

Sustainable development and development banks in the Brazilian Amazon

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SUSTAINABLE DEVELOPMENT AND DEVELOPMENT BANKS IN THE BRAZILIAN AMAZON

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**A thesis submitted in fulfillment
of the requirements for the degree of
Doctor of Philosophy**

**Faculty of Law
The University of New South Wales**

2012

**Walker, there is no path,
the path is made when walking.**

*[Caminante, no hay camino,
se hace camino al andar.]*

Antonio Machado

ABSTRACT

The thesis examines the processes of development in the Brazilian Amazon, particularly the role of development banks (DBs) in those processes. It carries out that task by analyzing the performance of two multilateral development banks (MDBs), namely the World Bank Group and the Inter-American Development Bank, as well as two Brazil's development banks, the National Development Bank (BNDES) and the Bank of Amazon (BASA). The aim of this study is to analyze the DBs' actions and policies, particularly in the field of sustainable development, in the last three decades (1981-2010), and to draw out what the DBs (and we) can learn from the weaknesses and adverse consequences of those actions and policies for the region. The role of DBs in promoting sustainable development in the region is of considerable importance to all of humanity, in a world facing significant loss of biodiversity and climate change. Nevertheless, based on historical and theoretical analysis, as well as empirical studies such as field research and interviews, the thesis argues that many parts of the Brazilian Amazon have followed a "boom-bust" cycle, underpinned by a predatory model of "development" that has caused environmental degradation, social exclusion and violence in those areas. The central argument is that the DBs see environmental impacts as "a factor to be considered" in their operations in the Brazilian Amazon, but they have not adopted sustainable development as their overarching objective for the region. The thesis also sets forth two subsidiary arguments. The first argument is that the DBs in the Brazilian Amazon have tended to act in the interests of their shareholders rather than responding to the needs of recipients (local people). The second argument - closely linked to the previous one - is that the sustainable development strategies and projects should be formulated by the borrowers, not the lenders. The thesis examines the measures needed to achieve the overriding policy goal. The study recommends the adoption of new mechanisms for promoting sustainable development in the region, highlighting the crucial role of DBs in those mechanisms. It concludes that these mechanisms require new multi-actor arrangements, namely "hybrid-institutions" that comprise international bodies, state, local community and private sector.

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Finally, responsibility for all errors, omissions, and opinions rests solely with the author. All findings, interpretations, and conclusions expressed in this paper are entirely those of the author and do not necessarily represent the views of the supervisors or the interviewees.

To Fabiana and our loving kids, Luísa and Victor.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACTO	Amazon Cooperation Treaty Organization
ARPA	Amazon Region Protected Areas
BASA	Bank of the Amazon <i>[Banco da Amazônia]</i>
BB	Bank of Brazil <i>[Banco do Brasil]</i>
BC	Central Bank of Brazil <i>[Banco Central do Brasil]</i>
BNDES	National Development Bank <i>[Banco Nacional de Desenvolvimento Econômico e Social]</i>
CEF	Federal Economic Bank <i>[Caixa Econômica Federal]</i>
COP	Conference of the Parties
DB	Development Bank
FAO	Food and Agriculture Organization of United Nations
GEF	Global Environment Facility
IBAMA	National Environment Agency <i>[Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis]</i>
IBRD	International Bank for Reconstruction and Development
IDB	Inter-American Development Bank
IDFC	International Development Finance Club
IFC	International Finance Corporation
IMF	International Monetary Fund
IFI	International Finance Institution
INPE	National Institute for Space Research <i>[Instituto Nacional de Pesquisas Espaciais]</i>
IPCC	Intergovernmental Panel on Climate Change
MDB	Multilateral Development Bank
PA	Protected Area

PPG7	Pilot Program to Conserve the Tropical Forests of Brazil
REDD	Reduced Emissions from Deforestation and Degradation
SNUC	National System of Protected Areas <i>[Sistema Nacional de Unidades de Conservação]</i>
SUDAM	Superintendency for the Development of Amazonia <i>[Superintendência para o desenvolvimento da Amazônia]</i>
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNESCO	United Nations Educational Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
WTO	World Trade Organization

INTRODUCTION

FORMULATION OF THE PROBLEM

In the Amazonian city of Manaus, an astonishing clash of rivers can be seen where the Negro River meets the Solimões River. Although this natural event is known as the “meeting of the waters”, it would be better named the “clash of the waters”. As Rohter says, “the two great rivers, markedly different in color and temperature, collide with such force and volume that they seem to be fighting each other.”¹ Curiously, the waters of these rivers do not mix instantaneously; it takes nearly thirteen kilometres to reach reconciliation between the different waters. It is said that the Amazonian writer Milton Hatoum was inspired by this natural phenomenon that occurs in his native town to create the main characters of his masterpiece *The Brothers*², that tells a story of twin sons of a Lebanese couple who grew up in the Manaus of the 1940s. While Omar was spoiled by his mother, his brother Yaqub had to leave his home to live in Lebanon, after a serious disagreement with Omar. Although the brothers had the same genealogy, they were irreconcilable personalities. Many years later, Omar became a violent man, seeking to live a leisured life, relying on mother’s financial support. His brother Yaqub, by contrast, earned his living working as a prominent engineer in São Paulo. The tension between these two Amazonian characters underpins *The Brothers*. Unlike the Amazonian “meeting/clash of the waters” that results in a harmonious environment, the twins of Mr. Hatoum’s fiction do not reach reconciliation; by contrast, the animosities between them are irreconcilable, and contaminate the entire family, causing the collapse of their home.

This thesis explores another meeting/clash, which also takes place in the Brazilian Amazon; this is the clash of development models. On the one side stand the main

¹ Larry Rohter, “Into the Amazon, The New York Times, September, 16, 2007, available from
<<http://travel.nytimes.com/2007/09/16/travel/16amazon.html?+Top/Reference/Times%...>>
October 2007.

² Milton Hatoum. *The brothers*. Translated by John Gledson. London: Bloomsbury Publishing Plc, 2003. Note that its original title in Portuguese is *Dois Irmãos* (Two Brothers).

economic forces in the region, supporting the traditional development model, which is based on, *inter alia*, timber extraction, mining, large-scale cattle ranching, and soybean production. On the other side stand a number of new models of development, which are supported by new social actors, such as grass-root movements and non-governmental organizations who stress that development does not depend on the destruction of the forest, but rather on its survival. As Becker et al. argue, these opposed viewpoints present a dilemma: development or conservation? However, this thesis argues that the dilemma is a false one, because “it deals with conservation as a synonym of untouchable preservation and identifies development with destructive production. It is false because it does not admit the existence of different models of modernity and alternative ways of development.”³

Considering the natural and social conditions found in the region (tropical climate, dense vegetation, and low population density), private capital has perceived the region as risky for significant investments. It has only been with the encouragement and support of the Development Banks (DBs) that the private sector has invested in the Brazilian Amazon. In the period 1981-2010, the DBs focused their financial operations on infrastructure projects, particularly in the transport and energy sectors, including the construction of highways, railways, ports, and hydroelectric plants.

Unfortunately, these large-scale schemes financed by DBs caused a number of adverse environmental consequences, including deforestation, burning, pollution, and biodiversity loss, as well as social problems, including displacement and threats to cultural diversity. Nevertheless, the formulation by Dr Brundland of the concept of sustainable development in 1987, and the treaties, agreements and principles launched at the UN Conference on Environment and Development held in Rio in 1992, provoked a change of attitude and a deepening of understanding by the international community of nations, including international institutions, about the

³ Bertha K. Becker, Carlos A. Nobre, Roberto Bartolo, “Uma via para a Amazônia”. *Folha de S. Paulo*, Tendências & Debates, 27/04/2008, p. A3. In Portuguese, “(...) trata a conservação como sinônimo de preservação intocável e identifica o desenvolvimento com produção destrutiva, (...). Falso pois não admite a existência de diversos modos de modernidade e caminhos alternativos de desenvolvimento (...). Free translation.

desirable responses to the challenges facing the tropical areas and their forest-dependent communities.

Following the Rio Conference, the Multilateral Development Bank (MDBs) changed their role in the Brazilian Amazon, from promoting large-scale schemes in the region, including the Polonoroeste (Northwest Pole) and the Great Carajás, that sought to attract private investment to the then sparsely inhabited Amazon region, to becoming leading institutions in promoting environmental protection programs, including the Pilot Program to Conserve the Tropical Forests of Brazil (PPG7) and the Amazon Region Protected Areas (ARPA). Nevertheless, in response to the adverse consequence of large-scale schemes in the region, in the 1990s the MDBs partially withdrew from financial operations on infrastructure projects.⁴ In doing so, they declined the opportunity to promote a new style of economy, one which supported sustainable development and poverty eradication. For their part, the state-owned banks (BNDES and BASA) did not significantly alter their sustainability performance in the region. In the period from 1992 to 2010, the BNDES expanded its financial activities on infrastructure sector, and the BASA became the main source of long-term loans granted by banks for the agribusiness sector. Even though these state-owned banks did not neglect the environmental risks, they saw the environmental impact only as “a factor to be considered” in their operations in the region.

In summary, in the last two decades (1990s/2000s) the DBs operating in the region were divided into two groups. On one hand, the MDBs were responsible for environmental sustainability. The International Finance Corporation (IFC), however, was an exception. As the private arm of World Bank, the IFC gave great weight to the economic dimension of sustainable development. On the other hand, the National Development Bank (BNDES)⁵ and the Bank of the Amazon (BASA)⁶ were in charge of promoting economic growth. Neither the MDBs nor their

⁴ The International Finance Corporation (IFC), however, was an exception. See discussion of the role of IFC in promoting economic development in the Brazilian Amazon in section 5.1 of Chapter 5 of this study.

⁵ In Portuguese, *Banco Nacional de Desenvolvimento Econômico e Social*.

⁶ In Portuguese, *Banco da Amazônia S.A.*

Brazilian counterparts have been fully engaged with the dynamics of a new approach to Amazon development in which a new style of economy could flourish in the context of sustainable development.

THE OBJECTIVE OF THE STUDY

The thesis examines the processes of development in the Brazilian Amazon, particularly the role of DBs in those processes over the last three decades (1981-2010), in order to draw out what the Banks and we can learn from the weaknesses and adverse consequences of those actions and policies for the region. The thesis also aims to identify new ways in which the work of DBs could contribute more effectively to promote sustainable development in the region, by integrating economic, social, and environmental needs. It carries out those tasks by analyzing the performance of two multilateral development banks (MDBs), namely the World Bank Group and the Inter-American Development Bank Group, as well as that of Brazil's two development banks, the National Development Bank and the Bank of the Amazon.

THE RESEARCH QUESTION

The inquiry proceeds by addressing the following central question:

What lessons can the DBs and we learn from the weaknesses and adverse consequences of the DBs' actions and policies related to the Brazilian Amazon in order to bring about a sustainable development model for the region?

THE ARGUMENT

The central argument is that the DBs have not contributed effectively to replacing the "boom-bust" pattern of development that has characterized development in the Brazilian Amazon by sustainable activities. Even though the DBs see environmental impacts as "a factor to be considered" in their operations in the Brazilian Amazon,

they have not adopted sustainable development as their overarching objective for the region. In consequence, the work of DBs has been characterized by ambiguity and inconsistencies in their approaches to supporting sustainable development in the region. For instance, the World Bank Group, consisting of five institutions, including the IBRD and the IFC, has pursued different approaches to Amazonian development, because while the IBRD sees environmental protection as a powerful component of sustainable development, the IFC frequently gives great weight to the economic dimension over the social and environmental.⁷ In addition, this thesis argues that those inconsistencies are even more evident in relation to the work of Brazil's state-owned banks. It argues that both BNDES and BASA have historically experienced much less civil society pressure to change towards more environmentally responsible activities. Moreover, Brazil's development banks are far behind their multilateral counterparts in terms of transparency, accountability and participatory mechanisms.

The thesis also sets forth two subsidiary arguments. The first argument is that the DBs have tended to act in the interests of their shareholders rather than to fulfill the basic needs of recipients (local people). Overall, the interests of shareholders are primarily related to the global demand for agricultural commodities and raw material such as iron and timber. On the other hand, the needs of local people refer to basic needs such as clean water, food security, job opportunities, and improved educational and health systems.

The second argument is that the sustainable development strategies and projects should be formulated by the borrowers, not the lenders. In other words, local people must find their own development path. This argument derives from the fact that there is no formula for development in tropical areas, including the Amazon. To date, there is no case of a developed country located in a tropical area with an economy based on forest resources.

⁷ "(...) There have also been occasions when the IFC and the Bank have pursued different approaches to development in the Brazilian Amazon. These coordination issues are presently being addressed through World Bank Group collaboration on the preparation of the new Environment Strategy, scheduled for launch in 2010". Independent Evaluation Group, World Bank Group, *Annual Review of Development Effectiveness: Achieving Sustainable Development*, p. 49.

METHODOLOGY OF THE STUDY

The study is designed to contribute to improve an understanding of the strategic role that the development banks could play in promoting new mechanisms for the construction of the transition towards a platform of sustainable development in the Brazilian Amazon. The methodology adopted includes both desk-based research, in particular review of relevant secondary literature, as well as empirical studies such as field research and interviews (see Annex).

THE IMPORTANCE AND ORIGINALITY OF THE STUDY

The importance of the thesis derives, first of all, from its subject: the Brazilian Amazon, one of the most biodiverse regions on Earth, and home to over twenty-three million people, including many indigenous groups and other traditional forest-dependent communities. This unique environment faces many challenges related to economic development and social justice, as well as environmental sustainability. Thus, the thesis addresses a topic of great significance, because it analyses how sustainable development can be promoted in a region of immense complexities, which directly affect a number of global issues, such as loss of biodiversity, climate change, and energy crisis.

According to Sands, “the true battleground for the future of international environmental law is likely to be in the fields of trade, financial resources, and intellectual property.”⁸ As the thesis focuses on financial resources channelled by development banks to the Amazon, it aims to contribute to the development of this branch of international law.

⁸ Phillippe Sands, “Environmental protection in the twenty-first century: sustainable development and international law”, in *Environmental law, the economy, and sustainable development*. Richard L. Revesz, Phillippe Sands and Richard B. Stewart. Cambridge: Cambridge University Press, 2008, p. 400.

The work of the MDBs, namely the World Bank Group and the Inter-American Development Bank Group, is very important, because the challenges they face in integrating economic, social, and environmental needs are critical ones for the Amazon Region. Most scholars and world leaders agree that the International Financial Institutions generally, and the MDBs in particular, must address these challenges urgently. According to the Leaders of the Group of Twenty (G20), who gathered in London on 2 April 2009:

We are determined to reform and modernize the international financial institutions to ensure they can assist members and shareholders effectively in the new challenges they face. We will reform their mandates, scope, and governance to reflect changes in the world economy and the new challenges of globalization. This must be accompanied by action to increase the credibility and accountability of the institutions through better strategic oversight and decision making.⁹

With regard to Brazil's development banks, in 2010 the BNDES disbursed about R\$ 160 billion, or approximately US\$ 96 billion,¹⁰ emerging as one the world's largest development banks.¹¹ BASA currently grants 74 per cent of long-term loans for the Brazilian Amazon.¹² Therefore, both national banks are very influential institutions in shaping Amazonian development. Unfortunately, these state-owned banks have not incorporated the ecological dimension of sustainable development even to the limited extent the MDBs have. Therefore, Brazil's development banks also need to be reformed urgently.

Although the four DBs which are the subject of this study have undertaken significant activities in the Amazon over the last three decades (1981-2010), these institutions – except for the World Bank - have received little attention from the

⁹ The Communiqué from the London Summit. The Global Plan for Recovery and Reform (2 April 2009, available from: <http://www.london_summit.gov.uk/resources/en/PDF/final-communicue> April 2009.

¹⁰ According to the average exchange rate (R\$/US\$) in January 2011.

¹¹ Interview with Eduardo Bandeira de Mello (BNDES), on 29/07/2009.

¹² Interview with Oduvaldo Lobato (BASA), on 19/08/2009.

legal academy. Indeed, no systematic legal analyses have been published so far examining these four financial institutions together.

THE OUTLINE AND SCOPE OF THE STUDY

The thesis is divided into nine chapters. The first two chapters examine the current situation in the Amazon. Chapter 1 begins by describing in detail the Amazon Basin, which is often portrayed as the planet's ecological heartland, and draws special attention to the Brazilian Amazon, which represents approximately two-thirds of the overall Amazon Basin. This chapter analyses the region's significant natural capital and its current main economic activities. In addition, this chapter analyses the main threats to the region, among others, rampant deforestation and burning, and their impact on biodiversity and climate change. Chapter 2 then provides an overview of the current operations of the DBs in the region, given their pivotal role in Amazonian development

Chapter 3 analyses the fundamental policy goal that this thesis posits as desirable: sustainable development. It argues that the concept contains three components: economic growth, social justice, and environmental protection. This chapter pays special attention to the environmental dimension of sustainable development, as, indeed, does the thesis as a whole. Chapter 4 analyses the processes of development in the Brazilian Amazon. It shows that the region's great natural capital has been undervalued. For instance, the rural lands with forest cover are much cheaper than those without forest cover. This chapter argues that the future of the Amazon rainforest depends on development models that add economic value to the standing forest. It also argues that the region can follow a sustainable pattern of development only if most of the economic benefits from environmental conservation accrue to local people in order to satisfy their basic needs.

Chapters 5 analyses the role of DBs, particularly in the field of environmental sustainability. Chapter 6, in turn, analyses a number of case studies of development financing in the Brazilian Amazon related to the period 1981-2010, from the state-

led development phase (1980s), to the donor-led development phase (1990s), and to the current hybrid model-led development phase (2000s).

Drawing on the lessons learned, the final three chapters (Chapters 7-9) then identify new ways in which the work of DBs could contribute more effectively to promote sustainable development in the region.

THE LIMITS OF THE STUDY

The thesis is not designed to provide a complete review of the Amazon development. First, it aims to assess only part of the Amazon region: the Brazilian Amazon. The thesis does not, for example, review the processes of development in the Bolivian, Colombian, and Peruvian Amazons.

Second, the thesis does not address important development issues regarding to the educational and health systems, and the fiscal and tax regimes. Nor does it address issues regarding to land tenure and rural reform, and the access to the courts. The development banks do not play a vital role in these fields. Third, the thesis does not examine the activities of commercial banks, including the state-run banks Banco do Brasil (BB) and Caixa Econômica Federal (CEF).

Finally, although the thesis recommends reforms to institutional frameworks for sustainable development, it is not intended to provide a complete framework, but provides guidance for institutional reform to bring about a transition towards a new development model for the Brazilian Amazon.

The law and facts in this study are current up to 31 December 2011.

PART 1

THE AMAZON AND ITS DEVELOPMENT ACTORS

Part 1 of this thesis (Chapters 1-3) provides three analyses: the global, ecological importance of the Amazon Basin, particularly the Brazilian Amazon; the development roles of the four selected development banks; and the concepts, principles and practices of sustainable development. These analyses set out the ecological and financial contexts for subsequent exploration and evaluation of proposals for enhancing sustainable development in the Amazon area. Part 1 endeavours to establish the following propositions:

- It is critical to all of humanity that a sustainable development model is fully adopted in the entire Amazon. *[Chapter 1]*

- It is not possible to promote sustainable development in the region without the Development Banks' full commitment to this goal. *[Chapter 2]*

- Sustainable development is the challenge of integrating economic, social, and environmental needs. *[Chapter 3]*

Chapter 1

The Amazon, its Global Importance, and the Many Threats Facing It

Chapter 1 presents the Amazon Basin, which is often portrayed as Earth's ecological heartland. As is described below, the region contains great ecological diversity, about a quarter of all global biodiversity, and its forests contain 90-140 billion tons of carbon. Nevertheless, today the Amazon faces significant challenges in the fields of economic development, poverty reduction, pollution, and environmental sustainability. Addressing the challenges requires international cooperation, among national and international institutions, including the DBs. Chapter 1 pays special attention to the Brazilian Amazon, which corresponds to about 68 percent of the entire region, and is home to nearly two-thirds of the Amazonian population.

1.1. The Amazon Basin

The word *Amazonia* conjures up mixed images of magnitude, exuberance, beauty, and destruction. It also causes contradictory feelings of delight, mystery, curiosity, greed, and concern.¹³ These images and feelings generally lead to an ambivalent view towards the Amazon Biome. Should it be conserved or developed?

Although the thesis analyses the role of DBs only in the Brazilian Amazon, and consequently, the case studies below are related to that region exclusively, this chapter initially analyses the Amazon as a whole, that is, the Pan-Amazon, for three

¹³ There is a vast literature related to the Amazon Basin. European writers on the topic include Alexandre von Humboldt, *Rélation historique du voyage aux régions équinoxiales du nouveau continent*; Charles-Marie de La Condamine, *Viagem pelo Amazonas: 1735-1745*; Claude Lévi-Strauss, *Tristes Trópicos*; and Hervé Théry and Jean Eglin, *Le Pillage de l'Amazonie*. Brazilian writers include Darcy Ribeiro, *Os índios e a civilização*; Euclides da Cunha, *Um paraíso perdido*, Orlando Villas Boas and Cláudio Villas Boas, *A marcha para o Oeste: a epopéia da expedição Roncador-Xingu*. Last but not least, there are many great Amazonian writers, among others, Márcio Souza, *Mad Maria*; Milton Hatoum, *The Brothers [Dois irmãos]*; Thiago de Mello, *Poemas preferidos pelo autor e seus leitores*.

reasons. First, most Amazonian problems such as environmental degradation, poverty, and illiteracy, are problems that occur in all Amazonian nations; therefore, regional cooperation is needed to address those challenges. Second, environmental harm usually goes beyond political-administrative frontiers. Finally, the development banks, including the BNDES, extend their activities beyond the Brazilian Amazon to other Amazonian countries.¹⁴

There are a number of terms referring to the Amazon Region, such as the Pan-Amazon, the Amazon Biome, the Amazon Basin, and the Amazon Rainforest. These terms are used interchangeably to refer to an enormous area located in eight South American countries, namely, Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela, as well as French Guyana (France).¹⁵ There are three criteria to define the Pan-Amazon: the ecological, the hydrographic, and the political-administrative.

The ecological (or biogeographic) criterion “uses as an indicator the extension corresponding to the South American tropical and subtropical humid forest biome located to the east of the Andes mountain range.”¹⁶ From this viewpoint, the Pan-Amazon means the Amazon Biome¹⁷. According to a hydrographic criterion, the Pan-Amazon represents the total extension of the Amazon basin as a water catchment. Finally, the political-administrative classification shows that the Pan-Amazon “covers an area of 7,413,827 km² (...). Brazil accounts for 68 percent of the Amazonia, followed by Peru (9 percent). (...) Considering this criterion, Amazonia represents 3.5 times the sum of the total land of Spain, France, Germany,

¹⁴ The Bank of Amazon (BASA) cannot operate outside Brazilian borders. Nevertheless, the Bank wants to change its legal statutes in order to expand its activities towards the other Amazonian countries such as Colombia, Peru, and Venezuela. Interview with Oduval Lobato (BASA), on 19/08/2009.

¹⁵ See Map 1: “The Amazon Region”.

¹⁶ The United Nations Environment Programme and the Amazon Cooperation Treaty Organization, *Environment Outlook in Amazonia: GEO Amazonia*, p. 19.

¹⁷ “Biomes are defined as ‘the world’s major communities, classified according to the predominant vegetation and characterized by adaptations of organisms to that particular environment’ (Campbell 1996)”. Source: University of California Museum of Paleontology, *The world’s biomes*, available from: <http://www.ucmp.barkelley.edu/exhibits/biomes/index.php> June 2008.

Italy, and the UK, 3.5 times the territory of Mexico, or 75 percent of the land area of China.”¹⁸

The Amazon is a region of ecological and social contrasts. There are many misconceptions about the Amazon Region that prevent people in general from understanding these contrasts. The first misconception views the Amazon Region as a homogeneous green carpet. The second views the Amazon Rainforest as the world’s lungs. The third sees it as an empty place, while under the fourth, the Pan-Amazon is as an “El Dorado”, where a number of precious metals and stones are hidden, such as gold and diamonds, that easily transform miserable lives into fortunate ones. Dispelling these four myths is important for a clear understanding of the Amazon Basin.

First, the image of the Amazon as a homogeneous natural green carpet is false. As Bush and Lovejoy state, “Amazonia is heterogeneous in terms of landscape, climate, and history. These three factors contribute significantly to the poorly understood or documented patterns of regional biodiversity.”¹⁹ To explain, the Amazon encompasses five main geological-ecological regions: the Andes, Amazon Lowlands, Brazilian Shield, Guyana Shield, and Estuary. The biological diversity is greater in the shield regions, usually below 3,300 feet north and south of the Amazon River,²⁰ which is now considered the largest river on Earth, at 6,992.06 kilometers in length.²¹ As London and Kelly point out, “each hour the Amazon River discharges 170 billion gallons of water into the Atlantic, (...)”, this means that

¹⁸ Above note 16, p. 38.

¹⁹ Mark Bush and Thomas Lovejoy, “Amazonian conservation: pushing the limits of biogeographical knowledge”, *Journal of Biogeography*, n. 34, 2007, p. 1292.

²⁰ Michael Goulding and Adrian Forsyth, “Biodiversity in Jeopardy: there are more life forms in Amazonia than anywhere else. But by the end of this century, there may be many fewer.” *The American Prospect*, Special Report, Tomorrow’s Amazonia, September 2007, p. 1, available from: <http://www.prospect.org/cs/article/article=biodiversity_in_jepardy> October 2007.

²¹ According to most sources, the Nile River is the world’s longest at 6,671 kilometers in length. However, many new studies have shown that the Amazon River is still longer than the African one. Lourival Sant’anna, “Amazônia Grandes Reportagens”, *O Estado de S. Paulo*, Nov./Dec. 2007, p. 12.

its “daily flow is eleven times the discharge of the Mississippi, providing almost one fifth of the entire daily flow of freshwater into all the world’s oceans.”²²

The Amazon Basin has a very warm and humid climate. In the Brazilian Amazon, for instance, the annual average temperature oscillates between 24°C and 26°C, and precisely in the Brazilian state of Amapá (AP), at the mouth of the Amazon River, the annual rainfall index exceeds 3,000 mm.²³ These environmental conditions support a rich concentration of flora and fauna in the region, with approximately one-tenth of floristic diversity and bird species on Earth, as well as 3,500 fish species.²⁴ In terms of the numbers of animal species, including invertebrates, estimates range from one million to more than 20 million species. It is estimated that over forty-two thousand different species of insects can be found in a single hectare of the Amazon rainforest.²⁵ Covering only five percent of the earth’s surface, the Amazon Region holds approximately a quarter of all living species on Earth.²⁶ It is considered the world’s greatest rainforest whether in size or in terms of biological diversity, followed at some distance by the Congo Forest, with 1.77 million sq. km. According to Betts et al., “the Amazon region hosts more than half of the world’s remaining tropical forests, and some parts have among the greatest concentrations of biodiversity found on Earth.”²⁷ In a nutshell, “the Amazon Basin is, above all, our planet’s greatest celebration of biodiversity”,²⁸ as argued by Goulding and Forsyth.

²² Mark London and Brian Kelly, *The last forest: the Amazon in the age of globalization*. New York: Random House, 2007, p. 21.

²³ *Plano Amazônia Sustentável: diretrizes para o desenvolvimento sustentável da Amazônia Brasileira*. Brasília: Ministério do Meio Ambiente, 2008, p. 22.

²⁴ Above note 16, p. 1.

²⁵ João Meirelles Filho. *O livro de ouro da Amazônia*. 5th ed., Rio de Janeiro: Ediouro, 2006, p. 75. Meirelles Filho is graduated in Business Administration (FGV-SP). He lives in Belém (Brazil) and is director of the *Instituto Peabiru* (www.peabiru.org.br).

²⁶ Above note 25, p. 70.

²⁷ Richard A. Betts, Yadvinder Malhi, and J. Timmons Roberts. “The future of the Amazon: new perspectives from climate, ecosystem and social sciences.” *Phil. Trans. R. Soc. B* (2008) 363, p. 1729. (accessed 11 June 2009). R. Betts is senior researcher at the Met Office Hadley Centre (UK); Y. Malhi is at the Environmental Change Institute, Oxford University Centre for the Environment (UK); and J. Timmons Roberts is at the College of William and Mary (USA).

²⁸ Above note 20, p. 1.

If in the past the Amazon was known as “Green Hell”,²⁹ currently it is seen as the planet’s ecological heartland³⁰ due to its great ecological diversity, which is found across the region as follows. “[Brazil] is the one with the greatest total number of plant, mammal, bird, reptile and amphibian species numbering a little more than 58,000 species. Colombia follows Brazil in its wealth of biological biodiversity, with almost 49,000 species; Peru, with 38,020 species; and Bolivia, with 22,268 species.”³¹

The Amazon Basin is thus an enormous ecological area, with the world’s richest biological diversity and its largest river. Nevertheless, this is not a homogeneous landscape, but rather a land of contrasts. Those regions located close to the Amazon River are, biologically speaking, very different from other areas in the basin, where the climate is drier and less biological diversity can be found. On the other hand, some areas show an extraordinary endemism such as the localities situated close to the Andean foothills.³²

The second misconception is that the Amazon rain forest works as the lungs of the world. This is based on the assumption that any plant produces much more oxygen than it absorbs. However, this is correct only in relation to growing plants. In view of the fact that the Amazon contains a variety of trees, including growing and mature ones, London and Kelly argue that it is “a mature forest. As such, it maintains an equilibrium between the production and absorption of oxygen.”³³ In other words, the biome absorbs as much oxygen as it produces. Even so, the Amazon is vital to the global climate equilibrium because its trees contain approximately 20 per cent of world carbon³⁴. In a nutshell, the Amazon is a giant

²⁹ R. J. A. Goodland and H. S. Irwin, *Amazon Jungle: Green Hell to Red Desert?* New York: Elsevier Scientific Publishing Company, 1975.

³⁰ Bertha K. Becker, *Amazônia na virada do III Milênio*. Rio de Janeiro: Garamond, 2007. Becker is Professor at the Federal University of Rio de Janeiro (UFRJ).

³¹ Above note 16, p. 112.

³² Above note 16, p. 112. By endemism, the thesis means plants or animals confined to a certain region. For a clearer idea of the principal region types, see Map 1.

³³ Above note 22, p. 21. Similar viewpoint is seen in João Meirelles Filho, above note 25, p. 28.

³⁴ Above note 16, p. 28 and 256.

carbon sink. Thus, rather than the lungs of the world, the Amazon Basin should be seen as the planet's air conditioning.³⁵

The third image, in turn, portrays the Amazon Rainforest as an empty place. This is a serious misconception. The Amazon is a land with people. "Amazonia has been occupied and in use from time immemorial."³⁶ As Goulding and Forsyth write, "humans have been in the Amazon Basin for at least 12,000 years, (...) with relatively dense human population in some areas, such as on Marajó Island at the mouth of the Amazon River and in the savanna regions of eastern Bolivia."³⁷

Schwartzman criticizes those who "see the [Amazon] forest as a natural system that has over thousands of years attained a fragile equilibrium."³⁸ He argues that "much of the Amazon was probably more densely populated before 1500 than at any time after until this century, or in some places until today."³⁹ He adds, "human occupation was significant, long term, and with lasting effect – including increasing biodiversity locally."⁴⁰ He concludes that "the 'pristine' forest prized by hard-line conservationists is in fact a recent artifact."⁴¹ Indeed, in 1500, when Portuguese navigator Pedro Álvares Cabral arrived in Brazil, approximately five million indigenous people were living there; half of them were situated in the Amazon basin. In the sixteenth century, the European colonizers found many indigenous peoples living in that region. Some of them inspired the Spaniards to name the

³⁵ Jacques Marcovitch, *A gestão da Amazônia: ações empresariais, políticas públicas, estudos e propostas*. São Paulo: Editora da Universidade de São Paulo, 2011, p. 32. J. Marcovich is former rector of the University of São Paulo (USP).

³⁶ Above note 16, p. 21.

³⁷ Above note 20, p. 2. It is argued that "the pre-Columbian occupations into Amazonia consisted of Arawak populations who spread as far as the Antilles, the Tupí-Guaraní, from the El Chaco region, and the ethno-linguistic family of Carib [sic] origin that entered the Amazonia basin through a low rainfall corridor. In the Peruvian-Ecuadoran zone, between the years 3500 and 300 BC, there was a commercial link between the Pacific Coast, the Andean altiplano and the eastern slope of the Andes (Upper Amazonia)."³⁷ See also above note 16, p. 21.

³⁸ Stephan Schwartzman, "Indians, Environmentalists and Tropical Forests: the Curious History of the Ecologically Noble Savage", in *Direito ambiental das áreas protegidas: o regime jurídico das unidades de conservação*. Rio de Janeiro: Forense Universitária, 2001, p. 110.

³⁹ Ibid p. 110.

⁴⁰ Ibid p. 110.

⁴¹ Ibid p. 110.

Amazon River. Over eight months, between 1541 and 1542, Spanish explorer Francisco de Orellana and his companions sailed across this river, carrying Gaspar de Carvajal as the trip's narrator. He saw many strong women living there, with long legs and arms, very tall, white, and with long hair. In combat, each woman was equal to ten men.⁴² According to him, these women looked like "warriors", who reminded him of the Amazons of ancient mythology, who had amputated their breasts in order to better manage their bows and arrows.⁴³

Spaniards and Portuguese colonizers heavily exploited the soils, as well as the plants and animal species of the region. Over the last centuries, the Amazonian population has increased dramatically, and the environment has changed as well. It is said that "the present configuration of the territory we know as Amazonia is, broadly speaking, the result of the European colonizers' occupation of the region between the sixteenth and nineteenth centuries."⁴⁴ Throughout the twentieth century, this region attracted many migrants. At present, about 33.5 million people live in the Pan-Amazonia,⁴⁵ containing great cultural diversity, including "420 distinct indigenous peoples, 86 languages and 650 dialects."⁴⁶

The region's population density is still considered as "low", in comparison with the world population density, because while the former is 4.74 inhabitants/sq. km. ("Greater Amazonia"), the latter is 47.83 inhabitants/sq. km.⁴⁷ Nevertheless, it is important to bear in mind that "the Amazonian population grew at an average annual rate of 2.3 percent from 1990 to 2007 and Ecuador was the country with the highest rate of average annual rate growth (3.6 percent)."⁴⁸

⁴² Sérgio Buarque de Holanda, *Visões do Paraíso: os motivos edênicos no descobrimento e colonização do Brasil*, São Paulo: Brasiliense; Publifolha, 2000, p. 32.

⁴³ Leonardo Boff, *Ecologia: grito da Terra, grito dos pobres*, São Paulo: Ática, 2000, p. 139.

⁴⁴ Above note 38, p. 110.

⁴⁵ According to the UNEP and ACTO, "it is estimated that in 2007 there were 33,485,981 inhabitants in Amazonia (prepared by GEO Amazonia), representing 11% of the total population of the ACTO countries". Above note 16, p. 67.

⁴⁶ Above note 16, p. 19.

⁴⁷ Above note 16, p. 67.

⁴⁸ Above note 16, p. 68. This demographic issue is important because sustainable development requires appropriate demographic policies. See discussion on demographic issues in section 3.1.3 of Chapter 3 of this study.

The fourth misconception is that the Amazon is an “El Dorado”, in other words, a place in which a number of precious metals and stones such as gold and diamonds are hidden, just waiting to be discovered, with the potential to automatically transform miserable lives into fortunate ones. This misconception has deep roots, related to the idea of “Earthly Paradise”.⁴⁹

Today, there are still lots of minerals in the Amazon, including gold and diamonds. Nevertheless, these natural treasures have normally brought much more misery than fortune to local people. Unfortunately, natural riches do not necessarily mean economic wealth.⁵⁰ The Great Carajás Program of the 1980s, analyzed in Chapter 6 below, was a good example of this, because it exploited the gold mines located in the Brazilian Amazonian state of Pará, creating a few millionaires but also causing major negative social and environmental impacts in that part of the Eastern Amazon.

The Amazon Basin is currently facing great challenges in the fields of economic, social, and environmental development. As is explained in more detail in Chapter 3, dealing with sustainable development, these issues are interrelated, forming an

⁴⁹ “It is known that for the Middle Age theologians, Earthly Paradise represented neither an untouchable and immaterial world, lost in early ages, nor simply a fantasy vaguely merciful, but a reality still existing in a remote place, eventually accessible. (...) [The Earthly Paradise] seemed to be emerging at last, through the first contacts of white people with the new continent. (...) Not to be surprised if, (...) the incessant spring of newly discovered lands [in South America] appeared to the first [European] visitors as a copy of Eden. From this sort of original illusion that canonized greed and banished continuous and monotonous labour would be shared equally by the colonizer of entire Latin America, including the Portuguese colonizers, not less than the Spanish ones. Above note 42, pp. X and XI. In Portuguese, “Sabe-se que para os teólogos da Idade Média não representava o Paraíso Terreal apenas um mundo intangível, incorpóreo, perdido no começo dos tempos, nem simplesmente alguma fantasia vagamente piedosa, e sim uma realidade ainda presente em sítio recôndito, mas porventura acessível. (...) [o Paraíso Terreal] (...) pareceu descortinar-se, enfim, aos primeiros contatos dos brancos com o novo continente. (...) Não admira se, (...) a primavera incessante das terras recém-descobertas devesse surgir aos seus primeiros visitantes como uma cópia do Éden. (...) Dessa espécie de ilusão origina, que pode canonizar a cobiça e banir o labor continuado e monótono, haveriam de partilhar indiferentemente os povoadores de toda a nossa América Hispânica, lusitanos, não menos do que castelhanos, (...)” Free translation.

⁵⁰ Mary Allegretti, “Florestas: a diferença entre ter valor e dar lucro”. *O Estado de S. Paulo*, São Paulo, 6/11/2008, p. 6.

overarching challenge, that is, the (re)conciliation between development and sustainability, in order to improve the Amazonian people's socio-economic standards, and to promote greater prosperity for the region without destroying the bioma carrying-capacity.

In the Amazon Basin “the level of economic development varies widely”.⁵¹ For instance, while in Orellana, located in the Ecuadorian Amazon, per capita GDP is US\$ 25,685.22, Putumayo, situated in the Colombian Amazon, shows much lower economic development, with per capita GDP of only US\$ 705.33.⁵² The higher economic levels are usually found in portions of the Amazon containing small populations and significant natural resources, in particular, oil, natural gas, and minerals.⁵³ The main Amazonian economic activities are agriculture (millet, livestock), forestry, mining (gold, bauxite, copper, iron), hydrocarbons (oil, natural gas), and industry (agro-industry, petrochemical, manufactures). Undoubtedly, the region's main productive activities depend on its natural resources. However, there is deep ambivalence amongst the people of the Amazon as to whether economic development must involve the destruction of the rain forest or its survival, and the alternative uses for its products.

In social terms, the need for socio-economic development in the Amazon Basin is urgent, because “a large part of the population lives in poverty or extreme poverty.”⁵⁴ For instance, in the Peruvian Amazon, the population living in extreme poverty was 17.8 percent in 2007. The low social standard can be demonstrated by health and education indicators. In the field of health, “diseases recorded in the Amazonian zone, in general with different degree of incidence in each country are: AIDS, malaria, dengue fever and tuberculosis.”⁵⁵ To illustrate, “recent studies in Iquitos (Peru) have shown that, because the malaria vector abounds on land where there is stagnant water which is a characteristic of recently deforested areas, malaria

⁵¹ Above note 16, p. 21.

⁵² Above note 16, p. 21.

⁵³ Above note 16, p. 21.

⁵⁴ Above note 16, p. 74.

⁵⁵ Above note 16, p. 75.

transmission is greater in deforested areas.”⁵⁶ As those areas are sharply increasing, the cases of malaria are growing in number as well. Another good example of the urgent need for social development is found in the state of Amazonas, in Venezuela, where “diarrhoea is the principal cause of medical consultation”.⁵⁷ The infant mortality rates are high in the Brazilian Amazon and the Ecuadorian Amazon, about 46 and 39.5 for each 1,000 live births, respectively.⁵⁸ In the educational sector, the “illiteracy rates (...) are considered high in the Amazonian region. For example, in Bolivia and Ecuador, 12 percent are illiterate while in Venezuela, it is 93 percent of the population of 10 years of age or more who cannot read or write.”⁵⁹ In the Amazon Basin as a whole, “educational conditions are substantially worse for the indigenous population, making clear the restrictions faced by this population group on having access to the service and its poor quality.”⁶⁰

In environmental terms, in view of the fact that the Amazon is an area with great biological diversity, the conservation and sustainable use of its natural resources are essential for the regional development. If the region is to maintain its environmental value, the Amazonian countries need to add economic value to their forest products, turning the standing forest into something more valuable than felled timber. For example, currently “Amazonian people use approximately 1,600 species of medicinal plants to cure different diseases.”⁶¹ This traditional knowledge over their natural resources could lead to the creation of a pharmaceutical industry which did not damage the ecology of the Amazon Basin.

1.2. The vital role of the Amazon

The Amazon is a system in equilibrium. It “has achieved a steady state in its water cycle, nutrients, and energy balance.”⁶² This chapter will endeavour to demonstrate

⁵⁶ Above note 16, p. 76.

⁵⁷ Above note 16, p. 77.

⁵⁸ Above note 16, p. 77.

⁵⁹ Above note 16, p. 78.

⁶⁰ Above note 16, p. 78-79.

⁶¹ Above note 16, p. 112.

⁶² Eneas Salati and Peter B. Vose, “Amazon Basin: a System in Equilibrium”, *Science*, Vol. 225, No. 4658, 13 July 1984, p. 129. E. Salati is a Brazilian physicist, Professor at

that the biome is so sensitive that all development actors should move to a platform of sustainable development in their operations there. In a nutshell, the sustainable future of the region is critical to all of humanity.

The Amazon Basin is the planet's ecological heartland due to its vital role in the fields of freshwater supply, biological diversity conservation, and climate equilibrium. In terms of water recycling regime, "on average 50 percent of the precipitation is recycled", and "rainfall ranges from 1500 to 3000 mm annually."⁶³ In addition, the Amazon River and its more than a thousand tributaries represent about 15 to 20 percent of the global freshwater supply.⁶⁴ Today, the vital role of Amazon as a giant water reservoir is threatened by the runoff caused by deforestation and burning, setting in motion a chain of damage.⁶⁵ According to Salati and Vose:

There is an immediate increased surface runoff, such water is rapidly lost to rivers and ocean, without the possibility of its recharging the soils system and of its recycling through transpiration and precipitation. Evapotranspiration will continue at a high although reduced rate, returning moisture to the atmosphere, but it is drawing from a decreasing soil water store. Therefore, ultimately there will be a reduction in the amount of water recycling to the atmosphere and hence diminished local cloud cover, and diminished precipitation, with the net effects that there will be less total water in the system and an increase in solar radiation.⁶⁶

In relation to the Amazon's global importance in the field of biological diversity conservation, Hoorn et al. say that "the Amazonian rainforest is arguably the most

University of São Paulo (USP), and former director of the National Institute for Amazonian Research (INPA), Manaus, and also worked for the Inter-American Development Bank, in Washington-D.C. P. B. Vose is the project manager of the International Atomic Energy Agency Amazon Project and is also at the Centre for Atomic Energy in Agriculture (USP).

⁶³ Ibid p. 129.

⁶⁴ Ibid p. 129.

⁶⁵ Ibid p. 136.

⁶⁶ Ibid p. 136.

species-rich terrestrial ecosystem in the world.”⁶⁷ As already mentioned, according to Meirelles Filho, the region hosts about a quarter of all living species on Earth.⁶⁸ Considering that “humanity strengthens itself by preserving the natural and cultural diversity”,⁶⁹ the ongoing destruction of the Amazon rainforest is a serious problem to all of humanity. We do not know how many medicinal plants are still hidden in the Amazon rain forests or whether they will be burned or used to treat and cure current and future illness.

Finally, the Amazon Basin is vital to humanity due to the potentially adverse impacts on global temperatures of its destruction. The biome contains 90-140 billion tons of carbon, which is equivalent to 9 to 14 years of human-induced carbon emissions.⁷⁰

1.3. The Brazilian Amazon

As explained earlier, the thesis does not consider the entire Amazon Region, but focuses on a specific portion of it: the Brazilian Amazon. Over two-thirds of the Amazon Region is located in this nation, representing an area of 4.24 million sq. km. or nearly 50 percent of Brazilian territory.⁷¹ This area is generally called the Brazilian Amazonian Biome.⁷² To be precise, the Brazilian Amazon’s boundaries

⁶⁷ C. Hoorn et al., “Amazon Through Time: Andean Uplift, Climate Change, Landscape Evolution, and Biodiversity”, *Science*, Vol. 330, 12 November 2010, p. 927. C. Horn is senior scientist at the Paleoecology and Landscape Ecology, Institute for Biodiversity and Ecosystem Dynamics (IBED), University of Amsterdam.

⁶⁸ Above note 25, p. 70.

⁶⁹ Fábio Konder Comparato, *A afirmação histórica dos direitos humanos*. São Paulo: Saraiva, 2007, p. 429. “A humanidade se fortalece pela preservação das diferenças naturais e culturais, (...)” Free translation.

⁷⁰ Daniel C. Nepstad. “The Amazon’s vicious cycles.” A report to the World Wide Fund for Nature (WWF), p. 4, available from: <http://assets.wwf.org.br/downloads/amazonas_27_11-web.pdf> December 2007. See discussion of the link between the Amazon Rainforest and climate in section 1.4.2 of Chapter 1 of this study. D. C. Nepstad is senior scientist at the Woods Hole Research Center, Falmouth (USA) and director of the Amazon Environmental Research Institute (IPAM), Belém (Brazil).

⁷¹ Above note 23, p. 34.

