the social and economic conditions, as well as the politics of a specific place and time), shape the broader boundaries for governing the environment (Bäckstrand and Lövbrand, 2006). I have shown that the build-up and implementation of public policies in the construction of a broader environmental governance regime in the Amazon of Brazil is underpinned by an extra-regional representation of an archetypal *Eldorado* (Castro et al., 2012) which has over time evolved to become the utmost

representation of global green conservationism towards the end of the past century and the early 2000s (Bull and Aguilar Støen, 2015).

These findings suggest that the imaginaries about the Amazon are fluid and dynamic - as I show through the examples in Chapter 4 (i.e.: a colonial *Eldorado* (Castro et al., 2012); the *locus* for a nationalist development project (PND, 1971) or; as a 21st century global biophysical entity for biodiversity conservation and climate regulation (Bull and Aguilar Støen, 2015). In other words, there has been a shift in the mainstream imaginary about the Amazon: first envisioned as a geographical space to be exploited for the extraction of gold and other minerals and natural resources, it has now become a reservoir of biodiversity and carbon, of global rather than national importance. Such a shift in the mainstream imaginary about the Amazon (and the discourse embedded) are underpinned by broader and influential interests rooted to national-global regimes of knowledge and power (Hajer, 1993). This means that the prevalence of one imaginary (and discourse) over others has in turn weakened the possibilities for other worldviews and knowledge basis to find means into how politics for the region are imagined and acted upon (Davis 2011; Escobar, 2009).

Therefore, although shifts in imaginaries and discourses about the Amazon have been observed over time, the dynamics of power embedded in the observed framings are, to an extent, maintained through the dominance of the global (or national) onto the local. This is particularly evident in the example of the Amazon portray - from an extra-regional stance - as a green conservation frontier envisioned through REDD+. Mobilized as a scientific fact, the global phenomenon of climate change (IPCC, 2019) shapes the global environmental knowledge regime from which REDD+ derives its main objectives, ideas and implementing actors. The latter include climate scientists, policy makers engaged with development and environmental policies, politicians holding interests in the sustainability agenda, and NGO's, as well as other actors who are directly involved in the climate policy arena (Zelli, 2011). These actors' power derives from two central nodes: (i) from the recognition and imposition of climate change mitigation (and adaptation) as an accepted global development agenda and (ii) from geopolitical structures of power which influence how this regime of knowledge is spatialized across the Amazon region.

I understand that such global and mainstream environmentalist framing, or imaginary, is not dominant neither exists alone. Rather, it co-exists with other framings for the region which are constantly under dispute in the politics of the region through struggles in the political arena. The

case of Chico Mendes (Mendes, 1989; Porto Gonçalves, 2009; Ventura, 2003), as described and analyzed in Chapter 4, permits to understand the historical imaginaries for the region as contributors to the built up of a broader environmental governance regime. Furthermore, the specific case of Chico Mendes allowed me to empirically demonstrate my arguments about the transformation of imaginaries for the environment in the region as a necessarily complex ordeal, where different discursive orientations interplay to influence how on-the-ground environmental politics take shape, as shown for the case of REDD+ in Chapter 6. Additionally, the Chico Mendes case is a good example of the co-existence of multiple narratives and imaginaries for a single social-ecological system (Gupta et al., 2016; Martinez-Allier, 2002), and its importance for the history of the Amazon's environmental governance is two-fold. First, it showed possible paths for environmental preservation upon the articulation of multi-level dynamics - connecting the local to the global through *bottom-up* processes (Lemos and Agrawal, 2006), and demonstrated how local forest dweller´s voices, and their own imaginaries about their livelihoods, could be made compatible with certain claims of the global environmentalist movement, such as the need to harmonise conservation and development and to empower the poorest of the poor (Porto-Gonçalves, 2009). Second, as rubber-tapper´s voices were combined to other social actors operating at higher hierarchical levels in the global political spheres, the knowledge and epistemological basis which underpins the design and implementation of measures for the governance of the environment was able to foster more plurality in the voices within processes of policy making (Pattberg and Widerberg, 2015).

In practical terms, the rubber-tapper´s movement articulated through the figure of Chico Mendes led to policy readjustments in Brazil in the 1990s (Ventura, 2003). The enactment of the specific instrument for environmental governance embodied by the extractive reserves or *RESEX* (in the Portuguese acronym) did not imply only the inclusion of a new approach to conservation focused on incentives and locally-devised resource management plans, thus moving away from traditional command-and-control measures. Rather, also led to the adoption of sustainable development narrative by specific government and social actors which recognized the presence and relevance of local livelihoods – their local traditional imaginaries and constituted environmental narratives - for ecosystem preservation (Schmink et al., 2014). In these terms, the RESEX signalled a way forward for environmental governance mechanisms in the Amazon rainforest (Vadjunec et al., 2011) which finds relation to the themes of decentralization and social participation present in the contemporary concept of environmental governance (Hacon, 2018; Pattberg and Zelli, 2015).