⁷² Apart from the Amazonian Biome, other five biomes are located in Brazil, as follows: the Cerrado (“Brazilian Savannah”); Atlantic Rainforest; Caatinga; Pantanal; and Pampa. See Map of Biomes.

may vary, according to different criteria, such as “hydrographical criteria (defining the area as that where watersheds drain into the Amazon River), ecological criteria (defining subregions based on ecological similarities), or biogeographical criteria (defining the region as the ‘known historical extent of the Amazon lowland rain forest biome in northern South America’).”⁷³ The thesis adopts the legal classification known as the Legal Amazon,⁷⁴ which states that the Brazilian Amazon encompasses nine states of Brazil.⁷⁵ The thesis refers to this vast region of Brazil as the Brazilian Amazon, or simply *Amazônia* (in Portuguese); thus throughout the thesis these terms are used interchangeably.

1.3.1. A region of great diversity

Due to its vast territory, with water in abundance, and characterized by a rich natural diversity, the Brazilian Amazon is perceived by Brazilians as a region of great geopolitical importance in the world. This perception is enhanced by the fact that this region contains long international frontiers, approximately 11,248 km, in addition to 1,482 other kilometers of coast line. All these factors have contributed to shape the Amazonian policies and strategies in a way that national security is considered by Brazilian authorities as one of the top priorities for the region.⁷⁶ Moreover, national security concerns are also increased due to the relatively low population density in the region. Official numbers indicate that about 12 percent of the Brazilian population or 25.1 million people live in the Legal Amazon.⁷⁷ The region hosts great cultural diversity. To illustrate, in the Brazilian state of Pará

⁷³ Above note 16, p. 270.

⁷⁴ The perimeter of the Legal Amazon (*Amazônia Legal*, in Portuguese) was initially formulated by the Federal Law n. 1.806/1953. Currently, it follows the Complementary Law n. 124/2007.

⁷⁵ Acre (AC), Amapá (AP), Amazonas (AM), Pará (PA), Mato Grosso (MT), Maranhão (MA), Rondônia (RO), Roraima (RR), and Tocantins (TO). See Map 2: The Brazilian Amazon.

⁷⁶ Author’s interview with Marcelo Marquesini (Greenpeace), on 05/03/2009.

⁷⁷ According to the 2010 Population Census provided by the IBGE - Instituto Brasileiro de Geografia e Estatística [Brazilian Institute of Geography and Statistics], available from: <<http://www.ibge.gov.br/english/estatistica/populacao/censo2010/calendario.shtm>> December 2011.

(Eastern Amazon), 25 indigenous languages can be found.⁷⁸ In the entire Brazilian Amazon, there are about 160 different indigenous groups.⁷⁹ It is estimated that today approximately 40 or 50 indigenous communities still live in remote areas, that is, far away from non-indigenous communities.⁸⁰ In addition, other traditional forest-dependent communities live in the Legal Amazon, representing about 3 million people.⁸¹ Nevertheless, the majority of the Amazon's inhabitants live in urban areas, 73 percent approximately,⁸² particularly in large cities, including Manaus (1.6 million inhabitants) and Belém (1.4 million inhabitants).⁸³ Because most local people live in urban areas, Becker argues the Brazilian Amazon has become an “urbanized forest”.⁸⁴

There are significant demographic, economic and social contrasts between the Amazon and other regions of Brazil. According to Celentano and Veríssimo,⁸⁵ in demographic terms, whereas the Brazilian Amazon's population density is 3.8 inhabitants per sq. km, the country's is 19.9 inhabitants per sq. km. In economic terms, although the Amazon is home to about 12 percent of Brazilians, the regional GDP represents only 8 percent of national GDP, and regional per capita income is nearly half the national figure. Finally, in social terms, the Human Development Index (HDI) of the Amazon (0.705) is significantly below the Brazilian one (0.813).⁸⁶ All these contrasts are significant for policymakers formulating

⁷⁸ Denis Albert Moore, Ana Vilacy Galucio and Nílson Gabas Júnior, “Desafio de documentar e preservar línguas”, in Ulisses Capozzoli, *Amazônia: destinos*. São Paulo: Duetto Editorial, 2008, p. 31.

⁷⁹ Above note 43, p. 139.

⁸⁰ Forline, Louis; Pozzobon, Jorge, “O destino dos ‘isolados’”, in Ulisses Capozzoli. *Amazônia: destinos*. São Paulo: Duetto Editorial, 2008, p. 31.

⁸¹ Darcy Ribeiro, *O povo brasileiro: a formação e o sentido do Brasil*. São Paulo: Companhia das Letras, 1995, p. 317.

⁸² Celentano, Danielle; Veríssimo Adalberto, “The State of the Amazon: Indicator”. *The Amazon Frontier Advance: from Boom to Bust*. Belém: Imazon, 2007, p. 10.

⁸³ There are many large cities in the Brazilian Amazon, among others, Cuiabá (760,000 inhabitants); Porto Velho (371,000 inhabitants); Macapá (344,000 inhabitants); Rio Branco (288,000 inhabitants); Boa Vista (247,000 inhabitants); Santarém (247,000 inhabitants); and Marabá (nearly 200,000 inhabitants). Source: The Instituto Brasileiro de Geografia e Estatísticas – IBGE - 2007, available from: <<http://www.ibge.gov.br/cidadesat/>> October 2007.

⁸⁴ Above note 30, p. 95.

⁸⁵ Above note 82, p. 6.

⁸⁶ UNDP, *The Human Development Report 2011*. Available from: <<http://hdr.undp.org/en/statistics>> December 2011.

development plans for the region. As mentioned above, this region is not an empty place, but a home to more than twenty-three million people, and most of them are eager to see significant improvements in their social and economic conditions.

A number of contrasts exist among the Brazilian Amazon's sub-regions. In demographic terms, while the large cities such as Belém show population density greater than 1,000 inhabitants per sq. km, other municipalities show population densities less than 1 inhabitant per sq. km. Informative contrasts may be drawn between regions in terms of their forest status: forested, deforested or non-forested (a categorization which is returned to in Chapter 4). In socio-economic terms, the southern Legal Amazon, a non-forested region situated in the north-central state of Mato Grosso, which is in ecological terms a transition zone between Brazilian Savannah and the dense forest,⁸⁷ shows a higher per capita income as well as a higher HDI in comparison to other portions of the Brazilian Amazon. In the state of Mato Grosso (MT), a number of municipalities show higher HDI. On the other hand, both deforested areas and the forested ones show lower per capita income as well as lower HDI in comparison with those usually found in the non-forested areas.⁸⁸

These social and economic indicators show that differentiated, specific strategies are required to be implemented in relation to the different portions of the Amazon, in order to promote both environmental conservation and economic development there. However, an undifferentiated approach to development involving principally agriculture and cattle ranching has been followed in the Amazon frontier, causing significant deforestation, pollution of water and soil, as well as social exclusion and violence. The thesis argues that this pattern of “development” must be urgently eliminated from most parts of the Brazilian Amazon for the benefit of the local people, as well as all humanity, which directly or indirectly depends on the ecological services provided by the “Last Forest”. Fortunately, fifty-two percent of

⁸⁷ To be precise, there are two non-forested zones inside the Legal Amazon. The first is located in a transition area between the Amazon biome and the Brazilian Savannah (*Cerrado*). The second is situated between the Amazon biome and the semi-arid vegetation (*Caatinga*). The term “non-forested” is not equivalent to “deforested” zone but to non-dense forest.

⁸⁸ See Chapter 4.

the Brazilian Amazon is located in municipalities where only up to five per cent of forest cover has been eliminated so far. These portions of the Amazon encompass an area known as the forest zone, which will face tremendous challenges in the coming years. All these parts of the Brazilian Amazon face a common challenge: how to combine economic growth and social justice with protection of the environment. The following section provides an overview of the current regional economy. This section is vital to understand the past and present development processes in the Amazon, as well as the role of development banks in those processes.

1.3.2. Economic activities

In spite of its vast natural resources, in the 1980s and 1990s the Amazonian economy faced difficult times involving a spiral of low economic growth and inflation. However, as with the rest of the national economy, the Amazonian economy has improved significantly over the last fifteen years.⁸⁹ Brazil is currently

⁸⁹ “At a time of rising global demand for food and energy, Brazil is uniquely placed. Already the world’s biggest producer of almost any farm product you like to mention, including ethanol made from sugar cane, Brazil is the fourth biggest manufacturer of cars and will soon become an important oil exporter. Its home markets are booming and have become a huge magnet for foreign direct investment. Its capital markets are attracting massive inflows from overseas. Meanwhile, Brazilian society is being transformed as income rises and inequality falls. (...) It is no exaggeration to say that Brazil is on the verge of superpower status. But it is not there yet, nor is that status guaranteed”. Financial Times, *Surfing a big wave of confidence*, by Richard Lapper and Jonathan Wheatley, available from: <<http://www.ft.com/cms/s/0/ed87d09c-4c88-11dd-96bb-000077b07658.html>> July 2008.

the sixth-largest economy,⁹⁰ forming with Russia, India and China, the “BRIC economies”.⁹¹

Brazil seems to be experiencing a period of sustained economic growth. To illustrate, between 2007 and 2010, Brazil’s GDP grew annually by 4.5 per cent on average.⁹² In 2010, Brazil GDP’s grew 7.5 per cent⁹³. In 2011, it is expected to grow by 3 and 3.5 per cent, and in 2012, by between 4 percent and 5 percent.⁹⁴ Importantly, Brazil’s economic progress has partially changed its social structure. This is because this recent prosperity has been evenly shared, and the social inequalities have gradually declined.⁹⁵ Surprisingly, economic growth and social

⁹⁰ See *The Guardian*, 26/12/2012, “Brazil overtakes UK as sixth-largest economy”, available from: <<http://www.guardian.co.uk/business/2011/dec/26/brazil-overtakes-uk-economy?INTCMP=SRCH>> December; see also *BBC News Business*, 26/12/2011, “Brazil economy overtakes UK, says CEBR”, available from: <<http://www.bbc.co.uk/news/business-16332115>> December 2011; see also *The Centre for Economic and Business Research*, “Annual World Economic League Table”, available from: <<http://www.cebr.com>> December 2011. In *The Economist*’s words, “if current trends hold (which is a big if), Brazil, with a population of 192m and growing fast, could be one of the world’s five biggest economies by the middle of this century, along with China, America, India, and Japan”⁹⁰. The Economist, Brazil takes off, Getting it together at last: a special report on business and finance in Brazil. November 14th 2009, p. 3. See Figure 2: “The World’s Largest Economies”.

⁹¹ According to a well-known Goldman Sachs Paper entitled “Dreaming with BRICs: the Path to 2050”: “If things go right, in less than 40 years, the BRICs economies together could be larger than the G6 in US dollar terms. By 2025 they could account for over half the size of the G6. Of the current G6, only the US and Japan may be among the six largest economies in US dollar terms in 2050 (...).The list of the world’s ten largest economies may look quite different in 2050. The largest economies in the world (by GDP) may no longer be the richest (by income per capita), making strategic choices for firms more complex.” Dominic Wilson and Roopa Purushothaman. In: Goldman Sachs Economics Website, Global Economics Paper N. 99 Global Economics Paper, “Dreaming With BRICs: The Path to 2050”, available from: <<http://www.iea.usp.br/iea/tematicas/futuro/outrasanalises/globaleconomics.pdf>> August 2008.

⁹² In 2007, Brazil GDP grew about 5.4 per cent; in 2008, it grew 5.1 per cent; in 2009, and grew about 0.1 per cent. Brazil Central Bank, available from <<http://www.bcb.gov.br/?english>>, April 2011.

⁹³ Brazil Central Bank, available from: <<http://www.bcb.gov.br/?english>> April 2011.

⁹⁴ Brazil’s Ministry of Economy, “Mantega estima PIB entre 3% e 3,5% esse ano”, available from <<http://www.fazenda.gov.br>> December 2011. See Figure 1: “GDP Growth - Brazil”.

⁹⁵ “Perhaps more impressively, Brazil’s recent progress seems to have been evenly shared. The growth of the middle class, combined with 100% increase in the minimum wage over recent years, and Bolsa Família, a programme of cash transfers (...), has caused inequality to decline. (...) According to IPEA, extreme poverty halved between 2003 and 2008. Brazil’s score on the Gini coefficient, a measure of inequality, is falling, getting closer to that of the United States.” *The Economist*, Brazil takes off, Getting it together at last: a special report on business and finance in Brazil. November 14th 2009, p. 16.

change have been more pronounced in the Legal Amazon (in northern Brazil) and north-eastern region than in any other regions of the country.⁹⁶ Yet the regional economy still represents only 8 per cent of the national economy; thus there is still an enormous potential for economic development in the Legal Amazon in the near future. The data related to northern Brazil indicate that the region's economy is likely to grow significantly in the coming years.⁹⁷ From 2010 to 2014 the region's GDP is expected to grow by 6.8 percent.⁹⁸ In addition, social inequalities have narrowed in the region. For instance, from 2005 to 2010 about 20 percent of local people migrated from social classes "E" (extreme poor) and "D" (poor) to class "C" (middle class); in consequence, today nearly 80 percent of northern region's population belong to the classes "C", "B" (higher middle class), and "A" (rich).⁹⁹

Historically the regional economy has been based on two opposed, competing, and conflicting poles.¹⁰⁰ According to Loureiro,¹⁰¹ one of these poles consists of a profitable and "modern" economy that has been controlled by national and international corporations, mostly, in the fields of mining, logging, agribusiness, and the Manaus Free Trade Zone.¹⁰² They are fully supported by the Brazilian State.¹⁰³ The other pole is occupied by a "backward" economy that has been developed by a number of small producers,¹⁰⁴ among others, fishermen, rubber tappers, and peasants, who are considered - by the elite and Brazilian State - as obstacles to progress.¹⁰⁵

⁹⁶ In relation to the interconnection between development policies and redistribution in Brazil, see Diogo R. Coutinho, "Linking promises to policies: law and development in an unequal Brazil". *The Law and Development Review*, vol. 3, Issue 2, Article 2, 2010.

⁹⁷ Northern Brazil is located in the Legal Amazon; however, the former is smaller than the latter, because it does not include the states of Mato Grosso (MT) and Maranhão (MA). See Map 2.

⁹⁸ Revista Exame, Especial Região Norte, edição 980, ano 44, n. 21, 17/11/2010, pp. 159-160.

⁹⁹ Ibid p. 162. To be precise, in 2010 about 27.2% of Northern Brazil's population belonged to classes "A" and "B"; 52% to class "C"; 19.5% to class "D"; and 1.3% to class "E".

¹⁰⁰ Violeta Refkalefsky Loureiro, *A Amazônia no século XXI: novas formas de desenvolvimento*. São Paulo: Empório do Livro, 2009, p. 22.

¹⁰¹ Brazilian sociologist, Violeta R. Loureiro is a senior academic at the Federal University of Pará (UFPA).

¹⁰² Above note 100, p. 22.

¹⁰³ Above note 100, p. 22.

¹⁰⁴ Above note 100, p. 22.

¹⁰⁵ Above note 100, p. 21.

According to Brazil's federal plan called the Sustainable Amazon Plan (PAS),¹⁰⁶ there are currently six main economic sectors in the Amazonian economy: agribusiness, logging, extractive, mining, industry and urban activities.¹⁰⁷ First, with regard to agribusiness, Brazil has recently become an economic superpower in the field of both agriculture and cattle ranching and is the world's largest exporter of a number of commodities, such as sugar, coffee, oranges, and beef, and an important producer of many others, such as soybeans, beans, corn, cotton, rice, and ethanol. Today, the BNDES is the main source of financing for the country's agribusiness activity.¹⁰⁸ As *The Economist* points out, "Brazil has learned to love its commodity sector."¹⁰⁹ An increasing proportion of these commodities has been produced in the Legal Amazon. For instance, in 1990 the Amazon was responsible for ten per cent of the national agricultural production, but by 2006 the region had increased its participation to 25 per cent of the national output. In 2008, there were about 71.4 million head of cattle in the Legal Amazon, representing 36 percent of the Brazilian total.¹¹⁰ Undoubtedly, this sector has played a vital role in the advance of the Amazonian frontier,¹¹¹ transforming forest cover areas into monoculture fields and pasture. According to Barreto *et. al.*, between 1990 and 2005, about 75 percent to 81 percent of the Amazon's deforested lands were occupied by cattle ranching.¹¹² Not

¹⁰⁶ In Portuguese, *Plano Amazônia Sustentável 2008*. The PAS outlines "a new model of development that fully bury the notion of environment as an obstacle to economic growth." Above note 23, p. 40. In Portuguese, "um novo modelo de desenvolvimento que sepulta de uma vez a noção do meio ambiente como um obstáculo ao crescimento econômico." Free translation.

¹⁰⁷ The Sustainable Amazon Plan takes the entire state of Maranhão as basis for its considerations, even though only part of this state is included in the Legal Amazon.

¹⁰⁸ Amigos da Terra – Amazônia Brasileira: *A hora da conta: pecuária, Amazônia e conjuntura*, p. 36, available from: <<http://www.amazonia.org/br/arquivos/308285.pdf>> August 2010.

¹⁰⁹ Above note 95, p. 11.

¹¹⁰ Paulo Barreto and Daniel Silva, *the challenges to more sustainable ranching in the Amazon*, available from: <http://www.imazon.org.br/novo2008/arquivosdb/170440oea_n14_eng.pdf> July 2010.

¹¹¹ The term "Amazonian frontier" refers to new frontiers of deforestation and human occupation.

¹¹² Paulo Barreto, Ritaumaria Pereira, and Eugênio Arima, *A pecuária e o desmatamento na Amazônia na era das mudanças climáticas*. Belém: Instituto do Homem e Meio Ambiente (IMAZON), p. 20, available from: <http://www.imazon.org.br/novo2008/arquivosdb/120849pecuaria_mudancas_climaticas.pdf> July 2010.

surprisingly, the region's deforestation rates vary according to fluctuations in commodity prices.¹¹³

Second, Brazil is the world's largest producer and consumer of rain forest timbers. The country shows great economic comparative advantage in this sector. As explained later in this thesis, this activity has been developed in a predatory manner in the Amazon, causing significant loss of forest cover. There are many other extractive activities in the Amazon, which provide alternatives to logging. Undoubtedly, this region shows great potential in this economic field, in particular, in terms of medicinal, cosmetic, and food products derived from a number of seeds and fruits,¹¹⁴ as well as a number of microorganisms and fish. Although a substantial part of these natural goods is already exploited in the region, this natural treasury could be explored in a much more efficient, socially just, and sustainable manner, as explained in later chapters.

The mining sector provides approximately 1.7 million jobs in Brazil. The former state-owned company *Vale* was privatized in the 1990s and is now the world's second largest diversified mining company in market capitalization,¹¹⁵ with extensive activities in the Legal Amazon. In fact, a number of minerals are found in the region, among others, iron, copper, manganese, aluminum, Nyquil, chrome, titanium, phosphate, platinum, zinc, bauxite, gold, silver, uranium, and diamond. This sector has caused great social and environmental degradation in the Amazon over the last decades, as the analysis in Chapter 6 of the "Great Carajás Program" illustrates.

¹¹³ Ibid p. 20. Philip Martin Fearside, an American senior researcher at INPA, argues that the deforestation rates in the Brazilian Amazon dropped in the three years from 2008 to 2010 because of the reduced price of commodities, including soybean and meat. Source: Marcovitch's interview with P. M. Fearside. Above note 35, p. 264. At present, there are approximately 6.9 million hectares of Amazonian deforested lands that are arable and without any economic activity so far. Above note 23, p. 37.

¹¹⁴ To illustrate, *açaí*, *andiroba*, *babaçú*, *bacurí*, *burití*, Brazilian nut, cacao, *cajú*, *copaíba*, *cupuaçú*, *graviola*, *jenipapo*, *muricí* and *pupunha*,

¹¹⁵ Vale, *Vale Webcast Newsletter*, available from: <http://www.prnewswire.co.uk/cgi/news/release?id=285930> December 2011.

With regard to the industrial sector, the Amazon has a large free-trade zone in Manaus (state capital of Amazonas).¹¹⁶ From a national security perspective, the Free-Trade Zone of Manaus was originally established in the mid-1960s in order to promote economic development in a region with “no people”. Today, Manaus is a dynamic industrial center, specializing in a number of products, in particular, electronics, bicycles, and motorcycles. In There are also industrial centres located in other state capitals of the Brazilian Amazon, such as Belém,¹¹⁷ São Luís,¹¹⁸ and Cuiabá. The remaining state capitals such as Boa Vista¹¹⁹ and Macapá¹²⁰ rely on public sector services as their main financial source, because they are located in former territories or newly created states where the private sector activities are still relatively weak.

Last, apart from these economic activities, the energy sector will be a prominent area of economic activity over the next decades. Due to Brazil’s rapid economic growth, the country is obliged to expand its energy supply. If the country wishes to keep its historical focus on hydroelectric energy (about 44 per cent of Brazil’s energy supply is currently renewable), it will have to build a number of large dams in the Legal Amazon.¹²¹

1.4. Main threats to the vital role of the Amazon

In 1995, the British historian Eric Hobsbawn lectured at the Art Gallery of São Paulo (MASP). He was asked if he considered himself a pessimist or an optimist about the future of humanity. He answered: “the optimist way goes through the resolution of three fundamental problems: the destruction of natural resources, the

¹¹⁶ The author conducted field research in Manaus and surroundings, in January 2009.

¹¹⁷ The author conducted two field research in Belém, the state capital of Pará (PA), in April 2008 and January 2009.

¹¹⁸ The author visited São Luís, the state capital of Maranhão (MA), in January 2000.

¹¹⁹ The author visited Boa Vista, the state capital of Roraima (RR), in March 1994.

¹²⁰ The author visited Macapá, the state capital of Amapá (AP), and lectured on environmental law to state judges at the Law School of Amapá (EJAP), in December 2009.

¹²¹ This issue is analyzed in the following sections related to climate change and the energy crisis, as well as in Chapter 6, particularly the case studies related to the development banks’ activities in the Madeira River Dams and Belo Monte Dam.

increase in social inequality, and the demographic explosion.”¹²² Thomas Friedman argues, in turn, the world “is getting *hot, flat, and crowded*.”¹²³ He suggests that “the convergence of global warming, global flattening, and global crowding is driving (...) five big problems – energy supply and demand, petrodictatorship, climate change, energy poverty, and biodiversity loss.”¹²⁴

Chapter 1 agrees with both Hobsbawn and Friedman. In fact, the earth is getting hot, and climate change threatens the continued existence of a number of species. Undoubtedly, our planet is getting crowded. In addition, the world is getting flat, although social inequalities are increasing among and within countries, because those left behind by the market economy now face a social safety net weaker than it was during the period 1945-1975, that was known as “the Golden Age of Capitalism”.¹²⁵ Taking into account the main global problems and challenges set out above, this chapter highlights three threats to the vital role of the Brazilian Amazon: biodiversity loss, climate change, and the energy crisis.¹²⁶ The Development Banks operating in the Brazilian Amazon have the potential to ensure that these problems and challenges are addressed properly, in so far as the outcomes may be determined by events in that region.

¹²² Eric Hobsbawn’s lecture, held on 14 August 1995 at the *Museu de Arte de São Paulo*, quoted by Cristiane Derani, *Direito Ambiental Econômico*, São Paulo: Max Limonad, 1997, p. 274. “A via do otimismo passa pela resolução de três problemas fundamentais: a destruição dos recursos naturais, o aumento de desigualdade social e a explosão demográfica”. Free translation.

¹²³ Thomas L. Friedman. *Hot, Flat, and Crowded: Why the World Needs a Green Revolution – and How We Can Renew our Global Future*. London: Penguin Books, 2008, p. 5. The term “hot” refers to the global climate change caused by human activities. The term “flat”, in turn, is related to “the stunning rise of middle class all over the world.”¹²³ Finally, considering the rapid population growth, Friedman argues “our planet is getting crowded, already having 6.7 billion people in 2008, and expecting to add other 2.5 billion human beings by 2050, that “will be absorbed mostly by the less developed regions, (...)”

¹²⁴ Ibid p. 37.

¹²⁵ Interview given by Ignacy Sachs (École des Hautes Études en Science Sociales, Paris; Instituto de Estudos Avançados / University of São Paulo) to *Jornal O Estado de S. Paulo*. Source: *O Estado de S. Paulo*, Aliás, 05/04/2009, p. J4. Free translation.

¹²⁶ It is important to explain that this study does not consider these three challenges as being the most important ones. There are other threats to the Amazon Region and its people, which could be considered as relevant as those mentioned above, among others: the pollution of natural resources such as rivers and soils, loss of cultural diversity, and poverty. Nevertheless, this study focuses on three issues as its main topics, without detriment to the others, which are analyzed according to their links to the selected ones. For instance, since the loss of biological diversity is closely connected with threats to cultural diversity, both of them are examined simultaneously.

Although it is not possible to ignore the existence of a number of connections among the three main topics, over the following pages the thesis explores the significant loss of biodiversity, then looks at climate change, and finally investigates the energy crises.

1.4.1. Biodiversity loss

Biological diversity means “the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”¹²⁷ It is said the earth’s biodiversity embodies a number of values, such as the ecological, social, cultural, scientific, educational, and economic, among others mentioned in the preamble to the Convention on Biological Diversity.¹²⁸ Nevertheless, human beings have caused significant loss of biodiversity at least since the Industrial Revolution. This trend has gathered pace over the last six decades. Currently, the extinction rate is “a thousand times faster than normal”,¹²⁹ and it has been claimed that “one species is now going extinct every twenty minutes.”¹³⁰

Most industrialized nations have already destroyed almost completely their native forests, causing enormous loss of biodiversity in their own lands. In addition, through colonialism and other enterprises, these countries have had a significant negative impact on the natural environment of other continents. For example, between the 16th and 18th centuries, Portuguese and Spanish colonizers heavily exploited the vast natural resources found in South America. With regard to the Brazilian Amazon, nevertheless, most of its biological diversity remained intact

¹²⁷ Convention on Biological Diversity, article 2 (Use of Terms).

¹²⁸ According to the Preamble to the Convention on Biological Diversity: “The Contracting Parties, Conscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components, Conscious also of the importance of biological diversity for evolution and for maintaining life sustaining systems of the biosphere, (...)”

¹²⁹ Above note 123, p. 141.

¹³⁰ Above note 123, p. 141.

during the colonial period. Even after Brazilian Independence (1822), “Mother Nature” was protected in the Amazon Region at least until the mid-1960s. Since that time, the threats to Amazonian biodiversity have increased dramatically.

Even so, to date about 85 percent of the Brazilian Amazon rainforest is still standing.¹³¹ However, the world’s largest rainforest faces many ecological threats, due to economic activities such large-scale farming and cattle ranching, illegal logging and mining, as well as large-scale projects such as hydroelectric power stations and paved highways. These activities have contributed to the significant deforestation of the Amazon over the last three decades. This jumped from nearly 300,000 sq. km. in 1980 to 732,000 sq. km in 2007, an increase of approximately 432,000 sq. km. in twenty-seven years.¹³² Although the pace of deforestation has gradually fallen in the last years, the last official rates show that deforestation still remains rampant in the Legal Amazon. According to the National Institute for Space Research (INPE),¹³³ over 27,000 sq. km. of rain forest disappeared in 2004; 19,000 sq. km in 2005; 14,000 sq. km. in 2006; 11,600 sq. km in 2007; almost 13,000 sq. km. in 2008; and about 7,400 sq. km in 2009. The region’s deforestation rate dropped in 2010 and 2011, to about 7,000 sq. km and 6,238 km, respectively, the lowest rates in the last 21 years!¹³⁴

Land values in the Brazilian Amazon do not support biological diversity; indeed, it appears to be seen as a burden by the private sector. For example, in the state of Amazonas (AM), rural properties with forest cover are usually worth between R\$ 39

¹³¹ Above note 23, p. 7. With regard to the region’s endangered species of wild fauna and flora, see Ministério do Meio Ambiente (Secretaria de Biodiversidade e Florestas), *Banco de Dados das Espécies Ameaçadas de Extinção*, available from: <<http://www.mma.gov.br/sitio/index.php?ido=conteudo.monta&idEstrutura=179&idConteudo=9624&idMenu=10263>> January 2011.

¹³² Above note 23, p. 7.

¹³³ Instituto Nacional de Pesquisas Espaciais, *Prodes Taxas Anuais*, available from: http://www.obt.inpe.br/prodes/prodes_1988_2010.htm January 2011.

¹³⁴ This fall results from various factors, among others: improved government actions in the field of environmental protection; and the global economic crisis which began in 2008/2009 and which unfolded in 2011, affecting the commodity prices. The Brazilian Amazon’s deforestation rate is linked to the international prices of commodities such as soybean and beef. For further information on the Legal Amazon’s deforestation rate, see Figure 3; see also INPE, *Taxas anuais do desmatamento 1988-2011*, available from: http://www.obt.inpe.br/prodes/prodes_1988_2011.htm December 2011.

(US\$ 19) and R\$ 102 (US\$51) per hectare. However, similar properties without forest cover are usually worth between R\$ 204 (US\$ 102) and R\$ 918 (US\$ 459) per hectare, because these properties can be exploited immediately. In the state of Mato Grosso (MT), in turn, while the forested land is worth about R\$ 208 (US\$ 111.8) and R\$ 1,441 (US\$ 774.7) per hectare, land without forest cover is worth around R\$ 689 (US\$ 370.4) and R\$ 3793 (US\$ 2,039.2) per hectare.¹³⁵ In a nutshell, apart from the land, the natural resources are not perceived as having economic value in the Brazilian Amazon. On the other hand, good infrastructure such as paved roads and warehouses adds significant economic value to rural properties.

As is demonstrated later in this thesis, in the Brazilian Amazon the protection of biological diversity depends on development policies and strategies that value the standing forest, for instance, by adding economic value to forest products and by remunerating forest-dependent communities in relation to the ecological services that their forests provide to all of humanity.

1.4.2. Climate change

Amazonian deforestation has caused not only a remarkable reduction of its astonishing biological and cultural diversity. It has also contributed to climate change, which includes, *inter alia*, changes in temperature, precipitation, and wind patterns.¹³⁶ The link between the Amazon Rainforest and climate is explained by Nepstad, who argues that “Amazon forest conservation will be necessary to stabilize the world’s climate”,¹³⁷ due to three factors. First, this rainforest is a consumer of heat, because the evaporation of water from its plants absorbs half of the solar energy that reaches its region. Second, the Amazon is a storehouse of carbon. As

¹³⁵ Consultoria FNP: análise do mercado da terra. Ano 2005. *Apud* Sven Wunder (editor). Pagamentos por serviços ambientais: perspectivas para a Amazônia brasileira. Brasília: MMA, 2008, pp. 23-24. This exchange rate (US\$1/R\$1.86) is up to 31 December 2011. See Figure 4.

¹³⁶ According to Article 1 (“Definitions”) of the United Nations Framework Convention on Climate Change (UNFCCC) “Climate change means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.”

¹³⁷ Above note 70, p. 4.

mentioned above, the biome contains 90-140 billion tons of carbon, which is equivalent to a decade of global carbon emissions. Third, this basin drains into the Atlantic Ocean enough water to influence ocean currents.¹³⁸

On the other hand, as Nepstad points out, the “stabilization of the world’s climate will be necessary to conserve the Amazon forests.”¹³⁹ As he explains, “[g]lobal warming alone will likely reduce rainfall in the eastern Amazon. (...) Higher temperatures will evaporate water more rapidly, exacerbating the drying trend associated with lower rainfall.”¹⁴⁰ Therefore, while Amazonian deforestation is contributing to increasing climate change, the latter, in turn, is affecting the Amazon’s environmental sustainability. As a result, the entire world, as well as Brazil, should be very concerned about the fate of the world’s largest rainforest, because it will determine the global and regional climate.

The latest news about global warming shows that “[t]he total temperature increase from 1850-1899 to 2001-2005 is 0.76°C [0.57°C to 0.95°C].”¹⁴¹ Moreover, an increase of about 0.2°C per decade is projected for the global temperatures in the next two decades.¹⁴² As the IPCC Fourth Assessment Report points out:

Most of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic greenhouse gas concentrations.¹⁴³

Carbon dioxide is the most important anthropogenic greenhouse gas (...).

The primary source of the increased atmospheric concentration of carbon dioxide since pre-industrial period results from fossil fuel use, with land-use change providing another significant but smaller contribution.¹⁴⁴

¹³⁸ Above note 70, p. 4.

¹³⁹ Above note 70, p. 4.

¹⁴⁰ Above note 70, p. 11.

¹⁴¹ Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report, Working Group I, “The Physical Science Basis”, p. 5, available from: <<http://www.ipcc.ch/ipccreports/ar4-wg1.htm>> November 2007.

¹⁴² Ibid p. 12.

¹⁴³ Ibid p. 10.

The adoption of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, during the United Nations Conference on Environment and Development, held in Rio de Janeiro (Brazil), was a significant step in the fight against global warming. This international instrument has obliged the developed countries to take the lead in combatting climate change.¹⁴⁵ In 1997, the Kyoto Protocol was adopted, only requiring the developed countries to reduce their greenhouse gas (GHG) emissions¹⁴⁶ by at least 5.2 percent against their baselines of 1990.¹⁴⁷ It entered into force on 16 February 2005, but it faced at least three major problems. First, the United States refused to ratify it. Second, large emerging countries, including Brazil, China, and India, had no commitments under the Kyoto Protocol system, although these countries – mainly China - contributed increasingly to the total GHG emissions. This was a very complex issue, due to the inclusion of the legal principle of common but differentiated responsibilities.¹⁴⁸ Third, the Kyoto Protocol did not establish any mechanism to compensate developing countries that protected their forests.

The Kyoto Protocol did not deal satisfactory with Brazil and its contribution to climate change. Brazil releases into Earth's atmosphere, annually, nearly 1.6 billion

¹⁴⁴ Ibid p. 2.

¹⁴⁵ According to the Article 3 ("Principles") of the United Nations Framework Convention on Climate Change (UNFCCC), "1. The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof."

¹⁴⁶ Greenhouse gases are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆), according to Annex A of the Kyoto Protocol.

¹⁴⁷ According to Article 3 of the Kyoto Protocol, "The Parties included in Annex I shall, individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012."

¹⁴⁸ The principle of common but differentiated responsibilities is analyzed in Chapter 3. As an Egyptian cabinet minister remarked to Friedman, "it is like the developed world ate all the hors d'oeuvres, all the entrees, and all the desserts and then invited the developing world for a little coffee 'and asked us to split the whole bill.' That's not going to happen. The developing world will not be denied". Above note 123, p. 55.

tones of CO₂, and 75 percent of it is due to deforestation and burning.¹⁴⁹ Unfortunately, Brazil's GHG emissions have increased significantly. Today, this country is already one of the largest carbon emitters.¹⁵⁰ It emits annually about 2.2 billion tons of CO₂, and will be emitting annually about 3.2 billion tons of CO₂ in 2020.¹⁵¹ However, by avoiding deforestation and burning, this nation would significantly reduce its GHG emissions. Thus, conserving the Brazilian Amazon is a critical factor in the fight against global warming.

Considering the vital role of the Brazilian Amazon in mitigating global climate change, in December 2009, at the United Nations Climate Conference (COP-15) held in Copenhagen (Denmark), Brazilian authorities proposed a commitment to reduce the Amazonian rate of deforestation by 80 percent by 2020. In addition, Brazil also made a commitment to reduce its greenhouse gas emission between 36 percent and 39 percent by 2020.¹⁵² The Cancun Agreements were reached at the COP-16, in December 2010. They included the commitment to mobilize about US\$ 100 billion annually by 2020 to support mitigation and adaptation measures in developing countries. In addition, they proposed the "Green Climate Fund" in order to manage this funding.

The most recent round of international talks on climate change took place in Durban (South Africa), in December 2011. At the COP-17, the discussions focused on two main topics: an agreement relating to a second commitment period under the Kyoto track, and a system for economic incentives to nations who take actions to reduce emissions from deforestation and degradation. The outcomes of COP-17 were positive. First, the COP-17 extended the Kyoto Protocol, and the second commitment period will start in January 2013 and end by December 2017 (or December 2020). Second, it established ad hoc working groups on the Durban

¹⁴⁹ Above note 35, p. 71.

¹⁵⁰ Above note 35, p. 73.

¹⁵¹ Renata Camargo and Sérgio Leitão, "A revolução energética dos investimentos", *Le Monde Diplomatique Brasil*, Suplemento Especial, Sustentabilidade e desenvolvimento: o que esperar da Rio+20, São Paulo: Instituto Pólis, Year 5, Number 53, December 2011, p. 8.

¹⁵² Above note 35, p. 73.

Platform for Enhanced Actions.¹⁵³ The Platform seeks to establish the foundations of the future climate regime, which will include all nations, from developed to emerging and developing countries, and will be concluded by 2015. Third, it officially established the United Nations Green Climate Fund.¹⁵⁴ As these decisions adopted in Durban are important to the role of development banks operating in the Brazilian Amazon, they are discussed below.

Assuming that the Kyoto Protocol scheme will continue after December 2017 (or December 2020), the Amazon Fund might benefit from an international climate agenda based on the principle of common but differentiated responsibilities. Therefore, developed nations – particularly the European countries – will have to take the lead in climate actions, and will be encouraged to make donations to the Amazon Fund.¹⁵⁵

Under a post-Kyoto scheme, it is very likely that Brazil will have legally binding targets to reduce its GHG emissions. In this context, Brazil will have to improve its government actions in the field of sustainable development, particularly the protection of biodiversity, because deforestation and burning in the Amazon are the country's main contributors to CO₂ emissions into the atmosphere.

Finally, the International Development Finance Club (IDFC), which includes the BNDES and another eighteen development banks of national and sub-region origin,¹⁵⁶ aims to contribute “to an effective execution of the UN's Green Climate

¹⁵³ The COP-17 decision referring to the Durban Platform for Enhanced Action is available from:

<http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_durban_platform.pdf> December 2011.

¹⁵⁴ The COP-17 decision referring to the United Nations Green Climate Fund is available from:

<http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_gcf.pdf>, December 2011.

¹⁵⁵ The discussion of the Amazon Fund is in section 7.2 of Chapter 7 of this study.

¹⁵⁶ Created in 2011, the International Development Finance Club (IDFC) is a network of development banks of national and sub-region origin. It encompasses nineteen banks, including inter alia the Agence Française de Développement (AFD), BNDES, China Development Bank (CDB), Cooperación Andina de Fomento (CAF), Development Bank of Southern Africa (DBSA), Indonesia Exim Bank, KfW Bankengruppe (Germany), Japan International Cooperation Agency (JICA), and Korea Finance Corporation (KoFC). The

Fund”, which it sees as “a core building block of the emerging international climate finance architecture.”¹⁵⁷ The member countries of the IDFC aim to strengthen “their voice in an environment dominated by multilateral financing institutions” and to create “an opportunity to better position national and sub-regional development banks in global decision-making processes.”¹⁵⁸ These objectives suggest a likelihood that, in the near future, the World Bank Group and four regional development banks, including the IDB (on the one side), and the national and sub-regional DBs, including the BNDES (on the other side), will be increasingly in dispute over the niche function of what might be called climate finance.¹⁵⁹

1.4.3. The energy crisis

If the history of civilization were an account of the energy matrix, it could be argued that humanity is facing a transitional period, from a fossil fuel era to a renewable fuel one.¹⁶⁰ Undoubtedly, the former era has caused a number of global problems, such as climate change and political instability. Expensive oil, geopolitical tensions, and climate change are interrelated contemporary problems that have pressed the world to create new sources of energy, particularly renewable ones, produced and consumed in a sustainable and efficient manner.

Today, Brazil is one of the leading countries so far as the proportion of renewable energy in its national consumption is concerned. In 2005, 44.5 percent of Brazil’s

chairperson of IDFC is Ulrich Schroeder (CEO of KfW). Luciano Coutinho is one of the vice-chairpersons of IDFC and CEO of BNDES. For further information, see International Development Finance Club, *Governance*, available from: <<http://www.idfc.org/Who-We-Are/governance.aspx>> December 2011.

¹⁵⁷ International Development Finance Club, *Who we are*, available from: <<http://www.idfc.org/Our-Program/climate-finance.aspx>> December 2011.

¹⁵⁸ Ibid.

¹⁵⁹ The “niche” of climate finance is analyzed in Chapter 9 of this study. The discussion of the role of World Bank in managing the Global Environment Facility (GEF) is in section 6.2 of Chapter 6 of this study.

¹⁶⁰ While the fossil fuel is called by Lefkowitz “fuels from hell”, encompassing coal, oil, and natural gas, that “come from underground, are exhaustible, and emit CO₂ and other pollutants”, the renewable fuels are called by Lefkowitz “fuels from heaven”, i.e., wind, hydroelectric, tidal, biomass, and solar power, since all these fuels “come from above ground, are endlessly renewable, and produce no harm emissions”. Rochelle Lefkowitz is quoted by Thomas L. Friedman. Above note 123, p. 32.

domestic energy supply was from renewable sources. This profile was much better than the world average at that time (13.1 percent), and far better than the OECD average (only 6.1 percent). By 2007, renewable sources represented 45.8 percent of Brazilian energy supply¹⁶¹. Today in Brazil, “more than 80 percent of the country’s electricity is generated by hydroelectric power plants.”¹⁶² This relative advantage derives from the country’s peculiar geography, being crossed by a vast number of large rivers, including the Amazon River. Of course, as with any energy matrix, this one also poses its own risks and challenges, such as the displacement of rural communities, as well as potentially significant environmental harm, caused by the construction of large dams for hydroelectricity.

Today, the world’s largest hydroelectric power plant in operation is located in southern Brazil (Itaipú). Not many hydroelectric facilities have been situated in the Brazilian Amazon so far. Nevertheless, due to the increasing demand for energy, recently the Amazon has been seen as a new frontier for the development of a number of large hydroelectric power plants in Brazil, such as Jirau, Santo Antonio, and Belo Monte. As some of them have been built using financial resources provided by the development banks, particularly the BNDES, and others are likely to follow the same path, this issue has become extremely relevant for the thesis and is analyzed in depth in Chapter 6, section 6.3.1.

The expansion of small hydroelectric facilities in the Legal Amazon may not present problems as long as a comprehensive environmental impact assessment (EIA) is prepared beforehand in order to minimize the negative social and environmental impacts on the region and mitigation measures are effectively carried out. However, due to the Amazon’s special circumstances, as a region of great diversity, which includes the existence of a vast number of endemic species, large

¹⁶¹ Federal Ministry of Mines and Energy. *Resenha Energética Brasileira. Exercício de 2007* (preliminar), available from: <http://www.mme.gov.br/site/menu/select_main_menu_item.do?channelId+1432&pageId=15304> September 2008. See Figure 5: “Energy Matrix”.

¹⁶² Ibid p. 13.

hydroelectric plants, such as those financed by development banks, the Jirau and Santo Antonio, located at the Madeira river, might yet cause major problems.¹⁶³

Apart from hydroelectric energy, the Amazon may play an important role in the field of renewable energy through the intensive use of other “fuels from heaven” (above ground), including biomass,¹⁶⁴ wind, tidal, and solar energy. Unfortunately, apart from biomass, Brazil has not invested sufficiently in those sources of renewable energy.¹⁶⁵ For instance, in 2011 Brazil’s wind generated capacity was 1,114 megawatts, compared with 8 thousand megawatts for China, and 6 thousand megawatts for India.¹⁶⁶ Brazil’s production of solar energy is particularly low, even though its level of solar radiation is twice as high as that found in Germany, which

¹⁶³ See Chapter 6, section 6.3.1.

¹⁶⁴ Bioenergy is defined as “energy produced from organic matter or biomass”¹⁶⁴, according to the UN-Energy: “Modern bioenergy technologies that produce heat, electricity, and transport fuels are advancing rapidly, with much of the recent interest focusing on liquid biofuels, in particular ethanol and biodiesel. The United States and Brazil dominate today’s liquid biofuels industry, (...)” Source: *UN-Energy. Sustainable Bioenergy: a Framework for Decision Makers*, p. 3, available from: <<http://esa.un.org/un-energy/pdf/sudev.Biofuels.FAO.pdf>> September 2008.

¹⁶⁵ Brazil has played an important role in this sector since the mid-1970s, when this country severely suffered from the first oil shock. In November 1975, Brazil released a nation ethanol program called “ProAlcool” in order to replace gasoline in passenger vehicles. This governmental program saw ups and downs in the last three decades, basically following the unstable international oil market. The program’s landmark was the year 2003, due to the production of flex-fuel engines on an industrial scale. At present, some critics argue that Brazilian ethanol has contributed to deforestation in the Legal Amazon. In fact, the sugarcane crops are not located in the region, but in other regions of Brazilian territory. However, these crops might be pushing both agriculture and cattle ranching to occupy the northern portions of the country. According to the Nature Conservancy report: “In a time when nations around the world are turning more to biofuels for growing energy demands, land for agricultural production of biofuels globally would have to increase up to 54 million hectares by 2014 if current targets by world governments for carbon emissions are to be met. Only Brazil can measure its potential additional hectares suitable for biofuel crops in the tens of millions, potentially putting at risk the country’s precious natural heritage (...). If biofuels expansion is channeled into lands that have already been cleared for farming and ranching, there will be little need to convert natural habitat, especially Brazil’s grasslands where most agricultural expansion will happen, in order to meet global needs. Impact on the country’s rich biodiversity will be minimized”. Source: The Nature Conservancy. *Brazil biofuels expansion*, available from: <<http://www.nature.org/wherewework/southamerica/brazil/work/art26530.html>> November 2008.