7.1.2. Ecological narratives for policy determined by context

In Chapter 5, I investigated how Brazilian policy narratives evolved in the last decades to drive environmental governance in the Amazon region. I scrutinized part of this process with a closer view to reveal the main social, economic, and political orderings related to environmental governance that were reinforced and those that were discarded in the last 60 years of "modern" policy making for the Amazon (Becker, 2011). Throughout the chapter I showed that ecologically oriented imaginaries and narratives, as found through the above example of Chico Mendes´s extractive reserves, do not follow a linear implementation path. This is to say that "old" narratives for policy making which evolved during the Military regime do not completely disappear from the policy "menu" and become substituted by new narratives, such as that of sustainable development. Instead, "old" narratives for policy making in the Amazon tend to reappear when specific political and economic vested interests become mobilised (FASE, 2020). Therefore, the possibility of ecologically oriented narratives to find grounds for implementation is conditioned to uneven power struggles in the political arena of Brazil as policy narratives overlap across time (Quintslr et al., 2012). As an extractive economy of the Global South, there are vested economic and political interests in expanding Amazonian commodity frontiers which work against the mainstreaming of policies aimed at social and ecological preservation (Gudynas, 2011)

I have argued throughout my research that two central historical processes have led to the current state of Amazonian environmental governance, where REDD+ figure as the latest trend (May et al., 2016). First, the boom-and-bust of the Military Regime (1964-1985) which, in its aftermath, led to the consolidation of new, democratic structures of power (Casara and Melchior, 2013). Simultaneously, the regime left long-lasting legacies to Amazonian governance, embodied through technocratic governance, controversial State-Corporate relations, land-tenure issues, and the lack of local empowerment (Ianni, 2001; Loureiro and Pinto, 2005). Second, the global advances of global environmentalism created a new knowledge and policy regime where ecological concerns (being biodiversity conservation and climate change the two most pressing issues) begin to play a key role in development policy making for the region (Holmgren, 2013). Consequently, this new regime overlaps with the previous mentioned legacies to result in uneven, and not always desirable outcomes.

Legacies from the military regime which have remained vivid and are re-assessed according to political or economic motivations operate by toppling down democratic participation, social and

ecological concerns (i.e.: the polemic and destructive spatial interventions enacted through PAC in the post-2008 crisis – Chapter 5) (Brum, 2014). In these terms, I understand that governance of the environment is continuously forged through disputed knowledge claims and narratives embedded in an uneven structure of power relations (Bacchi, 2009; Svarstad, 2018). Most importantly, I find that this latter condition can be articulated through a Marxist stance on power where historical social structures constrain and further reproduces human agency, or policies in this case (Harvey, 2003). As shown throughout the empirical chapters of this work, in the Amazonian context, power structures are rooted in colonialism and a rigid authoritarian past (Sodré, 1997) which challenges the possibilities for broader democratizing attempts (Casara, 2019). I understand these consolidated structures of power to challenge the emergence of reformist discursive orientations for the environment - hereby envisioned through green conservationism policies for the region - by reinforcing historical institutional path dependencies (Korhonen-Kurki et al., 2019). As revealed through the empirical chapters of this thesis, these power structures are shown to pre-condition the emergence of social and ecologically oriented policy narratives as they attempt to find further ground for implementation.

Against this backdrop of (i) longstanding structures of power (Casara and Melchior, 2013); (ii) broadened democratic basis; and (iii) political recognition of social-ecological concerns, the concept of sustainable development (Brundtland, 1988) appeared in the late 1980s and 1990s as the most appealing conservation narrative for policy making in the Amazon region (Leff and Porto Gonçalves, 2009). Envisioned through the possibility of attending to economic demands while addressing social and ecological preservation, sustainable development shaped a new paradigm for the access and use of natural resources within society (Lemos and Agrawal, 2006). In practical terms, the policy outcome for the evolution of environmental governance in the Amazon region, was the consolidation of programs rooted on transnational partnerships (*the PPG7 program*, see Chapter 5), which in the early 1990s appeared globally as as an innovative tool, bred from international intergovernmental cooperation structures for the integration of global agendas in global development (Hacon, 2018; Pattberg and Widerberg, 2016).

This concept of governance contested the conventional ways of policy analysis via the displacement of the State as the focal point of power to multiple nodes of power in multi-level networks (Adger et al., 2006) where the State appears as just another political actor (Lemos and Agrawal, 2006; Hacon, 2018). It suggested a transfiguration from the theoretical infrastructure that is usually state-centered, to a new set of political power in the new configurations proposed by neoliberal

globalisation (Rose, 2004). As shown throughout this dissertation, the last decades has increasingly observed the appearance of such global, multi-scalar, decentralized and market-oriented mode of governance (Lemos and Agrawal, 2006). This type of governance has found fertile ground to flourish in the Amazon region (Gebara et al., 2014) for specific reasons. First, the broadening of social participation in Brazil, through democratic processes, led to the decentralization of decision-making processes (Toni et al., 2011). In addition, the insertion of ecological concerns into policy narratives led Brazil into the developing of a strong institutional framework for the environment (Abramovay, 2020). Moreover, in light of the climate change phenomena, the Amazon rainforest has increasingly acquired a central role in the climate policy debates (Nobre et al., 2016). Finally, I suggest that market-oriented narratives for environmental conservation speak directly to the interests of mainstream policy makers operating at Latin American commodity frontiers (Thaler et al, 2019).

Critics have been led to claim that this type of environmental governance reflects a mainstream, neoliberal governmentality which maintains business-as-usual without a radical commitment to addressing long-standing structural social inequalities (Escobar, 2010; Thaler, 2017; Silva, 2012). Anchored on the findings from Chapters 4 and 5, I argue that these criticisms should "not appear as a surprise" as longstanding power relations in the Amazon region constantly act to obstruct and depoliticise more radical transformations in the governance of the environment (Escobar, 2005; Martinez Allier, 2002). Longstanding power structures favour approaches to governance which combine market orientation, rooted to mild social participation processes and are mobilized under global neoliberal terms (Mol, 2003). In this context, REDD+ as well as in other environmental governance mechanisms in Brazil (i.e.: *payment for ecosystem services; CDL; green taxes; CAR*) have emerged in the years 2000s as the latest initiatives for land-based governance in the Amazon region (Cromberg et al., 2014; May et al., 2016). In broad terms, as argued through Chapter 5, the conditions for such mechanisms to continue to find implementation ground in the region - as well as for the possible successful operation of such initiatives - are challenged by longstanding structures of power. More emphatically in the Amazon, legacies from the dictatorship period continue to operate by toppling down broader democratic social participation and ecological concerns (Brum, 2014; Ianni, 2001; Loureiro, 2005).

7.1.3. Where modernization most possibly falls short

As observed, economic and ecological narratives are found to co-exist in policy narratives for the Amazon (Becker, 2001). To further understand how narratives and discourses define environmental

governance in the Brazilian Amazon, Chapter 6 builds on to Chapter 5 to empirically identify the presence of contrasting broad environmental meta-discourses namely, ecological modernization, green governmentality, and civic environmentalism (Bäckstrand and Lövbrand, 2006), within the design and implementation of a REDD+ initiative – the ISA Carbono program in the State of Acre. The recent emergence of environmental governance mechanisms in the Amazon, such as REDD+, seems to reinforce a trend of a co-existence of economic and ecological orientations within the sphere of environmental conservation politics (Angelsen et al., 2012; Gebara et al. 2017; Pattberg and Zelli, 2015). The findings from Chapter 6, however, show the dominance of discourses of ecological modernization - rooted in terms of efficiency, markets, and technology - and a minor presence discourses of civic environmentalism – based on the enforcement of social participation, justice and non-capitalist alternatives. REDD+ is an example of a policy which rests on one particular imaginary, but which embeds distinct discourses throughout its implementation. Discourses find different degrees of implementation depending on the power held by the different participating actors, and the broader policy and social context in which it operates (Dryzek, 1998).

As such, I understand that the adoption of certain discourses is not abiding or should not be understood through fixed, strict frameworks or categories. Rather, contrasting discourses are found to interplay and hold nuances (Dryzek, 1998; Hajer and Veersteg, 2005). The specific contribution of Chapter 6 rests on the assessment of these nuances, as they are revealed through the extent to which each type of discourse finds presence within the design and implementation of environmental governance. They give boundaries to on-the-ground practices within the ISA Carbono implementation process (Bäckstrand and Lövbrand, 2006) and I understand that the interplay between such discourses may be revealing historical path dependencies (Korhonen-Kurki et al., 2019), the resilience of specific knowledge regimes (Van Dijk, 2006) and power struggles (Svarstad et al., 2018). These three facts combined may operate as obstacles to the way transformations in governance are rendered possible by contemporary forest program developers and managers of forestry governance (Börner et al., 2010). In the context of the Amazon, this suggests that mild policy reforms and a strong focus onto discourses of efficiency, modernization, markets and technology may run the risk of overshadowing the local agendas for social justice and non-capitalist alternatives (Leff, 2016).