¹⁶⁶ Above note 151, p. 9.

is a nation that, in the following years, is likely to achieve a parity between the cost of solar energy and that of conventional energy.¹⁶⁷

1.5. Global concern *versus* national sovereignty

The tension between sovereign rights over the Amazon's vast natural resources and global interests in the Amazon's ecological equilibrium must be analyzed in depth, because it affects directly the work of development banks. To illustrate, in August 2008 the Federal government announced the creation of the Amazon Fund that is managed by the BNDES.¹⁶⁸ It is expected to receive voluntary donations, from inside Brazil and overseas, in order to promote a set of actions to prevent Amazonian deforestation. According to the government, the Fund is a step forward in comparison to previous Funds, such as that relating to the Pilot Program to Conserve the Tropical Forest of Brazil (PPG7), which is managed by the World Bank.¹⁶⁹ This government's viewpoint was that a fund for Amazonian development must be managed by a national institution, because it is much more likely to ensure the pursuit of national interests. The government also argued that a national bank can work more efficiently in the Amazon in comparison to the multilateral banks that frequently face a number of difficulties in terms of language, culture, and climate.

The tension has historical roots.¹⁷⁰ The Portuguese colonial regime kept information about the Amazon Basin quiet due to political considerations; after all, other

¹⁶⁷ In February 2009, the Brazilian physician Carlos Henrique de Brito Cruz lectured in Sao Paulo at the workshop entitled *Physics and Chemistry of Climate Change and Entrepreneurship*, which gathered Brazilian and British researchers. He said that "the solutions [to the energy crisis] will be unique in each country and each region." Fundação de Amparo à Pesquisa do Estado de São Paulo. Revista Pesquisa FAPESP 157 (Março 2009), p. 17.

¹⁶⁸ The discussion of the Amazon Fund is in section 7.2 of Chapter 7 of this study.

¹⁶⁹ The discussion of PPG7 is in section 6.2 of Chapter 6 of this study.

¹⁷⁰ These historical roots are explained by Hecht and Cockburn as follows: "The destruction in the Amazon forests is not unique. It happens elsewhere, in Central America, in the Congo Basin, in Southeast Asia, but without provoking the same tumult and consternation. What imbues the case of the Amazon with such passion is the symbolic content of the dreams it ignites. (...) It has also inspired the most heroic struggles to resolve the fundamental question underlying the destiny of the world's tropical

Europeans were trying to occupy the region. In addition, there were many economic reasons to justify this censorship, including the myth of *El Dorado*.¹⁷¹ It is remarkable that the first “pure” scientific exploration in the Amazon took place only two centuries after the Portuguese had arrived in Brazil. In 1736, the French Academy of Sciences carried out this task. Later on, “the great naturalists Alexander von Humboldt and Aimé Bonpland traveled to the Amazon under the aegis of the Spanish monarch Carlos IV. (...) The naturalists collected their specimens assiduously and displayed great zeal for cartographic description. (...) As one Brazilian government agent said sourly of von Humboldt, ‘I never saw anyone measure so carefully land that was not his.’”¹⁷²

The Amazon was kept as a secret place over the decades that followed the independence of Brazil in 1822. However, as Hall points out, “the invention of the pneumatic tyre in 1888, the bicycle craze in the USA during the 1890s and the expansion of the automobile industry” created conditions under which “Brazilian rubber enjoyed a twenty-year boom period from 1890 to 1910.”¹⁷³ Manaus became

rainforests: what is the relation of people to nature, how do people perceive the obligations of this relationship? The mystery that is part of the Amazon’s allure is not merely a function of the region’s immensity and the infinitude of species it contains. It is also the consequence of centuries of censorship, of embargoes placed on knowledge and travel in the region by the Spanish and Portuguese crowns, of the polite silences of the religious orders during the Amazon’s colonial history. With such silences came fantasies, of marvels unimaginable, of gold and diamonds, of political utopias, of Indians variously amenable or savage beyond belief.” Susanna Hecht and Alexander Cockburn, *The fate of the forest: developers, destroyers and defenders of the Amazon*. London and New York: Verso, 1989, p. 1-2.

¹⁷¹ Ibid p. 5. “Gonzalo Pizarro, brother of the conqueror of Peru, decided to launch an expedition with Francisco de Orellana to conquer the lands of El Dorado and the cinnamon forests. (...) Orellana and his fifty companions never returned. Instead they became the first white men to descend from the headwaters to the mouth of the Amazon. Incensed by the treachery of Orellana and frustrated in his attempts to seek out the kingdom of El Dorado, a furious Pizarro made his return to Quito. (...) [T]he story of El Dorado continued to fire the imagination, (...).” Ibid p. 5.

¹⁷² Ibid p. 7. As Hecht and Cockburn point out, “Of course such botanical pioneers were not heedless of the economic consequences of the natural riches that lay before them. Richard Spruce, who spent some seventeen years of his life in the Amazon, often ardently expresses the wish that Amazônia had fallen into British hands. ‘How often have I regretted that England did not possess the Amazon valley instead of India!’” Ibid p. 7.

¹⁷³ “Magnificent private mansions and public buildings were constructed, including the US\$2 million Manaus Opera House where Caruso performed, as well as a slightly less grandiose version in Belem.” Anthony L. Hall. *Developing Amazonia: deforestation and social conflict in Brazil’s Carajas programme*. Manchester and New York: Manchester University Press, 1991, p. 2.

the world capital of the rubber market, and the wealthiest city in Brazil. However, in the late nineteenth century, a British botanist called Sir Henry Wickham sent a sample of Amazonian rubber seeds to Sri Lanka and Malaysia. As a result, “The Amazon industry’s fate was sealed, (...) by the steady increase in Asian production during the first decade of the century. Rubber production in the much more efficient Far Eastern plantations soon outstripped that of Amazonia.”¹⁷⁴

These historical events have shaped the perception of many Brazilians about foreigners’ activities in the Amazon. Some Brazilians show extreme nationalist feelings when the topic is the Amazon rain forest. At the Stockholm United Nations Conference in 1972, Brazil’s senior official remarked that “each country must evolve its own development plan, exploit its own resources as it think suitable, and define its own environmental standards. The idea of having such priorities and standards imposed on individual countries or groups of countries, on either a multilateral or a bilateral basis, is very hard to accept.”¹⁷⁵ According to London and Kelly, Brazil’s emissary at this conference asked ‘the developed countries to “give us your pollution,”’ as an invitation to multinationals to industrialize.”¹⁷⁶ In the late 1980s, various suggestions by foreign leaders have reinforced a patriotic sentiment regarding the Amazon.¹⁷⁷

Taking into account Al Gore’s opinion that “contrary to what Brazilians think, the Amazon is not their property, it belongs to all of us”, London and Kelly say:

¹⁷⁴ Ibid p. 3.

¹⁷⁵ Robert Wade, “Greening the Bank”, in Devesh Kapur, John P. Lewis, Richard Webb (ed.), *The World Bank: its first half century*. Washington, D.C.: Brookings Institution Press, 1997, p. 626.

¹⁷⁶ Above note 22, p. 17.

¹⁷⁷ According to London and Kelly, “François Mitterrand put forth a proposal of ‘relative sovereignty’ for the Amazon, which meant Brazil could house the rain forest but couldn’t use it without international approval. British prime minister John Major said, ‘The international environmental campaigns over the Amazon region have left the step of propaganda to begin an operational step, which definitely may include direct military intervention in the region’. And Mikhail Gorbachev, the leader of perhaps the single most environmentally destructive country in history, observed, ‘Brazil should delegate parts of its rights over Amazonia to competent international organizations.’ Above note 22, p. 37.

Imagine how this statement played in São Paulo. About as well as farmers in Des Moines would have reacted to Mao Tse-tung saying, ‘My people are starving, and they need free corn from Iowa, which must be seen as an international resource.’¹⁷⁸

Not only in São Paulo, which is located in the country’s most industrialized region, but also in other places such as Rio de Janeiro and Brasília, these comments led many Brazilians to scream loudly: *A Amazônia é nossa!* (the Amazon belongs to us). Analysing this statement, the renowned Brazilian journalist Marcelo Coelho critically asks:

What does it mean ‘it belongs to us’?” The Amazon, at this moment, belongs to those who have invaded and devastated it. They being the loggers, soybean farmers, cattle rangers, miners or iron makers (...).

The Amazon would belong to ‘us’ if the government had the authority to impose the law in that region, if it could supervise and punish those who promote deforestation.

(...)

The pro-Amazon case can be stated in different terms.

It is the case to give back to the local people a land that can be explored rationally as long as they get the help, supervision and financial resources from the entire world.¹⁷⁹

Under international law, Brazil enjoys sovereign rights over its national territory, including the Amazon Region and its vast natural resources. However, along with these rights, there are also international obligations that Brazil has accepted through its signature and ratification of nearly all international law treaties in the field of

¹⁷⁸ Above note 22, p. 37.

¹⁷⁹ Marcelo Coelho, *Folha de S. Paulo*, “Quem disse que é nossa?”, *Ilustrada*, 30/01/2008, p. E8. In Portuguese, “Mas como assim, ‘é nossa’? A Amazônia, no momento, é dos que a invadem e devastam. Sejam madeireiros, plantadores de soja, pecuaristas, mineradoras ou fabricantes de ferro-gusa (...). A Amazônia seria “nossa” se o poder público tivesse condições de impor a lei naquela região, se conseguisse fiscalizar e punir quem promove o desmatamento. (...) O caso em prol da Amazônia pode ser enunciado de forma diferente. Trata-se de devolver às populações locais uma terra que pode ser explorada racionalmente se contar com ajuda, fiscalização e verbas do mundo inteiro”. Free translation.

sustainable development - such as the United Nations Convention on Biological Diversity and the United Nations Framework Convention on Climate Change, and their complementary treaties, respectively, the Cartagena Protocol and the Kyoto Protocol. Moreover, the developed countries have the financial and technical capacity to help Brazil to fulfill the tremendous task of implementing sustainable development in the entire Legal Amazon.

Fortunately, the tension between “nationalists” and “internationalists” has declined in recent years. At the international level, many international institutions have adopted a much more sensible approach to Amazonian issues, attempting to put together as many social actors as possible (NGOs, private sector, and government) in order to achieve the goal that unifies them, i.e., the promotion of sustainable development in the Amazon. The PPG7 is an extraordinary example of this new approach. Due to the G-7’s initiative, a comprehensive package of sustainable development projects, known as “the Pilot Program to Conserve the Brazilian Rain Forest”,¹⁸⁰ was officially launched during the 1992 UN Conference on Environment and Development, held in Rio de Janeiro. Under this international program, G-7 members donate financial resources to a fund that is managed by the World Bank Group. This program has promoted a range of sustainable development projects, mostly through partnerships, including the contribution of international bodies, national government, and private sector.¹⁸¹

The System for Surveillance of the Amazon (SIVAM)¹⁸² is another good example of this new approach. Due to “a loan from the Export-Import Bank of the United States and grant money from Sweden, this facility was originally meant to provide sophisticated air control surveillance over the entire Amazon.”¹⁸³ This system was built by Raytheon, which is a US company. Of course, this system would have been impossible under the military rule of the 1970s and early 1980s, because the generals were concerned about national security, not forest preservation. Undoubtedly, this sophisticated monitoring system over the region represents a

¹⁸⁰ In Portuguese, *Programa Piloto para a Proteção das Florestas Tropicais do Brasil*.

¹⁸¹ The discussion of PPG7 is in section 6.2 of Chapter 6 of this study.

¹⁸² In Portuguese, *Sistema de Vigilância da Amazônia*.

¹⁸³ Above note 22, p. 71.

remarkably positive reaction by Brazil to the criticisms addressed by the US government and non-governmental organizations in relation to the traditional Amazonian development pattern. Brigagão, argues that the SIVAN can be seen as a sort of “bilateral strategic repair.”¹⁸⁴ According to London and Kelly,

When SIVAN became operational, The New York Times reported, “[The] system is so sophisticated and comprehensive that Brazilian officials now boast they can hear a twig snap anywhere in the Amazon.” They can monitor forest fires, spy on illegal landing strips, and detect incursions into indigenous lands. There is a hitch, of course. Governor Eduardo Braga of Amazonas told us, “SIVAN (...) can give us the information, but without a ground attack, we can’t stop it. We can know about it from the air, but we can only stop it on the ground.”¹⁸⁵

Nevertheless, with regard to the Amazon, the tension between internationalists and nationalists has not disappeared completely. It can also take on the character of fear that the developed countries will plunder the resources of the Amazon under cover of insisting on its ecological protection. For instance, “in April 2003, banners strewn across the overpasses of Brasília proclaimed, TODAY IRAQ FOR ITS OIL, TOMORROW THE AMAZON FOR ITS WATER”.¹⁸⁶ Under President Lula’s administrations (2003-2010), the contentious issue of the extent of international influence in the Amazon Region remained alive. In May 2008, during his speech to launch the Sustainable Amazon Plan (PAS),¹⁸⁷ President Lula declared:

Some people think the Amazon must belong to humanity. And we think it belongs to humanity. We think it needs to produce benefits for all

¹⁸⁴ In Portuguese, “reparo estratégico bilateral”. Clóvis Brigagão, *Inteligência e marketing: o caso SIVAM*. Rio de Janeiro: Record, 1996, p. 61.

¹⁸⁵ Above note 22, p. 72.

¹⁸⁶ Above note 22, p. 40.

¹⁸⁷ In Portuguese, *Plano Amazônia Sustentável*. See discussion of the PAS in section 3.3 of Chapter 3 of his study.

human beings. But we have to say loudly that who takes care of the Amazon is Brazil. Who decides what to do in the Amazon is Brazil.¹⁸⁸

Paradoxically, the nationalist sentiment towards the Amazon has followed the deforestation rates. In other words, when the rates raise, the “nationalism grade” increases as well, as a sort of self-protecting measure. For instance, just a couple of weeks after his speech declaring “the Amazon belongs to humanity”, President Lula said: “the world needs to understand that the Brazilian Amazon has a owner. This is the Brazilian people, who are the indigenous, rubber tappers, fishermen, and also all of us, who are aware that it is necessary to reduce the deforestation and burnings.”¹⁸⁹ According to Aragón, a Colombian senior researcher, “the Amazon has become a global issue, but remains peripheral within the very countries that share it.”¹⁹⁰ Thus, it is important to promote greater international cooperation, especially among the nine Amazonian countries, so that they can advance an agenda of regional integration focused on goals of sustainable development: economic growth, social justice and environmental conservation. Within this context, the Amazon Cooperation Treaty Organization (ACTO) may become a key international institution in the region. Today, the MDBs, namely the World Bank and Inter-American Development Bank, are influential instruments of development in the

¹⁸⁸ *FolhaOnline*, “Lula diz que Amazônia é da humanidade e deve ser cuidada pelo Brasil”, available from:

<<http://tools.folha.com.br/print?site=emcimadahora&url=http%3A%2F%2Fwww1.folha...>> May 2008. In Portuguese, “Como tem gente que acha que a Amazônia tem que ser da humanidade. E nós achamos que é [da humanidade]. Achamos que ela precisa produzir benefícios para todos os seres humanos. Mas temos que dizer em alto e bom som que quem cuida da Amazônia é o Brasil. Quem decide o que fazer na Amazônia é o Brasil”. Free translation.

¹⁸⁹ *FolhaOnline*, “O mundo precisa perceber que a Amazônia tem dono, diz Lula”, available from:

<<http://tools.folha.com.br/print?site=emcimadahora&url=http%3A%2F%2Fwww1.folha...>> May 2008. In Portuguese, “(...) O mundo precisa entender que a Amazônia brasileira tem dono. É o povo brasileiro, que são os índios, os seringueiros, os pescadores, mas também somos nós, que temos consciência que é preciso diminuir o desmatamento e as queimadas”. Free translation.

¹⁹⁰ Luis E. Aragón. “De quem é esta floresta, afinal?” In.: Ulisses Capozzoli. *Amazônia: destinos*. São Paulo: Duetto Editorial, 2008. “A Amazônia tornou-se (...) uma questão global (...), mas permanece periférica dentro dos próprios países que a compartilham.” Free translation.

Amazon Basin. The MDBs may contribute more effectively in promoting development in the region if they establish closer ties with ACTO.¹⁹¹

¹⁹¹ The discussion of ACTO is section 8.3 of Chapter 8 of this study.

Chapter 2

Development Banks operating in the Brazilian Amazon

The thesis examines the processes of development in the Brazilian Amazon, particularly the role of Development Banks (DBs) in those processes. Chapter 2 carries out that task by investigating the structure and activities in the Amazon of two MDBs, namely the World Bank Group and the Inter-American Development Bank Group, as well as Brazil's two development banks, namely the BNDES and the BASA. The thesis argues that the DBs have been powerful and influential actors in relation to the process of development in the Brazilian Amazon.¹⁹²

As is described in Chapter 6, private capital has perceived the region as extremely risky for significant investments. It has only been with the encouragement and support of the DBs that the region has seen an increasing inflow of private investments to large-scale projects in the fields of energy, transport, and agribusiness.¹⁹³ The questions arise of what the multilateral and public funding mean for vulnerable economies, which DBs play the primary role of funding in the region, and how the DBs' participation in the various development schemes can contribute to bring about a more environmentally and socially sustainable approach to development in the Brazilian Amazon.

Multilateral financing to the Amazon

As an emerging economy, Brazil has been influenced by the MDBs' actions and development policies. The World Bank Group, for example, has developed a large range of projects in the country. Between 1967 and 2007, the Bank approved as many as 122 projects in Brazil. These projects have had some critical economic, social and environmental impacts. As of 2009, the World Bank Group outlaid yearly

¹⁹² The concept and core elements of sustainable development are analysed in section 3.1.2 of Chapter of this study.

¹⁹³ See discussion of hydroelectric plants and meat-packing schemes in section 6.3 of Chapter 6 of this study.

about US\$ 20-22 billion worldwide,¹⁹⁴ with approximately US\$ 2 billion going to Brazil.¹⁹⁵ This later amount encompassed “an annual average of about \$500 million of IFC lending - including financing raised from commercial banks, \$50 million of MIGA guarantees and \$1500 million of IBRD lending.”¹⁹⁶ Considering that the country’s GDP is nearly US\$ 2 trillion,¹⁹⁷ the Bank concludes that its financial contribution is small.¹⁹⁸ According to the Bank’s Amazon Cluster Coordinator, Garo Batmanian, nearly 10 per cent of that total financing to Brazil is channelled to the Legal Amazon. In other words, the World Bank Group commits annually about US\$ 200 million to the Brazilian Amazon.¹⁹⁹ Nevertheless, the World Bank Group is much more than a lending institution, because it works across the country through other instruments such as knowledge, seal of approval and convening power.²⁰⁰ In addition, the Bank’s reports, strategies and projects are frequently emulated by other institutions, including the development banks, particularly the IDB, BNDES, and BASA.

Within this context, the Bank argues that its central challenge for engagement in Brazil is selectivity.²⁰¹ The Bank’s Country Partnership Strategy 2008-2011 stated that “the Bank Group should be engaging primarily with the long-run, path-setting challenges where Brazil has not yet devised solutions and where international experience can be of particular value.”²⁰² In this regard, the Bank pointed out five main challenges, including the promotion of sustainable development in the

¹⁹⁴ Author’s interview with Garo Batmanian (The World Bank – Amazon Cluster Coordinator), on 06/05/2009.

¹⁹⁵ World Bank, *Country Partnership Strategy for Brazil 2008-2011*, p. 22. Available from: <<http://siteresources.worldbank.org/BRAZILINPOREXTN/Resources/3817166-1220388091471/CPS2008.pdf?resourceurlname=CPS2008.pdf>> April 2011.

¹⁹⁶ Ibid p. 16.

¹⁹⁷ World Bank, *Brazil Country Brief*, available at <<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/LACEXT/BRAZILEXTN/0,,menuPK:322351~pagePK:141132~piPK:141107~theSitePK:322341,00.html>> , accessed on 27/05/2010.

¹⁹⁸ Above note 195, p. 16.

¹⁹⁹ Above note 194.

²⁰⁰ Above note 195, p. 14.

²⁰¹ Above note 195, p. 22.

²⁰² Above note 195, p. 22.

Amazon.²⁰³ According to the Strategy, “the Bank Group will reverse its de facto decades-long withdrawal from the financing of development in the Amazon, and will become a full-service partner to the Federal Government, the states and the private sector in reconciling conservation with development.”²⁰⁴

The World Bank Group’s assistance to Brazil in the environment area is currently divided into three separate agendas. They are called the brown, blue and green agendas. The brown agenda has existed since 1980 and it is related to industrial pollution control projects.²⁰⁵ The blue agenda, in turn, encompasses projects on water management.²⁰⁶ The green agenda focuses on ecosystems, particularly the Amazon rain forests, and includes the management of Global Environmental Facility (GEF) grants for sustainable development projects such as PROBIO and FUNBIO, the Pilot Program to Conserve the Tropical Forests of Brazil (PPG7), and the Amazon Region Protected Area (ARPA).²⁰⁷

The Inter-American Development Bank (IDB) is the main source of multilateral financing to Latin America and the Caribbean,²⁰⁸ a region that accounts “for 8.6 percent of the world’s population and 8.2 percent of the world’s GDP, and for 12 percent of total global greenhouse gas (GHG) emissions, (...).”²⁰⁹ In 2009, the IDB approved approximately US\$ 15.5 billion in loan operations to Latin America and the Caribbean, including about US\$ 3.5 billion for environmental improvement, climate change mitigation, and renewable energy, including US\$ 1.8 billion for

²⁰³ Above note 195, p. 22-23. Apart from the Amazon Region, the other four challenges are education, poverty reduction in the Northeast, urban development, and public sector management.

²⁰⁴ Above note 195, p. 23.

²⁰⁵ In 1980, the World Bank launched an industrial pollution control project in the Southeast of Brazil, precisely, in the State of São Paulo (SP).

²⁰⁶ Two projects were launched in the late 1990s in the Northeast of Brazil, because water provision has been a dramatic problem in the region.

²⁰⁷ The GEF grants for projects in the Amazon, including the PROBIO and FUNBIO are analyzed in Chapter 6, section 6.2.1. In relation to the PPG7, see Chapter 6, section 6.2.2. The ARPA is analyzed in Chapter 7, section 7.1.

²⁰⁸ Inter-American Development Bank, *2009 IDB Sustainability Report*. Available from: <<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35115991>> June 2010.

²⁰⁹ Ibid.

water and sanitation projects.²¹⁰ In relation to Brazil, in 2010 the IDB approved over US\$ 2.6 billion in loan operations.²¹¹ According to the IDB Country Strategy with Brazil, between January 2009 and December 2010, the Bank prioritized seven areas, including the environment and natural resources.²¹² Regarding the Brazilian Amazon, in the period 2009-10 the IDB gave special attention to urban issues, including the Social and Environmental Program for the Streams of Manaus (PROSAMIN) and the Program for the Urban Development and Socio-Environmental Inclusion in Manaus.²¹³

With regard to socio-economic improvements, although such developments may be attributed to many sources, such as governmental economic and social policies, as well as the involvement of civil society organizations, it is unquestionable that the MDBs have contributed significantly to improvements in Brazil over the last three decades (1981-2010). Supported by a stable democratic political environment, the MDBs' assistance has been helping Brazil to achieve the Millennium Development Goals (MDGs)²¹⁴ and to improve its HDI.²¹⁵

Public financing to the Amazon

Since the 1990s, most public financing available for projects in the Brazilian Amazon has come from three sources: the BNDES, the Amazon Development Fund, and the Constitutional Fund for Financing the Northern Region. Today, the BNDES is one of the world's largest development banks.²¹⁶ In 2010 the BNDES disbursed across the country about R\$ 160 billion, or approximately US\$ 95.7

²¹⁰ Ibid.

²¹¹ Inter-American Development Bank, *Brasil: Actualización de la Estrategia de País*, p. 5, available from: <<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35331453>> April 2011.

²¹² Above note 211, p. 5.

²¹³ Above note 211, p. 22.

²¹⁴ Brazil is likely to achieve all seven measured MDGs by 2015.

²¹⁵ Brazil is ranked as having high level of human development, according to the United Nations Development Program (UNDP) 2010.

²¹⁶ International Development Finance Club (IDFC), *Member countries of the IDFC*. Available from: <<http://www.idfc.org/Who-We-Are/members.aspx>>, December 2011.

billion.²¹⁷ The disbursements made by the BNDES have played an increasingly powerful role in relation to the development processes in the Legal Amazon. For example, these disbursements to Northern Brazil rose from R\$ 860 million in 2001 to R\$ 11.7 billion in 2010.²¹⁸ Considering the entire Legal Amazon, from 2006 to March 2011, the disbursements granted to the region totalled R\$ 47.9 billion, or approximately US\$27.5 billion.²¹⁹

This increasingly prominent role of the BNDES in the region is because its financing large-scale projects, particularly in the energy and transport sectors. For example, the BNDES is channelling funds to the construction of two hydroelectric power plants on the Madeira River; it is also financing the Estreito Hydroelectric Plant and the Coari-Manaus gas pipeline. Moreover, it is very likely that the BNDES will finance the construction of the Belo Monte plant on the Xingú river.

Apart from infrastructure schemes, the BNDES has played an increasingly influential role in the environment sector. For example, the BNDES manages the Amazon Fund. Created in 2008, the capital of this fund is made up of donations by governments, multilateral institutions, NGOs, and corporations. To date, the Amazon Fund contains fifteen approved projects.²²⁰ The Amazon Development Fund (FDA)²²¹ has also made an important contribution to public financing for projects in the Brazilian Amazon. The capital of FDA is made up from the federal treasury, and is managed by the Superintendency (SUDAM).²²² It represented about R\$ 1.03 billion in 2010, and increased to R\$ 1.18 billion in 2011. Most of the FDA financing go to the energy sector. For example, the FDA is channelling R\$ 503.27 million to the Santo Antonio Energia.²²³

²¹⁷ According to the average exchange rate (R\$/US\$) in January 2011.

²¹⁸ These are disbursements made by the BNDES for investments in the Northern Brazil, not including two other states of the Legal Amazon: Mato Grosso and Maranhão.

²¹⁹ According to the average exchange rate (R\$/US\$) in January 2011.

²²⁰ See discussion of the Amazon Fund in section 7.2 of Chapter 7 of this study.

²²¹ In Portuguese, *Fundo de Desenvolvimento da Amazônia*.

²²² A small part of the FDA goes to the Bank of the Amazon (BASA)

²²³ The FDA is also channelling about R\$ 446 million to the Telemar Norte Leste, and over R\$ 163 million to the Geradora de Energia do Norte, and approximately 1.8 million to the Companhia Energética Manauara. Valor Econômico Especial, "Pathways to the Amazon: the logistic of development", July 2011, p. 107.

Finally, the Constitutional Fund for Financing the Northern Region (FNO)²²⁴ is managed exclusively by the Bank of the Amazon (BASA).²²⁵ The Constitutional Fund was created by the 1988 Federal Constitution²²⁶ in order to oblige the government to channel three per cent of the revenue derived from two significant federal taxes, namely, income tax (IR)²²⁷, and the industrialized products tax (IPI)²²⁸, to promote economic and social development in the country's less industrialized regions: the northern (Amazon), the north-east, and the centre-west. At present, nearly 0.6 per cent of those taxes is channelled to the FNO,²²⁹ totalling about R\$ 3.5 billion, which means that the BASA enjoys relatively regular financial contributions.²³⁰ In 2011, the FNO had a budget of about R\$ 3.5 billion. According to Sousa Jr., chairman of the BASA, in 2011 the FNO will channel resources to a number of sectors, including about R\$ 700 million to the small-scale agriculture schemes (PRONAF), and R\$ 35 million to the protection of biodiversity.²³¹ The BASA is the oldest development bank in the region, and is found in nearly 800 Amazonian municipalities that host the Bank's agencies. In short, the Bank has deep roots in the region. Today, the BASA controls about 74 per cent of the long-term loans that are granted by banks²³² in the Brazilian Amazon.²³³

The scale and scope of financing

Considering the scale of financing in the Brazilian Amazon by the four development banks, it is evident that the multilateral financing has been far smaller than the public or local financing. As described above, while the IDB lends each year about

²²⁴ In Portuguese, *Fundo Constitucional de Financiamento do Norte*.

²²⁵ There are other financial sources as follows: the FDA, FAT and General Federal Budget.

²²⁶ Articles 159, I, "c".

²²⁷ IR means *imposto de renda*.

²²⁸ IPI means *imposto sobre produtos industrializados*.

²²⁹ The FNO was officially created by Federal Law 7827 (on 27/09/1989), that was changed afterwards by the Federal Law 9126 (on 10/11/1995).

²³⁰ Above note 223, p. 107.

²³¹ Above note 223, p. 108.

²³² Including the MDBs, BNDES, Bank of Brazil, and private banks.

²³³ The capital of the BASA has been made up from a number of sources that are analysed in Chapter 6, section 6.4.

US\$2.6 billion to Brazil and the World Bank about US\$2 billion, including approximately US\$200 million for projects in the Legal Amazon, the BNDES grants annually about US\$95.7 billion, including US\$11.7 billion to the Legal Amazon. Frequently, the BNDES operates in the Legal Amazon through the BASA. Today, the BASA enjoys significant presence in the region, controlling nearly three-quarter of the long-term loans that are granted by banks in the Legal Amazon.

As the scale of multilateral financing has been smaller than the public financing, the MDBs' central challenge for engagement in the region is selectivity. Therefore, the MDBs should create contributions where governance is still weak, and the international experience can create improvements, for example, the role of World Bank in the field of capacity-building in "frontier" areas (*e.g.* the ARPA and PPG7 projects),²³⁴ and the contribution of IDB in curbing urban problems, including the sanitation project in the Una watershed.²³⁵ The focus of public financing has been projects of higher financial risk, for example, the role of BNDES for the construction of highways, railways, ports, and hydroelectric dams,²³⁶ and the role of BASA in financing rural activities.²³⁷

To conclude, the scale and scope of financing in the Brazilian Amazon show that it is not possible to promote sustainable development in the region without the development banks' full commitment to this goal.²³⁸ Nevertheless, in the period from 1981 to 2010, the DBs have neither regularly played the role of promoters of this goal nor consistently provided a role model by ensuring that they themselves complied with this goal. The environmental and social policies of the DBs, and their impact on the sustainable development of the Brazilian Amazon, are analyzed in greater depth in Chapter 5.

²³⁴ See discussion of the ARPA and PPG7 projects in section 6.2.2 of Chapter 6 and section 7.1 of Chapter 7 of this study.

²³⁵ See discussion of the IDB activities in the Amazon in section 5.2 of Chapter 5 of this study.

²³⁶ See discussion of these development projects in section 6.3.1 of Chapter 6 of this study.

²³⁷ See discussion of these financing activities in section 5.4 of Chapter 5 and section 6.3.2 of Chapter 6 of this study.

²³⁸ The concept and core elements of sustainable development are below analysed in Chapter 3, section 3.1.2.

Chapter 3

Sustainable Development

There are varied understandings of and approaches to development. The whole of humanity has an interest in the model of development which is adopted in the Amazon Region, and much depends on that model being fully sustainable. By sustainable development this thesis means the challenge of integrating economic, social, and environmental needs. In other words, sustainable development seeks to integrate three goals, namely economic growth, social justice, and environmental conservation. As is shown below, the concept of sustainable development was not formulated from a blank slate. It absorbed the fundamental concepts of economic development and social (human) development theories, adding a new dimension, that is, environmental conservation. In a nutshell, the three components of sustainable development have to co-exist in a balanced way.

3.1. Overview

3.1.1. The rise of environmental awareness

The notion of an ecological perspective to development can be traced back to 1873, when the term *ecology* was first used,²³⁹ meaning “a branch of biology that emphasized study of the interaction of living organisms with their physical and biological environment.”²⁴⁰ That view “became more self conscious from the late 1930s. A new ethic of symbiosis with land, both moral and ethic, based on notions of long term ecological stability.”²⁴¹ In fact, the perspective known as *Modern Environmentalism* began to emerge after the Second World War, in 1945,²⁴² as a

²³⁹ Ian Tyrrell, “Modern Environmentalism”, in Roy Rosenzweig and Jean-Christophe Agnew, eds., *The Blackwell Companion to Post-1945, American History* (Oxford Basil Blackwell, 2002), p. 330.

²⁴⁰ Samuel Hays, *Beauty, Health and Permanence: Environmental Politics in the United States, 1955-1985*. New York: Cambridge University Press, 1987, p. 27.

²⁴¹ Ibid p. 27.

²⁴² Ian Tyrrell describes three moments of the American Conservation Movement, as follows:

response to increasing environmental degradation.²⁴³ Tyrrell distinguishes the current period of Modern Environmentalism (from 1945 onwards) from the earlier conservation movement as follows:

The ethic of conservation involved efficient use of resources according to maximum sustained yield without destroying those resources (...). In contrast, post 1945, environmentalists looked at nature as independent of humans and possessing intrinsic value, but nevertheless as providing benefits to humans beyond economic need. These were health, recreation, aesthetics, and sustainability through treating nature not as a set of discrete resources, but as an interrelated system. Thus modern environmentalism sought “beauty, health, and permanence.”²⁴⁴

In the 1950s and 1960s, Rachel Carson, the American biologist and conservationist, “made an important contribution to a widening of environmental awareness of toxic substances”,²⁴⁵ in particular pesticides such as DDT, by alerting society in relation

1st) 19th century conservation: mixture of preservation and renovation. Main author: George Perkins Marsh, “Man and Nature” (1864). His main concern was the trees being cut down indiscriminately; 2nd) 1900-1945 - *Progressive Conservation Era* - conservation as efficiency (“maximum sustained yield”). Main authors: Pinchot and Muir; 3rd) 1945 onwards - *Modern Environmentalism* – ecocentric. Key author: Raquel Carson, “Silent Spring” (1962). According to Professor Ian Tyrrell’s presentation in the course Environmental History (HIST3106), held in 08/05/2007, at the University of New South Wales (UNSW).

²⁴³ Apart from environmental degradation, there are other factors: the newly affluent middle class consumers, who provided the democratic grass roots support for the environmental movement; the developing science of ecology; the emerging Welfare state; color photography, TV programs, and other media influences, which helped to spread environmental awareness worldwide; the scope of environmentalism become wider, much beyond concerns related to wilderness, to include other issues such as urban and industrial pollution. Those origins of modern environmentalism have been set out by Professor Ian Tyrrell, in one of his presentation in the course “Environmental History” (HIST3106), in 15/05/2007, at the University of New South Wales (UNSW).

²⁴⁴ Above note 239, p. 329. According to Professor Ian Tyrrell, the concept of *maximum sustained yield* was introduced in fisheries in Europe, and was also applied in the U.S. to forestry, game, and soils. The earlier conservationist movement raised questions such as “how many fish can we catch in that river without destroying that shoal of fish?” or “how many trees can we cut down without destroying that tropical rainforest?” With regard to the Modern Environmentalism’s standpoint that nature provides benefits to humans beyond economic needs, see Payment for Environmental Services (PES) as a new mechanism for promoting sustainable development in the Brazilian Amazon, in Chapter 9.

²⁴⁵ Above note 239, p. 332.

to the risks of those substances to humans and the ecological equilibrium. Her books, *The Sea Around Us* (1951) and *Silent Spring* (1962), as well as her ability to explain scientific issues to non-scientific audiences using modern media such as television, spread her ideas worldwide, making her one of the most significant personalities of the early stages of Modern Environmentalism. Since then, we have seen across the world what was called by Ronald Inghart a “silent revolution”: “the values of Western publics have been shifting from an overwhelming emphasis on material well being and physical security toward greater emphasis on quality of life.”²⁴⁶

The 1970s saw an increasing environmental awareness across the world. In 1972, the United Nations convened a Conference on Environment and Human Habitat, in Stockholm, Sweden.²⁴⁷ In the same year, the United Nations Environment Programme (UNEP) was established in Nairobi, Kenya. Moreover, *Limits to Growth*, a famous study commissioned by the Club of Rome,²⁴⁸ was published in 1973, predicting that “there would be a catastrophic collapse of population around the year 2025 as resources became scarce.”²⁴⁹ In addition, in the 1970s and 1980s, a number of key international treaties were adopted, for instance, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1973); the Convention on the Law of the Sea (1982); the Convention for the Protection of the Ozone Layer (1985) and the Montreal Protocol on Substances that Deplete the Ozone Layer (1987). Moreover, the United Nations established the World Commission on Environment and Development (WCED) in 1983, which was responsible for articulating the concept of sustainable development, in a report called *Our Common Future*.²⁵⁰

²⁴⁶ Samuel Hays, *Beauty, Health and Permanence: Environmental Politics in the United States, 1955-1985*. New York: Cambridge University Press, 1987, p. 35.

²⁴⁷ “(...) without using the phrase ‘sustainable development’, the Stockholm Declaration foreshadowed the holistic approach embodied in this concept and helped give rise to it”. Daniel Barstow Magraw and Lisa D. Hawke, Sustainable development, in Daniel Bodansky, Jutta Brunnée and Ellen Hey, *The Oxford Handbook of International Environmental Law*, Oxford: Oxford University Press, 2007, p. 615.

²⁴⁸ A team of scientists.

²⁴⁹ Above note 239, p 337.

²⁵⁰ Brundtland Report (1987), named after the former Norwegian Prime Minister, Ms. Gro Brundtland, who was the chairwoman of the working group that formulated the report.

According to Magraw and Hawke, “the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil, was the first time that the world’s governments officially adopted sustainable development as the development paradigm. Sustainable development is the underlying theme of the five instruments adopted by the 172 countries represented by heads of state or other national leaders at UNCED.”²⁵¹ The five international instruments are: the Rio Declaration (containing 27 principles of international environmental protection); the Convention on Biological Diversity; the Framework Convention on Climate Change; Agenda 21 (an action plan); and the Principles on Forests.

According to the preamble of the 1994 Marrakech Agreement Establishing the World Trade Organization (WTO), sustainable development is also seen as an objective of the international trade system. In 2000, the United Nations adopted the Millennium Declaration, a framework for development, which includes the concept of sustainable development among its goals and targets.²⁵² The World Summit on Sustainable Development (WSSD) was held in Johannesburg, South Africa, in 2002, when sustainable development was reaffirmed as “the overarching framework for improving quality of life throughout the world.”²⁵³ The 2005 World Summit Outcome recognized “sustainable development as a key element of United Nations activities.”²⁵⁴

In recent times, environmental awareness has increased rapidly worldwide. The IPCC Fourth Assessment Report, launched in 2007, can be considered as a turning point in the history of environmentalism. As mentioned in subsection 1.4.3 above, the Report stated that since the nineteenth century global average temperatures have

²⁵¹ Above note 247, pp. 615-616.

²⁵² The Millennium Declaration contains 8 goals, 18 targets, and 48 indicators. Goal 7 is to “Ensure Environmental Sustainability”. One of its targets is to: “Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources.”

²⁵³ Above note 247, p. 612.

²⁵⁴ 2005 World Summit Outcome, available from: <
http://globalr2p.org/media/pdf/WSOD_2005.pdf> February 2012.

already increased around 0.76°C [0.57°C to 0.95°C].²⁵⁵ In addition, it projected an increase in those temperatures of about 0.2°C per decade in the next two decades. The report concluded that global warming is *very likely* due to human activities, especially to greenhouse gas emissions. In April 2009, the Leaders of the Group of Twenty (G20) met in London to discuss how to respond to the global economic crisis. The Communiqué from the London Summit stated:

27. We will make the transition towards clean, innovative, resource efficient, low carbon technologies and infrastructure. We encourage the MDBs to contribute fully to the achievement of this objective. We will identify and work together on further measures to build sustainable economies.

28. We reaffirm our commitment to address the threat of irreversible climate change, based on the principle of common but differentiated responsibilities, (...).²⁵⁶

The question arises of how to build a more environmentally and socially sustainable economy in the context of a world population of seven billion people, and rising demand for agricultural and mineral commodities, and energy. As is discussed later in Chapter 3, due to the very nature of the concept of sustainable development, the required actions must be articulated and implemented by “multilayered governance”,²⁵⁷ including such international bodies and agencies as the UNEP, UNDP, UNCTAD, UNESCO, and FAO. The multilayered governance should also include the International Finance Institutions (IFIs), such as the International Monetary Fund, World Bank Group and four regional development banks, and the development banks of national and sub-region origin belonging to the International Development Finance Club (IDFC).

²⁵⁵ Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report, Working Group I, “The Physical Science Basis”, p. 5, available from: <<http://www.ipcc.ch/ipccreports/ar4-wg1.htm>> November 2007.

²⁵⁶ The Communiqué from the London Summit. *The Global Plan for Recovery and Reform* (2 April 2009), available from: <<http://www.london.summit.gov.uk/resources/en/PDF/final-communicue>> April 2009.

²⁵⁷ Anthony Giddens, *The politics of climate change*. Cambridge: Polity Press, 2009, p. 5.

Considering that UNEP has not played a leading role in the field of sustainable development, a proposed suggestion from Brazil is the creation of a new body within the UN system, which should be placed at similar hierarchical level of the Security Council. The new body would work to overcome the current uncoordinated guidelines in this sector, by providing binding guidelines to other UN bodies, and recommendations to the international community of nations and other international bodies.²⁵⁸

To conclude, the historical analysis of the emergence of environmental awareness worldwide shows that it has been expanding and deepening. This is evident in the proliferation of international agreements in the field of sustainable development. The emergence and expansion of international environmental law has, in turn, affected the work of DBs in the Brazilian Amazon. As is shown later in Chapters 5 and 6 of this study, the MDBs have been gradually transforming their actions and policies to become more environmentally sustainable. However, for the principle of sustainable development to be fully implemented, the development banks must play a more effective role in helping nations to make the transition from old models of development to a more environmentally sustainable one. Keeping in mind that the Amazon is so important to all of humanity that it requires all development actors, particularly the DBs, to move to a platform of sustainable development in their action in the region, the chapter analyses the concept of sustainable development in the following pages.

3.1.2. The concept and core elements of sustainable development

Launched in 1987, the Brundtland Report contains the standard definition of sustainable development. It states:

²⁵⁸ See Proposals from the signatories institutions for Brazil, Civil Society and Government positioning to the negotiations to the United Nations Conference on Sustainable Development (Rio+20), available from: <<http://www.ethos.org.br>> November 2011.

Humanity has the ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.²⁵⁹

Ever since, sustainable development as a term has been used quite frequently by global actors, from international institutions such as the UN and the WTO, to transnational corporations and non-governmental organizations. In addition, this term has shaped laws, policies, and strategies of national and local governments all over the world. As a result, it is seen as a cornerstone of international environmental protection, and also of many national laws worldwide. Considering international law in the field of sustainable development, Sands identifies four core elements of sustainable development: sustainable use, inter-generational equity, intra-generational equity, and integration.²⁶⁰ A similar construction is adopted by Ellis and Wood, who highlight the following elements of sustainable development: necessity, limitation, equity and integration.²⁶¹ A detailed analysis of these elements is important to illustrate the main characteristics of the term sustainable development.²⁶² Moreover, that analysis is useful for making a proper assessment of the need of new mechanisms for promoting that goal in the Brazilian Amazon.²⁶³

Necessity

²⁵⁹ World Commission on Environment and Development. *Our Common Future*. New York: Oxford University Press, 1987, p. 8.

²⁶⁰ Philippe Sands, "International courts and the application of the concept of 'sustainable development'", in John Hatchard and Amanda Perry-Kessaris (ed.), *Law and Development: facing complexity in the 21st century: essays in honour of Peter Slinn*, 2003, p. 147

²⁶¹ Jaye Ellis and Stephan Wood, "International Environmental Law", in Richard and Wood, *Environmental Law for Sustainability*, p. 375.

²⁶² As mentioned above, Ellis and Wood's core elements are very similar to Philippe Sand's ones. The thesis expressly adopts Ellis and Wood's framework because inter-generational equity and intra-generational equity can be integrated into a single element of sustainable development: equity. Moreover, Sand identifies "sustainable use" as an element of sustainable development. Nevertheless, it is not recommended to explain the concept (sustainable development) using the same word (sustainable). The thesis prefers the terms "necessity" and "limitation", because they can clarify the meaning of sustainable development more effectively.

²⁶³ New mechanisms for promoting sustainable development in the Brazilian Amazon, and the role of DBs in those mechanisms, are analyzed in Chapters 7-9.

Necessity as a core element of sustainable development means the material conditions which are necessary to lead a healthy and productive life. It refers, *inter alia*, to clean water, food security, safe shelter, and job opportunities. Ellis and Wood state that “sustainable development implies, first and foremost, a concern with satisfaction of human needs: the need, especially, for poverty eradication and social and economic development in developing countries.”²⁶⁴ In this regard, the Rio Declaration states:

Principle 1: Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Limitation

Limitation as a core element of sustainable development means the process of controlling two phenomena. One is the current unsustainable patterns of production and consumption. The other phenomenon is world population growth. In this regard, the Rio Declaration states:

Principle 8: To achieve sustainable development and higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Like the simple-living theorists who stand for “rationalization of means and moderation of ends”, most environmentalists groups argue that the current rates of production and consumption should drop to “sustainable levels”, in particular among wealthy countries, which have the world’s largest ecological footprints.²⁶⁵ However, less consumption would mean economic recession, and developing countries would be those that would suffer the most severe economic and social

²⁶⁴ Above note 261, p. 375.

²⁶⁵ Ecological footprint of nations – 2005 update, available from: <<http://www.RedefiningProgress.org>> January 2007.

consequences. This being so, one of the best responses to the current global environmental crisis is technological advancement through which human beings can improve their productivity while using fewer natural resources. The limits to production and consumption depend on the current stage of technological development. For instance, a potential development of clean sources of energy would provide better conditions to increase the current level of global production and consumption, while causing less environmental degradation.

In relation to demographic issues, the current growth of the world's human population is a critical threat to achieving global sustainable development. This issue was addressed many years ago by Thomas Malthus.²⁶⁶ In his forecast, the growth of population would soon outgrow the availability of resources. As is well known, his predictions in relation to potential global population have proved wrong, due to technological progress. Likewise, the Club of Rome's Report²⁶⁷ also proved wrong in its catastrophic predictions in relation to scarcity. The Report argued "that there was an inevitable resource ceiling to economic growth, indicating an end of copper production by 2000 and an end to most other metals and minerals soon thereafter."²⁶⁸ Nevertheless, as Walde points out, "(...) the world has not seen the attack of this resource ceiling."²⁶⁹ Undoubtedly, both Malthus and the Club of Rome underestimated the potential of technological progress.²⁷⁰ Nevertheless, their concerns in relation to population growth cannot be ignored completely. Today, population growth contributes to the increase of both poverty and environmental degradation.²⁷¹ If it is already a difficult task to integrate the economic, environmental, and social needs of the twenty-three million people who currently live in the Brazilian Amazon, it would be much harder to satisfy the needs of fifty

²⁶⁶ Thomas Malthus's *The Essay on Population* was published in 1798.