My understanding of REDD+ as a policy instrument that may fall short in transforming Amazonian society, and both conservation and development pathways is of course not novel. Others have already addressed the possible shortcomings of current environmental governance mechanisms

(Mastrangelo and Aguiar, 2016; Thaler, 2017), and the divide which has seemed to materialize in REDD+ discourses between the priority of market-based solutions from those that prioritise community development objectives and non-carbon benefits and highlight distributive concerns (DI Gregorio, 2017; Duchelle et al., 2014; Scofienza, 2017; Vilje et al, 2016). REDD+ has been further problematized when early implementation outcomes indicated that ecological modernization discourses often superseded the views and interests of local people (Holmgren, 2013; Evans et al., 2014; Gupta et al., 2012) while REDD+ activities themselves may undermine the rights and ambitions of forest-dwelling peoples (Angelsen et al., 2012; Gebara et al., 2017; Hiraldo and Tanner, 2011). In the case of ISA Carbono, for example, the fact that the program does not centrally engage with land tenure issues reveals a lack of commitment in addressing complex, structural issues (Gebara et al, 2016; May et al., 2016). Without resolving current conflicts over land tenure and access to land, the program is reduced to a form of environmentally premised redistribution or tropical Keynesianism (Hecht, 2012), which in turn disconnects forest (carbon) management from broader struggles over land and peoples' rights (Greenleaf, 2020). As land-based conflicts play a major role in defining Amazonian spatial and social development (Korhonen-Kurki et al., 2019; Loureiro, 2005; May et al., 2016; Greenleaf, 2020), I believe that by addressing the land tenure issue, programs such as the ISA Carbono could lead to broader transformational change in Amazonian environmental governance and break with the existing status quo over land rights and local economic development pathways.

My analysis on the ISA Carbon program also contributes to existing research by revealing the adoption of contrasting discourses and framings on how communities manage their natural resources. Moreover, I show that discourses for implementation are often based on dominant (or alternative) narratives, at times rooted in biased interests, epistemologies, or outdated knowledge claims (Warner, 2010). This is evident from the fact that, among the program's interviewed actors, the ecological modernization discourse is rather prominent over other discourses. The "ingredients" for more radical transformational change, represented through the discourse of civic environmentalism, is revealed to appear in minor terms. More specifically, under the sub-programs aimed at Indigenous populations and Sustainable Conservation Units (UCs in the Portuguese acronym) aimed at the management of forest carbon stocks. Hence, I understand that ecological modernisation provides a determined framing of nature which is underpinned by utilitarian logics and, in Acre, such logics are especially aimed at its rural frontiers in the attempt to drive down forest degradation and CO_2 emissions (Chapter 6). This directly influences how environmental dilemmas are problematised, how priorities are established and how solutions are produced. Much

critical scholarship has argued for the necessity to foster decolonial approaches to the sustainability of ecosystems in ways that are entirely different from the utilitarian logics rooted to contemporary mainstream thinking (Krenak, 2020; Leff, 2016). As shown throughout this dissertation, such logics emerge from the establishment of colonial imaginaries and narratives which have dominantly spawned in time (Santos, 2010). In synthesis, how nature is valued or framed becomes an inherent key element of environmental governance (Agrawal, 1995) and hinders the emergence of a more democratic imaginary (Howarth, 2000).

I have also argued that environmental governance meta-discourses, such as ecological modernisation, fall inherently short in proposing ways to address the unsustainability of coupled social and ecological systems, such as the Brazilian Amazon (Escobar, 2010; Gudynas, 2011; Leff, 2016; Martinez Allier, 2009; Silva, 2012). Colonial and utilitarian framings for governing the environment (Leff, 2016; Krenak, 2020) have become a means to legitimise natural resources extraction (Mastrangelo and Aguiar, 2016; Thaler et al., 2019). This reflects more than just the failure of these framings to promote sustainable development policies: it also demonstrates the pervasiveness of the current model of capitalist accumulation and its inherent structure of political power relations which constrain, rather than advance sustainable development. Such model, and the governance processes which surround it, are not concerned with addressing the distribution of political, social and economic power (Martinez Alier, 2009; Escobar, 2010).