²⁶⁷ The Club of Rome's viewpoint was set up by *The Limits to Growth*, published in 1973.

²⁶⁸ Thomas W. Walde, "Natural resources and sustainable development", in Nico Schrijver & Friedl Weiss, *International Law and Sustainable development*, Leiden: Martinus Nijhoff Publishers, 2004, p. 126-127.

²⁶⁹ Ibid pp. 126-127.

²⁷⁰ In fact, technological progress can both improve our quality of life and wreck communities and the environment. For instance, nuclear plants are widely used for pacific proposes, nevertheless, atomic bombs may be used during war time, as the humanity saw in the 20th century.

²⁷¹ In Brazil, the rate of population growth has dropped significantly over the two decades, but still remains higher than predicted, nearly 1.2 percent (2007).

million people. Fearnside, an American scientist based in Manaus at the National Institute for Research in the Amazon (INPA), analyzed the interplay between limitation and sustainable development in the Amazon Region. He wrote:

The existence of limits ... leads to the inevitable conclusion that population and consumption cannot grow indefinitely. There is no such thing as sustainable development for an infinite number of people, nor for a fixed population that is infinitely rapacious. There is no way that development aimed at increasing the size of the pie can address problems that are rooted in highly unequal distribution of the pie. Many physical limits represent restrictions that need to be respected and lived with rather than as an agenda of items to be attacked. Recognition of this fact forces one to face fundamental problems of development that many people would prefer not to think about – resulting in a tendency to deny the existence of limits.²⁷²

The answer to the question about how to address the complex issue of human population growth might be found by examining the third element of sustainable development.

Equity

As a component of sustainable development, equity needs to be examined taking into account two different aspects: intra-generational equity and inter-generational equity. The former means “social justice”. The principle is set out in the Rio Declaration,

Principle 5: All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

²⁷² Philip Fearnside, “Fragile soils and deforestation impacts: the rationale for environmental services of standing forest as a development paradigm in Amazonia”, p. 8.

Therefore, sustainable development aims to reduce socio-economic inequalities. It seeks prosperity. Walde argues that “prosperity triggers much greater ‘secondary’ expectations once the ‘basic needs’ are met without effort.”²⁷³

In relation to inter-generational equity, Principle 3 of Rio Declaration states: “the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.” According to Ellis and Wood, inter-generational equity means that human beings should also take into consideration the needs of future generations. Empirically, it means that we can use the natural resources that we find in nature currently; nevertheless, we should take them “without compromising the ability of future generations to meet their own needs.”²⁷⁴ However, considering the standard definition of sustainable development, the time-horizon to be adopted is unclear.²⁷⁵

Walde argues that “the main characteristic of the principle of sustainable development is the inclusion of time – forward time. (...) Sustainable development puts the future on a completely equal footing with the present (and takes no account of the past).”²⁷⁶ He observes that “there has been continuous technological change over the last 1000 years at least (...). If a particular metal seemed close to depletion, as reflected in higher prices, another usage with other material inputs was developed. Technological innovation and price signals have mutually reinforced each other.”²⁷⁷ He concludes that “global depletion of non-renewable minerals is not a serious concern even under the perspective of the needs for future generations”. Those future generations “may or may not need the minerals currently being

²⁷³ Above note 268, p. 125.

²⁷⁴ Brundland Report.

²⁷⁵ Kates *et. al.* identify three different time-horizons: “the short-term (2015) goals of the Millennium Declaration; the two-generation goals (2050); and the long term (beyond 2050) goals.” Robert W. Kates, Thomas M. Parris, and Anthony A. Leiserowitz, “What is sustainable development? Goals, indicators, values, and practices”, *Environment: Science and Policy for Sustainable Development*, April 2005, Vol. 47, No. 3, p. 12.

²⁷⁶ Above note 268, p. 123.

²⁷⁷ Above note 268, p. 128.

developed and consumed, if the past is any guide, it is likely that future generations' needs and the methods of satisfying them will be very different from today."²⁷⁸

Integration

Last but not least, integration is the fourth element of sustainable development that is pointed out in this chapter. Sustainable development must integrate the concepts of economic growth and social justice, along with environmental protection. Sustainable development is a concept that can only be fully understood if it is located in the context of other approaches to development, including economic development and human development, because that concept shares with those approaches the common belief that human beings can produce better circumstances.

The increasing awareness in relation to the current global environmental crisis has to lead to new development theories without disregarding the other critical aspects of human societies (*e.g.* economic and social relations). As Principle 4 of the Rio Declaration states: "In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."

Indeed, sustainable development links environmental sustainability to wider economic and social aspects of life. As Paehlke points out, sustainable development is the challenge of integrating "social, economic, and environmental needs, to optimize gains in all three realms in a balanced way."²⁷⁹ Similarly, Park argues that "the norm of sustainable development emerged to balance environmental preservation with economic growth and social justice within the context of inter-state agreements."²⁸⁰ According to Sands, sustainable development requires that "environmental considerations be integrated into economic and other development

²⁷⁸ Above note 268, p. 129.

²⁷⁹ Robert C. Paehlke, *Democracy's dilemma: environment, social equity and the global economy*. Cambridge: the Massachusetts Institute of Technology Press, 2003, p. 10.

²⁸⁰ Susan Park, "the World Bank, dams and the meaning of sustainable development in use". *Journal of International Law and International Relations*, Vol. 5, No. 1, p. 104.

plans, programs, and projects, and that development needs are taken into account in applying environmental objectives.”²⁸¹

The viewpoint that sustainable development encompasses these three dimensions (economic, social and environmental) is explicit in a number of international instruments, *inter alia*, the 1995 Copenhagen Declaration on Social Development (paragraph 6)²⁸², and the 2002 Johannesburg Declaration on Sustainable Development (paragraph 6).²⁸³

Dovers suggests that sustainable development is a concept that can be seen as a means and a goal, simultaneously.²⁸⁴ He argues that the concept indicates some practices that should be applied to achieve an end that will be never fully reached. Taking sustainable development as a means or a process, we see a huge range of ways to implement sustainable development programs all over the world. After all, each society must find its particular way of integrating those three realms. What might be considered sustainable practice in a given country might not be the case for others. For instance, the need for economic growth and social justice is urgent in developing countries, due to their lower per capita GDP and HDI. On the other hand, environmental conservation has to be weighed differently in wealthy countries, because they have already reached higher economic and social standards, although they have greater adverse ecological impacts.

As mentioned previously in this subsection, Principle 1 of the Rio Declaration states that “all human beings are entitled to a healthy and productive life in harmony with nature”; thus, both poor and rich people are entitled to a clean environment. We

²⁸¹ Philippe Sands, “Environmental protection in the twenty-first century: sustainable development and international law”, in Richard L. Revesz, Philippe Sands and Richard B. Stewart (eds), *Environmental law, the economy, and sustainable development*. Cambridge: Cambridge University Press, 2008, p. 374-375.

²⁸² “We are deeply convinced that economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development, which is the framework for our efforts to achieve a higher quality of life for all people.”

²⁸³ “We assume a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development – economic development, social development, and environmental protection – at the local, national, regional, and global levels.”

²⁸⁴ S. Dovers. *Environment and Sustainability Policy: creation, implementation, evaluation*. Federal Press, p. 8.

must bear in mind that “sustainable development, with its combination of economic growth and environmental quality, is not achievable in poverty. Poverty makes no funds available for environmental quality – they are for immediate needs.”²⁸⁵

On Walde’s analysis, in order to promote sustainable development in the Brazilian Amazon, human beings should be at the centre of concern. This goal of sustainable development will be more difficult to achieve if some sectors of local people remain living in poverty. Taking into account that economic growth can contribute to poverty reduction, economic development is a desirable phenomenon for the Brazilian Amazon. As Justice Carmo correctly says: “it is no use having a well-preserved rain forest in exchange for local people’s misery.”²⁸⁶ Nevertheless, it does not mean that environmental protection should wait for poverty elimination or reduction. In other words, environmental protection is not a second step, following socio-economic development. In fact, the right direction is one which takes into account - from the beginning and throughout - the three dimensions of sustainable development, *i.e.*, economic growth, social justice and environmental conservation.

Even within national borders, each local community must find its own way of integrating those three dimensions. A given development project can be considered sustainable in one region of a country, but it might not be so in another. For example, a paved highway crossing the Brazilian Northeast semi-arid region is more likely to be seen as sustainable project than a similar one crossing the Amazon rainforest, because the former would cause much less environmental damage than the latter, which would be located in an area richer in biological diversity.²⁸⁷

²⁸⁵ Above note 268, p. 137-138.

²⁸⁶ Interview with Justice Antonio Carmo de Souza (High Court of Amapá - TJAP), on 14/10/2009. In Portuguese, “(...) não adianta você ter uma floresta preservada em troca da miséria do povo”. Free translation.

²⁸⁷ In relation to the potential impact of highways linking the Amazon frontier to pristine rain forests, see Philip M. Fernside, “Brazil’s Cuiabá-Santarém (BR-163) highway: the environmental cost of paving a soybean corridor through the Amazon.” *Environmental Management* 39 (5), 2007, pp. 601-614; Philip M. Fernside and Paulo M. L. A. Graça, “BR-319: Brazil’s Manaus-Porto-Velho Highway and the Potential Impact of Linking the Arc of Deforestation to Central Amazon”, *Environmental Management* 38 (5), 2006, pp. 705-716.

Finally, sustainable development as a goal may be described as utopian, because it may not be possible to perfectly integrate social, economic and environmental needs.²⁸⁸ As any society may be more democratic, fair, and egalitarian than others, in the same manner, some societies may achieve better levels of sustainability than others. In order to illustrate the ongoing challenges of integrating social, economic and environmental needs in the Brazilian Amazon, the thesis analyses a number of case studies in Chapter 6, aiming to draw out a number of lessons to guide the development banks' future actions in the region.

3.1.3. The absence of clear and precise content

Sustainable development is a broad concept, and necessarily so, because this concept needs to be applicable all over the world while taking into account local circumstances. In other words, as a universal goal, sustainable development is intended to be realizable in completely different realms, in ecological, economic, social and cultural terms. Taking the imprecision of the concept as its strength, Magraw and Hawke argue:

The generality of the concept (...) is both inevitable and appropriate because the concept must provide guidance and inspiration to policy-makers while simultaneously being capable of application in a variety of contexts, involving different economic realities, ecological conditions, population characteristics, legal systems, cultures, values, and preferences. Indeed, in practice, sustainable development must be tied closely to local conditions.²⁸⁹

Although the term has been used worldwide, it has been criticized by many scholars and international organizations. For instance, Rist suggests that there is “a lack of conceptual clarity” in the Brundtland Report’s definition of sustainable

²⁸⁸ Roberto Mangabeira Unger. “Desenvolvimento sustentável é abstração”. Interview with Laura Greenhalgh. *O Estado de São Paulo*. São Paulo, 15/06/2008. Available from: <<http://www.estadao.com.br/noticias/suplementos,desenvolvimento-sustentavel-e-abstracao,189519,0.htm>> June 2008.

²⁸⁹ Above note 247, p. 612.

development.²⁹⁰ He believes that sustainable development is not a feasible goal.²⁹¹ *Caring for the Earth* has, in turn, argued that the term is “ambiguous and open to a wide range of interpretations.”²⁹² Taking into account the generality of the concept of sustainable development, “one could ask whether the concept is so vague as to be meaningless and not of any practical use.”²⁹³ Similarly, Kates, Parris, and Leiserowitz argue that the standard definition of sustainable development is “creatively ambiguous.”²⁹⁴ Analyzing the Brundtland Report’s definition of sustainable development, Heal concludes: “While eloquent, this is very thin on operational content.”²⁹⁵

In view of the imprecision of the concept Heal suggests “a working definition” as follows: “Sustainability is doing things that we can safely continue indefinitely: doing things that can be continued over long periods without unacceptable consequences, or without unacceptable risks of unacceptable consequences.”²⁹⁶ *Caring for the Earth* has offered an original interpretation of sustainable development as “improving the quality of human life while living within the carrying capacity of supporting ecosystems.”²⁹⁷

However, Boer sees as problematic *Caring for the Earth*’s definition of sustainable development. According to Boer,²⁹⁸ it is anthropocentric and utilitarian. In order to

²⁹⁰ Gilbert Rist, *The history of development*, London: Zed Books, second impression, 1999, p.183.

²⁹¹ Rist argues that “people should be made to think that everything is changing, so that everything can remain the same as before.”²⁹¹ Ibid p.182.

²⁹² “The confusion has been caused because ‘sustainable development’. ‘sustainable growth’ and ‘sustainable use’ have been used interchangeably, as if their meanings were the same. They are not.” *Caring for the Earth: A Strategy for Sustainable Living*, IUCN, 1991.

²⁹³ Above note 247, p. 612.

²⁹⁴ They suggest that “this malleability allows programs of environment or development; places from local to global; and institutions of government, civil society, business, and industry to each project their interests, hopes, and aspirations onto the banner of sustainable development.” Above note 275, pp. 9 and 10.

²⁹⁵ Geoffrey Heal, “Markets and Sustainability”, in Richard L. Revesz, Phillippe Sands and Richard B. Stewart (eds), *Environmental law, the economy, and sustainable development*. Cambridge: Cambridge University Press, 2008, p. 410.

²⁹⁶ Ibid p. 400.

²⁹⁷ Above note 292.

²⁹⁸ Ben Boer, “Institutionalising ecologically sustainable development: the roles of national, state, and local governments in translating grand strategy into action” (1995) *31 Willamette Law Review*, p. 7.

avoid those undesirable interpretations, Boer prefers the term *ecologically sustainable development*. It is hard to agree with those who overvalue the ecological component of the term sustainable development, for instance, saying that “all beings have a natural right to sustenance”, and that “all members of the earth community, including all humans, have the right to sustenance – to food and water, to a safe and clean habitat, to security of ecological space.”²⁹⁹ Quite to the contrary, socio-economic progress cannot be denied due to “the natural right to sustenance of all beings”,³⁰⁰ otherwise most economic activities would have to be prohibited, because they usually cause some environmental degradation, thus, harming other beings.

In fact, many countries adopt the term “ecologically sustainable development”, because they believe it highlights the ecological component of the concept. For instance, the Australian government (1992) prefers that term and has defined it as “development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.”³⁰¹ The 1988 Brazilian Federal Constitution also uses the concept of ecologically sustainable development, in its article 225, “caput”. Nevertheless, adding the word “ecologically” to the term does not change its original meaning, that is, the development that integrates economic growth and social justice with environmental conservation. As the term “sustainable development” (without adding the word “ecologically”) is adopted more frequently in the fields of international law and Brazilian environmental law, only this term will be employed in this study.³⁰²

3.1.4. The legal status of sustainable development

Sustainable development is also a legal concept which informs many international instruments (both “hard law” and “soft law”). According to Sands, “international

²⁹⁹ Vandana Shiva, *Earth democracy: justice, sustainability and peace*. London: Zed Books, 2005, p. 9.

³⁰⁰ Ibid p. 9.

³⁰¹ Australian Government, *National Strategy for Ecologically Sustainable Development* 8, Australian Government Publishing Service, 1992.

³⁰² As is analysed in section 3.2 of Chapter 3 of this study, sustainable development involves the challenge of integrating three goals: economic growth, social justice, and environmental protection.

law in the field of sustainable development points to a body of principles and rules drawn from traditional approaches, evolutionary rather than revolutionary.”³⁰³ In 1994, a group of independent legal experts identified the content of international law in the field of sustainable development as follows: “It is a legal term which refers to processes, principles and objectives, as well as to a large body of international agreements on environment, economic and civil and political rights.”³⁰⁴

Some international agreements include the concept of sustainable development as a principle, for instance, the United Nations Framework Convention on Climate Change (UNFCCC).³⁰⁵ However, this concept is seen as an objective by other international instruments, for example, the Convention on Biological Diversity (article 1), and the preamble of the WTO agreement. Analyzing “what these processes, principles and objectives might be”, Sands concludes that

international law in the field of sustainable development coalesced around a broad umbrella accommodating the specialized fields of international law which aim to promote economic development, environmental protection and respect for civil and political rights. It is not independent and free-standing of principles and rules, and it is still emerging. As such, it is not coherent or comprehensive, nor is it free from ambiguity and inconsistency. The significance of the UNCED process is not that it has given rise to new principles, rules or institutional arrangements. Rather, it endorses on behalf of the whole of the international community (states, international institutions, non-governmental actors) an approach requiring existing *principles, rules and institutional arrangements to be treated in an integrated manner*.³⁰⁶

³⁰³ Above note 281, p. 381.

³⁰⁴ Above note 260, p. 147.

³⁰⁵ The United Nations Framework on Climate Change Convention, its fourth principle in article 3 states that “the Parties have a right to, and should, promote sustainable development.”

³⁰⁶ Above note 260, p. 147.

The international legal concept of sustainable development, as Sands calls it,³⁰⁷ has been invoked before bodies such as the International Court of Justice (ICJ), as well as the Appellate Body of the World Trade Organization (WTO). The jurisprudence of those two bodies was examined by Sands, highlighting some new understandings in relation to the legal status of sustainable development. As Sands says, “before the ICJ the concept of ‘sustainable development’ received its first thorough airing in the case concerning the Gabčíkovo-Nagymaros project, between Hungary and Slovakia.”³⁰⁸ In this case, the concept of sustainable development was invoked by both nations, in their written arguments.³⁰⁹ In the Appellate Body of the WTO (Shrimp-Turtle Case),³¹⁰ the concept of sustainable development provided “the ‘color, texture and shading’ to permit interpretation of the GATT 94 text which legitimately permits one state to take measures to conserve living resources which are threatened by actions in another state, subject to a need to exhaust multilateral diplomatic routes which may be available.”³¹¹

³⁰⁷ Philippe Sands, *Principles of international environmental law*, Oxford, 2004, p. 252.

³⁰⁸ “The case concerned a dispute over whether or not to build two barrages on the Danube shared by Hungary and Czechoslovakia. In 1977, by treaty, the two countries had agreed to build two barrages which would then be jointly operated. The 1977 Treaty envisaged the diversion of water from the Danube, where it was a boundary river, onto Czechoslovak territory (...). Construction began and proceeded more slowly than had been originally envisaged. In the mid-1980 political opposition in Hungary focused on the environmental impacts of the barrage (...). In May 1989, great public pressure led Hungary to suspend work on large parts of the project. (...) Czechoslovakia took the view that the barrages posed no serious threat to the environment. (...) In 1992 Czechoslovakia had dammed the Danube and diverted over 80 per cent of waters (...). In April 1993, (...) Hungary and Slovakia agreed to refer the matter to the ICJ.” Above note 260, p. 148.

³⁰⁹ Sands observes that “Hungary focused on the environmental aspect of the concept whilst Slovakia focused on its ‘developmental’ elements. For its part the Court invokes the concept to achieve an accommodation of views and values (...). The Court appears to use the concept to build a bridge, (...)”. Above note 260, p. 150. According to Sands, the Court’s decision is “suggesting that the preservation of the status quo – one barrage not two, jointly operated, (...) would be an appropriate solution”. Above note 260, p. 149.

³¹⁰ Appellate Body of the World Trade Organisation AB-1998-4, 12 October 1998. This case concerns “the import prohibition imposed by the United States on Certain Shrimp and Shrimp Products from India, Malaysia, Pakistan and Thailand, on the grounds that they were harvested in a manner which adversely affected endangered sea turtles.” Above note 260, p. 151.

³¹¹ Above note 260, p. 156. Text of the GATT 1994, Article XX: “Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures: (...) (b) necessary to protect human, animal or plant life or health; (g) relating to the

Considering both decisions, Sands concludes that they have not contributed much to the understanding of the concept of sustainable development: “we do not know with a great deal more certainty what it is, or what international legal status it has, or in what precise way it is to be made operational, or what consequences might flow from its application.”³¹² In a nutshell, “the law of sustainable development is still finding its feet.”³¹³ As Boyle points out, the ICJ’s decision “left open two very large questions, namely whether the Court could review development proposals on the ground that they were not sustainable, and whether the principle had an *erga omnes* character.”³¹⁴ Nevertheless, Birnie and Boyle sum up the current understanding of the concept of sustainable development, as follows:

There is no international legal obligation that development must be sustainable, and decisions on what constitutes sustainability rest primarily with individual governments. (...). [Despite this, sustainable development] can influence the outcome of cases, the interpretation of treaties, and the practices of states and international organization, and it may lead to significant changes and developments in the existing law.³¹⁵

Today, sustainable development is central to the mandate of many international organizations, such as the United Nations Environment Programme (UNEP) and the United Nations Development Program (UNDP). In addition, the international finance institutions, including the World Bank Group and the Inter-American Development Bank, have gradually adopted this new paradigm of development to guide their operations.³¹⁶ Sustainable development is also central to the mandates of Brazilian institutions influencing development in the Legal Amazon, for instance, the BNDES. Moreover, the concept of sustainable development is enshrined in the

conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.”

³¹² Above note 260, p. 156.

³¹³ Above note 281, p. 408.

³¹⁴ Above note 260, p. 156.

³¹⁵ Patricia Birnie and Alan Boyle, *International law & the environment*, Oxford: Oxford University Press, second edition, 2002, pp. 95-96.

³¹⁶ The discussion of the role of MDBs in promoting sustainable development is in sections 5.1 and 5.2 of Chapter 5 of this study.

Brazilian Constitution (article 225), and thus all institutions must guide their activities in accordance with this new paradigm.³¹⁷

3.2. Integrating the three dimensions of sustainable development

As argued above, sustainable development involves the challenge of integrating three goals: economic growth, social justice, and environmental protection. Paradoxically, these goals are at the same time mutually supportive and mutually destructive of each other. In other words, there are tensions among them. In the following pages, these tensions are analysed in depth. First, the chapter analyses the strongest tension, that is, between economic growth and environmental protection. Second, it examines the tension between economic growth and social justice. Last, it analyses the tension between environmental protection and social justice.

3.2.1. Tension between economic growth and environmental protection

Tension arises principally between the “economic growth” approach to the economic dimension of sustainable development and the environmental protection dimension. The term economic growth “has in practice meant growth in gross national product, due to an increased production of goods and services.”³¹⁸ An economy may increase its ability to produce goods and services in two ways. First, it can use more resources; second, it can use the same resources more efficiently. Although the development process does not equate wholly with economic growth, the latter plays a critical role in improving peoples’ lives, something which can be demonstrated by tracking the relationship between improvements in Gross Domestic Product (GDP) and accompanying movements in the Human Development Index

³¹⁷ In relation to Brazilian law and the mandates of Brazilian institutions influencing development in the Legal Amazon, see section 3.4 of Chapter 3 of this study.

³¹⁸ Herman E. Daly, *Beyond Growth*. Boston: Beacon Press, 1996, p. 27.

(HDI).³¹⁹ However, economic growth often causes negative environmental externalities, for example, pollution and biodiversity loss, which are usually not reflected in those measures of development. In few words, there are tensions between economic growth and protection of the environment. The concept of sustainable development is an attempt to reconcile those dimensions.

The pursuit of economic growth may undermine the promotion of environmental protection due to the fact that “the economy depends upon the environment both as a source of raw material inputs and as a ‘sink’ for waste outputs.”³²⁰ Within this perspective, in 1995 a group of eminent ecologists and economists produced a well-known study regarding the relationship between economic growth and protection of the environment³²¹. According to Daly, this work emphasized the following three propositions:

- (1) the [environment] resource base is finite,
- (2) there are limits to the carrying capacity of the planet, and
- (3) economic growth is not a panacea for [diminishing] environmental quality.³²²

Considering the relationship between the economic growth and environmental quality, Pearce argues,

One reason we might want to be against economic growth is that we might think economic growth causes environmental degradation. If it

³¹⁹ GDP is the dominant measure of economic success. It measures the size of a region’s economy, taking into account the total market value of all goods and services in that region over a given period of time. For example, in 2010, Brazil’s GDP was estimated at about US\$ 2.1 trillion. Development is also measurable through the HDI, articulated by the UNDP, which encompasses three dimensions of human development: living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at the primary, secondary and tertiary level), and having a decent standard of living (measured by purchasing power parity, PPP, income).

³²⁰ Above note 318, p. 6.

³²¹ Kenneth Arrow, Bert Bolin, Robert Costanza, Partha Dasgupta, Carl Folke, C.S. Holling, Bengt-Owe Jansson, Simon Levin, Karl-Goran Maller, Charles Perrings, David Pimentel, “Economic Growth, Carrying Capacity, and the Environment”, *Science*, 28 April 1995, Vol. 268, No. 5210, pp. 520-521.

³²² Above note 318, p. 10.

does, then controlling economic growth should reduce that degradation. Even this position needs careful qualification. Economic growth might, for example, be a cause but there might be other causes as well and the other causes might be more important.³²³

Pearce concludes that “focusing on anti-growth is not just unhelpful, it diverts attention away from real policies that stand a chance of success. A focus on the quality of growth is surely correct, however.”³²⁴ Certainly, economic growth can be crucial to environmental protection in many ways. For instance, the treatment of raw sewage is a key environmental need in most developing countries, including the Amazonian ones. Economic growth leads to increasing public revenues, which might allow governments to promote this treatment. The case of technological advancement is another good example, because profits create virtuous cycles that allow more investment in modern technologies, generally environmental friendly ones. In contrast, economic recession usually leads to diminishing revenues. Under these circumstances, governments may prefer to cut public expenditure related to environmental sustainability, which is frequently seen as an issue of lesser priority in comparison to other issues such as education and transport systems.

For sustainable development, then, reconciling these two dimensions will require not only that economic growth be accompanied by suitable and effective environmental protections but also that the two goals are approached as being inseparable, being at the same time mutually supportive and mutually destructive of each other. It is important to make clear the distinction between economic growth (quantitative expansion) and economic development (qualitative improvement), and not to assume that they are the same. The former has greater capacity to cause environmental harm, while the latter should be seen as “the path of environmental and social sustainability, because of its greater capacity to increase GDP without pushing up the environmental load. It seems inevitable that economic development will expand in the Brazilian Amazon and that this tension, which is already

³²³ David Pearce, *Economics and environment: essays on ecological economics and sustainable development*. Cheltenham (UK) and Northampton (USA): Edward Elgar Publishing, 1998, p. 319.

³²⁴ Ibid p. 119.

apparent, will continue in the coming decades. Given this, development policy-makers and actors, should adopt an economic development approach which prioritizes qualitative improvements. It will be argued later in the thesis that development banks, as particularly influential and powerful actors in the Brazilian Amazon, must promote qualitative economic growth in the region, that is, a rising GDP derived from an increasing ability to produce goods and services more efficiently, without damaging the ecological value of the region.³²⁵

Pearce analyzed the relationship between nature and economic development as one of competition and he concluded:

That competition is played out mainly in terms of land use change, (...). Development does have moral justification because it meets the needs of a rapidly growing global population and because it meets the aspirations of individuals. Its social return is measured in money terms. To compete, nature must be demonstrated to have economic value, and that economic value must be captured through the creation of institutions that feed that economic value to those who make land use decisions.³²⁶

Pearce argues that environmental protection, or as he terms it the protection of nature, will also require “moral justification” if it is to compete successfully with the economic dimension. In the context of the Brazilian Amazon, that competition is largely played out between the Amazon rain forest and regional economic development. The latter does have moral justification because it meets the needs of a rapidly growing global population, demanding beef, soybean, timber, and minerals. Indeed, economic development meets the legitimate aspirations of local people in improving their social standards. In addition, its social return is clearly measured in money terms such as increasing wages. Applying Pearce’s analysis, environmental protection must also be structured in the Amazon so as to contribute to both economic and social development. This could be achieved, as is discussed in

³²⁵ See new mechanisms for promoting sustainable development in the Brazilian Amazon, in Chapters 7-9 of this study.

³²⁶ Above note 323, p. 31.

Part 4 of the thesis, through the creation of institutions to remunerate the local people for the ecological services that their lands and, particularly, the standing forest, provide for the entire humanity.

3.2.2. Tension between economic growth and social justice

The social dimension of sustainable development is closely linked to two elements of sustainable development discussed earlier in this chapter: necessity and equity. The former refers to the basic human needs, such as clean water and safe shelter.³²⁷ The latter refers to intra-generational equity, including poverty alleviation and the fight against social inequalities. The “equity” element also includes intergenerational equity, which means equity among generations, that is, the present and future generations. In view of the fact that is unhelpful to define the term (sustainable development) using the same word (development), this thesis refers to the social dimension of sustainable development as “social justice” rather than “social development” or “human development”.³²⁸ Nevertheless, it is important to bear in mind that the term “social justice” is used here in its broader meaning, including all aspects of social development such as those mentioned by the International Covenant on Economic, Social, and Cultural Rights.

In general, economic growth and social justice are mutually supportive of each other. On one hand, economic growth is vital to tackle effectively a number of social injustices, among others, unemployment, poverty, malnutrition and child mortality. On the other hand, increasing social justice boosts economic growth. To illustrate, since the 2000s Brazil has experienced a significant reduction in its social inequalities. In consequence, millions of Brazilians left poverty to become new

³²⁷ In this regard, the Rio Declaration states: Principle 1: Human beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.”

³²⁸ Social development theory encompasses three major variants referring to the concept of “social development”. As Kates *et al.* explain: The first is simply a generic noneconomic social designation that uses terms such as ‘social’, ‘social development’, and ‘social progress’. The second emphasizes human development as opposed to economic development: ‘human development’, ‘human-well-being’, or just ‘people.’ The third variant focuses on issues of justice and equity: ‘social justice’, ‘equity’, and ‘poverty alleviation.’ Above note 275, p. 12.

consumers. According to *The Economist*, “the share of people in social class C increased from 42 percent of the population in 2004 to 52 percent in 2008.”³²⁹ Thus, the emergence of a new consumer class has supported Brazil’s recent economic development.³³⁰ Nevertheless, even though economic growth “has moral as well as material benefits”,³³¹ there are occasions when the pursuit of economic growth may undermine social justice. For instance, today the constructions of large dams in the Brazilian Amazon, including the Madeira River Dams and the Xingú River Dam, are grounded in the need for regional economic growth; nevertheless, they are already causing displacement of many forest-dependent communities such as riverbank and indigenous groups. In addition, the pursuit of short-term economic return may undermine the respect for established labor standards, for example, in terms of inadequate workplace conditions and low wages.

3.2.3. Tension between environmental protection and social justice

Human beings depend on a healthy environment to survive and to live a productive life. In this regard, environmental protection and social justice are mutually supportive of each other. To illustrate, the mitigation and adaptation measures related to global climate change contain a social component in the sense that poor communities are much more vulnerable to extreme weather events such as heat

³²⁹ The Economist, *Brazil takes off, A special report on business and finance in Brazil*. November 14, 2009, p. 16. With regard to the relationship between economic growth and social justice in Latin America, see The Economist, *Nobody’s backyard: the rise of Latin America, A special report on Latin America*, September 11th 2010, p. 12.

³³⁰ In 2010, Brazil’s GDP grew about 7.5 percent, according to the World Bank, *Brazil Country Brief*, available from: <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/LACEXT/BRAZILEXTN/0,,menuPK:322351~pagePK:141132~piPK:141107~theSitePK:322341,00.html> April 2011.

³³¹ “Growing prosperity, history suggests, makes people more tolerant, more willing to settle disputes peacefully, more inclined to favour democracy. Stagnation and economic decline are associated with intolerance, ethnic strife and dictatorship. Growth, in short, has moral as well as material benefits”. *The Economist*. Why the rich must get richer. Do industrial countries care too much about growth? No, they ought to care more. *Brazil takes off, A special report on business and finance in Brazil*. November 14, 2009, p. 16. With regard to the relationship between economic growth and social justice in Latin America, see The Economist, *Nobody’s backyard: the rise of Latin America, A special report on Latin America*, September 11th 2010, p. 12.

waves and heavy precipitations that have become more frequent and intense recently.³³² However, environmental protection and social justice can also be mutually destructive of each other. In this case, the tension between the ecological and social dimensions would undermine the promotion of sustainable development.

In the Brazilian Amazon, the tension occurs in two ways. On one hand, there are occasions when social justice policies and strategies may cause environmental degradation. An example is Brazil's land reform strategies. Since the 1980s, in order to mitigate unrest over access to rural lands, the Brazilian government has granted land titles to farm workers who move to the region, especially to the states of Rondônia and Pará.³³³ As is demonstrated in Chapter 6, these rural settlement projects usually cause significant deforestation in the project-affected areas.

On the other hand, there are occasions when the pursuit of higher environmental standards may undermine social justice. An example is the case of "protected areas". In the last three decades, the creation of large protected areas such as national parks and ecological stations has affected the lives of local residents. Even though they depend on the rain forests to survive, frequently they are no longer allowed to live inside the area.³³⁴ Under these circumstances, there is no development, because there is no process of enlarging the freedoms that people enjoy. Fortunately, there are a number of options outside the conflict between protected areas and local residents. An example is the case of payment for environmental services (PES).

To conclude, there is broad agreement that the three dimensions of sustainable development – economic growth, social justice, and environmental protection – must be approached as being inseparable, because these goals are at the same time mutually supportive and mutually destructive of each other. In the pages below, Chapter 3 analyses Brazil's legal and institutional frameworks in the field of

³³² IPCC, *Climate Change 2007: Synthesis Report*, available from: <http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf> October 2010.

³³³ See Map of Brazil.

³³⁴ In relation to the conflicts between parks and people, see Antonio Carlos Diegues, *O mito moderno da natureza intocada*, São Paulo: Hucitec, 1998.

sustainable development in order to evaluate their adequacy to integrate the three dimensions in the Legal Amazon.

3.4. Sustainable development, domestic law, and the mandates of Brazilian institutions influencing development in the Amazon

As mentioned in chapter 1, approximately two-thirds of the Amazon Region is located in Brazil. Apart from the Amazon, this country contains other megadiverse biomes, such as the Atlantic Forest,³³⁵ Brazilian Wetlands,³³⁶ and Brazilian Savannah.³³⁷ Therefore, Brazil is “one of the world’s richest megadiversity countries, vying with Indonesia for the title of our planet’s biologically wealthiest nation.”³³⁸ Recently, Brazil and its biomes, particularly *Amazônia*, have been at the centre of environmental concerns. In consequence, the Brazilian government has come under considerable social and political pressure, from inside and outside the country, to improve its environmental efficiency, particularly in the field of biodiversity conservation. The analysis below focuses exclusively on the practices of national and local agencies in the biodiversity conservation sector in order to show how “Brazil has become a world leader in biodiversity conservation.”³³⁹

The history of environmental conservation in Brazil can be traced back to, at least, the mid-1930s when the first national parks were created in the states of Rio de Janeiro and Paraná.³⁴⁰ Throughout the 1940s, 1950s, and 1960s, a number of new national parks were created across the country, except in the Amazon and Pantanal biomes. As of 1970, the Araguaia National Park was the only park in the entire Brazilian Amazon.³⁴¹ As noted above, in 1972 the first United Nations Conference

³³⁵ In Portuguese, *Mata Atlântica*.

³³⁶ In Portuguese, *Pantanal*.

³³⁷ In Portuguese, *Cerrado*.

³³⁸ Russel Mittermeier *et al*, *A brief history of biodiversity conservation in Brazil*. Conservation Biology (June 2005), vol. 19, n. 3, p. 601.

³³⁹ Ibid p. 601.

³⁴⁰ In 1934, the National Park of Itatiaia was created in the state of Rio de Janeiro (RJ). In 1937, the National Park of Iguaçu was created in the state of Paraná (PR).

³⁴¹ Above note 338, p. 601.

on the Environment took place in Stockholm, Sweden. At that conference, Brazil suffered diplomatic pressure from the developed countries to improve its environmental policies. As a result, in 1973 Brazil created the Special Secretariat for the Environment (SEMA).³⁴² In the 1970s and 1980s, an impressive number of protected areas were created across the nation, including in the Amazon Region. According to Mittermeier et al.:

This period of rapid development of Brazil's park's system was truly historic and can be compared with the burst of conservation activity under President Theodore Roosevelt in the United States in the early part of the twentieth century. The combined efforts of SEMA and IBDF from 1974 to 1989 led to the creation of 22 national parks, 20 biological reserves, and 25 ecological stations, totalling 144,180 km².³⁴³

Since the early 1990s, Brazil has been supported by many institutions, among others, the UNEP, UNDP, World Bank, IDB, and the German Development Bank to improve its national protected areas system. Undoubtedly, some multilateral mechanisms such as the Pilot Program to Protect the Forests of Brazil (PPG7) and the Amazon Protected Areas Program (ARPA) have played a critical role in this regard.³⁴⁴ At present, under Brazilian Environmental Law, approximately 42 percent of the "Legal Amazon" is classified as protected areas,³⁴⁵ which encompass a range of categories, from Conservation Units and Indigenous Lands, to *Quilombolas* Lands and military areas.³⁴⁶ All these categories of protected area are analysed below.

³⁴² The SEMA was led by the prominent Brazilian environmentalist Paulo Nogueira-Neto.

³⁴³ Above note 338, p. 602.

³⁴⁴ With regard to the PPG7 and ARPA, see Chapter 6, section 6.2.2, and Chapter 7, section 7.1, respectively.

³⁴⁵ The Legal Amazon (*Amazônia Legal*, in Portuguese) encompasses nine states of Brazil, as follows: Acre (AC), Amapá (AP), Amazonas (AM), Pará (PA), Mato Grosso (MT), Maranhão (MA), Rondônia (RO), Roraima (RR), and Tocantins (TO). The concept of the Legal Amazon is explained in detail in Chapter 1. See Map of Brazil.

³⁴⁶ Above note 23, p. 51.

The Conservation Units (UCs)³⁴⁷ are key tools to protect the Legal Amazon. Over the last decades of the twentieth century, vast portions of Brazilian territory, including the Legal Amazon, were transformed into protected areas such as national parks. The legal framework of these protected areas was established by the 2000 National System of Conservation Areas Act.³⁴⁸ As Brazil has a federal system, there exist both federal and state Conservation Units, together covering 18.7 percent of the Legal Amazon. The 2000 Act classifies the Conservation Units into two categories: Conservation Units of Strict Protection and Conservation Units of Sustainable Use. The former aims to directly protect the environment, allowing the use of their natural resources only under very exceptional circumstances. To be precise, the Conservation Units of Strict Protection³⁴⁹ category encompasses five sub-categories of protected areas: Ecological Station, Biological Reserve, National Park, Natural Monument, and Wildlife Refuge.³⁵⁰ Together, these five categories encompass an area of approximately 425,000 sq. km. of the Legal Amazon.³⁵¹ As of 2006, Amazonian deforestation had destroyed less than 1.8 percent of forest cover under the legal regime known as the Conservation Units of Strict Protection.³⁵²

The category of Conservation Units of Sustainable Use,³⁵³ in turn, aims to reconcile environmental conservation with sustainable use of natural resources. These units cover an area of 675,000 sq. km of the Legal Amazon, and encompass seven types of protected area, as follows: the Environmental Protection Area, Special Ecological Interest Area, National Forest, Extractive Reserve, Fauna Reserve, Sustainable Development Reserve, and Natural Heritage Reserve.³⁵⁴ As is shown in Chapters 7-9, the MDBs are playing a significant role in helping Brazil to expand its

³⁴⁷ In Portuguese, *Unidades de Conservação*.

³⁴⁸ In Portuguese, *Lei do Sistema Nacional de Unidades de Conservação* - Federal Law n. 9985 of 18 July 2000.

³⁴⁹ In Portuguese, *Unidades de Conservação de Proteção Integral*.

³⁵⁰ In Portuguese, *Estação Ecológica, Reserva Biológica, Parque Nacional, Monumento Natural and Refúgio da Vida Silvestre*, according to articles 8-13, from the Federal Law n. 9985/2000.

³⁵¹ Above note 23, p. 52.

³⁵² Above note 23, p. 51.

³⁵³ In Portuguese, *Unidades de Conservação de Uso Sustentável*.

³⁵⁴ In Portuguese, *Área de Proteção Ambiental, Área de Interesse Ecológico Especial, Floresta Nacional, Reserva Extrativista, Reserva da Fauna, Reserva de Desenvolvimento Sustentável, Reserva Particular do Patrimônio Natural*, according to articles 14-21, of the Federal Law n. 9985/2000.

conservation units located in the Legal Amazon, for example, the World Bank through the PPG7 and ARPA and the BNDES through the Amazon Fund.³⁵⁵

Secondly, Indigenous Lands³⁵⁶ are very important tools to protect the Amazon's cultural diversity and to indirectly conserve the region's natural landscapes and biodiversity, since their environmental impacts are low generally and the prevalence of fire is four times lower inside than outside Indigenous Lands situated in the region. There are currently over 700,000 indigenous people in Brazil,³⁵⁷ the majority living in the Legal Amazon. Today, indigenous lands encompass 18 percent of the Legal Amazon.³⁵⁸ Unfortunately, a number of indigenous communities are under serious threat. For example, the ongoing constructions of large dams in the Brazilian Amazon, such the Santo Antônio and Jirau in the Madeira River and the Belo Monte in the Xingú River, are already causing adverse consequences to indigenous groups in those areas. The BNDES is funding these development projects.³⁵⁹

Thirdly, the *quilombolas* of the Brazilian Amazon are African-descendants whose ancestors escaped from slavery and found refuge in the forest. They form traditional communities and their life styles have low environmental impacts. Currently, the *quilombolas* lands occupy 1.6 percent of the Legal Amazon.³⁶⁰ Last but not least, the military areas cover 0.4 percent of the Brazilian Amazon.³⁶¹ The forest cover is considered virtually intact in these areas. The development banks play no role in these areas, and they are not analyzed further.

³⁵⁵ The PPG7 is analysed in Chapter 6, section 6.2.2. The ARPA, in turn, is analysed in Chapter 7, section 7.1. Finally, the Amazon Fund is examined in chapter 7, section 7.2.

³⁵⁶ In Portuguese, *Terras Indígenas*.

³⁵⁷ Louis Forline and Jorge Pozzobon, "O destino dos 'isolados'" in Ulisses Capozzoli, *Amazônia: destinos*. São Paulo: Duetto Editorial, 2008, p. 30.

³⁵⁸ Above note 23, p. 52.

³⁵⁹ The dams are analysed in Chapter 6, section 6.3.1.

³⁶⁰ Above note 23, p. 52.

³⁶¹ The largest being the Instruction Camp of Cachimbo. In Portuguese, *Campo de Instrução de Cachimbo*. Above note 23, p. 52.

Fortunately, Brazil's protected areas system and related mechanisms (RLF and APP)³⁶² have been supported by a vast number of NGOs in the fields of environmental conservation and human rights, particularly indigenous rights. Some international environmental NGOs such as The Nature Conservancy (TNC) and WWF-Brazil have been among the most influential in the Legal Amazon. Prominent national NGOs have been included the Funatura, SOS Amazônia, IPÊ, Fundação Vitória Amazônica (FVA), IMAZON, and IPAM.³⁶³ As Mittermeier et al. note, "these NGOs took on largely complementary roles, developing strong scientific, analytical, and political capacity and stimulating conservation regionally and nationwide. They set up strong partnerships with international organizations and the government, notably in management and research in protected areas".³⁶⁴ To illustrate, the WWF set up a partnership with the World Bank to promote the world's largest tropical forest preservation program known as ARPA (Amazon Protected Areas Program).³⁶⁵

In addition to the NGOs, there are many other key players supporting the national and local agencies in promoting environmental sustainability nationwide. For instance, it is estimated that "Brazil now has more than 500 private organizations focused on biodiversity conservation".³⁶⁶ With regard to the Legal Amazon, the private sector has set up a number of partnerships with international organizations and the government has focused on that field. For example, some large Brazilian cosmetic companies such as *Natura* and *O Boticário* have supported the *Protected Areas Fund* for the maintenance of the Amazon's protected areas. Another good example is that of the private bank *Bradesco* that has channelled financial resources

³⁶² Under Brazilian law any rural landowner, whose property is situated in the Legal Amazon, is obliged to keep standing at least 80 percent of the forest cover located inside the perimeter of his/her private property. This piece of land is known as a forest legal reserve (RLF), and cannot be exploited unless there is an ecological management plan approved by the environmental agency. In addition, those forest cover areas located along the rivers and/or at the top of mountains and hills also cannot be deforested, because they are considered as permanent protection areas (APP) by the Brazilian Forest Code. Unfortunately, the comprehensive legal framework has been violated regularly in the Legal Amazon, causing a significant loss of biodiversity and contributing to climate change.

³⁶³ Above note 338, p. 604. This thesis acknowledges the remarkable contribution of other NGOs such as the ISA and Greenpeace, among others.

³⁶⁴ Above note 338, p. 604.

³⁶⁵ The Amazon Protected Areas Program is studied in Chapter 8

³⁶⁶ Above note 338, p. 604 .

to the *Sustainable Amazonas Foundation*, which supports a scheme for promoting payments for environmental services in the state of Amazonas.³⁶⁷

To conclude, Brazil already has a “critical foundation for successful conservation”,³⁶⁸ because the country has “made an enormous commitment to (...) protected areas (...) - one far exceeding that of any other tropical country and comparable to a developed country”.³⁶⁹ In addition, it “has experienced major growth in non-governmental conservation capacity and has developed a strong community of world-class conservation scientists and practitioners”.³⁷⁰ However, this massive apparatus has received insufficient funds. For instance, at present only five per cent of the Federal budget is channelled to the Environment Ministry.³⁷¹ In addition, this apparatus for sustainable development has to compete with another one that is heavily committed to “traditional” models of economic development, in which the importance of environmental factors is underestimated.

³⁶⁷ With regard to PES schemes, see Chapter 9.

³⁶⁸ Above note 338, p. 601.

³⁶⁹ Above note 338, p. 601.

³⁷⁰ Above note 338, p. 601.

³⁷¹ Washington Novaes, “Amazônia e Cerrado – desta vez vai mesmo?”, *O Estado de S. Paulo*, Espaço Aberto, p. A2, 02/04/2010.

PART 2

DEVELOPMENT IN THE BRAZILIAN AMAZON

Chapter 4

The processes of development in the Brazilian Amazon

4.1. Historical periods

Chapter 4 provides a more comprehensive and detailed picture of the different models of Amazonian development in order to understand the current clash of models taking place in the region, and affecting the work of development banks, leading them to play an ambiguous role in the region, between the predatory development model and the sustainable one. Following Becker, Chapter 4 divides the history of Amazonian development (from European colonization to date) into three different periods: the Territorial Formation period (1616-1930), the Regional Planning period (1930-1985), and the Mystery of Heartland period (1985-onwards)³⁷².

In 1616, Portuguese colonizers built a fort known as *Forte do Presépio*, which is located on the Amazon River estuary, and is considered the mark of the foundation of the city of Belém. It was built to protect the possession from imminent attacks, which could come from indigenous communities or other European groups, in particular, the French, Dutch, English, and Germans,³⁷³ in retaliation against the outcomes of the *Tordesillas Treaty*.³⁷⁴ After that, the Portuguese gradually occupied

³⁷² Bertha Becker. *Amazônia: geopolítica na virada do III Milênio*. Rio de Janeiro: Garamond, 2007, p. 23.

³⁷³ Above note 81, p. 309.

³⁷⁴ Hecht and Cockburn explain that “[i]n 1493, Rodrigo Borgia, Pope Alexander VI, brokered an agreement between Portugal and Spain that the former take control of all territory west and the latter all territory east of the longitude running through the Cape Verde islands. A year later Castille-Aragon and Portugal signed the Treaty of Tordesillas in which the dividing line was moved 370 leagues to the west and the New World was formally claimed. (...) [A] quarter of a century before Cortez and his conquistadors laid low the Aztec Empire, most of Brazil fell under formal control of the Portuguese, whose overriding imperative was to secure this vast space before someone else claimed it. And other claimants stood ready: the French, Dutch and Germans moved along the eastern coast

other portions of the Amazon region, even beyond the Tordesillas Line. As Brazil became an independent nation in 1822, Brazilian diplomacy focused its attention on issues related to international navigation in the region, as well as the delineation of national borders, which was concluded from the period 1899 to 1930.

The second period, the Amazonian Regional Planning period, was initiated by the first administration of Getúlio Vargas in the 1930s, and achieved its peak during the period of Brazilian military rule (1964/1985). In 1964, within the context of the Cold War, the military authorities deposed the nationalist government of João Goulard. The generals started a new period of Amazonian development, which had national security and integration as top priorities. Their motto was “occupy so as not to surrender.”³⁷⁵ The concerns related to national security and integration matters already had deep roots in the Brazilian authorities, which can be traced back to the colonial period (1500-1822), perhaps due to the country’s continental dimension.³⁷⁶

Due to these concerns, in the late nineteenth century, the first Brazilian Republican Constitution stated that the country would build a new national capital in the centre of its territory. Many decades later, seeking to promote national integration, the administration of Juscelino Kubitschek (1956-1960) changed the federal capital from the city of Rio de Janeiro, on the southeastern coast of Brazil, to a remote area located between the Brazilian coast and the Amazon Region. Brasília was inaugurated in April of 1960, starting an intense process of human occupation of interior lands of Brazil, a social phenomenon that can be seen as a Brazilian version of the well-known “March to the West” in the United States.³⁷⁷ It was also in 1960 that the construction of the Belém-Brasília Highway (BR-153) was completed, the first large road crossing the Brazilian Amazon, which now links two of the

and entered Amazônia via the Guianas, seeking a footing for trading outposts and possible colonies”. Susanna Hecht and Alexander Cockburn. *The fate of the forest: developers, destroyers and defenders of the Amazon*, London: Verso, 1989, p. 4.

³⁷⁵ In Portuguese, “ocupar para não entregar”.

³⁷⁶ Brazil is the world’s fifth largest nation, sharing borders with all other South American countries, except Chile and Ecuador.

³⁷⁷ As London and Kelly write, “the inexorable development of the Amazon in the late twentieth century began with the inauguration of Brasilia in 1960. The city would come to symbolize Brazil’s ambition and capacity, and its location would redirect the focus of the country’s physical expansion. Opportunities now lay in the interior and Brasília was the first step in making that frontier accessible”.³⁷⁷ Above note 22, p. 32.

country's most populated cities. Although the process of integrating the Amazon into the rest of Brazil had already started when the generals took office in Brazil, it was only after 1964 that a comprehensive model of development was established for this region.³⁷⁸

Regardless of eventual environmental harms related to its governmental plans, the military rulers took national security and integration as their main goals for the Brazilian Amazon, and set up many institutions and programs in order to achieve them. The official programme known as "Operation Amazonia"³⁷⁹ was formulated in 1966. According to Hall:

It was geared towards establishing "development poles" such as Manaus, encouraging immigration and the formation of self-supporting groups, providing incentives to private investment, encouraging infrastructural development and research into resource potential. (...) Economically speaking, it implied the promotion of an import-substitution industrialisation model funded by both domestic capital from the Centre-South as well as foreign funds.³⁸⁰

In the mid-1960s, Belém and Manaus were chosen for the role of "development poles" in the Amazon Region, because these cities had already experienced a period of significant prosperity over the years of 1880s-1920s, which is known as the "Rubber Boom" period. From the 1960s onwards, these areas were included in a comprehensive project of economic development. To illustrate, since 1967 Manaus

³⁷⁸ As Hall writes, "The 1964 military takeover in Brazil marked a watershed in policy-making for Amazonia. Until then public initiatives to exploit the region's resources (...) had been piecemeal, narrowly focused and inconclusive. Possibly because the military authorities were more sensitive to the geopolitical importance of integrating the Amazon Basin into the national economy than their civilian predecessors in government, a new and more aggressive occupation strategy soon became apparent." Anthony L. Hall, *Developing Amazonia: deforestation and social conflict in Brazil's Carajas programme*, Manchester and New York: Manchester University Press, 1991, p. 6.

³⁷⁹ In Portuguese, *Operação Amazônia*.

³⁸⁰ Above note 378, p. 8.

has been recognized as a Free Trade Zone.³⁸¹ The Belém-Brasília Highway was paved in 1973, integrating Belém into the national economy.

During this period, virtually any modern development in the Amazon was welcomed by the administration. In 1967, the American billionaire Daniel K. Ludwig set up a project near the mouth of the Amazon River, occupying an immense area of 3.6 million hectares. As London and Kelly point out, “Ludwig built more than three thousand miles of road, thirty-seven miles of railway, and a deep-water port.”³⁸² The Jari Project also included, according to Hall, “100,000 hectares of two fast-growing foreign varieties of tree (...); a massive cellulose plant floated from Japan; timber production for plywood and furniture; one of the largest high-yielding rice paddies in the world, covering 12,000 hectares; soybean, sugarcane, castor-oil and palm-oil plantations; and a livestock project with 50,000 head.”³⁸³ This project also included a company town with 40,000 workers. However, the project was not an economic success for two main reasons. One reason relates to the fragile environment that imposed important constraints on rice and timber production. The other factor involves the historical concerns related to national security. The Ludwig’s operations in the region were perceived by Brazilian authorities as being unduly secretive. As a result of these problems, in 1982 Ludwig sold the Jari Project to a group of Brazilian companies.³⁸⁴ The Jari Project showed that even billionaire-led projects creating thousands of jobs may end in spectacular failure, due to a lack of risk assessments.

In mid-1960s, the Superintendency for the Development of Amazonia (SUDAM)³⁸⁵ was created to set up a policy of fiscal incentives, including income tax credits and import/export exemptions, to attract both national and foreign investors.³⁸⁶ The SUDAM approved a number of livestock projects that were heavily funded by the

³⁸¹ In Portuguese, *Zone Franca de Manaus*.

³⁸² Above note 22, p. 108.

³⁸³ Above note 378, p. 8

³⁸⁴ Above note 378, p. 8.

³⁸⁵ In Portuguese: *Superintendência de Desenvolvimento da Amazônia*.

³⁸⁶ Above note 378, pp. 6-7.

World Bank Group and the Inter-American Development Bank.³⁸⁷ In 1970, the Plan for National Integration (PIN)³⁸⁸ was launched to finance “a 5,000-kilometre Trans-Amazon highway (BR 320) linking the North-East and Amazonia”,³⁸⁹ in order to connect “people with no land to a land with no people”.³⁹⁰ This governmental plan “also envisaged a north-south highway linking Transamazonica with Centre-South, from Santarém to Cuiabá (BR 165).³⁹¹ The PIN sought to foster a colonization process in the Amazon. Small farmers were encouraged by the federal government to settle down along these two highways. However, this colonization policy did not succeed for various reasons such as:

[t]he construction of roads which were impassable in the rainy season, the provision of fast-growing seed varieties which matured at the wettest time of the year in Amazonia, the allocation to farmers of infertile areas, and rigid credit mechanisms which were not adapted to farmers’ needs in the agricultural calendar.³⁹²

Schmink and Wood travelled across the Amazon region in the mid-1970s. They reported a dramatic remark made by an attendant working at a petrol station located along the Transamazon highway. She said to them: “You are embarking on the Great Transamargura (“Transbitterness”), (...) It links nothing but poverty in the Northeast to misery in Amazonia”.³⁹³ The failures of PIN led the military regime to alter its policies for the Amazon, which “turned from an initial emphasis on absorbing excess population in other regions of Brazil to favoring the expansion of large-scale capitalist ventures.”³⁹⁴

³⁸⁷ Hall writes that “this is fact reflected the global emphasis being given at the time by multilateral bodies such as the World Bank and the Inter-American Development Bank to investment in the Third World livestock sector; these two organisations alone made loans of US\$ 1.3 billion for cattle-rearing in the 1960s and 1970s.”

³⁸⁸ In Portuguese, *Plano de Integração Nacional*.

³⁸⁹ Above note 378, p. 10.

³⁹⁰ Marianne Schmink and Charles H. Wood, *Contested frontiers in Amazonia*, New York: Columbia University Press, 1992, p. 2.

³⁹¹ Above note 378, p. 10.

³⁹² Above note 378, p. 16.

³⁹³ Above note 390, p.4.

³⁹⁴ Above note 390, p.5.

This new approach to the Amazon's development was reflected in the 2nd Plan for National Integration (1975-1979), which "set forth a regional agenda called POLAMAZONIA (...)" which sought to create growth poles by redirecting public and private investment into areas with economic potential, such as cattle raising, large-scale farming and mining activities. As Hall states, this new approach "based the future development of Amazonia on extending transport and communications, on expanding export-oriented activities such as beef, timber and minerals, and on the geographical of investments in specific areas of the region."³⁹⁵ This plan "stressed national economic priorities and the role of Amazonia in generating foreign exchange through the export of those natural resources in which Brazil enjoys a 'comparative advantage.'"³⁹⁶ To summarize, Hall describes the Brazilian economic policies during the 1960s and 1970s as having been a "State Capitalism" model, in which planning strategies in general, and import substitution strategies and export-based industrialization in particular, played a key role in promoting economic development.³⁹⁷

In the early 1980s, mining, agribusiness and land reform were top priorities for the region.³⁹⁸ For example, the Polonoroeste Program and the Great Carajás Program were implemented in the Brazilian states of Rondônia and Pará, respectively.³⁹⁹ However, Brazil was entering a period of gradual political liberalization, and the military government was not in a position to set up plans, policies, and strategies for the region, because the generals were facing increasing opposition from many sectors of Brazilian civil society, who clamoured for reforms.

³⁹⁵ Above note 378, p. 20.

³⁹⁶ Above note 378, p. 20.

³⁹⁷ Hall writes that the Brazilian economic policies were "characterised by a form of 'State Capitalism' in which government [took] an increasingly interventionist stance, encouraging both import-substitution and export-based industrialization via attraction of domestic and foreign investment (...) In Amazonia the State played a crucial role in moulding the policies and strategies (...). It achieved this through a series of direct measures, including investment in mining and infrastructure such as road and rail transport, as well as less direct incentives to agribusiness and land speculators by means of subsidized credit, fiscal incentives and other benefits." Above note 378, p. 39.

³⁹⁸ Above note 378, p. 33.

³⁹⁹ Both programs are analysed in chapter 7.

Since 1985, when the military groups left political power in Brazil, a clash between two development models has taken place in the Legal Amazon.⁴⁰⁰ According to Mr. Pontes, a senior federal prosecutor, “the first model was implanted during the military dictatorship, based on timber extraction and cattle. It’s predatory because it causes death, it’s not renewable, and it devastates the forest.”⁴⁰¹ The other model is called by environmental activists “Social Environmentalism”, and is based on “small-scale agro-forestry collectives”, that is, “family farmers who extract their sustenance in harmony with the forests.”⁴⁰²

Reflecting on these historical periods of Amazonian development, Loureiro highlights three conclusions.⁴⁰³ First, the Brazilian Amazon has sacrificed its people and natural environment in order to enrich other regions of Brazil and other countries. Second, this situation is unacceptable, because the region’s natural and cultural diversity should be used as a basis for “a process of development that is different, authentic, and compatible with the region’s singularity and richness.”⁴⁰⁴ Third, the previous models of development failed because they were not based on regional values. The balance of this chapter describes the development activities in the three zones of Brazilian Amazon - the non-forested zone, the Amazon frontier and the forested zone - which have given rise to these conclusions.

4.2. Development in the non-forested zone

The Legal Amazon encompasses an area of 4.24 million square kilometres, including the Amazon biome (3.65 million square kilometres) and two transition areas, one located between the Amazon biome and the Brazilian Savannah biome (*Cerrado*); and the other situated between the Amazon biome and the semi-arid vegetation (*Caatinga*).⁴⁰⁵ In the period 1981-2010, the transitional area between the Amazon and the Savannah, which is located in the southern Amazon, mostly in the

⁴⁰⁰ National Geographic, January 2007, volume 211, n. 1, p. 60.

⁴⁰¹ Ibid p. 60.

⁴⁰² Ibid p. 60.

⁴⁰³ Above note 100, p. 36.

⁴⁰⁴ Above note 100, p. 36. In Portuguese, “Um processo de desenvolvimento diferente, autêntico e compatível com a singularidade e riqueza da região”. Free translation.

⁴⁰⁵ Above note 25, p. 34. See Map 2.

state of Mato Grosso, has experienced economic growth and social progress, but also extensive environmental destruction. Representing approximately a quarter of the Legal Amazon, this transitional area is called the “non-forested zone”, which means an area without dense forest cover. Savannah and natural grasslands cover this zone, where a dryer climate provided adequate natural conditions for the development of large-scale economic activities, such as agriculture and cattle-ranching.⁴⁰⁶

Economic efficiency in the Amazon

Until the 1970s, the vast lands of Mato Grosso were considered unproductive soils for agricultural activities. Due to remarkable developments in the fields of science and technology, this region has become one of the “world’s breadbaskets”. Currently, the state of Mato Grosso (MT) and the neighboring state of Tocantins (TO) are the Brazilian states that have experienced the highest rates of economic growth. In the period 2002-2005 the wealth generated by the agriculture sector in Mato Grosso and Tocantis grew 44.3 percent and 92.1 percent, respectively.⁴⁰⁷ Whereas the Brazilian Amazon GDP grew at an annual average of 6 percent between 2000 and 2004, those states located in the drier portions of the Legal Amazon, like the state of Mato Grosso, have shown an even stronger economic performance. For instance, the Mato Grosso GDP jumped from US\$ 3.87 billion in 1990 to US\$ 7.34 billion in 2000, reaching US\$ 10.37 billion in 2004.⁴⁰⁸ This strong economic performance based on agribusiness, mainly soybean production, has led to increasing social standards in these portions of the Brazilian Amazon.

The remarkable economic success of the Maggi family in the state of Mato Grosso provides a good example of the attitude to development which has prevailed in this region. From the time of its arrival in Mato Grosso in the late 1970s to today, this family’s history illustrates how an economic efficiency approach to development

⁴⁰⁶ Celentano, Danielle; Veríssimo Adalberto. *The State of the Amazon: Indicator*. Belém: Imazon, 2007, p. 9. Available from: <<http://www.imazon.org.br>> April 2010.

⁴⁰⁷ Marta Solomon, “PIB da Amazônia Legal cresce mais que o do país”, *Folha de S. Paulo*, Brasil, 01/06/2008, p. A4.

⁴⁰⁸ Above note 406, p. 20.

has affected, positively and negatively, the quality of life of the Brazilian Amazon's inhabitants.

André Maggi and his Italian-descended family moved to the Amazonian state of Pará in the mid-1970s, and afterwards in 1979, to the neighboring state of Mato Grosso, searching for cheap rural lands.⁴⁰⁹ Over two decades, André Maggi built up an “empire” of agricultural commodities called Grupo Maggi. Today, this enterprise is run by André's son, Blairo Maggi - the “Soybean King”, *Rei da Soja*, as he is known in Brazil. He is considered the world's largest soybean producer. Moreover, between 2003 and 2010, he was the Governor of Mato Grosso state. In 2007, London and Kelly wrote:

Undoubtedly, Maggi controls the future of development in the Amazon more than anyone else. He controls the capital, and he controls his state's government. To write him off as a provincial oligarch in the third world would be foolish. To compare his vision to the monomania of Ford and Ludwig would also be mistaken.⁴¹⁰

⁴⁰⁹ “[André Maggi] pursued rice as his crop of choice. (...) Maggi's first soy planting failed because he used seeds from Paraná, which were not suitable to the aluminum-rich soil of Mato Grosso. (...) After four years of trial and study, he saw results - and it was then that he showed the true business genius that would make Grupo Maggi such a formidable enterprise. Realizing that his own success would lure imitators, he amasses capacity at every level of production. He formed a seed business and a storage business, and he built a hydroelectric plant to provide farms with power at a reasonable cost - vertical integration in the heart of the Amazon. André Maggi worked the land himself, preferring to sleep in the laborer's dormitories rather than in his house in Rondonópolis. Besides experimenting with the soil, he also kept an eye out for acquisitions, as he appreciated that as the size increase, the marginal cost of growing soy decreased. He found a ready market.”⁴⁰⁹ Above note 22, p. 167.

⁴¹⁰ Above note 22, p. 181. According to them, “[Henry] Ford came to the Amazon in 1927 desperately looking to escape the clutches of the British-Dutch rubber cartel that was manipulating the supply and price of Asian rubber. (...) Brazil gave Ford nearly 2.5 million acres of land (...). But the Amazon was not an environment where tree could be produced on a Ford assembly line; they were killed in short order by a fungus (...) In 1938, Ford swapped approximately seven hundred thousand acres (...). Ford tried chemical sprays against the pests, but those failed, and though he managed to plant over 3.6 million trees, he lost almost all of them to nature. He declared defeat in 1946, having lost nearly thirty million dollars in the process”. Above note 22, p. 107.

The combined economic and political power that Blairo Maggi held in his hands allowed him to obtain preferential access from multilateral financial institutions, such as the World Bank and Inter-American Development Bank, as well as their Brazilian counterparts, namely the National Development Bank (BNDES) and Bank of Amazon (BASA). The non-governmental organization Greenpeace concluded that “Grupo Andre Maggi has had access to financing from public and private banks in Europe and Japan, and from the IFC.”⁴¹¹ As is more fully explained later, the International Finance Corporation (IFC) is the private sector arm of the World Bank Group. The IFC provides, *inter alia*, loans to private companies. Greenpeace reported:

The IFC had classified Grupo Andre Maggi projects as “category B” - i.e. of low environmental risks. As a result, Rabobank, the Netherlands’ biggest agricultural bank, had led provision of two loans together worth US\$ 330 million: an IFC audit report found that “Rabobank’s reasoning (for giving Maggi the loan) was that if IFC approves this project and they classify it only as a class B, low-risk project, we can safely invest \$ 230 million (the value of the second loan) (...)”.⁴¹²

The tension between economic growth and environmental protection is explicit in the case of Blairo Maggi’s administration. Maggi took office as the Mato Grosso’s governor in January 2003 and soon this region showed the highest deforestation rates, representing nearly half of Amazonian deforestation in that year. According to the *New York Times*, Maggi said that “[it] does not mean anything at all, and I don’t feel the slightest guilt over what we are doing here.”⁴¹³ Economic growth seemed to mean everything to him, who “keeps a different set of statistics. The per capita income in Mato Grosso has risen more than fifteen-fold in the last twenty years. The productivity of soy has grown in Mato Grosso from 1.57 tons per hectare in 1980 to

⁴¹¹ Greenpeace, *Eating up the Amazon*, p. 8, available from: <www.greenpeace.org> March 2007.

⁴¹² Ibid.

⁴¹³ The New York Times, Editorial, “The Amazon at Risk”, 31/05/2005.

3.1 tons in 2003”⁴¹⁴. In Maggi’s words: “What are we doing here? We are feeding the world.”⁴¹⁵

To conclude, the advance of the agricultural frontier from south-central Brazil towards many parts of the Legal Amazon has caused significant environmental harm.⁴¹⁶ However, in the non-forested zone, this style of development based on the agribusiness sector has provided social returns for the local inhabitants, as is described below.

High human development in the Amazon

In the 2000s, nine out of the ten municipalities that show high development indices (HDIs) in the Brazilian Amazon are located in the state of Mato Grosso (MT).⁴¹⁷ In terms of education, the Mato Grosso HDI is 0.860, which is higher than the national average (0.849). Furthermore, the state of Mato Grosso possesses the highest life expectancy among the Brazilian Amazonian states. Ironically, the data related to the entire Brazilian Amazon shows that “the greater the deforestation, the higher the HDI.”⁴¹⁸ As Celentano and Veríssimo explain, “this increase in HDI is due to the

⁴¹⁴ Above note 22, p. 171.

⁴¹⁵ He continues, “We ask that the developed countries help us by financing our infrastructure, but they cry about the environment without understanding the environment. We ask them to help us by dropping the subsidies they give their farmers, and make it easier for us to compete, so perhaps we wouldn’t have to expand so much. But they don’t do that. They are maintaining the levels of poverty in the world by making it difficult for us to realize our potential. There is hypocrisy in Europe and in the United States. They cry when we cut a tree, but they don’t cry when children die or do not have an education. If they want to help us, then help us help ourselves, (...)”. Above note 22, p. 172.

⁴¹⁶ For further information about the rate of deforestation in the Brazilian Amazon, particularly in the non-forested areas (Mato Grosso state), see Instituto Nacional de Pesquisas Espaciais (INPE), *Taxas anuais do desmatamento 1988-2011*, available from: <http://www.obt.inpe.br/prodes/prodes_1988_2011.htm> December 2012. See Figure 3.

⁴¹⁷ Apart from Belém, state capital of Pará (PA), these are the Amazonian municipalities that show high development indices: Sorriso (MT), Cuiabá (MT), Lucas do Rio Verde 0.818, Cláudia, Campos de Júlio (MT), Campo Novo do Parecis (MT), Sinop (MT), Primavera do Leste (MT) and Alto Taquari (MT). Celentano, Danielle; Veríssimo Adalberto. *The State of the Amazon: Indicator. The Amazon Frontier Advance: from Boom to Bust*. Belém: Imazon, 2007, p. 31. Note that Celestino and Veríssimo show data from UNDP 2003 and IBGE 2000. Given the strong economic performance of Brazil over the period 2000-2010, many other municipalities, in particular the Amazonian states should probably have attained a high HDI.

⁴¹⁸ Above note 406, p. 32.

increase in income in these municipalities resulting from economic activities and the arrival of migrants with superior education and capital.”⁴¹⁹

The data shown above must be interpreted very carefully. Brazilians cannot assume that the advance of deforestation in other portions of the Brazilian Amazon will lead to strong economic and social development as happened in the case of Mato Grosso state. In fact, the Legal Amazon corresponding to savannahs has a drier climate, “where rainfall is less than 1,800 mm/year (approximately 17 percent of the territory), and the conditions for agriculture are relatively more favorable.”⁴²⁰ Nevertheless, the other parts of the Legal Amazon, corresponding to 83 percent of the total, show completely different socio-environmental conditions. Thus, the Mato Grosso model of occupation cannot be copied by other Brazilian Amazonian states which hold the richest diversity of animals and plants on Earth and for which deforestation would involve massive ecological and other losses, both locally and globally.

Nevertheless, some aspects of the “Mato Grosso model” can be considered a case of success that may provide an important lesson to the other Amazonian states of Brazil. For instance, science and technology have been key components in promoting continuous development in Mato Grosso, and have transformed it into a relatively prosperous region in South America. Undoubtedly, science and technology may play an important role in promoting development in other portions of the Brazilian Amazon as well, exploiting (in a sustainable manner) the region’s biological diversity to produce medicines, cosmetics, food, and tourist facilities.

4.3. “Development” in the Amazon frontier

The Brazilian Amazon is heterogeneous in terms of landscape, climate, and history. Accordingly, a successful approach found in one part of the region cannot necessarily be transplanted to other parts of the Amazon. Unfortunately, a number of politicians, policy-makers, businesses, and finance institutions, do not fully

⁴¹⁹ Above note 406, p. 32.

⁴²⁰ Above note 406, p. 7.

understand this. This misconception of Amazonian development has allowed the agricultural frontier advance to forested areas, causing remarkable deforestation and loss of biological and cultural diversity, as well as social exclusion and rampant violence.

The so-called “Amazon frontier” encompasses two areas: the deforested area and the under pressure area. The former represents 10 percent of the Legal Amazon, that is, “areas originally covered by forest, in which the municipalities have already lost more than 70 percent of their forested area (excluding Protected Areas).”⁴²¹ The deforested area is located between the so-called “arc of deforestation” and the non-forested zone, and its main economic activities are large-scale cattle ranching and agriculture. Unlike the non-forested zone, in the deforested area, the natural conditions are not favorable for these economic activities in the long-term. The under pressure area also corresponds to about 10 percent of the Legal Amazon. This area is located on new frontiers of deforestation, and its main economic activities are illegal logging and large-scale cattle-ranching. The processes of “development” in these two areas are analyzed below in light of the boom-bust theory. The analysis aims to answer the following question: in the Amazon, is deforestation associated with sustained improvement in local people’s well-being?⁴²²

The boom-bust pattern of development

In general, the Amazon Frontier has advanced from southern to northern portions of the Brazilian Amazon through illegal logging activities, which are frequently facilitated by the opening of new, paved roads. Undoubtedly, the region has an international comparative advantage in the field of logging and loggers rapidly make considerable profits. Frequently, this economic boom leads to increases in job opportunities and income, with consequent higher tax revenues. Nevertheless,

⁴²¹ Above note 406, p. 9.

⁴²² The question was formulated based on the following quotation: “Here, we investigated how human development varies across the region’s deforestation frontier to determine whether deforestation is associated with sustained improvement in people’s well-being.” Ana S. L. Rodrigues, Robert M. Ewers, Luke Parry, Carlos Souza Jr., Adalberto Veríssimo, Andrew Balmford, “Boom-and-Bust Development Patter Across the Amazon Deforestation Frontier”, *Science*, vol. 34, 12 June 2009, p. 1435.

logging is a short-term activity; once an area is cleared, some people then advance to new frontiers, seeking to make even more money with illegal logging. Others prefer to stay in the newly created deforested area, turning their economic activities to agriculture and cattle ranching, but often facing such difficult natural and economic conditions that they do not succeed. This vicious cycle is known as the “boom-bust” pattern of development, articulated by the Belém-based NGO IMAZON.⁴²³ In the following pages, this thesis explains it in depth, seeking to point out the economic forces that drive deforestation in the Brazilian Amazon, and their connections with the development banks. As Celentano and Veríssimo explain, under a boom-bust pattern of development:

The first years of economic activity see rapid and ephemeral growth (boom), followed by a significant decline in income, employment, and tax revenue (bust) (...). Income falls due to collapse of timber exploitation, and as a result of economic conversion of land for agriculture and cattle ranching activities, which do not sustain the same generation of income and jobs. The low profitability of farming and cattle ranching results primarily in regions with greater rainfall indices, where low fertility of soils and the proliferation of crop pests and disease are more frequent, especially in the case of grain crops.⁴²⁴

Based on the author’s interviews with a number of key actors in the current processes of Amazonian development, a boom-bust pattern of development may be said to have occurred in municipalities located in the following Brazilian states: Pará, Mato Grosso, and Rondônia. Garo Batmanian (World Bank)⁴²⁵ highlights that the pattern cannot be found in other Amazonian localities such as Manaus (AM) and Carajás (PA). Erika Bechara (PUC/SP), in turn, rejects the use of the term “development” at all in relation to boom-bust.⁴²⁶ She prefers the term “predatory

⁴²³ Amazon Institute of People and the Environment. In Portuguese, *Instituto do Homem e do Meio Ambiente da Amazônia*.

⁴²⁴ Above note 406, p. 7.

⁴²⁵ On 06/05/2009, author’s interview with Garo Batmanian (World Bank’s cluster coordinator).

⁴²⁶ On 16/09/2009, author’s interview with Professor Erika Bechara (PUC/SP - Pontifícia Universidade Católica de São Paulo).

exploration” to describe that phenomenon. In fact, the boom-bust pattern is not associated with sustained improvement in local people’s well-being. According to Rodrigues *et al.*, “our results suggest that those improvements are transitory, with municipal standards of living, literacy, and life expectancy declining in the postfrontier to levels similar to those in the prefrontier municipalities”. They conclude, “people in municipalities that have cleared their forests are not better off than those in municipalities that have not.”⁴²⁷

Today, the Amazonian society is facing a critical time, because it has to stop the boom-bust cycle urgently, in view of the fact that the Amazon is nearing a “turning point” in which the whole socio-ecological system will “collapse”. According to Jared Diamond, there are five main sources of collapse, the most important being the responses of society to their environmental problems. He explains that in the past a number of societies had problems related to deforestation, but while some societies such as Japan and Tonga managed to overcome their problems (ecological management enabled them to continue their path to greater prosperity), other societies such as Easter Island and Nordic Greenland did not change their same unsustainable practices, thus they collapsed.⁴²⁸ Jared Diamond concluded that “a society’s responses depend on its political, economic, and social institutions and on its cultural values. Those institutions and values affect whether the society solves (or even tries to solve) its problems.”⁴²⁹

Lack of governance

Governance is weak in the Brazilian Amazon’s deforested and under pressure areas, where the role of law is precarious, social inequality is severe, and violence is rampant. A clash of “development” models, between the ongoing predatory model and the emerging sustainable one, is more explicit in these frontier areas than

⁴²⁷ Ana S. L. Rodrigues, Robert M. Ewers, Luke Parry, Carlos Souza Jr., Adalberto Veríssimo, Andrew Balmford, Boom-and-Bust Development Patter Across the Amazon Deforestation Frontier, *Science*, vol. 324, 12 June 2009, p. 1435, available from: <www.sciencemag.org> November 2010.

⁴²⁸ Jared Diamond, *Collapse: how societies choose to fail or succeed*. New York: Viking, p. 31.

⁴²⁹ Ibid p. 31.

anywhere else in the Brazilian Amazon. This clash has involved environmental degradation, social exclusion and thousands of victims. According to the “map of violence”, there is a patent connection between illegal deforestation and violence in Brazil. The “map of violence” shows a ranking of the two hundred most violent municipalities in Brazil. It demonstrates that 23 of the 36 municipalities which are responsible for half of the Amazonian deforestation are also in the top percentile of the most violent municipalities in Brazil.⁴³⁰

Sister Dorothy Stang was one of the victims of boom-bust pattern of development. She was an American sister of Notre Dame de Namur, and she was killed in Anapú, a small Brazilian town located in the State of Pará (in the Easter Amazon), on 12 February 2005. The American missionary supported an “alternative” approach to development. She believed that poor settlers “could learn to manage their land sustainably as a matter of self-preservation. ‘The death of the forest is the end of our lives’, she told her followers.”⁴³¹ Sister Dorothy was murdered precisely because she wanted to incorporate a small plot of land called Lot 55 into a Sustainable Development Project called *Esperança* (Hope). This lot “belonged” to Vitalmiro Bastos de Moura (nickname Bida), a local land-grabber.

Illegal occupation is rampant in the state of Pará, particularly in the Anapú area. Local people called the illegal occupation *grilagem* that “is the process of appropriation of public lands in violation of the law by document falsification or by means of corruption.”⁴³² Like Bida, a number of farmers have acquired “their lands”

⁴³⁰ “Lista da violência inclui área de desmate”, *Folha de S. Paulo*, Cotidiano, C1, 30/01/2008, p.C1. The thirty-six Amazonian municipalities with higher rates of deforestation are the following ones: Alta Floresta (MT), Altamira (PA), Aripuanã (MT), Brasil Novo (PA), Brasnorte (MT), Colniza (MT), Confresa (MT), Cotriguaçu (MT), Cumaru do Norte (PA), Dom Eliseu, Gaúcha do Norte (MT), Juara (MT), Juína (MT), Lábrea (AM), Machadinho D’Oeste (RO), Marcelândia (MT), Nova Bandeirantes (MT), Nova Mamoré (RO), Nova Maringá (MT), Nova Ubiratã (MT), Novo Progresso (PA), Novo Repartimento (PA), Paragominas (PA), Paranaíta (MT), Peixoto de Azevedo (MT), Pimenta Bueno (RO), Porto dos Gaúchos (MT), Porto Velho (RO), Querência (MT), Rondon do Pará (PA), Santa Maria das Barreiras (PA), Santana do Araguaia (PA), São Félix do Araguaia (MT), São Feliz do Xingu (PA), Ulianópolis (PA), and Vila Rica (MT). Source: Ministério do Meio Ambiente [*Ministry for the Environment*]. Available from: <<http://www.mma.gov.br>> May 2008.

⁴³¹ *National Geographic*, January 2007, volume 211, n. 1, p. 61.

⁴³² *Ibid* p. 13.

through this unlawful means, aiming to transform the forest cover into pasture. Bida “had already destroyed many other areas of the Amazon rainforest (...) when he reached Sister Dorothy. As she was a burden for him, he ordered someone to murder her.”⁴³³ On 15 May 2007, the Jury of Pará⁴³⁴ found Bira guilty of the nun’s murder. According to Brazil’s Bar Association (OAB),⁴³⁵ this decision was an historic one, in the sense that it would change people’s perception in relation to impunity in the Legal Amazon. However, as Bida was sentenced to more than 20 years’ imprisonment, under Brazilian law, he had the right to a second trial, and later to a third trial. Finally, on 13 April 2010, the Bida case was concluded, and he was sentenced to 30 years’ imprisonment.⁴³⁶

The murder of the 73-year-old missionary, as well as many other murders can only be fully explained if we take into account the historical cycle of impunity. The lack of efficient governmental initiatives regarding sustainable development also explains those assassinations, as well as the clash between development models, which is more closely analyzed later, through case studies involving the development banks.⁴³⁷ The Stang case is relevant here because it highlights that the protection of those things that are located above the land (forest cover) requires, first of all, rural reform, given that illegal occupation is also rampant in many other parts of the Brazilian Amazon.

4.4. Development in the forested zone

Representing about 55 percent of the Legal Amazon, the so-called forested zone encompasses localities where up to five percent of forest cover has been eliminated so far. This immense area contains the largest rain forest cover on Earth, being

⁴³³ Sister Dorothy read to Rayfran das Neves Sales, a hired gunman, the following passage from the Bible: “Blessed are they who hunger and thirst for justice, for they shall be satisfied (Matthew, chapter 5)”. As she turned her back to him, he murdered her. Ibid p. 13.

⁴³⁴ In Portuguese: *Segunda Vara Criminal de Belém*.

⁴³⁵ In Portuguese: *Ordem dos Advogados do Brasil*.

⁴³⁶ *Folha online*, “Condenado por morte de Dorothy Stang, Bida é o único mandante de crime agrário preso no Pará”, available from: <<http://www1.folha.uol.com.br/folha/brasil/ult96u719931.shtml>> December 2011.

⁴³⁷ The case studies of development financing in the Brazilian Amazon are found in Chapter 6.

named by London and Kelly as the “Last Forest”.⁴³⁸ Most of this forest carpet is located in Brazil’s largest state, known as *Amazonas* (AM), where ninety-seven percent of its territory of over 1.55 million square kilometres is still covered by native vegetation. The neighboring state of Amapá shows even higher portions of forested areas, with ninety-eight per cent of its territory pristine forest.⁴³⁹ Celentano and Veríssimo explain, “except for the industrial hub of Manaus, and a few other municipalities with mineral, gas, and petroleum exploration, other economic activities are incipient in the region (i.e. non-timber extraction and logging).”⁴⁴⁰

The forest-dependent communities

The “Last Forest” is not an empty place. Over the last twelve thousand years, it has been inhabited by human beings.⁴⁴¹ Today, the Brazilian Amazon rainforest is home to about 160 different indigenous groups.⁴⁴² Apart from these communities, the forested zone is also home to other forest-dependent communities, such as the *quilombolas*, who are African-descendent communities established in the region a long time ago when a number of former slaves escaped from slavery in coastal areas to live hidden in the rain forests. There are also other traditional communities living in the deforested zone, for instance, a vast number of riverbank groups and rubber tappers. They are commonly known as *caboclos*. All these forest-dependent communities provide an ecological service for all of humanity.⁴⁴³ They have lived in the “Last Forest” without destroying it significantly. Although these communities show lower HDI, Celentano and Veríssimo explain that:

[t]he quality of life of rural municipalities inhabited by traditional populations, indigenous groups, and *quilombolas* may be underestimated by HDI, due to artifacts of the cultural differences and life-styles of these

⁴³⁸ Above note 22.

⁴³⁹ Author’s interview with Justice Carmo Antonio de Souza (Supreme Court of Amapá), on 14/10/2009.

⁴⁴⁰ Above note 406, p. 9.

⁴⁴¹ Above note 25, p. 34.

⁴⁴² Leonardo Boff, *Ecologia: grito da Terra, grito dos pobres*, São Paulo: Ática, 2000, p. 139.

⁴⁴³ See discussion of the vital role of the Amazon region in section 1.2 of Chapter 1 of this study.

populations. Income and access to conventional systems of education carry different weights when compared to the urban population. On the other hand, cultural preservation and the conditions of access to and quality of natural resources are given greater importance in the quality of life of these populations, which are often extractive and self-sufficient.⁴⁴⁴

As the Blairo Maggi Case is paradigmatic for the non-forest zone, and the Dorothy Stang Case for the boom-bust pattern of “development’ in the Amazon frontier, the Chico Mendes Case shows the great challenges in replacing the dominant development model, based on unsustainable economic activities such as illegal logging and monoculture, by a new and sustainable model of development committed to improve the economic and social standards of living without destroying the rain forests.

In the last three decades, “a multitude of grass-roots initiatives have challenged the dominant paradigm, constituting a ‘quiet revolution’ in Amazonian development.”⁴⁴⁵ Undoubtedly, the movement of rubber tappers of the Western Amazon has had an exemplary role in this “quiet revolution”. The rubber tappers’ struggles for the forest highlight many aspects that help to understand the current clash of Amazonian development models. These struggles are described below.

In late 1970s, Amazonian rubber tappers were suffering from the actions of cattle ranchers, who wanted to drive them from the lands that they had been occupying for generations. In reaction, the rubber tappers of Western Amazonia adopted a new tactic called *empates* (stalemates).⁴⁴⁶ Taking advantage of the newly-permitted democratic rights of the mid-1980s, the rubber tappers of Acre (AC) decided to

⁴⁴⁴ Above note 406, p. 30.

⁴⁴⁵ Karen A. Kainer; Marianne Schmink; Arthur Cezar Pinheiro Leite; Mário Jorge da Silva Fadell. “Experiments in Forest-Based Development in Western Amazonia”. *Society and Natural Resources* 16:869-886, 2003, p. 871.

⁴⁴⁶ “The empates (...) were collective actions that prevented the action of chain saw gangs. Over a hundred men, women and children would go to an area and stand in the way of the trees, preventing the *peões*, as the chain saw wage workers were called, from doing the job. They would usually stop working, until the police were called in.” Mauro Barbosa de Almeida. “The Politics of Amazonian Conservation: The Struggles of Rubber Tappers”. *Journal of Latin American Anthropology* 7, n. 1 (2002), p. 189.

stand up for their rights regarding access to the natural resources of their lands. In 1985, with Chico Mendes as their main leader, the rubber tappers created the National Council of Rubber Tappers (CNS).⁴⁴⁷ As Almeida explains, “they claimed large forest territories to use under traditional management systems and as collective property; (...).”⁴⁴⁸ The CNS operated on an informal basis until 1989. During this period, the council’s financial support came from many non-governmental organizations, including the British OXFAM, the Brazilian FASE, and the Dutch Bilance.⁴⁴⁹ In fact, the struggle of rubber tappers for their right to use rubber trees matched the goals of many environmentalist groups, which were fighting to preserve the forest still left standing. The outcomes of this alliance have been excellent for both sides.

In 1988, Chico Mendes went to Washington in order “to caution the Inter-American Development Bank that its road project in Acre threatened disaster unless it could be reformulated to protect the forest and its inhabitants before the road work was completed.”⁴⁵⁰ Fortunately, as Swartzman points out, “[t]he loan was suspended for a time and later re-negotiated, with his [Mr. Mendes] participation. He won two international environmental awards”,⁴⁵¹ and entered into history on 22 December 1988, when he was murdered by a group of cattle ranchers.

The case of Chico Mendes is considered a watershed in Amazonian development history. Since Chico Mendes’ death, the rubber tappers of Acre and other groups around them have had a critical role in developing Brazilian Environmental Policy. In addition, they have influenced the development banks’ actions in the Legal Amazon. Schmink and Wood point out the importance of Chico Mendes to the radical shift in the Amazonian development model of international financial institutions, as follows:

⁴⁴⁷ In Portuguese, *Conselho Nacional dos Seringueiros*.

⁴⁴⁸ Above note 446, p. 172.

⁴⁴⁹ Above note 446, p. 192-195.

⁴⁵⁰ Stephan Schwartzman, “Ten years after the death of Chico Mendes: the Amazon in the new millennium”, Environmental Defense Fund, available from: <<http://apps.edf.org/article.cfm?contentID=1549>> December 2011.

⁴⁵¹ Above note 451.

The case of Chico Mendes, a rubber tapper in the remote state of Acre, illustrates this new feature of the resistance in Amazonia. (...) By the time of his death Chico expressed his views before the World Bank, the Inter-American Development Bank, United States legislators, and other world leaders. His efforts were recognized by awards from the United States and the Better World Society and by posthumous honors granted by numerous organizations in the United States and Europe (...).

By 1990 the terms of the Amazonian debate had shifted. The environmental and human rights consequences of the development policy became the target of headline stories in Brazil and across the world. The expansion of cattle ranching in the Amazon, once the mainstay of the modernization program, was condemned in favor of extractive activities that would leave the forest intact. Other questions arose about the equity and the sustainability of the development model, prompting a new appreciation of traditional Amazonia.⁴⁵²

In concrete terms, the rubber tappers achieved their main goal, which was the creation of “Extractive Reserves” (RESEX),⁴⁵³ which forms a particular category among many other types of conservation units (UCs).⁴⁵⁴ As of May 2007, 19.97 percent of the Brazilian Amazon was protected as conservation units. In the Amazonian state of Acre, for example, there are currently five RESEXs.⁴⁵⁵ Moreover, many members of the Acre rubber tappers movement have gone on to important positions in government. For instance, in 1990s, Marina Silva became “the first black, female, forest-born senator in Brazil’s history.”⁴⁵⁶ From 2003 to 2008, she ran the Federal Ministry for the Environment, under President Lula’s administration. In 2010, she was the Green Party’s candidate for the presidency of Brazil, and received over 19 million votes (about 20 percent of total votes). In

⁴⁵² Above note 390. p. 9.

⁴⁵³ In Portuguese, *Reservas Extrativistas*.

⁴⁵⁴ In Portuguese, *Unidades de Conservação*.

⁴⁵⁵ The Resex Alto Juruá, Resex Alto Tarauacá, Resex Cazumbá-Iracema, Resex Chico Mendes, and Resex Riozinho da Liberdade.

⁴⁵⁶ Above note 446, p. 211. For further information on Marina Silva and the rubber tappers movement in the state of Acre, see Marília de Camargo César, *Marina: a vida por uma causa*. São Paulo: Editora Mundo Cristão, 2010.

addition, the state of Acre has been run by people close to the rubber tapper movement, *inter alias*, the former Governor Jorge Viana,⁴⁵⁷ who declared that “our goal is to demonstrate to present and future generations that development does not depend on the destruction of the forest, but rather on its survival”.⁴⁵⁸ The forest government of Acre, as it is known, has implemented many policies that follow this new approach to development, such as the Chico Mendes Law, which “provides rubber tappers with additional payment (...) per kilogram of rubber produced. This payment is in recognition of the economic value of environmental services rendered through forest cover retention”.⁴⁵⁹ The outcomes of this policy are remarkable: “since the law was enacted in January 1999, state rubber production has more than tripled.”⁴⁶⁰ Comparing this new approach to development to the previous ones, Kainer and others point out:

This sustainable development philosophy is a radical departure from early Amazonian development strategies of the 1960s and 1970s that focused on mining, ranching, and colonization, and that equated progress with deforestation (...). By the mid-1980s, both domestic and global environmental criticism of these development schemes converged with condemnation from human rights activists, who noted that in addition to the negative ecological impacts of these planned projects, they also blatantly disregarded the rights of indigenous and traditional peoples living in the Amazon basin. This convergence of environmental and social concerns, along with growing resistance movements among local Amazon groups, resulted in a search for development alternatives.⁴⁶¹

⁴⁵⁷ Jorge Viana is a forestry engineer who worked for the rubber tappers and other grass-root movements. He was elected to run the state of Acre for two consecutive administrations: 1999-2002 and 2003-2006. His brother, Tião Viana, a doctor with specialization in infectology, is currently the Governor of Acre. These politicians represent the increasing prestige of the rubber tappers within the Brazilian Amazon society. Other Amazonian states have also elected many politicians which are linked to the environmental movement, such as Governor Eduardo Braga in the State of Amazonas (2003-2006 and 2006-2010), and Governor Camilo Capiberibe in the State of Amapá (as from 2011).