Finally, I suggest that the discursive dominance of ecological modernization can be explained by historical legacies, and by the appeal of the idea behind the ecological modernization discourse which suggests that development and conservation are compatible and do not involve economic or socially unbearable trade-offs. Narratives, discourses and imaginaries are "sticky" and the involvement of more stakeholders in a given policy or governance mechanism may show how dominant discourses are reproduced, and not necessarily reflect the capacities from available alternative framings. Comprehending how historical and social conditions have reproduced dominant and biased ways of thinking, which often reproduce the marginalisation of specific groups of people and contribute to the control and exploitation of certain territories and natural resources for the benefit of a tiny few, is only a first step in the long-term struggle towards the construction and realisation of alternative, development counter-narratives, for the Amazon region and beyond (Berkes, 2017; Fairhead and Leach, 1996; Robbins, 2000; Roe, 1994). To the bare minimum, these alternative narratives should be scientifically robust, socially equitable, and contribute to liberate both humans and nature (Forsyth, 2003) from economic and political processes that degrade the

environment and to alienate people from collective thinking and organization, and from their own lives.

7.1.4. Methodological contributions

Throughout this dissertation I learned that both imaginaries, narratives and discourses have been useful analytical concepts. In special, I highlight the relevant dimensions of such *post-structuralist* methods for analysis as powerful tools for gaining in-depth understanding of the underlying meanings which shape policies for the environment. I understand the importance of dissecting the evolution of policies through narratives as two-fold. First, it has allowed me to identify how problem framings evolved across time: from mostly involving concepts such as *modernization*, *development*, *efficiency*, *markets and capitalistic enclosures,* to incorporate social and ecological oriented narratives through the broadening of social participation and the insertion of a global knowledge regime. Second, doing so has fostered a more thorough understanding of the contextual factors which combine to transform and, further, implement policies. Doing so has further allowed me to conceive global environmental politics as permeated by a struggle over meanings, symbols, and representations, which are then enacted into a set of practices, policies and *governance processes*.

7.2. Limitations and further research

To conclude this thesis, I outline the limitations of the research and propose future research avenues. First, I acknowledge that the historical analysis of imaginaries for the Amazon presented in Chapter 4 could be enriched with a more complete set of materials and methods. For example, the analysis of historical discourses about the Amazon as a geographical space to be governed, or even conquered, and the reasons behind such quests, would have benefited from analysing a broader range of statements from a larger number of policy documents, written media, and for example the arts (literature, theatre, movies, and fine arts). Methodologically, this could be done employing a text mining and topic modelling approach as it has already been done to study, for example, historical discourses about climate change or soy expansion and deforestation (Bohr, 2020; Mempel and Corbera, in review). I believe that this would possibly reveal a more fine-grained understanding of how the imaginary of *Eldorado* and other portrayals of the Amazon region may have changed over more concrete periods of time, and across different constituencies (e.g. media, government, civil society). Possible findings from this research may address the extent to which the imaginary of the *Eldorado* among others, are not only representative of extra-regional imaginaries

for the region, but rather are found to be intrinsically rooted to local cultures and the collective views which actively shape current imaginaries *from* the region.

Seemingly, I also recognize that the analysis on the evolution of environmental governance presented in Chapter 5 could have benefited from a broader range of materials and data as I acknowledge this present study was limited to policy narratives. A central finding of my investigation revealed how the implementation of contrasting policy narratives overlap across time. Building on from this factor, I understand that further research could be enriched by scrutinizing the complexity from policy integration challenges – the *nexus*: land use; demographics; economic production; biophysical terms; etc. (Mercure et al., 2019). I believe that doing so might enable a deeper comprehension on the complex feedbacks resulting from the interaction of contrasting policies and how, in turn, they interact to result in new *territorialities* (Becker, 2010).

Finally, I acknowledge that future research on REDD+ in Acre should target on-the-ground experiences, and thus a larger number of research actors and broader suite of methods, such as participatory techniques that can allow to better grasp the subjectivities or specificities that contribute to explain policy processes and outcomes at the local, community-based, or even individual level.

To conclude, and despite the above-highlighted limitations, I hope that my dissertation has contributed to acknowledge the relevance that seminal imaginaries, narratives and ideas about social and ecological systems have to the state-of-the-art of how the environment is governed. In these terms, I hope to have demonstrated the usefulness of analysing narratives and discourses in environmental studies, insofar as discourses and narratives can provide the framings through which problems are interpreted. More emphatically, I hope this dissertation has contributed to the current debate on Amazonian environmental governance by addressing the historical and contemporary ingredients which still determine the environmental politics and the governance of the Amazon region.

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