⁴⁵⁸ The Government of Acre 1999. Above note 445, p. 870.

⁴⁵⁹ Above note 445, p. 876.

⁴⁶⁰ Above note 445, p. 877

⁴⁶¹ Above note 445, p. 871.

At the international level, this *Social Environmentalism* has shaped the role of multilateral bodies. For instance, the Pilot Program for the Amazon Rainforest (PPG7), whose financial resources come from the G7 countries, and are managed by the World Bank Group and the United Nations Environmental Program (UNEP), provides “substantial support (...) for smallholder and collective production systems, increasing the number and diversity of actors engaged in developing alternative management strategies. The Inter-American Development Bank is also providing financial resources, for example, US\$ 7.1 million to support forest management and extractivism.”⁴⁶²

Manaus: an urbanized forest

Inhabited by 1.6 million people, Manaus is a megalopolis located in the middle of the “Last Forest”. It is the state capital of Amazonas.⁴⁶³ The city was transformed into a Free Trade Zone in 1967. As London and Kelly explains:

In the initial plan, Manaus received broad tax and duty concessions for thirty years in order to attract domestic and foreign investment. (...) It drew the interest of hundreds of major multinational corporations such as Honda, Nokia, Minolta, Gillette, and Harley-Davidson.

(...)

The Zona Franca has been as successful as any other important environmental initiative in the history of the world, though it was never intended to be. It is inconceivable that any of the generals and economists conjured up the plans cared about global warming or preservation of biodiversity; these concepts didn’t even exist in 1967. However, by providing a profligate source of employment, the Zona Franca has attracted tens of thousands of people from the rain forest and kept tens of thousands of people in the city – all of whom might have had to resort to deforestation for survival.⁴⁶⁴

⁴⁶² Above note 445, p. 882.

⁴⁶³ See Map 2: “The Brazilian Amazon”.

⁴⁶⁴ Above note 22, p. 242-244.

Today, Manaus is a large industrial hub. To illustrate, it is home to Honda's largest motorcycle factory, responsible for producing about 7,000 motorcycles per day.⁴⁶⁵ The case of Manaus highlights a new approach to Amazonian development, linking human development and environmental protections. As London and Kelly say, "how do you stop deforestation? Give people decent jobs. If you give them jobs, they can afford houses; give them houses and their family has security; give them security and their vision shifts to the future."⁴⁶⁶ However, this model is not the most sustainable one. Manaus has experienced a significant flow of migrants, but has not seen regular investment in social infrastructure, including sanitation, housing, and health centres. As a consequence, the adverse impacts of the urban population of Manaus and its main economic activities on the local environment, including pollution of rivers, have been significant.⁴⁶⁷

The city's productive capacity could be diverted, instead, to directly supporting the retention of the forest, especially with assistance from the development banks, a possibility that is explored in the final part of this thesis. In the meantime, the next Part examines the structures and objectives of the four development banks and the roles which they have played in the various stages and styles of development in the Brazilian Amazon.

⁴⁶⁵ *Revista Exame*, Especial Região Norte, edição 980, ano 44, n. 21, 17/11/2010, p. 165.

⁴⁶⁶ Above note 22, p. 244.

⁴⁶⁷ Manaus is ranked among the worst large cities of Brazil in terms of sanitation. For example, sanitation facilities cover about 38 percent of the population of Manaus. For further information on sanitation problems in Manaus, see Trata Brasil, *Ranking Melhores e Piores em Saneamento*, available from: <<http://www.tratabrasil.org.br/datafiles/uploads/estudos/pesquisa13/Release-Ranking-2009-final-21-09.pdf>> December 2011.

PART 3
DEVELOPMENT BANKS, DEVELOPMENT, AND SUSTAINABLE
DEVELOPMENT IN THE BRAZILIAN AMAZON

Chapter 5
The anatomy of four development banks

Chapter 5 analyses two multilateral development banks (MDBs), namely the World Bank Group and the Inter-American Development Bank Group (IDB). Both banks have been key international institutions for the global economy over the second half of last century, and banks played a critical role in many Latin American countries' development process during the last five decades. Brazil has been one of their main borrowers during this period. Nevertheless, the world economy has changed significantly over the last two decades, and Brazil has also changed a great deal, not only in economic terms, but also in social, political, and ecological terms. These significant changes have certainly affected the role of the MDBs in Brazil. Will they remain key actors in Amazonian and Brazilian development and, if so, how sustainable will their approaches to development be?

A number of economists have argued the MDBs will not be necessary any longer because under the current global system of liberalization of the flow of capital, private capital can provide the finance necessary to promote development worldwide. Indeed, at least since the early 1990s, there has been a remarkable inflow of foreign investment to emerging economies, including Brazil. According to Dornbusch, "if the capital market is perfectly able to identify interesting projects and to promptly finance private investment funds and public budgets around the world, who needs these remnants of foreign aid and statism?"⁴⁶⁸ Against this, the global economic crisis of 2007-2009 has shown that private capital can sometimes

⁴⁶⁸ Rudiger Dornbusch, in Ronaldo Costa Couto, *A História Viva do BID e o Brasil*. 2nd ed., Washington: Banco Interamericano de Desenvolvimento, 2002, p. 97. "Se o mercado de capitais é perfeitamente capaz de identificar projetos interessantes e financia prontamente investimentos privados e orçamentos públicos em todo o mundo, quem precisa desses remanescentes da ajuda externa e do estatismo?" Free translation.

withdraw and that access to “external assistance” is critical for vulnerable economies, even more in times of economic recession.

These multilateral banks are likely to continue their important roles in Brazilian development for the next decades, in particular, in the less developed regions of Brazil, such as the Legal Amazon and the northeast, where much development work, especially social justice and environmental protection, will not be profitable enough to attract private investors so will continue to need public capital *i.e.* MDBs.

On the premise, then, that the MDBs will continue to play an influential role in development in the Brazilian Amazon, Chapter 5 explores the objectives, structures and lending frameworks of the World Bank Group and the IDB, in order to lay a basis for later assessment of the sustainability of their approaches to development in the Brazilian Amazon. Considering that sustainable development means development with a powerful environmental protection component,⁴⁶⁹ and that the thesis aims to analyze the banks’ activities in the region that hosts about a quarter of all global biodiversity,⁴⁷⁰ the chapter examines the MDBs’ environmental performance.

Chapter 5 also analyses the objectives, structures and lending frameworks of two of Brazil’s development banks, the National Development Bank (BNDES), and the Bank of Amazon (BASA). Given that Brazil follows a hybrid development model in which the public and private sectors act as partners in projects,⁴⁷¹ these state-owned banks are key players in the current and future processes of development in the Brazilian Amazon.

In the pages below, firstly this chapter examines the World Bank Group, which is the world’s oldest development bank, and which has played an important role in Amazonian economic development over the period 1981-2010. Chapter 5 then

⁴⁶⁹ In relation to the concept and core elements of sustainable development, see Chapter 3, section 3.1.

⁴⁷⁰ In relation to the Amazon Basin, see Chapter 1, section 1.1.

⁴⁷¹ Mario Shapiro, “Development Bank, Law and Innovation Financing in a New Brazilian Economy”, *The Law and Development Review*, Volume 3, Issue 2, 2010, p. 79.

analyses the work of the IDB, which is the largest source of international financing in Brazil, and has also financed a vast number of projects in that region. Finally, the chapter examines Brazil's own development banks – BNDES and BASA, particularly their operations in the Legal Amazon, drawing attention to their performance in the field of environmental conservation.

5.1. The World Bank Group

In July 1944, the United Nations Monetary and Financial Conference was held in Bretton Woods, New Hampshire, in the United States. Nearly 800 people representing the forty-four country delegations⁴⁷² gathered at the Mount Washington Hotel “to provide for postwar financial stability and, above all, to ensure unfettered international commerce.”⁴⁷³ Apart from the president of the conference, who was the US Treasury Secretary Henry Morgenthau, two other people played a vital role in this conference: his assistant Harry Dexter White and, on the British side, John Maynard Keynes.

As the Bretton Woods Conference was intended “to produce nothing less than a detailed blueprint for a global peace-keeping machine”,⁴⁷⁴ it set up two international bodies which were expected to become key postwar institutions, the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (IBRD).⁴⁷⁵ Remarkably, “the formal invitations to Bretton Woods described the conference’s object as the formulation of definitive proposals for an international monetary fund and “possibly” for a bank. In fact, it was only thanks to the preparations undertaken by the British, which is to say by Lord Keynes, and to Keynes’s own tenacity, that such a bank was considered by the conference at all”.⁴⁷⁶ As Keynes declared:

⁴⁷² Among others, Brazil and other Amazonian nations such as Bolivia, Colombia, Ecuador, Peru, and Venezuela. In fact, as George and Sabelli point out, only two countries really counted: the United States and the United Kingdom. Susan George and Fabrizio Sabelli, *Faith and credit: the World Bank’s secular empire*. Boulder: Westview Press, 1994, p. 22.

⁴⁷³ Ibid p. 21.

⁴⁷⁴ Ibid p. 25.

⁴⁷⁵ Currently, the IBRD is one body of the World Bank Group, as is discussed below.

⁴⁷⁶ Above note 472, p. 26.

The field of reconstruction from the consequences of war will mainly occupy the proposed Bank in its early days. But as soon as possible, and with increasing emphasis as time goes on, there is a second primary duty laid upon it, namely to develop the resources and productive capacity of the world, with special attention to the less developed countries, to raising the standard of life and the conditions of labour everywhere, to make the resources of the world more fully available to all mankind.⁴⁷⁷

Keynes proposed a financial mechanism for the Bank under which all governments were called “to pay, in proportion to their capacity, a subscription to the bank.”⁴⁷⁸ On 27 December 1945, the Bank’s Articles of Agreement entered into force. On 8 March 1946, the inaugural meeting of the Boards of Governors of both the IMF and the IBRD was held in Savannah, Georgia. The Bank made its first loans in 1946. These loans played an extremely important role in the reconstruction of Western European countries. Since 1948, the Bank has also extended its activities to developing countries, including Brazil, which has been one of its main borrowers.

The Bank and the IMF are seen as “sisters” and known as the Bretton Woods Institutions, although they were set up to fulfill different tasks. According to George and Sabelli, “the Fund was conceived to provide short-term balance of payments support to its members and thus facilitate the free flow of commerce. The Bank was to work both for ‘the reconstruction and for the development of member countries, (...)’”⁴⁷⁹ Nevertheless, a close association exists between the Bank and IMF.⁴⁸⁰

⁴⁷⁷ Above note 472, p. 30.

⁴⁷⁸ Above note 472, p. 30.

⁴⁷⁹ Above note 472, p. 33.

⁴⁸⁰ Sherman draws out the following topics: both institutions were created at Bretton Woods Conference to provide financing to help countries; they are linked to the United Nations, and have their headquarters in Washington (more precisely, one is located in front of the other); and “a country must be an IMF member to join the World Bank.” (Carol Sherman, *A look inside the World Bank*, Sydney: Envirobook, 1990, p. 33). Above all, the Bank and the IMF share a common worldview with regard to development policies. According to Rajagopal, “During its first two decades, the IMF used more than half of its resources to deal with the balance-of-payments difficulties of industrialized countries. However, in the 1980s, the IMF shifted dramatically its activities as a whole, starting to focus on loans to Third World economies. Ever since, this institution has been associated with such words as surveillance, structural adjustment, and conditionality (Carol Sherman, *A look*

Today, the World Bank Group is structured as following: the International Bank for Reconstruction and Development (IBRD); the International Development Association (IDA); the International Finance Corporation (IFC); the Multilateral Investment Guarantee Agency (MIGA); and the International Center for Settlement of Investment Disputes (ICSID). Each institution plays its own role. While the term “the World Bank Group” encompasses these five international institutions, the term “the World Bank” refers only to the IBRD and IDA. The thesis focuses its attention on two World Bank Group’s institutions exclusively, the IBRD and the IFC, because the other three institutions have not been influential institutions in the Brazilian Amazon.⁴⁸¹

Established in 1946, the IBRD possesses full juridical personality,⁴⁸² and is currently a cooperative of 185 member countries. Its aims and priorities are related to economic growth. According to the IBRD Articles of Agreements, the purposes of the Bank are “to assist in the reconstruction and development (...) by facilitating the investment of capital for productive purposes (...); to promote private foreign investment (...); to promote the long-range balanced growth of international trade and the maintenance of equilibrium in balances of payments (...); to arrange the loans made or guaranteed by it in relation to international loans through other channels (...); and to conduct its operations with due regard to the effect of

inside the World Bank, Sydney: Envirobook, 1990, p. 33). Brazil implemented the IMF economic stabilization program during the 1990s, but it did not renew its agreement with the IMF in 2004. The country paid off all its debts with this institution. In October 2009, Brazil bought about US\$ 10 billion of IMF credits. To conclude, Brazil left behind its position as debtor to become creditor of IMF. Today, the IMF does not play an important role in the Brazilian development policies anymore.

⁴⁸¹ The IDA is an institution with the aim of helping the world’s poorest countries in terms of poverty reduction by providing interest-free loans and grants for development programs. Brazil is not among the 81 countries that are eligible to borrow from IDA. To be precise, Brazil is among the 15 top IDA donors. The MIGA, in turn, provides guarantees known as political risk insurance to foreign investors. As Brazil has had a stable economy, the MIGA does not play an influential role in the Brazilian Amazon. Source: Bretton Woods Institutions, *MIGA – Multilateral Investment Guarantee Agency*, available from: <<http://www.brettonwoodsproject.org/institution/miga/index.shtml>> September 2007. Finally, the ICSID aims “to facilitate the settlement of investment disputes between governments and foreign investors.”⁴⁸¹ Like the MIGA, ICSID does not play a key role in the Brazilian Amazon. Available from: <<http://web.worldbank.org>> March 2007.

⁴⁸² IBRD Articles of Agreement, Article VII, Section 2.

international investment on business conditions (...).”⁴⁸³ Thus, the IBRD does not include social justice and environmental protection among its main purposes, but only one dimension of sustainable development, that is, economic growth.

The organizational structure of the Bank appears decentralized, because it encompasses a Board of Governors, Executive Directors, a President, an Advisory Council, and Loan Committees.⁴⁸⁴ However, the Bank’s decision-making structure is relatively centralized, because members hold voting rights proportional to their shareholdings.⁴⁸⁵ According to the Articles of Agreement, “each member shall have two hundred fifty votes plus one additional vote for each share of stock held.”⁴⁸⁶ Given the US financial contribution to the Bank, in practice it is the only nation that holds a veto power inside the Bank. Such structures have enabled the US to choose key position-holders inside the Bank, as is explained below. In addition, the US financial contributions to the Bank determine the location of its main office: Washington, D.C.⁴⁸⁷ The IBRD has established a number of regional and country offices around the world, including two offices in Brazil.⁴⁸⁸

The IFC was established in 1956. The IFC is the “private arm” of the World Bank, and currently has 182 member countries. Coincidentally, the very first IFC operation was an investment in Brazil, to be precise a loan of about US\$ 2 million to the Siemens affiliate in the country.⁴⁸⁹ According to the IFC Articles of Agreement, the purposes of the Corporation are “to further economic development by encouraging the growth of productive private enterprise in member countries, particularly in the less developed areas, (...).”⁴⁹⁰ In other words, the Corporation’s aim is to supplement the activities of the IBRD in the pursuit of economic growth

⁴⁸³ IBRD Articles of Agreement, Article I.

⁴⁸⁴ IBRD Articles of Agreement, Article V, Sections 1-7.

⁴⁸⁵ Cheryl Payer. *The World Bank: a critical analysis*. New York, London: Monthly Review Press, 1982, p. 28.

⁴⁸⁶ IBRD Articles of Agreement, Article V, Sections 3.

⁴⁸⁷ IBRD Articles of Agreement, Article V, Sections 9.

⁴⁸⁸ One is located in the national capital, Brasília; the other, in São Paulo, the country’s largest city.

⁴⁸⁹ International Finance Corporation, *IFC history*, available from: <[http://www.ifc.org/ifcext/about.nsf/AttachmentsByTitle/ifchistory.htm/\\$FILE/ifchistory.htm](http://www.ifc.org/ifcext/about.nsf/AttachmentsByTitle/ifchistory.htm/$FILE/ifchistory.htm)> December 2010.

⁴⁹⁰ IFC Articles of Agreement, Article I.

through the expansion of private enterprise. Once again, the other two dimensions of sustainable development, social justice and environmental protection, are neglected by the above Articles of Agreement. With regard to the structural features of the Corporation, all the powers of the Corporation are vested in the Board of Governors.⁴⁹¹ As with the IBRD, the voting rights inside the Corporation are proportional to the countries' shareholdings, and the Bank Group's president serves as IFC's president. Moreover, the principal office of the Corporation is located in Washington, D.C.⁴⁹² Like the IBRD, the IFC has regional offices, including two offices in Brazil.⁴⁹³

Analyzing the World Bank Group in historical perspective, Gavin and Rodrik observe that its aims and priorities were "initially construed quite narrowly, but its scope broadened substantially over time."⁴⁹⁴ They explain that the Bank was originally concerned with "balanced budgets, sound tax systems, and monetary stability";⁴⁹⁵ in the 1950s, with "the needs for national development plans";⁴⁹⁶ in the 1960s, with "the role of private sector";⁴⁹⁷ and in the 1970s, with "rural development and population policies."⁴⁹⁸ They draw attention to the fact that "during McNamara's presidency (1968-1981), the Bank considerably reoriented its focus from infrastructure projects to antipoverty programs."⁴⁹⁹ However, "the 1980s in turn were the decade of 'structural adjustment' and 'outward orientation.'"⁵⁰⁰ As they note, "Bank money always came with ideas and advice attached."⁵⁰¹ In the 1990s, the Bank Group intensified its activities in the environmental sustainability sector, particularly in the fields of biological conservation and climate change.⁵⁰²

⁴⁹¹ IFC Articles of Agreement, Article IV, Section 2.

⁴⁹² IFC Articles of Agreement, Article IV, Section 8.

⁴⁹³ In São Paulo and Rio de Janeiro.

⁴⁹⁴ Michael Gavin and Dani Rodrik, "The World Bank in Historical Perspective", *American Economic Review*, Vol. 85, No. 2, May 1995, p. 332.

⁴⁹⁵ Ibid p. 332.

⁴⁹⁶ Ibid p. 332.

⁴⁹⁷ Ibid p. 332.

⁴⁹⁸ Ibid p. 332.

⁴⁹⁹ Ibid p. 333.

⁵⁰⁰ Ibid p. 332.

⁵⁰¹ Ibid p. 333.

⁵⁰² The role of Bank Group in the field of environmental sustainability is analysed below in this section.

A critical analysis

The thesis aims to draw out what the development banks can learn from the weaknesses and adverse consequences of their actions and policies in the Brazilian Amazon. Moreover, it seeks to propose ways in which the work of the development banks could contribute more effectively to promote sustainable development in the region. In order to achieve these goals, in the next pages this chapter explores the main criticisms of the work of the World Bank Group worldwide, highlighting those issues directly or indirectly related to the processes of development in the Brazilian Amazon and the work of the IBRD and IFC in those processes.

One of the main criticisms of the World Bank Group refers to its structure, including the organization, procedures and voting power. The structure still reflects the economic and political context of 1944. However, the international context has changed profoundly. Today, the emerging countries play a powerful role in the world economy. For example, today China is the second largest economy, and Brazil is the six-largest in the world.⁵⁰³ In addition, as from 2013 India will also become one the six largest economies.⁵⁰⁴ Therefore, the need for institutional reform is indicated by a number of factors. First, the World Bank could expand its funding capacity. This is because these emerging countries could provide great financial contribution to the Bank. Second, the World Bank could operate more efficiently in developing countries if key positions inside the institution, including the president, the chief economist, and the Director of the World Development Report (WDR) were filled by, for example, Chinese, Brazilians, and Indian citizens. This is because

⁵⁰³ See *The Guardian* “Brazil overtakes UK as sixth-largest economy”, 26/12/2011, available from: <<http://www.guardian.co.uk/business/2011/dec/26/brazil-overtakes-uk-economy?INTCMP=SRCH>> December 2011; see also *BBC News Business*, “Brazil economy overtakes UK, says CEBR”, 26/12/2011, available from: <<http://www.bbc.co.uk/news/business-16332115>> December 2011; see also *The Centre for Economic and Business Research*, “Annual World Economic League Table”, available from: <<http://www.cebr.com>> December 2011.

⁵⁰⁴ According to the Economist Intelligence Unit (EIU) and the Business Monitor International (BMI). See Érica Fraga, “O Brasil deve ser neste ano a 6a. maior economia do mundo”. *Folha de S. Paulo*, 30/10/2011, p. A18.

these citizens grew up in the developing world; therefore, they are very likely more directly familiar with the problems and challenges affecting developing countries.⁵⁰⁵

There are many criticisms of the approaches to development adopted by the World Bank Group and, in its policies, strategies, and projects, in particular, as regards their negative social and environmental impacts. The non-governmental network the Bretton Woods Project⁵⁰⁶ highlights the main development concerns and criticism of the Bank's activities, which include⁵⁰⁷ that the loan conditions imposed on borrower countries require economic liberalisation, deregulation and privatization, generally "without due regard for the borrower countries' individual circumstances",⁵⁰⁸ and reduce a state's authority to govern its own economy. Another development-related criticism is that many funded infrastructure projects have had adverse social and environmental implications, for instance, hydroelectric dams causing displacement of riverbank communities. Humphreys observes that the World Bank Group has attracted two categories of criticism, from both the left and right. He says:

From the left, critics have argued that the World Bank neglects its mission to help the world's poor; that it serves as an agent of rich countries by prising open the economies of developing countries to

⁵⁰⁵ Today, there is significant representation of nationals of these countries in the international institutions, though not heading them. One exception is the Food and Agriculture Organization of United Nations (FAO), which is heading by a Brazilian citizen, José Graziano da Silva. According to the former President of Brazil, Fernando Henrique Cardoso, "the world order needs to be rebuilt in the twenty-first century and to be legitimated the new order will need to express power configurations that are emerging. (...) And the BRICs, what role will they play?" In Portuguese, "A ordem mundial precisa ser reconstruída no século XXI e para ser legítima a nova ordem terá que exprimir as configurações de poder que estão emergindo. (...) E os BRICs, que papel vão jogar?" Free translation. Fernando Henrique Cardoso, *A soma e o resto: um olhar sobre a vida aos 80 anos*. Rio de Janeiro: Civilização Brasileira, 2011, pp. 66-67. For further information on his viewpoints referring to the global order, see pp. 99-121.

⁵⁰⁶ It is a network created by a group of over 7,000 British NGOs to scrutinize and influence the World Bank Group and IMF. Source: Bretton Woods Project, *What is the Bretton Woods Project!*, available from: <<http://www.brettonwoodsproject.org/project/about.shtml>> September 2007.

⁵⁰⁷ Bretton Woods Project, *What are the main concerns and criticism about the World Bank and International Monetary Fund!*, available from: <<http://www.brettonwoodsproject.org/item.shtml!x=320869>> September 2007.

⁵⁰⁸ Above note 480, p. 33.

foreign investment; and that it imposes a market-based neoliberal economic model on these countries. From the right, the Bank has been criticized as an inefficient bureaucracy; for preventing the efficient operation of markets by pursuing discredited Keynesian interventionist policies; and for subsidizing inefficient economies through inappropriate lending.⁵⁰⁹

The lack of local participation and control of decision-making is one of the main criticisms of the Bank Group's operations in developing countries. According to Sherman:

It has failed to ensure the involvement of community groups and local peoples in the identification, planning and implementation of its projects and programs. Without these changes taking place there can be no true development in the Third World.

It is the local people who are best equipped to know the needs of their region. Without involvement by local populations the Bank and governments will continue to finance inappropriate schemes which ultimately destroy any hope of a sustainable future.⁵¹⁰

As is demonstrated later in this section, the World Bank Group has worked hard to address these criticisms. In consequence, today there is greater emphasis on transparency, accountability, and local participation in decision-making processes. For example, the Amazon Partnership Framework, established by the World Bank, was based on an extensive consultation process. Moreover, the Bank has also improved its environmental performance, as it has been gradually incorporating the environmental dimension into its development policies, strategies, and activities on the ground, through a gradual process generally known as “greening the Bank”. Chapter 5 argues that civil society's criticisms and pressures have played a critical role in this change.

⁵⁰⁹ David Humphreys, *Logjam: deforestation and the crisis of global governance*. London and Sterling: Earthscan, 2006, p. 168.

⁵¹⁰ Above note 480, p. 33.

The Environmental Policies and Performance of the World Bank Group

During the period 1949-1962, Eugene Black was the president of World Bank. According to Stein, “he limited the scope of the Bank to loans for infrastructure projects that could clearly demonstrate a capacity to expand GDP and generate the income to repay the loans.”⁵¹¹ In other words, under Black’s administration, development projects were funded for their capacity to stimulate economic growth, regardless of their environmental impacts. Nevertheless, under George Woods’ administration (1963-1968), the Bank began to expand its activities far beyond the field of infrastructure. “The new lending focused mostly on agriculture, with some additional commitment to social spending such as education and water supply and to ‘technical assistance.’”⁵¹² By the late 1960s, although environmental issues were increasingly being debated worldwide, the impacts of World Bank activities on the environment had not attracted much attention.

In 1970, however, the Bank became the first multilateral agency to have an environmental adviser, when James Lee was appointed to this position by then Bank President Robert McNamara. Wade explains that increasing concern about environmental issues in the late 1960s led to the establishment of different schools of thought on the subject.⁵¹³ On the one hand, the “environmental protection” school, which was considered a moderate approach to this issue, “sought to apply an environmental version of the Hippocratic oath: ‘First do no harm’”.⁵¹⁴ In short, the US government, responding to pressures from environmentalists, passed an act requiring “the U.S. government agencies to undertake environmental assessments designed to mitigate or avoid the environmental damaged caused by public investment projects”.⁵¹⁵

⁵¹¹ Howard Stein, *Beyond the World Bank agenda: an institutional approach to development*. Chicago and London p. 10.

⁵¹² Ibid p. 12.

⁵¹³ Above note 175, p. 619.

⁵¹⁴ Above note 175, p. 619.

⁵¹⁵ Above note 175, p. 619.

On the other hand, the “deep ecology” school argued that “instead of seeking infinite economic growth, societies should try to meet simple material needs and create ‘harmony with nature’. (...) Societies should abandon capital intensity and economies of scale and in their place adopt decentralized decision-making and small-scale endeavors”.⁵¹⁶ According to Wade, the Bank had to take a position in this debate:

As the recognized lead agency in the work on development issues, the Bank could not remain oblivious to this rising tide of concern, particularly because many in the new environmental movement were saying that economic growth should be stopped, an idea fundamentally opposed to the Bank’s mission. In addition, the Bank had to consider what position it would take at the United Nations Conference on the Human Environment scheduled for 1972 in Stockholm.⁵¹⁷

The Bank played a leading role in this Conference, for instance in the preparatory work, to persuade the developing countries not to withdraw “McNamara’s speech established the Bank as the leading agency in dealing with the environmental problems of developing countries.”⁵¹⁸ Unfortunately, there was a “loss of momentum after 1972.”⁵¹⁹ In short, “the Bank downplayed environmental issues in the years that followed, both to the outside world and still more to itself.”⁵²⁰

Wade points out five reasons for the Bank’s retreat as a potential leading institution in the new field of environmental protection. First, the complexity of environmental issues had been deeply underestimated by the Bank.⁵²¹ Second, the U.S. government

⁵¹⁶ Above note 175, p. 619.

⁵¹⁷ Above note 175, pp. 619-620.

⁵¹⁸ Above note 175, p. 623.

⁵¹⁹ Above note 175, p. 619.

⁵²⁰ Above note 175, p. 623.

⁵²¹ The President of the World Bank Robert McNamara “recognised that ‘then we were in the Stone Age of environmental awareness, we were very ignorant of what we were doing. We knew so little that we were sure that the number of projects with significant environmental implications would be very small and that for those it would be easy to identify how to reduce the environmental damage to tolerable levels at tolerable costs – two percent to four percent of project cost at a maximum and generally less’” He said, “‘We saw the direct attack on absolute poverty as very complex. We did not see the requirement

retreated from these issues, in order to face other issues such as the 1970s oil crises.⁵²² Third, developing countries became skeptical about the Bank's involvement in this new field, which could slow their rate of economic growth.⁵²³ Fourth, the Bank's staff were skeptical about introducing "explicit environmental considerations and self-styled environmental professionals."⁵²⁴ Fifth, the extremist approaches to the environmental crisis created some anti-environmental sentiments, portraying the environment movement as "a Trojan horse for socialism."⁵²⁵

James Lee worked on his own for two years, only in 1973 did a second staff member join the Office of Environmental Affairs. The Office did not have the resources to perform its mandate efficiently. According to Wade, "by 1973 the Office had three regular specialists. The Bank was then approving about 250 new lending operations totalling \$15 billion a year, in addition to supervising hundreds of ongoing projects, and had a professional staff of about 2,800".⁵²⁶ "In practice", Wade explains, "the Office of Environmental Affairs was usually involved in project design only at a late stage of the project cycle, 'at the eleventh hour,' too late to modify the design".⁵²⁷ Moreover, the relationship between the office and the rest of the bank was seen as a sort of "bloody adversarial relationship."⁵²⁸

In 1978, the Bank launched its forestry policy, which attracted a number of criticisms. According to Payer, "the policy directed resources not to forest conservation, but at replacing logged forests with plantations, and it advocated that the cost of reforesting logged landscapes should be the responsibility of the host

of avoiding significant environmental damage as very complex. This reflected a lack of understanding on our part." Above note 175, p. 624.

⁵²² [In the 1970s], the U.S. Congress and Treasury did not push environmental issues in their dealings with the Bank, and their overall relations with the Bank were cordial and unassertive compared with what was to come. Above note 175, p. 624.

⁵²³ As Wade says, "the North's pressure for environmental protection measures at the expense, as they saw it, of economic growth."⁵²³ He argues, "The developing countries took the line: 'You chopped down your forest and used them for consumption and exports. Why shouldn't we? Yes, there are risks, but we have to take them, our people are starving, first we have to grow and then we can clean up.'" Above note 175, p. 625-627.

⁵²⁴ Above note 175, p. 627.

⁵²⁵ Above note 175, p. 627.

⁵²⁶ Above note 175, p. 627

⁵²⁷ Above note 175, p. 628.

⁵²⁸ Above note 175, p. 631.

government rather than timber corporations.”⁵²⁹ “By the early 1980s”, Wade argues, “the Bank was being closely scrutinized by environmental NGOs. Its claims to environmental awareness and consideration were increasingly questioned. The first project to come under sustained scrutiny was the Polonoroeste”⁵³⁰ Programme in the western Brazilian Amazon.⁵³¹

Although the Bank played a critical role in the early 1970s, in particular, at the 1972 Stockholm Conference, it did not significantly change its policies and strategies in the environmental sector until the mid-1980s. Until that time the changes in the field of environmental sustainability were “cosmetic”, according to Rajagopal. He explains that after 1985 the bank began changing its activities concerning the environment for two reasons. The first factor was the formulation of the concept of sustainable development by the 1987 Brundtland Commission, resolving “the contradictions between the logic of development and the logic of environment.”⁵³² The second factor was “the grassroots resistance from many environmental and social movements in the West and the Third World during the 1980s.”⁵³³

Wade summarized the changes in the relationship between the Bank and the environmental dimension as follows: until the mid-1980s, the Bank adopted a “frontier economics” perspective, thus, the changes were purely “cosmetic”. Between 1987 and the early 1990s, the Bank shifted to an “environmental protection” paradigm, and then to the so-called “environmental management” approach. He points out that “the process by which one paradigm shifted to another was anything but a deliberative response to new knowledge and new opportunities.”⁵³⁴ Nevertheless, this “logic of discovery” of new facts, as Wade calls it, has played only a minor role in shifting the Bank’s activities. The main cause of changes in the World Bank’s activities towards the environment has been, according

⁵²⁹ Cheryl Payer, *The World Bank: A critical analysis*. New York: Monthly Review Press, p. 289, cited in David Humphreys, *Logjam: deforestation and the crisis of global governance*. London and Sterling: Earthscan, 2006, p. 169.

⁵³⁰ Above note 175, p. 637.

⁵³¹ With regard to the Polonoroeste Programme, see Chapter 6, section 6.1.1.

⁵³² Balakrishnan Rajagopal, *International law from below: development, social movements, and Third World resistance*, Cambridge: Cambridge University Press, 2003, p. 116.

⁵³³ Ibid p. 116.

⁵³⁴ Above note 175, p. 730.

to Wade, “the outside pressure from the major donors/owners of the Bank or from the NGOs.”⁵³⁵

Wade’s analysis is compelling in relation to the Brazilian Amazon. The World Bank Group’s work in the Brazilian Amazon changed from 1987 due to the outside pressure from the Bank’s major donors, such as the United States, as well as from the international and national NGOs. As Wade observed, “the NGOs paid much less attention to the other multilateral banks than the World Bank Group, not because they thought it worse than the others but because it had a much higher political profile.”⁵³⁶ In fact, although the IDB has been the main source of multilateral financing for development in Latin America and Caribbean, it has not been subjected to as much external pressure to integrate the environmental dimension into its daily activities as has the World Bank Group.

Under constant outside pressure from environmental groups, in 1987 the World Bank Group upgraded the Office of the Environment to the Environment Department. In 1989, it introduced a requirement that environmental impact assessments be undertaken for all its projects.⁵³⁷ In 1991, it revised its policies and strategies related to forests, launching *the Forest Sector: A World Bank Policy Paper*, which adopted a more preservationist approach than the previous one, which had been considered by Payer as “more industry oriented than people oriented.”⁵³⁸ The 1991 Policy Paper stated that “the The Bank Group will not at under any circumstances finance commercial logging in primary tropical moist forests.”⁵³⁹ Meanwhile, the Bank also collaborated with the United Nations Development Program (UNDP) and United Nations Environmental Program (UNEP), to create the Global Environmental Facility (GEF), a trustee fund that aims to help

⁵³⁵ Above note 175, p. 731.

⁵³⁶ Above note 175, p. 731.

⁵³⁷ Susan Park, “The World Bank, dams and the meaning of sustainable development in use”, *2009 Journal of International Law and International Relations*, vol. 5, No. 1, pp. 93-122.

⁵³⁸ Above note 485, p. 169

⁵³⁹ The World Bank, *The Forest Sector: A World Bank Policy Paper*, Washington DC: World Bank, 1991, p. 65.

developing countries in financing programs and projects that protect the global environment.⁵⁴⁰

In 1998, the Bank Group announced an alliance with the NGO World Wide Fund for Nature (WWF) to support the practices of forest conservation and sustainable use of forest products.⁵⁴¹ In 2001, the World Bank Environmental Strategy was launched, containing basically three interrelated objectives: to improve the quality of life, to enhance the quality of growth, and to protect the quality of the regional and global commons.⁵⁴² Therefore, the strategy focused on the three pillars of sustainable development: social justice, economic growth, and environmental conservation. According to the Bank's Independent Evaluation Group (IEG-World Bank), which is an independent, three-part unit within the World Bank Group, "the 2001 Environment Strategy recognized the importance of mainstreaming environmental issues across many sectors -- that is, addressing environmental issues from a multidisciplinary perspective, with strong cross-sector collaboration and through projects mapped to many different sector boards."⁵⁴³ However, as the IEG concludes, "the Bank's record in implementing the 2001 Environment Strategy and advancing the results agenda is quite mixed."⁵⁴⁴

The work of the Bank Group in the field of environmental sustainability, from 1990 to 2007, was analysed in depth by IEG-World Bank in its 2008 report, *Environmental Sustainability: An Evaluation of World Bank Group Support*. The Evaluation contained three objectives: "First, it seeks to assess how – and how well – the World Bank Group has supported its public and private sector clients in their efforts to achieve greater environmental sustainability (...). Second, it attempts to identify the principal external and internal constraints on Bank Group effectiveness.

⁵⁴⁰ The GEF is analysed in section 6.2 of Chapter 6 of this study.

⁵⁴¹ The World Bank-WWF alliance is analysed in section 6.1 of Chapter 6 of this study.

⁵⁴² The Independent Evaluation Group – World Bank Group, *Annual Review of Development Effectiveness 2009: Achieving Sustainable Development*, p. 48., available from: <http://siteresources.worldbank.org/EXT2009ARDE/Resources/arde09_web.pdf> March 2010.

⁵⁴³ Ibid p. 53.

⁵⁴⁴ Ibid p. XIII.

And third, it seeks to suggest how some of these constraints, particularly the internal ones, can be reduced.”⁵⁴⁵

With regard to the first objective, the Evaluation noted that the Bank Group’s support for achieving greater environmental sustainability “has grown during the past 15 years. Performance has improved over time, though it has been weaker in Sub-Saharan Africa than elsewhere”.⁵⁴⁶ According to the Evaluation, “the Bank Group is now the largest multilateral source of environment-related financing, including administration of Global Environment Facility (GEF) grants, and an important source of advice to many country and private sector clients”.⁵⁴⁷ As Parker correctly points out, “other multilateral development banks now emulate the World Bank”.⁵⁴⁸ However, the Evaluation concluded that the World Bank’s portfolio in the field of environmental sustainability has been absolutely inadequate to face the tremendous environmental crisis across the world. In fact, “total World Bank commitments between fiscal 1990 and 2007 were US\$ 401.5 billion in 6,792 projects. The 2,401 projects specifically identified as involving the environment and natural resources management (ENRM) [were] officially estimated to include relevant commitments on the order of \$59 billion.”⁵⁴⁹

The Evaluation identified four main external constraints on Bank effectiveness. Firstly, it pointed to an insufficient commitment at the national, sub-national and firm levels to achieving environmentally sustainable goals, due to the fact that most countries are struggling to face other issues. Secondly, it identified a number of problems related to fragile states, including political instability, civil unrest, rapid population growth, and poverty. Thirdly, it noted a lack of information related to the causes of environmental problems. Finally, it identified as a constraint a “weak legal, regulatory, financial, technical, human, and institutional capacity” at the country level.⁵⁵⁰

⁵⁴⁵ Ibid p. XIII.

⁵⁴⁶ Ibid p. XV.

⁵⁴⁷ Ibid p. XVI.

⁵⁴⁸ Susan Park, “The World Bank, dams and the meaning of sustainable development in use”, *Journal of International Law and International Relations*, Vol. 5, No. 1, p. 105.

⁵⁴⁹ Above note 542, p. XVII.

⁵⁵⁰ Above note 542, p. XXI.

The internal constraints on World Bank effectiveness were first, insufficient attention to longer-term sustainable development,⁵⁵¹ and, second, “insufficient coordination of action within the Bank Group.”⁵⁵² For example, the Evaluation pointed out: “there is a risk that the public and private sector arms of the Bank Group may be working with different criteria in relation to the environment.”⁵⁵³ The thesis later analyses all these constraints through the case studies related to the Brazilian Amazon.⁵⁵⁴

The Evaluation also contained a very interesting statement prepared by the external Advisory Panel.⁵⁵⁵ The statement concluded: “Despite many excellent achievements around the world, despite major intellectual accomplishments and many policy innovations, and despite state-of-the-art environmental safeguards, the Bank Group continues to give low de facto priority to the goal of enhancing the environmental sustainability of development.”⁵⁵⁶ Its findings included, among others, insufficiency of funding for environmental management,⁵⁵⁷ insufficiency of coordination within

⁵⁵¹ “Given the demand-driven nature of Bank programs at the country level, global public goods, including environmental quality and sustainability, tend to receive insufficient priority. Similarly, not enough attention is given to sustainable development obstacles and opportunities in Bank country and regional strategies”. Above note 542.

⁵⁵² Above note 542, p. XXII.

⁵⁵³ Above note 542, p. XXII.

⁵⁵⁴ See Chapter 6.

⁵⁵⁵ The External Advisory Panel was not the author of the Evaluation. The Panel met on 2 May 2008, at the World Bank Headquarters in Washington, “to consider the draft IEG report, ‘Supporting Environmental Sustainability: An Evaluation of World Bank Group Experience, 1990-2007’, and prepared the [Advisory Panel] Statement afterward. The Panel consisted of Julia Marton-Lefevre (director general of the International Union for the Conservation of Nature); Bjorn Stigson (president of the World Business Council for Sustainable Development); Christian Avérous (head of the Program of Country Environmental Performance Review; Organization for Economic Co-operation and Development); Yolanda Kakabadse (advisor, Fundación Futuro Latinoamericano); and Olav Kjørven (assistant administrator and director of development policy; United Nations Development Program). Above note 542, pp. XXV and 149.

⁵⁵⁶ Above note 542, p. XXV.

⁵⁵⁷ “(...) Only a small fraction of lending goes directly to strengthen environmental management”. Above note 542, p. XXV.

the Bank Group,⁵⁵⁸ and insufficiency of collaboration with new “hybrid-institutions”.⁵⁵⁹

As a result of these overall conclusions, the Panel made a number of recommendations for the work of Bank Group in the field of environmental sustainability. The most relevant to the present analysis argues that the Bank should pay more attention to the field of carbon finance⁵⁶⁰ and green economy.⁵⁶¹ According to the Panel, the Bank Group needs a new environmental policy looking “beyond a useful 10- to 20-year horizon, to a 40- to 50- year time horizon as well.”⁵⁶²

In response to these criticisms and recommendations, since 2008 the Bank Group has adopted a number of new strategies in the fields of climate change, water, urban development, and energy. These strategies will result in a new World Bank Group Environment Strategy, which as of February 2012 was still being drafted. According to the Bank Group, it “will build on the lessons learned during the last decade.”⁵⁶³ Indeed, the Bank Group has worked hard to address many criticisms about its approach to development. In relation to the problems with transparency and local participation in decision-making, for example, the Bank Group has promoted an extensive consultation process to inform its new Strategy. In addition, the Bank Group has prepared a number of background analytical papers, covering a range of

⁵⁵⁸ “The Bank Group has not sufficiently acted ‘as one’ in addressing strategic environmental challenges. Above note 542, p. XXV.

⁵⁵⁹ “The Bank Group should look beyond itself (...). It must approach partnership with the United Nations, with the private sector, and with civil society in a qualitative new and strategic way.” Above note 542, pp. XXV-XXVI.

⁵⁶⁰ “The Bank Group could be more active in the field of carbon markets. The Bank Group should more broadly support the transfer and effective application of low-carbon technologies and promote more systematically enhanced technology collaboration among developed and developing countries.” Above note 542, p. XXVI.

⁵⁶¹ The Bank Group should pay more attention to “small and medium enterprises”, that “are critical for pursuing sustainable economic growth and halting environmental degradation.” Above note 542, p. XXVII.

⁵⁶² Above note 542, p. XXVI.

⁵⁶³ World Bank, *Environment – Introduction to the WBG’s Environment Strategy*. Available from:

<<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/0,,contentMDK:20268515~menuPK:242145~pagePK:210058~piPK:210062~theSitePK:244381,00.html>> July 2011.

environmental issues including climate change, the role of biodiversity and ecosystems, environmental institutions and governance and pollution management.⁵⁶⁴ According to the Bank Group, “the new Environment Strategy is intended to help client countries address their environmental challenges, reflecting country priorities.”⁵⁶⁵ This approach to sustainable development is extremely positive, because while the concept of sustainable development is one which has consciously been expressed loosely so as to maintain a necessary flexibility within it, in practice sustainable development must be tied closely to local conditions in order to integrate effectively its three dimensions.⁵⁶⁶

Actions in the Amazon

As mentioned in chapter 2 above, the World Bank Group lends to Brazil around US\$ 2 billion annually, including approximately US\$ 200 million for projects in the Legal Amazon.⁵⁶⁷ Considering that currently Brazil’s GDP is nearly US\$ 2 trillion, the Bank’s financial contribution is small. Nevertheless, it would be a mistake to measure the importance of the Bank solely in terms of the amount of financing it provides, because the Bank provides other benefits through other instruments, including its policies, strategies and reports which are emulated by other international and national institutions operating in the Brazilian Amazon.⁵⁶⁸

In a nutshell, the Bank’s policies in the Brazilian Amazon are very important to the sustainable development of the region. Throughout the 1980s, the World Bank Group granted funds for the construction of large roads, for instance, the BR-364

⁵⁶⁴ World Bank, *Strategy Background Papers*. Available from: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTENVSSTRATEGY/0,,contentMDK:22776812~pagePK:210058~piPK:210062~theSitePK:6975693_00.html> July 2011.

⁵⁶⁵ World Bank, *Strategy 2010 - Environment Strategy Consultations*. Available from: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTENVSSTRATEGY/0,,contentMDK:22783650~pagePK:210058~piPK:210062~theSitePK:6975693_00.html> July 2011.

⁵⁶⁶ See section 3.1.3 of Chapter 3 of this study.

⁵⁶⁷ Author’s interview with Garo Batmanian (The World Bank – Amazon Cluster Coordinator), on 06/05/2009.

⁵⁶⁸ See discussion of the development banks operating in the Brazilian Amazon in Chapter 2 of this study, surrounding footnote 121.

located in the Western Legal Amazon.⁵⁶⁹ In addition, the Bank channelled financial resources to the mining sector, for example, to the Great Carajás Programme.⁵⁷⁰ As the Bank acknowledged “there were large controversies surrounding the Bank’s work in the Amazon in the 1980s.”⁵⁷¹ In response to these controversies, in the 1990s the Bank Group “withdrew from engagement on productive activities in the Amazon, and concentrated its interventions on conservation, primarily through the use of trust funds and GEF grants.”⁵⁷²

The Bank’s current strategy for Brazil for 2008-2011 perceives three main challenges: “how to reconcile conservation (...) with development (...), how to use the immense mineral and natural resources of the region in a sustainable manner, and how to build the energy infrastructure and transport corridors necessary for the region’s development.”⁵⁷³ A key part of the Bank’s strategy to address these challenges is the Bank Group’s Amazon Partnership Framework (APF) (2008-2011). The APF is based on an extensive consultation process, which included the governmental and private sectors, as well as the civil society sector, including NGOs and the scientific community.⁵⁷⁴ The APF aims to provide “(...) well-defined principles which would govern the response of the Bank to requests for Bank partnership in this region.”⁵⁷⁵ The APF has the following objectives:

At the national/global level the aims are to: i) stabilize Amazonia’s contribution to nature conservation and global environmental services; and ii) contribute to the national energy grid, logistic corridors, and flow of other natural resources and goods within the context of sustainable development.

At the Brazilian Amazon level the aims are to: i) increase access to basic services for the population living in the Brazilian Amazon; ii) ensure

⁵⁶⁹ See the Polonoroeste Case in section 6.1.1 of Chapter 6 of this study.

⁵⁷⁰ See the Great Carajas Programme in section 6.1.2 of Chapter 6 of this study.

⁵⁷¹ World Bank, *Country Partnership Strategy for Brazil 2008-2011*, p. 24.

⁵⁷² Ibid p. 24. The Global Environmental Facility (GEF) is analysed further, in Chapter 6, section 6.2.1.

⁵⁷³ Ibid p. 24.

⁵⁷⁴ Ibid p. 24.

⁵⁷⁵ Ibid p. 79.

employment and economic growth through sustainable use of resources; and iii) improve participatory processes in planning and implementation of large programs.⁵⁷⁶

Implementing the APF's objectives, the Bank aims to contribute to the promotion of sustainable development of the Brazilian Amazon through providing finance for projects relating to land regularization and cadastre⁵⁷⁷; adaptation and mitigation actions to climate change;⁵⁷⁸ expansion of protected areas;⁵⁷⁹ sustainable use of natural resources;⁵⁸⁰ and infrastructure development.⁵⁸¹

One vulnerability is that, because the World Bank Group encompasses five institutions, it is extremely important that all these institutions pursue similar approaches to Amazonian development. The World Bank Group argues that the IFC and the IBRD are working together, particularly in the Amazon, "where the IFC and IBRD have developed (...) a joint partnership framework". It wrote:

On the one hand the IBRD works with states in improving land titling and environmental management, while the IFC works with major private firms to start a process of ensuring that agricultural and livestock activities respect environmental and social laws. Third-party certification plays an increasing role in such activities.⁵⁸²

Unfortunately, there have been inconsistencies of approach within the Bank Group, because while the IBRD tends to see environmental sustainability as a powerful component of development, the IFC usually gives greater weight to the economic

⁵⁷⁶ Ibid pp. 79-80 (emphasis added).

⁵⁷⁷ With regard to the land regularization issues, see section 4.3 of Chapter 4 of this study.

⁵⁷⁸ With regard to the climate change, see section 1.4.2 of Chapter 1 of this study. See also Payment for Environmental Services (PES) and Reducing Emissions from Deforestation and Degradation (REDD) in Part 4.

⁵⁷⁹ See discussion of the Amazon Region Protected Areas Program (ARPA) in section 7.1 of Chapter 7 of this study.

⁵⁸⁰ See discussion of the Forest Stewardship Council in section 9.1 of Chapter 9 of this study.

⁵⁸¹ With regard to the infrastructure development, see discussion of the Pilot Program to Conserve the Tropical Forests of Brazil (PPG7) in section 6.2.2 of Chapter 6 of this study, and discussion of the Madeira River Dams in section 6.3.2 of Chapter 6 of this study.

⁵⁸² Above note 571, p. 29.

growth dimension than social and environmental considerations.⁵⁸³ As mentioned above, the Bank Group argues: “(...) there have also been occasions when the IFC and the Bank have pursued different approaches to development in the Brazilian Amazon.”⁵⁸⁴

The IFC has over the years made several investments in companies operating in the Amazon, most recently in the soy producer Amaggi and the meatpacker Bertin.⁵⁸⁵ In order to improve its environmental performance, the IFC is now preparing a program called the IFC Brazilian Amazon Initiative (BAI). The BAI contains three central objectives: “to develop market based incentives for the conservation of the Amazon; to contribute to reduced deforestation and biodiversity conservation; and to address poverty alleviation by promoting sustainable value chain business linkages and strengthening stakeholders engagement.”⁵⁸⁶ According to the Bank Group, “IFC will work in the Amazon using a combination of advisory services and investments. Key investments opportunities are likely to be in the areas of agribusiness, forestry, access to finance, and to a lesser degree manufacturing and biodiversity related products.”⁵⁸⁷

In April 2010, the World Bank Group approved the Country Partnership Strategy Progress Report, a midterm revisions of its CPS for Brazil for the period 2008-2011. The Report analyzed the bank’s activities in the environmental sector, stating that “with Bank support, Brazil has continued making progress on the environmental sustainability agenda. Deforestation in the Amazon, for example, has fallen steadily.”⁵⁸⁸ To support the Brazilian environmental agenda, “the World Bank Group has combined trust funds with traditional IFC and IBRD financing. The Bank has mobilized bilateral and multilateral grant funds (e.g. from the GEF) in support

⁵⁸³ Above note 571, p. 49.

⁵⁸⁴ Above note 571, p. 49.

⁵⁸⁵ With regard to the Amaggi, see section 4.3 of Chapter 4 of this study.

⁵⁸⁶ Above note 571, p. 99.

⁵⁸⁷ Above note 571, p. 99.

⁵⁸⁸ International Bank for Reconstruction and Development and International Finance Corporation, *Country Partnership Strategy Progress Report for the Republic of Brazil for the period FY 2008-2011 (Report No. 53356-BR, p. 8, available from: <<http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2010/04/01/00033495520100401015046/Rendered/PDF/533560CASP0P11101Official0Use0Only1.pdf>>* July 2011.

of conservation and natural resource management initiatives.”⁵⁸⁹ In relation to the Brazilian Amazon Initiative (BAI), one of its main contributions has been the Sustainable Beef Working Group. Convened by the IFC, this Working Group “includes 36 organizations representing ranchers, meat packers, retailers, financial institutions, and NGOs. IFC and the Brazilian NGO Aliança da Terra have launched a project to improve environmental and social standards for ranchers and soy producers.”⁵⁹⁰ This project is analysed later in this thesis, in chapter 6, section 6.3.2.

To conclude, since the 1970s the World Bank Group has gradually incorporated the environmental dimension of development into its policies and strategies. In consequence, the Bank Group has been more environmentally responsible in its funded-projects worldwide. Today, the Bank Group is an influential finance institution in the Brazilian Amazon. Even though the amount of financing the Bank Group provides to the region is small, the Bank provides other benefits through other instruments and through its policies and publications. In the near future, the importance of the Bank Group in promoting sustainable development in the Brazilian Amazon will depend on three factors: the role of the Bank Group in the field of carbon markets; the Bank’s ability to act as “one” in addressing environmental problems; and the Bank’s collaboration with the dynamics of “hybrid-institutions”, that comprise international institutions, state, local community and private sector. The new mechanisms for promoting sustainable development in the Brazilian Amazon, including carbon markets and hybrid-institutions, and the role of World Bank Group in those mechanisms, are analysed in detail later in this thesis, in Part 4.

5.2. The Inter-American Development Bank

There is another multilateral lending institution that also plays an important role in the Brazilian Amazon: the Inter-American Development Bank (IDB). This bank is the main source of multilateral financing for development in Latin America as a

⁵⁸⁹ Ibid p. 8

⁵⁹⁰ Ibid p. 9.

whole, as well as in Brazil.⁵⁹¹ The IDB Group is composed of the IDB, the Inter-American Investment Corporation (IIC) and the Multilateral Investment Fund (MIF). While the IIC focuses on small and middle-sized business, the MIF helps private sector growth through grants and investments.⁵⁹² The analysis examines why the IDB has become more important than the World Bank Group for Latin American countries and the IDB's advantages in relation to other sources of multilateral financing; whether the IDB has fulfilled its promises regarding the promotion of development in this region and whether the IDB has been an influential actor in promoting sustainable development in the Brazilian Amazon.

Nineteen of the forty-four country delegations which gathered in Bretton Woods in 1944 came from Latin America.⁵⁹³ In 1948, Chile was the first non-European country to receive a loan from the IBRD. In short, Latin American nations had great expectations regarding the IBRD as a key financing institution for the region's development. However, until 1956, almost two-thirds of the IBRD's financing resources were exclusively channelled to European countries. In addition, as the decolonization process in parts of Africa and Asia brought new IBRD members, these newly created nations started to compete for the Bank's financial resources.⁵⁹⁴ Moreover, the mainstream ideas of development held by the Economic Commission for Latin America were seen as completely different from those proposed by the IBRD.⁵⁹⁵ Furthermore, the IBRD's policies for loans were perceived as difficult

⁵⁹¹ Ronaldo Costa Couto, *A História Viva do BID e o Brasil*, 2nd ed., Washington: Banco Interamericano de Desenvolvimento, 2002, p. 93.

⁵⁹² Today, "the IDB holds a credit rating of AAA/aaa, the highest available", according to the Inter-American Development Bank, *2009 IDB Sustainability Report*, available at <<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35115991>>, accessed on 29/06/2010.

⁵⁹³ Bolívia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela.

⁵⁹⁴ These newly created countries were in better position to compete for funding, because they had tight link with their former European colonies.

⁵⁹⁵ Created in 1948, the Economic Commission for Latin America and the Caribbean (ECLAC) is headquartered in Santiago (Chile), being one of the five regional commissions of the United Nations. ECLAC's main purpose is to promote the economic and social development of the region. In the 1950s, it supported an industrialization process for the region through import substitution strategies. According to the ECLAC, "in its early days the Commission developed its own method of analysis and thematic focus which, with some variations, it has maintained up to the present day. Its approach has come to be known

ones to meet for “weak economic structures” such as those of Latin American countries. Finally, Latin America perceived the IBRD staff as not familiar with the region’s needs.⁵⁹⁶

During the 1950s, those international circumstances led the Latin American nations to propose the establishment of a regional development bank. The proposal met strong opposition from both the IBRD and the United States, which argued that having two institutions would mean an unnecessary duplication of multilateral financial institutions for the region.⁵⁹⁷ Nevertheless, under the critical economic circumstances of the 1950s, when many Latin American countries experienced a decrease in their economic activities, a proposal for a regional financing institution finally materialized. President Juscelino Kubitschek of Brazil addressed a specific proposal in 1958 toward the creation of a regional development bank, which was finally created in 1959 as the IDB.

The IDB is the world’s oldest and largest regional development bank, with 26 borrowing member countries, which are situated in Latin America and the Caribbean.⁵⁹⁸ Today, the IDB is the region’s main source of multilateral financing

as ‘historical structuralism’ (...). This approach does not recognize the existence of uniform ‘stages of development’, since for ‘latecomers to development’, such as the countries of the region, the dynamics of the process are different than they were for the nations that underwent development at an earlier point in history (...). Economic Commission for Latin America. *About ECLAC. History of ECLAC*, available from: <<http://www.eclacc.cl/?>> May 2008.

⁵⁹⁶ Aloísio Barboza de Araújo, *O governo brasileiro, o Bird e o Bid: cooperação e confronto*. Rio de Janeiro: IPEA, 1991, pp. 21-22.

⁵⁹⁷ To be precise, the first proposal to create an international institution to focus exclusively on pressing problems in the region can be traced to the First Inter-American Conference in 1890. Inter-American Development Bank – About the IDB, available from: <<http://www.iadb.org/aboutus/index.cfm?language=English>> September 2007.

⁵⁹⁸ Brazil is a borrowing member, along with other 25 nations, as follows, Argentina, Bahamas, Barbados, Belize, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela. There are also other countries that belong to the IDB, as non-borrowing countries, as follows, Austria, Belgium, Canada, Croatia, Denmark, Finland, France, Germany, Israel, Italy, Japan, Republic of Korea, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Note that Cuba has not become a member so far.

for development.⁵⁹⁹ Like the World Bank Group, the IDB helps to finance development projects in order to promote economic growth, poverty reduction, and environmental protection in developing nations. Like the World Bank Group, the IDB has its headquarters in Washington (DC) and the IDB's Articles of Agreement are almost copies of the World Bank's ones. Nevertheless, the IDB is completely separate from the World Bank Group, and has its own capital and mandates. In addition, while the latter helps finance development projects worldwide, the former focuses its activities in a particular region: the Latin America and the Caribbean.

Structurally, the IDB differs from the World Bank Group in many ways, for example, in relation to the distribution of voting power within these institutions. In fact, this regional finance bank is formally controlled by the 26 Latin American and Caribbean nations, which have maintained 50.02 percent of the voting power and the majority of capital resources.⁶⁰⁰ "This makes it easier for the Bank to work closely with borrowing member countries, and to tailor policies and lending programs according to local conditions",⁶⁰¹ argues the IDB. Unlike the World Bank Group, whose presidents have always come from the United States, the President of the IDB has always come from Latin America.⁶⁰² As Tussie correctly argues: "This sense of trust and ownership is an important feature of a regional development bank (...)." ⁶⁰³

⁵⁹⁹ Above note 596, p. 22.

⁶⁰⁰ Voting power is based on each member nation's subscription to the IDB's ordinary capital resources. Brazil and Argentina are the borrowing members that hold the largest percentage of total votes – that is, 10.572 %, each one, followed by Mexico (6.912%). Among the non borrowing members, the US is the nation that holds the largest voting power (30.007% of total votes), followed by Japan (5.001%) and Canada (4.001%). Source: the Inter-American Development Bank, About the IDB: capital stock and voting power, available from: <http://www.iadb.org/aboutus/IV/go_voting.cfm?language=English> September 2007.

⁶⁰¹ The Inter-American Development Bank - About the IDB – How is the IDB unique?, available from: <<http://www.iadb.org/aboutus/I/mi-how.cfm?language=English>> September 2007.

⁶⁰² Luis Alberto Moreno (2005-present), of Colombia; Enrique V. Iglesias (1988-2005), of Uruguay (born in Asturias, Spain); Antonio Ortiz Mena (1971-1988), of Mexico; and Felipe Herrera (1960-1971), of Chile.

⁶⁰³ Tussie points out a number of key factors that may justify the IDB's existence, as follows. First, the IDB can be an institution controlled by the borrowing member countries; second, the Bank can be a different voice in comparison to other international financial institutions; third, "the Bank can inspire and guide, rather than impose, policy reforms. Fourth, "the IDB can make the donor's agenda compatible with national and regional

Araújo draws attention to two important features of the IDB. First, the IDB's members include non-regional countries. This feature has existed since 1972, when the IDB Articles of Agreement were modified in order to allow new members, for instance, Canada, Japan, and a number of European nations, among others. The admission of new non-regional members increased the institution's financial resources, as well as weakening the relative influence of the US inside the institution, since the US had until then been the only developed country represented on the board. The second main feature refers to technical assistance. According to the agreement establishing the IDB, the Bank shall provide "technical assistance for the preparation, financing, and implementation of development plans and projects, including the study of priorities and the formulation of specific project proposals."⁶⁰⁴ Technical assistance has been an important sector to the Bank's activities. In view of the fact that over 70 percent of IDB staff comes from borrowing member countries, the staff has been perceived by Latin Americans as more familiar with national and regional sensitivities than the other multilateral lending institutions.

A brief overview of the activities of the IDB since its creation in 1959 shows how dramatic the changes have been over time in its strategies towards the promotion of development in Latin America and the Caribbean. The first IDB loans were "to support the state-led development model and endorsed social intervention."⁶⁰⁵ As Tussie points out, "the Bank thus established for itself a reputation as the 'water and sanitation bank', because it was the major provider of external funding for this sector."⁶⁰⁶ Due to the oil crises of the 1970s, which affected drastically the region's economies, the Bank's power in the overall development of the region diminished, although "was still significant in certain sectors, such as energy and sanitation

sensitivities; it can then evaluate the region's agenda and make it presentable for funding."⁶⁰³ She concludes, "the individuality of the IDB has stemmed more from its corporate culture and its small country focus than from sectoral differentiation or specific types of loans. Diane Tussie, *The Inter-American Development Bank, in Multilateral Development Bank* (vol.4). Boulder: Lynne Rienner Publishers, 1995, p. 1-3.

⁶⁰⁴ The agreement establishing the IDB, in its section 2.

⁶⁰⁵ Above note 603, p. 3

⁶⁰⁶ Above note 603, p. 3

(...).”⁶⁰⁷ In the 1980s, the period frequently known as “the lost decade” for Latin America and the Caribbean, the debt crisis changed the IDB’s focus from economic development to financial survival. Since the 1990s, the IDB has focused on broader aspects of development such as poverty reduction and environmental matters. Moreover, as Tussie explains, “the Bank has tried to play a compensatory role as it struggled with the market failures that characterized the development process.”⁶⁰⁸

A critical analysis

In the next pages, the main general criticism of the IDB’s actions and policies in the period 1981-2010 are analysed, drawing out those issues directly or indirectly related to the processes of development and of sustainable development in the Legal Amazon and the contribution of the Bank in those processes.

The first criticism is that there has been insufficient ownership of, and, hence, trust in, the IDB by the borrower countries in the region it serves. Today, about 1,837 employees of the IDB are located outside its headquarters (Washington-DC), in the other Bank offices situated inside and outside the regions they serve, for instance, in offices in Tokyo and Paris.⁶⁰⁹ According to the Bank, “some 70 percent of IDB staff are nationals of the Bank’s borrowing countries.”⁶¹⁰

The second criticism refers to an insufficiency of funding for development and sustainable development. The IDB argues that it has been “a pioneer in financing social sectors such as water and sewage, microenterprise, and institutional strengthening”, and is now a “leader in social lending.”⁶¹¹ In fact, from the early 1960s “the IDB has provided more than US\$ 183.2 billion in loans and guarantees to countries in the region for projects to reduce poverty, raise standards of living, spur economic growth, protect natural resources, foster integration and trade, and

⁶⁰⁷ Above note 603, pp. 3-4.

⁶⁰⁸ Above note 603, p. 4.

⁶⁰⁹ Above note 603, p. 4.

⁶¹⁰ Above note 603, p. 4.

⁶¹¹ Above note 603, p. 4.

others.”⁶¹² According to Koldo Echebarría, a Bank official, “our average annual approvals since 1994 were US\$ 7.5 billion, rose to US\$ 11 billion in 2008, and could reach US\$ 16 billion in 2009.”⁶¹³ The IDB argues that it is “an indispensable catalyst for development in Latin America and the Caribbean.”⁶¹⁴ Nevertheless, considering the region’s population and its economic, social, and environmental needs, US\$ 16 billion a year in loan operations is an insufficient volume of funding for development. This low total of approved loans has constrained the Bank’s effectiveness in transforming the region.

Other factors, too, have hindered the effectiveness of the IDB, including in its role supporting development and sustainable development, and it has acknowledged the need for a reform agenda that has been gradually implemented.⁶¹⁵ The agenda addresses not only the overarching goal of improved effectiveness, but also the factors contributing to it, including improved practices for risk management, participation of civil society, standards of transparency, ethics and integrity, and social and environmental safeguards.⁶¹⁶ In relation to the participation of civil society, the Bank has promoted the annual IDB-civil society meetings. For example, in 2009, a meeting was held in Guadalajara (Mexico), at which high-level IDB staff

⁶¹² Above note 603, p. 4.

⁶¹³ Revista América Economia, *BNDES avança*, n. 381, Nov. 2009, p. 28. In Portuguese, “nossa média de aprovações anuais desde 1994 era de US\$ 7,5 bilhões, subiu para US\$ 11 bilhões em 2008 e poderá chegar aos US\$ 16 bilhões em 2009”. Free translation.

⁶¹⁴ Inter-American Development Bank, *Better Bank – The IDB Reform Agenda* - Inter-American Development Bank, available from: <<http://www.iadb.org/InstReforms/index.cfm?lang=en&id=6595>> June 2010.

⁶¹⁵ Ibid.

⁶¹⁶ Ibid. With regard to improved practices for effectiveness and risk management, “at the end of 2008, after more than two years of work, the IDB approved a matrix to calculate more accurately the impact of their investments, to accelerate the lending concessions, and to improve the return of funds. Bank staffs recognize that there is a reasonable degree of uncertainty involved in this process.” Revista América Economia, *BNDES avança*, n. 381, Nov. 2009, p. 30. In Portuguese, “No fim de 2008, depois de mais de dois anos de trabalho, o BID aprovou uma matriz para calcular com mais precisão o impacto de seus investimentos, tornar a concessão de empréstimos mais ágil e melhorar o retorno dos financiamentos. Os técnicos do banco reconhecem que há um razoável grau de incerteza envolvido nesse processo.” Free translation. In relation to the participation mechanisms, the Bank has promoted the annual IDB-civil society meetings. For example, in 2009, the meeting was held in Guadalajara (Mexico), where high-level IDB staff and civil society organizations discussed a number of issues, including “a new policy on gender, disclosure of, and access to information and climate change.”

and civil society organizations discussed a number of issues, including “a new policy on gender, disclosure of, and access to information and climate change”.⁶¹⁷

Relating to transparency, in April 2010 the IDB approved its new Access to Information Policy, seeking “to demonstrate its transparent use of public funds, and by deepening its engagement with stakeholders, to improve the quality of its operations and knowledge and capacity-building activities.”⁶¹⁸ The Policy (sections 2.1 and 2.2) adopts the principle of maximizing access to information, with “narrow and clear exceptions.”⁶¹⁹ Luis Alberto Moreno, the current IDB president, declared: “The new policy is part of our efforts to make the IDB more accountable, (...) to measure the impact of our work, keeping the public informed of what we do in a timely fashion (...). On the critical issue of transparency, it will allow us to lead by example.”⁶²⁰ These reforms are very important to sustainable development in Latin America and the Caribbean countries. According to the Rio Declaration on Environment and Development, transparency, disclosure of, and access to information, and the participation of all concerned citizens are powerful instruments to best handle environmental issues.⁶²¹ Nevertheless, the Bank Information Center advises that:

[t]ransparency activists were disappointed at the limited movement concerning IDB private sector lending operations, so-called Non-Sovereign Guaranteed Operations. The NSG section, like other sections of the policy, literally allows governments and private sector participants to block disclosure of information.⁶²²

⁶¹⁷ Ibid.

⁶¹⁸ Inter-American Development Bank, *Access to Information Policy*, available from: <<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35167427>>, July 2010.

⁶¹⁹ Ibid.

⁶²⁰ Bank Information Center, *IDB Approves New Disclosure Policy*, available from: <<http://www.bicusa.org/en/Article.11878.aspx>> July 2010.

⁶²¹ Rio Declaration on Environment and Development, principle 10, states: “Environmental issues are best handled with the participation of all concerned citizens, at the relevant level.” Principle 20 states: “Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.”

⁶²² Above note 618.

The IDB Access to Information Policy (section 4.1) states that “while the Bank is committed to disclosing as much information as possible, there are compelling reasons to protect certain types of information”,⁶²³ among others, “information and documents relating to non-sovereign guaranteed operations or provided to the Bank in connection with such operations.”⁶²⁴ The type of information that may not be accessible is listed in the Policy’s Annex II, including, among other things, environmental and social strategies (ESS), environmental impact assessments (EIA), strategic environmental analyses (SEA), environmental analyses (EA), and environmental and social management reports (ESMR). This means that information is able to be restricted in an area fundamental to sustainable development, that of the environmental and conservation character of funded projects.

Yet transparency is one of the key areas where the IDB could contribute significantly in promoting the Amazon’s sustainable development. If the IDB were to take the lead in setting higher levels of transparency, the BNDES and BASA would probably follow them suit. As noted in the Introduction to this thesis, Brazil’s development banks are far behind their multilateral counterparts in terms of transparency, accountability, and participatory mechanisms. As with the World Bank, the influence of the IDB on the nature of development in the region extends beyond the projects it funds, and this would likely be the case for a strong IDB policy of transparency, disclosure and participation. Considering the aim of the thesis, in the following pages the general importance of these systems is referred to in the context of the Bank’s environmental performance, while Chapter 6 provides actual illustrations.

The Environmental Policies and Performance of the IDB

The IDB argues that “as a regional leader, [it] must show the way in addressing critical issues such as climate change, increasing prevalence of natural disasters,

⁶²³ Above note 618.

⁶²⁴ Above note 618.

growing scarcity of water, and loss of biodiversity and ecological integrity.”⁶²⁵ Whether the Bank has become a leader in environmental performance is addressed below.

The Bank’s commitment to environmental responsibility can be traced back to 1979, “when it became the first multilateral bank to adopt an environmental policy”,⁶²⁶ namely the OP-703. Since 1994, the Bank has had “the environment, together with poverty reduction and social equity, as priority areas for Bank support.”⁶²⁷ In 2003, the IDB approved a new Environmental Strategy, stressing, among other thing, that “incentive-based instruments are needed to complement traditional command and control mechanisms.”⁶²⁸ In 2006, the IDB approved its Environment and Safeguards Compliance Policy, “grounded in the principles of sustainable development as set out in the Declaration of Rio 92, Agenda 21, and most recently in the World Summit on Sustainable Development in Johannesburg.”⁶²⁹ It stated that “the goal of this Policy is to advance the Bank’s mission in Latin America and the Caribbean toward achieving sustainable economic growth and poverty reduction goals consistent with long term environmental sustainability.”⁶³⁰ According to this IDB Policy, any project presented to the Bank is classified into one of three categories, taking into account its potential environmental impacts. *Category A* projects are predicted to have significant negative impact; *Category B*, to have local and short-term negative impact; and *Category C*, to have minimal or no negative impact. In theory, this organizational system allows the IDB to prevent or mitigate any significant environmental impacts from its funded projects.

⁶²⁵ Above note 618.

⁶²⁶ This refers to the OP-703.

⁶²⁷ Above note 618. In 1994, it was signed the IDB’s Eighth Capital Replenishment.

⁶²⁸ Inter-American Development Bank, *2003 IDB Environment Strategy*, available from: <<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1448830>> June 2010.

⁶²⁹ Inter-American Development Bank, *2006 IDB Environment and Safeguards Compliance Policy*, <http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=665902>, p. 2, at 29/06/2010. The international treaties in the field of sustainable development were analyzed in Part 2 of this study.

⁶³⁰ Ibid, p. 2.

In 2009, the IDB channelled approximately US\$ 3.5 billion into projects for environmental improvement, mitigating climate change, and increasing the use of renewable energy.⁶³¹ This was more than double the 2008 total lending for the environmental sustainability sector. The Bank's role in the promotion of the region's environmental sustainability is increasing gradually, but it still seems very limited. Notwithstanding this improved institutional framework, the Bank still faces great challenges in the field of sustainability. Perhaps, the most crucial one is related to new tools for identifying and evaluating sustainable development options. According to the Bank's Sustainability Report 2009:

The traditional entry point for national and multilateral development agencies - the project level - provides limited opportunities for informed decisions on resource use, especially for the longer term. Thus, other approaches are necessary to more effectively identify options to reconcile conflicts over resource use and contribution to sustainable economic growth.

The Bank and its client countries must undertake the sectoral and cross-sectoral analysis required to adequately evaluate the sustainability of development alternatives.

The tools for identifying and evaluating sustainable development options are readily available and include country environmental assessments, strategic environmental assessment, and sectoral analysis.

Underpinning these analyses must be concerned action to strengthen institutional capacity of governments at all levels and of the private sector.

The Bank recognizes the importance of defining and reporting on effectiveness of its efforts and results and outcomes of its investments. (...) It is exploring options for developing sustainability indicators which it can report on.⁶³²

⁶³¹ Ibid.

⁶³² Inter-American Development Bank. Sustainability Report 2009, available from: <www.iadb.org/document.cfm?id=35115991> February 2012. With regard to the proposed sustainability indicators, see section 3.2.2 of Chapter 3 of this study.

The influence of the IDB on the nature of development in Latin American and the Caribbean countries could be enhanced if the Bank had adopted stronger policies of transparency, disclosure, and local participation in decision-making, because these policies are important tools to alleviate the problem of identifying opportunities to best integrate the three dimensions of sustainable development, but also core aspects of the IDB's environmental performance.

Actions in the Amazon

According to the IDB, the most crucially important place where it, as a supra-national body, can create improvements

is in “frontier” areas, where governance is weak, and where local political economies often seek short-term private economic gains rather than long-term development benefits. Weak public sector institutions and environmental governance can lead to significant predatory –and often illegal – exploitation of natural resources, including valuable timber and minerals, unsustainable agriculture and ranching activities, widespread deforestation and land degradation, and harm to indigenous populations. This can also be the case regardless of official efforts to establish new protected areas.⁶³³

The IDB also sees itself as possessing “a wealth of experience that it can apply to further strengthen its capacity to support sustainable infrastructure.”⁶³⁴ The term “sustainable infrastructure” appears to refer to attempts to finance a reconciliation of the promotion of regional integration with environment sustainability. As is seen later in this thesis, one of the IDB's top priorities is the rapid development of regional integration. According to the IDB Strategy with Brazil (2004-2007), “the Bank will continue to provide support especially for regional integration of the physical infrastructure in transportation, telecommunications, and energy markets,

⁶³³ Inter-American Development Bank, *2009 IDB Sustainability Report*, available from: <<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35115991>> June 2010.

⁶³⁴ Ibid.

including financing for binational works under the Initiative for the Integration of South American Regional Infrastructure (IIRSA),⁶³⁵ with a view to enhancing Brazil's competitiveness on international markets.”⁶³⁶ Whether sustainable infrastructure is a feasible approach in frontier areas such as the Amazon Basin is addressed in the case studies below.⁶³⁷

Apart from the infrastructure projects, the IDB continues to focus its action in the Legal Amazon on the water and sanitation sectors. Most projects in these sectors are located in the region's metropolises. The city of Belém, for instance, is the Legal Amazon's second largest city, with nearly 1.4 million inhabitants.⁶³⁸ The city suffered a rapid and chaotic process of urbanization, as “its population doubled in the past 30 years without the accompanying investments in infrastructure and urban planning.” Of the 81 Brazilian cities with more than 300,000 inhabitants, Belém is currently ranked among the 10 worst in terms of sanitation.⁶³⁹ In 2004, the IDB granted a loan of \$US 149 million to Belém to finance a sanitation project in the Una watershed, benefitting 176,000 people. In 2008, the Bank granted another loan of about US\$ 68.7 million for a sanitation and urban environmental program in Estrada Nova watershed, benefitting nearly 220,000.⁶⁴⁰

Even though still incipient, the IDB is financing new mechanisms for adding economic value to forest products. For instance, the Bank is one of the partners of the PES scheme called *Extractive Reserve/Natex Factory*. Given that the PES schemes are one of new mechanisms for promoting sustainable development in the Brazilian Amazon, the contribution of IDB in this field is analysed later in this thesis, in Chapter 8.

⁶³⁵ In Portuguese, *Iniciativa para a Integração Regional Sul-Americana*.

⁶³⁶ Inter-American Development Bank, *Bank Strategy with Brazil (2004-2007)*, p. 47, available from: <<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=431614>> June 2010.

⁶³⁷ See section 6.3.1 of Chapter 6 of this study.

⁶³⁸ The author visited the city of Belém in April 2008 and January 2009.

⁶³⁹ Trata Brasil, *Ranking Melhores e Piores em Saneamento*, available from: <http://www.tratabrasil.org.br/novo_site/cms/templates/trata_brasil/utl/pdf/release_final.pdf> June 2010.

⁶⁴⁰ Inter-American Development Bank, *Brazil obtains IDB loan for Belém Sanitation Project*. Available from: <<http://www.iadb.org/news-releases/2008-07/english/brazil-obtains-idb-loan-for-belem-sanitation-project-4682.html>> June 2010.

To conclude, the IDB has been an important institution in promoting development in Latin America. While trust and ownership are key features that explain the Bank's prestige in the region, there are a number of factors that have constrained the Bank's effectiveness in fulfilling its promises regarding the promotion of development in the region. There is insufficient volume of funding and, in relation to the Brazilian Amazon, there are also insufficient mechanisms for participation in decision-making processes regarding the funded projects. Even though the Bank acknowledges that the most crucial area where the IDB can make the difference is in frontier areas, the Bank has not yet established an office anywhere in the Brazilian Amazon. Recently, the IDB has focused its operations in the water and sanitation sectors. To date, the IDB has not effectively engaged in the forest sector in order to promote sustainable development in the Brazilian Amazon. In sum, today the IDB does not have a comprehensive and whole-of-agency commitment to sustainable development in the Brazilian Amazon.

5.3. The National Development Bank (BNDES)

Between the 1950s and 1980s, Brazil adopted a state-oriented development model, in which state-owned companies such as Petrobras (oil and gas sector), Vale (mining sector), and Embraer (aircraft sector) played a critical role in the country's economic development.⁶⁴¹ By 1985, Brazil had about 252 state-owned enterprises, which were heavily financed by the many state-owned banks,⁶⁴² among others, the National Development Bank (BNDES) and the Bank of Amazon (BASA). This state intervention model was based on import substitution policies, in which the market protection and reserve mechanisms played a central role. However, from the mid-1990s, the administration of President Cardoso (1995-1998 and 1999-2002) established "an extensive privatization program of state-owned companies" in the country.⁶⁴³ As a consequence, by 1999 the state-owned companies had fallen to 96,

⁶⁴¹ Above note 471, p. 78.

⁶⁴² Above note 471, p. 78.

⁶⁴³ Above note 471, p. 78.

and the number of state-owned financial institutions had dropped from a high of 32 to 14.⁶⁴⁴

However, President Lula's administrations (2003-2006 and 2007-2010) increased the role of state agents again.⁶⁴⁵ Today, according to Schapiro, "the Brazilian economy seems close to a hybrid model of development, in which both state agents and the private actors are supposed to share projects and responsibilities."⁶⁴⁶

Within this hybrid model of development, Brazil's state-run banks play a central role in promoting socio-economic development. For example, the BNDES exercises considerable development policy-making authority, granting funds to nearly all the large-scale development projects. Moreover, the Bank of Brazil (BB) is currently the country's largest commercial bank, granting substantial credit to enterprises and people during the global financial crisis of 2008-2009. In turn, the Caixa Econômica Federal (CEF)⁶⁴⁷ has channeled substantial financial resources to Brazil's housing program called "My House My Life".⁶⁴⁸ Last, both the Bank of the Northeast Brazil (BNB)⁶⁴⁹ and the Bank of the Amazon (BASA) have been increasingly performing as vital institutions to reduce the development gap between the country's most industrialized regions located in south and southeastern Brazil and the poorer regions situated in northeastern Brazil and the Legal Amazon.

The thesis focuses exclusively on the BNDES and the BASA, both state-owned banks. Throughout the last three decades, both have played a critical role in the process of development in the Legal Amazon and have become powerful financial institutions in the region. The future of the Amazon rain forest will be largely

⁶⁴⁴ Above note 471, p. 85.

⁶⁴⁵ President Lula did not change the monetary policies that had been implemented by President Cardoso, which were based on inflation targets, higher interest rates and rigid fiscal discipline.

⁶⁴⁶ Above note 471, p. 79. In January 2011, President Dilma Rousseff took office in Brasília. Her administration has not changed the economic policies adopted by President Lula.

⁶⁴⁷ Founded in 1861, the CEF is a commercial bank. Today, it has more than eight million account holders and twenty-nine savers, according to CEF, *History*, available from: <<http://www1.caixa.gov.br/idiomas/ingles/history.asp>> December 2011.

⁶⁴⁸ In Portuguese, *Minha Casa Minha Vida*.

⁶⁴⁹ In Portuguese, *Banco do Nordeste do Brasil*.

determined by the development policies and impacts of these banks. The BNDES is currently one of the world's largest development banks, and has granted funds to major development schemes, including the ongoing construction of two hydroelectric plants on the Madeira River. It is also likely to provide financial resources for the construction of the world's third largest hydroelectric plant called Belo Monte, located on the Xingú River. The BNDES also manages the Amazon Fund, the capital for which is made up from foreign donations which are directed towards reducing the greenhouse gas emissions derived from tropical deforestation.⁶⁵⁰

In the following pages, the historical role played by the BNDES in the process of development in the Legal Amazon is analysed. The analysis aims to draw out the lessons to be learned from the consequences of its development-related actions and policies for the region. Moreover, the analysis aims to identify the main challenges the BNDES has faced and will face in order to balance economic, social, and environmental needs related to the region. The analysis examines whether the bank has incorporated the environmental dimension in its work and whether it has effectively engaged in the dynamics of the private sector in order to promote a more environmentally and socially sustainable economy in the Brazilian Amazon.

Antecedents

After the Second World War, Brazil experienced a period of remarkable decline in levels of foreign investment, which were instead being channelled into the reconstruction of Europe (The Marshall Plan). As a result, in 1950, the then President of Brazil, Getúlio Vargas, “argued the case for government intervention to address the issue of Brazil's economic growth, ideally with assistance from foreign capital.”⁶⁵¹ His administration managed to establish a Brazil-United States Joint Commission to examine financing for development projects. The outcome of the Commission's work was the founding of the BNDES. As Azevedo and Gorayeb

⁶⁵⁰ The Amazon Fund is analysed in section 7.2 of Chapter 7 of this study.

⁶⁵¹ Elizabeth Azevedo and José Gorayeb. *BNDES 50 anos de desenvolvimento*, 2002, p. 189.

explain: “the role of the Bank was to formulate and execute Brazil’s economic development policy. Its role as provider of funds for projects that required long-term financing was essential, since at that time the local financial system provided only short-term loans.”⁶⁵²

During the 1950s, the idea of centralized or state-led economic planning was in vogue in Latin America. The Economic Commission for Latin America (ECLA) had been established in 1948, with the purpose of contributing to the economic progress of the region through planning techniques.⁶⁵³ This view of development inspired the creation of a number of development banks in Latin America.⁶⁵⁴ Importantly, it inspired the state-focused policies of the IDB, founded in 1959. In short, many development banks arose and adopted central planning strategies to promote economic development in the region. Brazil’s own development bank, the BNDES, also followed this centralized approach to development, including supporting import substitution strategies in accordance with the ECLA’s historical structuralism theory-based approach.⁶⁵⁵ Created in 1952 as the National Bank for Economic Development, the National Development Bank (or its acronym in Portuguese BNDES)⁶⁵⁶ focused its main activities during the 1950s on infrastructure, in particular, in the fields of transport and energy. To illustrate,

⁶⁵² Above note 651, p. 189.

⁶⁵³ In July 1984, the institution’s English acronym changed to ECLAC, because the institution had expanded its membership, including the Caribbean countries. The Spanish acronym (CEPAL) has remained the same.

⁶⁵⁴ For instance, the *National Financiera*, in Mexico, and the *Corporación de Fomento*, in Chile.

⁶⁵⁵ In the 1950s, the ECLA supported an industrialization process for the region through import substitution strategies. According to the ECLAC, “in its early days the Commission developed its own method of analysis and thematic focus which, with some variations, it has maintained up to the present day. Its approach has come to be known as ‘historical structuralism’ (...). This approach does not recognize the existence of uniform ‘stages of development’, since for ‘latecomers to development’, such as the countries of the region, the dynamics of the process are different than they were for the nations that underwent development at an earlier point in history (...).” Economic Commission for Latin America. *About ECLAC. History of ECLAC*, available from: <<http://www.eclacc.cl/?>>, May 2008.

⁶⁵⁶ Founded as the National Bank for Economic Development or in Portuguese, “Banco Nacional de Desenvolvimento Econômico” (BNDE), its name was changed in the 1970s, adding a “S” for Social, thus currently its official name is the following one: the National Bank for Economic and Social Development, or in Portuguese, “Banco Nacional de Desenvolvimento Econômico e Social” (BNDES). This thesis refers to it as “the National Development Bank” (or the acronym in Portuguese BNDES).

between 1956 and 1961, “the Bank allocated 48.6 percent of its spending to the metallurgy sector and 33.4 percent to the electricity sector. At that time, the Federal Government had selected these sectors as priority”.⁶⁵⁷ According to Azevedo and Gorayeb, “in its first ten years, the BNDES had contributed decisively, especially through investments in infrastructure, to Brazil’s transition from being an eminently agrarian country to becoming an industrial power.”⁶⁵⁸

In the 1960s, the BNDES concentrated its work in the basic industry sector, including a number of private-sector projects. In the 1970s, the period known as “the decade of the Brazilian miracle”, the Bank financed important large-scale projects, including in the Amazon, such as the Tucuruí dam, and the Transamazonian and Cuiabá-Santarém highways. In addition, in the 1970s the BNDES financed the construction of two nuclear power stations, in the state of Rio de Janeiro. During the execution of Brazil’s Second National Plan (1974-1979), “about 48 percent of [the Bank’s] financial disbursements were directed towards raw material processing (mainly metallurgy, chemicals and fertilizers, paper and cellulose); 30 percent of the resources was allocated to infrastructure (on emphasis on electric power and railways) and 7 percent was invested in capital goods (especially mechanical and electrical equipment).”⁶⁵⁹ Reviewing the work of the BNDES throughout this period, Schapiro concluded:

There was a kind of overlap between BNDES’s role in the direct regulation of the credit market and the substantive aims of government plans. The Bank was not only a source of supplemental financial resources to the market; it was in fact a source of financing of the developmental policy objectives. Although it may seem like a subtle overlap, it is a relevant feature to understand the trajectory of the Brazilian financial system: its agenda and financial intervention tools were determined by the country’s macro industrialization objectives.⁶⁶⁰

⁶⁵⁷ Above note 471, p. 79. With regard to the Brazilian government’s priorities in the late 1950s, see Target Plan (1956-1961).

⁶⁵⁸ Above note 651, p. 195.

⁶⁵⁹ Above note 471, p. 83.

⁶⁶⁰ Above note 471, p. 85.

The 1980s were “the lost decade” for Brazil, due to the lack of economic growth. In 1983, Brazil’s GDP fell by 5 percent, and in 1987 the government declared a moratorium on debt repayment. Of course, under these dramatic economic circumstances, the Bank’s ability to finance development projects was significantly reduced. Between the late 1980s and early 1990s, Brazil began a period of renewal. In economic terms, for instance, “the BNDES began an extensive process of privatization of companies under its control.”⁶⁶¹ In politics, a new Brazilian Constitution was promulgated in 1988, determining that at least 40 percent of the funds collected by FAT⁶⁶² was to be channeled to the Bank’s investments in projects related to the creation of jobs and income.⁶⁶³ This period of political democratization affected the work of the BNDES, which was expanded to new social areas, for instance, financing schools for street children, blood banks, and computer systems for prisons. In addition, the Bank launched an Environmental Conservation Program known as “Conserva”,⁶⁶⁴ in association with multilateral credit agencies.⁶⁶⁵ Throughout the 1990s, the BNDES coordinated the privatization of a vast number of companies, in the fields of steel, electricity, petrochemicals, ports, highways, and telecommunication.⁶⁶⁶

Within this context of economic openness, in the 1990s the private sector began to suffer increasing competitive pressure, which contributed “to the creation of a new agenda in the Brazilian economy: the adoption of innovation strategies by private companies.”⁶⁶⁷ According to Schapiro, the BNDES has had “an important financing role in this new economy.”⁶⁶⁸ Indeed, in the 1990s the BNDES began to fund many private sector development initiatives across the country, particularly in its most industrialized regions. The BNDES celebrated its fiftieth anniversary in 2002, pointing out key dimensions for its intervention, such as social development,

⁶⁶¹ Above note 651, p. 211.

⁶⁶² The FAT is a federal fund. In Portuguese, *Fundo de Amparo ao Trabalhador*.

⁶⁶³ Above note 651, p. 212.

⁶⁶⁴ In Portuguese, *Programa de Conservação Ambiental*.

⁶⁶⁵ Above note 651, p. 210.

⁶⁶⁶ Above note 651, p. 217 (totalling nearly 120 companies).

⁶⁶⁷ Above note 471, p. 85.

⁶⁶⁸ Above note 471, p. 88.

infrastructure, exports, modernization of productive sectors, regional development, and privatization.⁶⁶⁹

Today, the BNDES is a federal public company linked to the Ministry of Development, Industry and Foreign Trade,⁶⁷⁰ with headquarters in Rio de Janeiro. The board of BNDES is currently composed of eight members: the president, vice-president and six directors, all appointed by the President of Brazil.⁶⁷¹ Above all, this institution provides long-term financing for endeavours that promote Brazil's economic, social, and environmental development. As Schapiro noted, "BNDES alone answers for the majority of the long-term resources allocated in the country - it is practically a monopolist in this segment."⁶⁷² Garcia, a senior academic at the Catholic University of Rio de Janeiro (PUC-RJ), has criticized this monopolist role, arguing that "we always must remember that the BNDES is there to fill a market failure, not to take the place of the private banking system."⁶⁷³ Nevertheless, even though the Bank is a powerful state-owned institution, it does not advocate the return of the state-centered development model. By contrast, as Schapiro observed, "[the] BNDES seems to share this diagnosis: the success of its role requires the comprehension of information drawn from the routines of the respective business sectors, as well as the establishment of partnerships with private agents (especially the rest of the financial markets)."⁶⁷⁴ According to the current president of BNDES, Luciano Coutinho:

⁶⁶⁹ Above note 651, p. 224.

⁶⁷⁰ The BNDES was initially an independent body; however in 1971 an act was passed (law 5662/1971) to change the bank's statute, transforming it into a public company.

⁶⁷¹ The president of BNDES is currently Luciano Coutinho. He has PhD in Economics from the Cornell University, and is associate professor at the University of Campinas (UNICAMP). A review of the background of previous Bank's presidents shows that the board members are appointed according to both political and technical criteria. Available from:

http://www.bndes.gov.br/SiteBNDES/bndes/bndes_pt/Institucional/O_BNDES/Quem_e_q_uem/ June 2010.

⁶⁷² Above note 471, pp. 88-89.

⁶⁷³ América Economia Brasil, *BNDES avança*, n. 381, Nov. 2009. In Portuguese, "sempre é preciso lembrar que o BNDES existe para suprir uma falha de mercado, e não para tomar o lugar do sistema bancário privado." Free translation.

⁶⁷⁴ Above note 471, p. 113.

We know that the Brazilian private banks have difficulties in long-term loans due to the structure of their funding. However, we do not believe that the performance of BNDES is to expel the private banking system, but allow them to enter.

The great challenge for the Brazilian economy is to save more, and to invest more, so that the BNDES concentrates on the projects of longer maturity and higher risk, the classical role of a development bank.⁶⁷⁵

While the BNDES is of the view that it must concentrate its actions on those projects of longer maturity and higher economic risks, such as those related to the construction of hydroelectric plants and highways, sustainable development requires that it must also eliminate or at least mitigate the significant social and environmental risks that are usually caused by these large-scale projects, particularly when the projects are carried out in the Legal Amazon.

A critical analysis

There is currently a remarkable consensus in Brazil that, since it was created in 1952, the BNDES has played a pivotal role in the country's development. Today, even those who say that Brazil should advance its privatization process do not argue that the Bank should be privatized.⁶⁷⁶ The BNDES is considered as the country's "think tank", that is, the national centre for policy formulation.⁶⁷⁷ As a federal public agency, in 2009 the Bank disbursed about R\$ 137 billion (US\$ 81 billion),

⁶⁷⁵ Above note 673, p. 31. In Portuguese, "Sabemos que os bancos privados brasileiros têm dificuldades em conceder empréstimos de longo prazo devido à estrutura de seu *funding*. No entanto, não acreditamos que a atuação do BNDES deva expelir os bancos privados do sistema, mas sim permitir a entrada deles. (...) O grande desafio para a economia brasileira é poupar mais e investir mais, para que o BNDES concentre-se nos projetos de maturação mais longa e risco mais elevado, o papel típico de um banco de desenvolvimento." Free translation.

⁶⁷⁶ "Now and for a number of decades, BNDES is the only publicly-owned bank, the role of which can be justified. It continues to play an extremely important role but its role must be steered toward more institutionalized action rather than direct intervention", according to André Lara Resende, interviewed in BNDES, *BNDES 50 anos de desenvolvimento*, see above note 651, p. 224.

⁶⁷⁷ João Roberto Lopes Pinto, "BNDES: o reforço à dinâmica dos negócios", *Le Monde Diplomatique Brasil*, outubro 2008, p. 20.

and in 2010, about 160 billion (US\$ 95.7 billion),⁶⁷⁸ and it is currently financing a vast number of development projects across the country, bringing significant benefits to the lives of millions of people. Nevertheless, these benefits could be enhanced, and adverse impacts, such as the environmental degradation caused by its development projects, could be reduced drastically. A number of criticisms of the activities of the BNDES are set out in a 2007 civil society Report, “Plataforma BNDES”.⁶⁷⁹ It divides the main criticisms into four strands.

The first strand of criticism refers to “Transparency and Publicity”. According to the Report, while the BNDES releases information related to its financing in the public sector, it only selects some information for release in relation to its financing in the private sector. In short, currently it is not possible to know the full content of the bank’s loan portfolio. The second strand of criticism deals with “Participation and Social Control”. According to the Report, the BNDES does not have established processes for public participation. The Report argues for public meetings to be created routinely prior to any approval of projects, in order to assess their socio-economic and ecological viability. To sum up, both these criticisms call for more openness by the bank to civil society.

The third and fourth strands of criticism stress the need to reform the project financing of the BNDES, which is seen as economically-oriented only. The Report argues that the Bank’s activities should also focus on social justice and environmental protection. The third strand of criticism, called “Criteria and Parameters”, calls for new criteria for the Bank’s loans, for example, taking more

⁶⁷⁸ In 2011, “Brazilian tax-payers will spend nearly R\$ 21 billion a year on subsidies embedded in loans from the National Treasury to the BNDES.” “Crédito ao BNDES custa US\$ 21 bi ao País”. *O Estado de S. Paulo*. In Portuguese, “Os contribuintes brasileiros vão gastar quase R\$ 21 bilhões ao ano com subsídios embutidos nos empréstimos do Tesouro Nacional para o BNDES”. Free translation. For further information on the subsidies embedded in loans from the National Treasury to the BNDES, see also Mailson da Nóbrega, “Finanças federais: a volta às trevas”, *Revista Veja*, 21/07/2010, p. 106.

⁶⁷⁹ The Report was formulated in December 2007, by a large number of civil society organizations, including RedeBrasil, MST, and CUT. Note that the RedeBrasil (“NetBrazil”) is a NGO specialized in scrutinizing the work of multilateral finance institution in Brazil. The MST is the Movement of Landless Rural Worker (*Movimento dos Trabalhadores Rurais Sem-Terra*). CUT is the Unified Center for Trade Union (*Central Única dos Trabalhadores*).

serious account of the environmental impact of funded projects. The Report also says the environmental policy of BNDES is “vague and aspirational”. In addition, the Report argues that the Bank should give preference to those projects that contribute to reduce greenhouse gas emissions, for example, providing special banking “spreads”. Finally, the fourth strand of criticism refers to “Sectoral Policies”, stressing a decentralization of credits, arguing that most loans are provided to the richest regions of Brazil such as the southeast one, particularly to São Paulo (SP) and Rio de Janeiro (RJ), rather than to less developed regions, such as the northeast and the Legal Amazon.

The Environmental Policies and Performance of the BNDES

In 1976, the BNDES officially incorporated environmental considerations into its approval procedures. However, the BNDES did not pay sufficient attention to the environmental impacts of its financial activities, failing, for example, to set up an environmental work team, a step not taken until the late 1980s.⁶⁸⁰ Influenced by reforms in other finance institutions during that period, mainly the World Bank, the BNDES intensified its involvement in the environmental sector. For instance, in 1989 the Bank established an environmental work team in charge of classifying the Bank’ operations, based on their potential impacts on the environment.⁶⁸¹

Building on this, in the early 1990s, the BNDES signed a number of international agreements in the field of environmental sustainability. For example, together with the World Bank and the Export-Import Bank of Japan (currently JBIC), the BNDES signed a contract of about US\$ 100 million to finance the National Industrial Pollution Control Programme.⁶⁸² The BNDES also supported the preparatory measures for the 1992 UN Conference on Environment and Development, held in Rio de Janeiro, and in 1994 it signed the International Statement of Financial Institutions on the Environment and Sustainable Development. The BNDES also

⁶⁸⁰ BNDES, *Histórico de atuação ambiental do BNDES*, available from: <http://www.bndes.gov.br/SiteBNDES/bndes/bndes_pt/Areas_de_Atualizacao/Meio_Ambiente/historico.html> October 2010.

⁶⁸¹ Ibid.

⁶⁸² Ibid.

became a member of the UNEP-FI⁶⁸³ at this time. According to the BNDES, “as a result of its inclusion and due to the constant interchange with UNEP-FI, the Bank is always updated with state-of-art environmental practices and the sustainability of banking operations in the worldwide financial sector.”⁶⁸⁴ In 1995, the BNDES signed the so-called Green Protocol,⁶⁸⁵ an agreement signed by five federal state-run banks: the BNDES, Bank of Brazil (BB), Bank of the Amazon (BASA), Bank of Northeast Brazil (BNB), and Caixa Econômica Federal (CEF). Furthermore, the Bank also took part in a number of events such as the Coordination Committee of the UNEP-FI and the negotiations related to the UN Convention on Climate Change.⁶⁸⁶ In 2003, the BNDES established its new environmental guidelines that are analysed below.

In August 2008, five of Brazil’s public banks, including the BNDES, signed a new Green Protocol known as the Protocol of Intent for the Socio and Environmental Responsibility with aims to “define forerunner, multiplying and exemplar bank policies and practices in terms of socio and environmental responsibility.”⁶⁸⁷ The Protocol established four principles: that the banks should finance sustainable development through their credit lines and programs; that they should take into account the social and environmental impacts, and related risk analyses of their clients and investment projects; that they should promote sustainable consumption; and, that they should engage the parties interested in the environmental sustainability sector. In 2010, the BNDES updated its Socioenvironmental Policy, stating that: “fostering sustainable development, proactively and in all the projects supported, is the main objective of the Bank’s Socioenvironmental Policy, focusing on the integration of economic, social, environmental and regional aspects.”⁶⁸⁸ The Policy contains a number of guidelines⁶⁸⁹ and instruments.⁶⁹⁰ In general, the new

⁶⁸³ The United Nations Environment Programme – Finance Initiative.

⁶⁸⁴ Above note 680.

⁶⁸⁵ In Portuguese, *Protocolo Verde*.

⁶⁸⁶ Above note 680.

⁶⁸⁷ Above note 680.

⁶⁸⁸ BNDES, *Socioenvironmental Policy*, available from:

<http://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Social_and_Environmental_Responsibility/environmental_policy.html> December 2010.

⁶⁸⁹ Such as that the Bank should “act in accordance with the current public policies and legislation, in particular with provisions in the National Environmental Policy; [that it

Policy responded to the 2007 report Plataforma BNDES; however, it remains to be seen if the Protocol and the subsequent Policy will affect the Bank's routine activities. Unfortunately, these documents do not contain binding guidelines. For the BNDES, the guideline is "a factor to be considered" in the project finance.⁶⁹¹ For this reason, the role of guidelines has been marginal in promoting a more environmentally and socially responsible financial operation in the Brazilian Amazon.

To sum up, the BNDES is currently a pivotal actor in promoting development in Brazil, including the Legal Amazon, and its policies and actions are critical for sustainable development. To date, the BNDES has not truly incorporated the environmental dimension of development into its policies and practices, with environmental impact only one factor to be considered in its funded projects. It has not effectively engaged with the dynamics of the private sector in order to promote a more environmentally responsible economy in the Brazilian Amazon. This assessment is analysed and substantiated in depth through the case studies in Chapter 6.

5.4. The Bank of the Amazon (BASA)

should] continuously develop and improve financial products with social and environmental objectives and to incorporate social and environmental criteria in other products, when appropriate; and that it should offer different conditions for financial support to projects with social and environmental additionalities and projects that address environmental damage.”⁶⁸⁹ Above note 680.

⁶⁹⁰ Such as “products, lines, programs and reimbursable and non-reimbursable funds for financial support for initiatives and investments in the Environment and Social and Regional Development; sector resolutions, specific policies and other regulations; internal socioenvironmental guides, assessment methodologies of beneficiaries, assessment of credit risk and monitoring and impact assessment of projects supported; internal procedures for risk assessment and for social and environmental analysis of beneficiaries and undertakings seeking financial support.” Above note 680.

⁶⁹¹ Project finance is “a method of funding in which the lender looks primarily to the revenues generated by a single project, both as the source of repayment and as security for the exposure. This type of financing is usually for large, complex and expensive installations that might include, for example, power plants, chemical processing plants, mines, transportation infrastructure, environment, and telecommunications infrastructure.” Source: Basel Committee on Banking Supervision, International Convergence of Capital Measurement and Capital Standards “Basel II”), available from: <<http://www.bis.org/publ/bcbs118.htm>> December 2011.

During the Second World War (WWII), the Brazilian Amazon emerged again as an important source of rubber, because Asian rubber sources were isolated from the Western buyers. Under these circumstances, Brazil and the United States decided to create a financial institution in order to expand the Brazilian rubber economy. The so-called Washington Agreement was signed in 1942; and the Rubber Credit Bank set up⁶⁹². After the end of WWII, the Amazon rubber economy again declined, leaving the Brazilian Amazon without much of an economic base and with stagnating development. In the face of this, the federal administration decided in 1950 to create a bank to organize the provision of investment finance for the Brazilian Amazon: the Amazon Credit Bank,⁶⁹³ which evolved to become the Bank of Amazon (BASA).⁶⁹⁴

The BASA is currently a federal financial institution, which is linked to the Federal Treasury Ministry. The Bank's headquarters are located in Belém. Among the four development banks studied in this thesis, the BASA is the only bank with headquarters located in the Brazilian Amazon. This fact can be seen as a strength, because it means that the BASA has deep roots in the region. According to the BASA, "as one of the main inducers of the region's sustainable development, the Bank is qualified to be one of the financiers who owns know-how about the reality of the region, so a partner for implementation of federal and international financial resources with the purpose of continuity and sustainability of more than half of the national territory."⁶⁹⁵ The BASA is not a "pure" development bank, because it works as a commercial bank as well. Today, the Bank's agencies are found in 796 municipalities across the Legal Amazon. In addition, the BASA controls about 74

⁶⁹² Decree No.4451, July 1942.

⁶⁹³ In Portuguese, Banco de Crédito da Amazônia S/A.

⁶⁹⁴ In Portuguese, *Banco da Amazônia S/A*.⁶⁹⁴ Banco da Amazônia, *História*, available from: <<http://www.basa.com.br>> October 2009.

⁶⁹⁵ Banco da Amazônia, O que é sustentabilidade, available from: <http://www.bancoamazonia.com.br/bancoamazonia2/responsabilidade_item1.asp>, June 2010. In Portuguese, "(...) o fato de ser um dos principais indutores do desenvolvimento sustentável da região, credenciam o Banco da Amazônia a ser um dos agentes financeiros que detém know-how sobre a realidade da região, portanto, um parceiro para aplicação dos recursos federais e internacionais com o intuito de perenidade e sustentabilidade de mais da metade do território nacional." Free translation.

per cent of the long-term loans that are granted by banks, including the MDBs, BNDES, and commercial banks, for the Brazilian Amazon.⁶⁹⁶

Overall, the capital of the BASA has been made up from the Constitutional Fund to Finance Northern Brazil (FNO),⁶⁹⁷ which is managed exclusively by the Bank.⁶⁹⁸ As mentioned above in Chapter 2, the Constitutional Fund was created by the 1988 Federal Constitution⁶⁹⁹ in order to oblige the government to channel three per cent of its earnings derived from two significant federal taxes, namely, income tax (IR),⁷⁰⁰ and the industrialized products tax (IPI),⁷⁰¹ to promote economic and social development in the country's less industrialized regions: the northern (Amazon), the north-east, and the central-west. At present, nearly 0.6 per cent of those taxes is channelled to the FNO,⁷⁰² which means that the BASA enjoys relatively regular financial contributions.

A critical analysis

The BASA currently provides grants to the agribusiness sector. It has two categories of fund: Regular FNO and Special FNO. The former focuses on rural producers (medium- and large-scale farming), and grants loans with interest rates ranging from 5 percent to 9 percent per year.⁷⁰³ The latter targets family farming, and is linked to the federal program called the National Program for Strengthening the Family Farming (PRONAF).⁷⁰⁴ These grants are a form of subsidized credit, with interest

⁶⁹⁶ The capital of the BASA has been made up from a number of sources that were analysed in Chapter 2.

⁶⁹⁷ In Portuguese, *Fundo Nacional de Financiamento do Norte*.

⁶⁹⁸ There are other financial sources as follows: the FDA, FAT and General Federal Budget.

⁶⁹⁹ Articles 159, I, "c".

⁷⁰⁰ IR means *imposto de renda*.

⁷⁰¹ IPI means *imposto sobre produtos industrializados*.

⁷⁰² The FNO was officially created by Federal Law 7827 (on 27/09/1989), that was changed afterwards by the Federal Law 9126 (on 10/11/1995).

⁷⁰³ Paulo Barreto, Ritaumaria Pereira, and Eugênio Arima, *A pecuária e o desmatamento na Amazônia na era das mudanças climáticas*. Belém: Instituto do Homem e Meio Ambiente (IMAIZON), p. 22.

⁷⁰⁴ In Portuguese, *Programa Nacional de Fortalecimento da Agricultura Familiar* (PRONAF).

rates ranging from 1 percent to 4 percent per year.⁷⁰⁵ Considering that the Central Bank of Brazil's basic interest rate (SELIC) is over 10 per cent per year, and that between December 2003 and December 2006 in practice the interest rates ranged, for business, from 26 percent to 34 percent annually, and for individuals from 57 percent to 62 percent, Brazilian taxpayers are financing, through the BASA's subsidized credits, the rapid advance of agribusiness into the Legal Amazon. According to Barreto *et al.*:

With these attractive conditions, the cattle rancher received R\$ 1.89 billion in loans between 2003 and October 2007 (...), distributed in 14,500 contracts. Of the total funding, 45 percent were for small producers (Special FNO), and 55 percent for medium and large producer (Regular FNO). During this period, the peak of lending occurred in 2004, coincidentally a year of peak of deforestation, and declined afterwards.⁷⁰⁶

Apart from the current subsidized credit scheme, other factors have also constrained the effectiveness of the BASA in its role supporting development and sustainable development in the Brazilian Amazon. One criticism is that the BASA does not have a comprehensive policy of transparency, disclosure of, and access to information. Another criticism is that the bank's decision-making processes are very centralized. The bank does not have established processes for public participation, and key positions holders inside the Bank are appointed by the Federal government, according to political criteria.

The Environmental Policies and Performance of the BASA

⁷⁰⁵ Amigos da Terra – Amazônia Brasileira: *A hora da conta: pecuária, Amazônia e conjuntura*, available from: <<http://www.amazonia.org/br/arquivos/308285.pdf>> August 2010.

⁷⁰⁶ Above note 703, p. 22. "Com essas condições atrativas, os pecuaristas receberam R\$ 1,89 bilhão em empréstimos entre 2003 e outubro de 2007 (...), distribuídos em 14.500 contratos. Do total do financiamento, 45% foram para pequenos produtores (FNO Especial) e 55% para produtores médios e pequenos (FNO Normal). Nesse período, o pico de empréstimo ocorreu em 2004, coincidentemente um ano de pico de desmatamento, e declinou nos anos seguintes (...)." Free translation.

The Bank of Amazon argues that its activities are conducted so as to promote sustainable development in the Legal Amazon. According to the BASA:

The great challenge to be overcome by us in partnership with stakeholders can be found in the following equation: “How to reconcile the economic, social and ecological in a set of integrated actions that might lead society to levels of progress and new results, which would never be achieved by fragmented development strategies that prevail today?”⁷⁰⁷

Unfortunately, the Bank of Amazon has not given the answers to this question. Today, the BASA does not have a comprehensive environmental policy nor binding guidelines and instruments, and it does not even have a department for the environment. In consequence, the BASA frequently grants financial resources regardless of their negative environmental impacts. According to public prosecutors in the state of Pará, the BASA granted thirty-seven loans worth 11 million to companies that illegally cleared the Brazilian Amazon rainforest, and used labour practices bordering on slavery. They said that the state-run bank Banco do Brasil (BB) granted 55 loans worth \$55 million to projects with similar problems.⁷⁰⁸ The prosecutors concluded that “the discovery of this irregular financing shows that this is a generalised problem.”⁷⁰⁹ Therefore, if the BASA wants to promote sustainable development in the Brazilian Amazon, it should change the current subsidized credit schemes. Barreto *et. al.* conclude:

The subsidized rural credit for the Amazon could exclude the agriculture and cattle ranching, as they indirectly encourage deforestation. If we are to maintain some sort of subsidy to the region, it could be channelled to

⁷⁰⁷ Above note 695. In Portuguese, “O grande desafio a ser superado pelo Banco em parceria com os stakeholders reside na equação: Como conciliar o econômico, o social e o ecológico num conjunto de ações integradas que possam levar a sociedade a patamares de evolução e resultados inéditos, que jamais seriam atingidos pelas estratégias fragmentadas de desenvolvimento que prevalecem hoje?” Free translation.

⁷⁰⁸ See BBC News Latin America & Caribbean, *Brazil banks sued for Amazon deforestation*, available from: <<http://www.bbc.co.uk/news/world-latin-america-12944239>> December 2011.

⁷⁰⁹ Ibid.

activities that produce public benefits such as the environmental and ecological services, for example, the reforestation that encourages the conservation of biodiversity and carbon sequestration (...).⁷¹⁰

This study does not oppose the existence of subsidized rural credit for the Amazon, but it suggests that the current schemes should be guided by socio-environmental criteria. For this reason, the need for binding guidelines is identified in this section as an essential measure to promote a more environmentally and socially responsible financial operation in the region.

To conclude, the Bank of Amazon has not truly incorporated the environmental dimension of development in its financing. Today, it grants subsidized credit for inefficient cattle ranching. The BASA should create a new credit system for the region, in order to promote a more environmentally and socially responsible economy in the world's largest rain forest. This assessment is analysed and substantiated in depth through the case studies in Chapter 6.

⁷¹⁰ Above note 703, p. 33. “O crédito rural subsidiado para a Amazônia deveria excluir a agropecuária, pois indiretamente estimula o desmatamento. Se for para manter algum tipo de subsídio para a região, que seja direcionado para atividades que produzam benefícios públicos como os serviços ambientais e ecológicos - por exemplo, o reflorestamento que estimula a conservação da biodiversidade e o sequestro de carbono (...)” (...)” Free translation.

Chapter 6

Case Studies of Development Financing in the Brazilian Amazon (1981-2010)

Chapter 6 is divided into three sections: the state-led development period (1980s); the donor-led development period (1990s); and the hybrid model-led development period (2000s). First, it examines the state-led development period, including the work of World Bank in the Polonoroeste Program and the financial activities of the BNDES and BASA in the Great Carajás Program. Second, it analyses the donor-led period, particularly the role of the World Bank in the GEP and PPG7 projects in the Brazilian Amazon. Finally, it examines the hybrid-led development period, including the socio-environmental performance of BNDES in the construction of three hydroelectric power plants in the Brazilian Amazon, and the role of BASA in promoting the cattle ranching sector.

This chapter has chosen the case studies below because each one illustrates the main features of a particular development period. In addition, these cases provide the lessons that the Banks and we can draw from the beneficial and adverse consequences of these types of development project in the Brazilian Amazon.

The case studies below are evaluated in light of the concept and core elements of sustainable development, found in the Rio Declaration on Environment and Development, and analyzed in Chapter 3 above.

6.1. State-led development period (1980s)

As described in Chapter 4, between the 1950s and 1980s, Brazil adopted a state-owned development model, also called “State Capitalism”, in which planning strategies in general, and import substitution strategies and export-base industrialization in particular, played a key role in promoting economic

development.⁷¹¹ During this period, a large number of state-owned companies were created, as well as public banks, one of the first being the BNDES in 1952. A bank specifically for the purpose of Amazonian development, the Amazon Credit Bank had been created in 1950. In the mid-1960s, an agency called the Superintendency for the Development of Amazonia (SUDAM) was created to set up an incentive scheme for the economic development of the region. The military regime (1964-1985) identified national security and integration as top priorities. At this time, it was considered of great geopolitical importance for Brazil to integrate the Amazon into the nation as a whole, in physical, social, and economic terms. Within this context, a number of large-scale programs were implemented in the region, among others, the *Polonoroeste* (Northwest Pole), in the Brazilian state of Rondônia (western Legal Amazon), and the Great Carajás, in the Brazilian state of Pará (eastern Legal Amazon). These two programs are analyzed below, because they have been instrumental in provoking a change of attitude, and a deepening of understanding by the development banks, particularly the MDBs, about the desirable actions for the region. This section aims to evaluate the programs in light of the sustainable development paradigm in order to draw out what the Banks and we can learn from the weaknesses and adverse consequences of those large-scale programs for the Brazilian Amazon.

6.1.1. The Northwest Region Integrated Development Program (*Polonoroeste*)

Overview

In the early 1980s, while the Brazilian Amazon was still seen by the military rulers as a “land with no people”, south and northeast Brazil were facing social tensions regarding the shortage of rural lands resulting from the concentration of land holdings.⁷¹² Responding to these tensions, the government formulated a relocation

⁷¹¹ With regard to import substitution-based approach to development in Latin America, see “historical structuralism” in section 5.3 of Chapter 5 of his thesis.

⁷¹² José Lutzenberger, “The World Bank’s Polonoroeste Project: a social and environmental catastrophe”, *The Ecologist*, Vol. 15, No. 1/2 (January/February 1985), p. 70.

plan under which it removed “some of the rural poor from the regions where they were born and dump[ed] them in the Amazon.”⁷¹³ In practice, this was the Polonoroeste Program.

The Program officially encompassed a number of components, particularly the paving of “the 1,500 kilometer Cuiaba-Porto Velho highway [BR-364] and expansion of the regional feeder road network.”⁷¹⁴ The Program involved about US\$ 1.6 billion,⁷¹⁵ with the World Bank as “the only non-Brazilian source of finance”,⁷¹⁶ and contributing through six interlinked loans a total of US\$ 434.4 million,⁷¹⁷ about 54 percent of it for paving the BR-364 highway.⁷¹⁸ Importantly, the World Bank Group included a number of conditions in its loan agreements, for example, clauses about the establishment of health centres and indigenous reserves. In December 1981, the World Bank approved the first three loans and the work began.⁷¹⁹

The Polonoroeste Project is now considered an important case in the history of the World Bank Group. As Wade explains, “it was conceived in the Bank as an innovation, which was to give unprecedented attention in the institution to mitigating the adverse effects of the development project on the environment and on indigenous peoples.”⁷²⁰ In fact, the Program became “the Bank’s biggest ... and most disastrous involvement in forest colonization in the tropics”, Rich argues.⁷²¹

In order to facilitate migration to the project area, thereby mitigating unrest over access to rural lands, the National Institute for Colonization and Agrarian Reform (INCRA)⁷²² promised to grant land titles to those farm workers who moved to the

⁷¹³ Ibid p. 70.

⁷¹⁴ World Bank, *World Bank Approaches to the Environment in Brazil: A Review of Selected Projects*, Vol. 5 (The Polonoroeste Program), 1992, p. vii.

⁷¹⁵ Ibid p. vii.

⁷¹⁶ Above note 175, p. 637.

⁷¹⁷ Above note 714, p. vii.

⁷¹⁸ Bruce M. Rich, “Multi-lateral Development Banks: Their Role in Destroying the Global Environment”, *The Ecologist*, Vol. 15, N. 1/2 (January/February 1985), p. 60.

⁷¹⁹ Above note 714, p. vii.

⁷²⁰ Above note 175, p. 637.

⁷²¹ Above note 718, p. 59.

⁷²² In Portuguese: *Instituto Nacional de Colonização e Reforma Agrária*.

region and could subsequently prove they had occupied the public lands. Curiously, there was a perverse way to prove occupation. Farmer workers were required to demonstrate they had already destroyed the forest cover above their lands. As a relocation initiative, the Program was successful, boosting “a flood of migrants. (...) A ‘golden west’ fever took hold. The population in the project-affected area surged from an estimated 620,000 in 1982 to 1.6 million in 1988.”⁷²³ However, “the highway [BR-364] and feeder roads opened the area not only to the intended beneficiaries, small farmers, but also to loggers, miners, and cattle ranchers (who received large state subsidies).”⁷²⁴ In addition, the migrants did not have the knowledge to cultivate tropical lands, because they had come from temperate climate areas (southern Brazil) or semi-arid areas (northeastern Brazil).⁷²⁵ As a result, the Polonoroeste Program caused enormous social and environmental degradation in the western Brazilian Amazon, as is demonstrated below.

In the early 1980s, David Price, an American anthropologist⁷²⁶ familiar with the project area, was appointed as one of the Bank’s experts and sent to the region.⁷²⁷ He saw that nearly everything was going completely wrong on the ground, causing “a true holocaust for the forest.”⁷²⁸ He classified the project as “stupid and ignorant”⁷²⁹. In fact, the Program was not suitable for the region, because its “soils are the poorest in the world. Permanently, high temperatures and high rainfall leach away all the mineral nutrients.”⁷³⁰ Lutzenberger, Brazil’s leading agronomist and environmental activist, explained:

It is quite common to see settlers give up their clearings after the first meager harvest. They have to make new clearings every year. Then, when the whole plot is cleared, they move on again.

⁷²³ Above note 175, p. 646.

⁷²⁴ Above note 175, p. 648.

⁷²⁵ Adrian Cowell (director), Roger James (producer), *In the Ashes of the Forest*, Oley: PA: Bullfrog Films, 1990. Version in Portuguese (*Nas Cinzas da Floresta*).

⁷²⁶ That time, he was also a doctoral candidate at the University of Chicago.

⁷²⁷ David Price, “The World Bank vs Native People: a consultant’s view”, *The Ecologist*, Vol. 15, No. 1/2 (January/February 1995).

⁷²⁸ Ibid p.74

⁷²⁹ Ibid p. 74.

⁷³⁰ Above note 712, p. 70.

The productivity of extensive cattle-raising on these pastures is ridiculously low - 30 to 60 kg per hectare per year, as compared to ten times that much in temperate climates.

The forest itself, before it was cut down, produced much more food per hectare in the form of tropical fruit, game, and the fish life it sustained in the streams.⁷³¹

Price reported the adverse social impacts of the project on the region; however, there was a concern to prevent his report being circulated across the World Bank's divisions.⁷³² In June 1983 he announced that the Bank was "determined to implement its project regardless of its effects on the native people."⁷³³ In fact, the flood of migrants significantly affected the indigenous communities, above all because the Brazilian government did not establish the indigenous reserves. In addition, the INCRA failed in promoting viable rural settlement schemes. It simply divided the rural lands according to checkerboard-like patterns with most plots located in unproductive soils.⁷³⁴ In September 1984, Lutzenberger announced before the U.S. Congress: "I would like to ask why the World Bank bothers to write conditions into its loan agreements, and then does nothing when those conditions are blatantly flouted, such as the clauses about Indian reserves, virtually none of which have been demarcated in the Polonoroeste region."⁷³⁵ In 1985, the rate of deforestation in the project-affected area was the highest in the Brazilian Amazon.⁷³⁶

⁷³¹ Above note 712, p. 70.

⁷³² Above note 727, p. 74.

⁷³³ Above note 712, p. 73.

⁷³⁴ According to Lutzenberger, the rural lands were divided "according to checkerboard-like patterns blindly conceived on the drawing board." In the mid-1980s, he observed that "some plots are on relatively good soil, others are on almost pure sand or on rock outcroppings. Some are totally or partially on slopes too steep to plough, thus guaranteeing erosion from the start, others may be totally flat or rolling. One plot may cut across the meanders of the same brook several times, thus forcing the farmer to build several bridges. Another plot may have access to no water at all. This is a bad way to treat any terrain, but for tropical forests with fragile soils it can be disastrous." Above note 725, p. 70.

⁷³⁵ Luzenberger also announced before the U.S. Congress: "On behalf of the environmental groups of Brazil, I call on the [World] Bank to stop the [Highway 364] road and rethink its policy in Rondonia." Above note 712, p. 72.

⁷³⁶ In 1985, Rich observed that "the rate of deforestation in the Polonoroeste Programme area is the highest in the Brazilian Amazon, and increasing explosively." Above note 718, p. 60.

Following serious criticism by international and national NGOs and grassroots movements regarding the adverse impacts of project on the region, in 1985 the Bank's Mid-term Review stated:

There was no option 'to develop or not to develop', but only one of 'how to.' The forces were already at work, and sooner or later the highway would be paved.

There were no illusions that the process of securing a balanced development of the region would not be a difficult one. Nevertheless, it was felt that the Government was determined and able to marshal the resources to manage this complex and difficult program.

While the program has reached many of its infrastructure construction targets, its performance has been disappointing against its essential broader objectives of balanced and controlled regional development.⁷³⁷

The Mid-Term Review pointed out a number of pitfalls involved in the execution of the program in Rondonia, among other, "weak program coordination, institutional inefficiencies and an undisguised lack of political support for environmental and Amerindian protection."⁷³⁸ In addition, the Review argued that the agricultural strategy "remained largely unimplemented."⁷³⁹

After the Mid-Term Review was presented, the Bank decided "to suspend disbursement until a 'Corrective Action Program' could be agreed upon and certain specific measures taken for Amerindian protection."⁷⁴⁰ According to the Bank, "the proposed [corrective] action program included measures to reinforce Polonoroeste's coordination at both the federal and state levels, reallocate program funding, reduce migration, improve forestry and environmental protection and strengthen

⁷³⁷ World Bank, mid-term review, internal memorandum of 25 February 1985, paras. 2-5, cited in above note 714, p. 65.

⁷³⁸ Above note 714, p. 65.

⁷³⁹ Above note 714, p. 66.

⁷⁴⁰ Above note 175, p. 651.

Amerindian protection.”⁷⁴¹ Nevertheless, “five months later (...) when the Brazilian government presented to the Bank an action plan to deal with the problems and showed evidence that the settlers had been removed from the recently invaded Indian reserve, the Bank resumed disbursements.”⁷⁴² In fact, the Brazilian government showed enough evidence that it was capable of tackling the issues included in the corrective action plan. Wade writes that, despite the resumption of disbursements,

Suspension did have an effect. In the period from 1985 to the effective end of the Polonoroeste project in 1989, the Brazilian government somewhat strengthened the implementing capacities of the state agencies, roughly demarcated most of the reserves, and provided some of the infrastructure of the settlement projects (the health centers, water supply systems, schools, and storage facilities). Gradually the government on the ground began to make some progress in doing some of the things it had agreed to do years before.⁷⁴³

On 29 September 1986, nearly seventy-five protests demonstrating opposition to the World Bank’s activities in tropical rain forests took place across the United States. In Washington, for instance, a group of furious protesters climbed a Bank building in order to bedeck it with an enormous poster stating, “World Bank destroys tropical rainforests (Rain Forest Action Network).”⁷⁴⁴ As Wade argues, “many people who had never heard of the Bank came to know of it as ‘the bank that destroys rain forests.’”⁷⁴⁵ Finally, on 5 May 1987, the then president of the World Bank, Barber Conable, delivered a speech at the World Resource Institute (WRI). He admitted the Bank’s failures in Rondônia. “His admission upset members of the Polonoroeste project team, who continued to think that the project was much better than it would have been without the Bank”, Wade observes.⁷⁴⁶ Conable announced a number of

⁷⁴¹ Above note 714, p. 72.

⁷⁴² Above note 175, p. 652.

⁷⁴³ Above note 175, pp. 652-653.

⁷⁴⁴ Adrian Cowell (director), Roger James (producer), *In the Ashes of the Forest*, Oley: PA: Bullfrog Films, 1990. Version in Portuguese (*Nas Cinzas da Floresta*).

⁷⁴⁵ Above note 175, p. 657.

⁷⁴⁶ Above note 175, p. 673.

reforms to improve the Bank's environmental performance⁷⁴⁷. He said: "We are creating a top-level Environmental Department to help set the direction of Bank policy, planning and research work. It will take the lead in developing strategies to integrate environmental considerations into our overall lending and policy activities."⁷⁴⁸

Analysis

Created by the military rulers, the Polonoroeste Program embodied the goals of national security and integration as top priorities for the Brazilian Amazon. The generals' motto was "integrate in order not to forfeit".⁷⁴⁹ In the early 1980s, the Amazon's environmental sustainability was not among the Brazilian government's main concerns.⁷⁵⁰ The World Bank had, meanwhile, begun its gradual process of "greening the Bank".⁷⁵¹ In fact, the Bank had already set up its Office of Environmental Affairs. However, this Office was involved in the project design "at the eleventh hour".⁷⁵² From the Bank's perspective, the environmental impact derived from development projects and programs was "a factor to be considered", but still not a core one.⁷⁵³

⁷⁴⁷ Margaret E. Keck, "Planaflores in Rondônia: the limits of leverage". in Jonathan A. Fox and L. David Brown, *The World Bank, NGOs, and grassroots movements*. Massachusetts Institute of Technology, 1999, p. 181.

⁷⁴⁸ Above note 175, p. 673.

⁷⁴⁹ In Portuguese, *integrar para não entregar*. David Goodman and Anthony Hall, *The future of Amazon: destruction or sustainable development*, Houndmills: The Macmillan Press, 1990, p. 4.

⁷⁵⁰ In relation to the role of military rulers (1964-1985) in the Brazilian Amazon, see section 4.1 of Chapter 4 of this study.

⁷⁵¹ See section 5.1 of Chapter 5 of this study.

⁷⁵² Above note 175, p. 628.

⁷⁵³ According to Mikesell and Williams, "there is a difference between viewing environmental impacts as 'a factor to be considered' in facilitating and implementing development projects and programs, on the one hand, and adopting sustainable development as the primary policy objective, on the other. The [World] Bank's full transition to the latter objective has yet to occur in practice, despite the lofty policy statements of its leaders." Raymond F. Mikesell and Larry Williams, *International banks and the environment: from growth to sustainability, an unfinished agenda*. San Francisco: Sierra Club Books, 1992, p. 13.

The significance of the Polonoroeste case is that it illustrates a profoundly unsustainable approach to Amazonian development; in addition, it shows that condemnation of such approach (by international NGOs and grass-roots movements) had a powerful impact on the work of World Bank in the region. Considering the core elements of sustainable development, this thesis concludes that the Polonoroeste Program was a disaster for the region for a number of reasons. First, it failed to satisfy human needs, a core element of sustainable development. As argued above, the Polonoroeste Program did not focus on the basic needs of local people, particularly small farmers and traditional-dependent communities. Quite the contrary, the Program sought to mitigate the social tensions found in other regions of Brazil, by bringing the landless rural worker to “lands with no people”, that is, the Legal Amazon, regardless of its ecological singularity. In terms of limitation as a core element of sustainable development, the Program’s demographic policy was also a total disaster. As described above, in the period 1982-88, the local population grew from about over 600,000 to 1.6 million people!

Moreover, the Polonoroste failed in promoting intra-generational equity in the region. As described above, the paving of BR-364 and expansion of the regional feeder road network caused adverse social impacts on traditional-dependent communities because the indigenous reserves promised were not established by the Federal Government. In addition, the Program did not carry out a comprehensive settlement scheme for the region, but removed the rural poor from the lands where they were born – and which they knew how to cultivate – to relocate them in the Rondônia’s unfertile soils in order not to address the problems with concentrations of rural land holdings found elsewhere in Brazil. Therefore, the Program did not promote social justice in Rondônia. With regard to inter-generational equity, today the project-affected area does not hold the same biological and cultural diversity it

did three decades ago;⁷⁵⁴ thus, the local people enjoy now diminished (natural and cultural) resources to generate new development opportunities.⁷⁵⁵

Finally, the Program did not practice environmental protection as vital component of the development process in the Amazon Region.⁷⁵⁶ As the military rulers saw the rainforest as an obstacle to the goals of national security and integration, they boosted deforestation activities in the region; for example, land titles were granted by the government to rural workers who had cleared their plots.

Lessons learned

The Polonoroeste case was a watershed in the history of the World Bank Group in the field of social justice and, in particular, environmental protection. The lessons learned from this case contributed to the Bank's shift on greater emphasis on environmental protection.

In the early 1990s, the Bank – along with the Brazilian authorities – announced a project called *Planafloro* (The Rondônia Agriculture, Livestock, and Forest Plan),⁷⁵⁷ aiming “to address social and ecological problems left in the wake of Polonoroeste.”⁷⁵⁸ According to Keck:

In many respects, the Planafloro directly addressed the problems of *sustainable development*. Using an ecologically sensitive planning tool, it aimed to intensify economic activity (especially agriculture) where the land could sustain it, discourage or ban settlement in fragile areas,

⁷⁵⁴ See Instituto Brasileiro de Geografia e Estatística (IBGE) [Brazilian Institute of Geography and Statistics], *Indicadores de desenvolvimento sustentável: Brasil 2010* [Indicator of sustainable development: Brazil, 2010], available from: <<http://www.ibge.gov.br/home/geociencias/recursosnaturais/ids/ids2010.pdf>> March 2011.

⁷⁵⁵ See discussion of equity and integration as core elements of sustainable development in subsection 3.2.1 of Chapter 3 of this study.

⁷⁵⁶ Rio Declaration Principle 4 states: “In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.”

⁷⁵⁷ In Portuguese, *Plano Agropecuário e Florestal de Rondônia*.

⁷⁵⁸ Above note 747, p. 181.

regulate timber extraction, establish or strengthen extractive reserves, protect indigenous areas and ecological reserves, and reinforce social infrastructure in key areas. This agenda was extremely ambitious (and probably unrealistic) for a project that involved only \$ 167 million dollars from the Bank and counterpart funds amounting to approximately \$ 30 million apiece from the state and federal governments.⁷⁵⁹

In April 1992, the World Bank reported the main lessons it had learned from the adverse consequence of the Polonoroeste Program in the Brazilian Amazon:

In synthesis, just as the potential environmental and social costs of any investment project need to be weighed together with its expected economic and financial benefits, so too must the true time and human resources costs required to properly identify and understand, and thus to more effectively minimize or prevent, the potential undesired social and environmental impacts of any such operation (...). Only if such costs are adequately provided for are unfortunate experiences from the environmental standpoint such as that witnessed in Northwestern Brazil more likely to be avoided in the future. From the Bank's perspective, this is perhaps the ultimate legacy and lesson of Polonoroeste.⁷⁶⁰

The thesis draws five lessons from the episode. First, the Amazon cannot sacrifice its local people (forest-dependent communities) and natural riches in order to satisfy the interests of outside groups (in this case, large landowners from the other regions of Brazil). Second, any Amazonian rural development model must be based on regional values, because the local people hold the traditional knowledge to cultivate those tropical lands.⁷⁶¹ Third, any potential environmental impact must be considered at a very early stage of the project design. Fourth, transparency, accountability, disclosure of, and access to information are vital components for the

⁷⁵⁹ Above note 747, p. 183.

⁷⁶⁰ Above note 714, p. 261.

⁷⁶¹ Rio Declaration Principle 12 states: "Indigenous people and their communities and other local communities have a vital role in management and development because of their knowledge and traditional practices."

success of development projects in the Brazilian Amazon. As mentioned above, Price's report did not circulate across the Bank's divisions. Finally, democracy and sustainability are values mutually supportive of each other. In the early 1980s, Brazil did not hold a democratic political system. In consequence, civil society organizations could not contribute to the decision-making processes regarding to the highway and regional feeder road network, settlement schemes, indigenous reserves, and health facilities.

Today, the World Bank is a leading institution in the field of transparency and accountability policies, and Brazil is a stable democracy. Since the conclusion of Polonoroeste Program, the problems with control, transparency and local participation in decision-making have been reduced significantly in bank's funded-projects in the region. Yet serious problems still remain with insufficiency of funding for sustainable development (*e.g.* the underfunding of the Planafloro initiative).

6.1.2. The Great Carajás Program

Overview

In 1972, the Brazilian government and the World Bank began discussions related to "Bank assistance in the integrated development of the Carajás iron ore deposits."⁷⁶² In 1980, under the administration of President Figueiredo (1979-1985), the Great Carajás Program (PGC)⁷⁶³ was officially inaugurated. It was considered "the largest 'integrated' development scheme ever undertaken in an area of tropical rainforest, anywhere in the world."⁷⁶⁴ It covered "an area of almost 900,000 square kilometers, the size of Britain and France combined, or almost 11 percent of the country",⁷⁶⁵ representing approximately a quarter of the Amazon Basin itself.

⁷⁶² Anthony Hall, *Developing Amazonia: deforestation and social conflict in Brazil's Carajás Programme*. Manchester and New York: Manchester University Press, 1991, p. 41.

⁷⁶³ In Portuguese, *Programa Grande Carajás*.

⁷⁶⁴ Above note 762, p. 41.

⁷⁶⁵ Above note 762, p. 41.

The Great Carajás Program aimed to promote investment in a number of economic sectors, from mineral extraction and its processing, to agriculture, livestock and forestry. It also included significant improvements in regional infrastructure. For the period 1981-90, the Program's investments were originally projected to be US\$ 62 billion.⁷⁶⁶ The multilateral and national development banks granted loans to this program, as described in detail below. According to Hall, the Program encompassed basically four major projects: iron-ore mining, two aluminum plants, and the Tucuruí hydroelectric scheme. These projects are analyzed below.

Located in the eastern Legal Amazon, in the Brazilian state of Pará (PA), the hills of Carajás contained in early 1980s around “eighteen billion tonnes of high-grade iron-ore”, that was seen as “the largest known reserve in the world”.⁷⁶⁷ In addition, this region contained tonnes of other minerals such as manganese, copper, chrome, nickel, cassiterite, tungsten, and gold.⁷⁶⁸ In order to explore those mineral resources, the investments were channelled to the iron-ore mine, as well as the construction of a port in the city of São Luís, the state capital of Maranhão (MA), and of a railway to link the mine and the port. The Project required an initial investment of US\$ 3.1 billion. The BNDES⁷⁶⁹ was the main source of financing, responsible for about US\$ 1.1 billion. The World Bank lent US\$ 304 million.⁷⁷⁰ About US\$ 600 million came from the EEC, and US\$ 500 million from Japan.⁷⁷¹ The BASA was responsible for channeling the financial resources to the companies involved.⁷⁷²

The Amazon at this time also contained “the world's largest bauxite reserve, estimated at 2.2 billion tones, in Paragominas and Trombetas areas.”⁷⁷³ Two

⁷⁶⁶ Above note 762, p. 41.

⁷⁶⁷ Above note 762, p. 48.

⁷⁶⁸ Above note 762, p. 49.

⁷⁶⁹ At that time, the bank's anagram was BNDE. The letter 'S' (for “social”) was added later.

⁷⁷⁰ The World Bank, *Report and Recommendation of the President of the International Bank for Reconstruction and Development to the Executive Directors on a proposed loan in an amount of US\$ 304.5 million to CVRD with the guarantee of the Federal Republic of Brazil for the Carajas Iron Ore Project*, 22 July 1982, p. i.

⁷⁷¹ Above note 762, p. 51.

⁷⁷² Raimundo Lima dos Santos. O Projeto Carajás – PGC e algumas consequências regionais. *Revista Eletrônica Boletim do TEMPO*. Ano 5, no. 07, Rio de Janeiro, 2010.

⁷⁷³ Above note 762, p. 54.

aluminum plants were included in the Great Carajás Program. One of them was located on the Tocantins River near the city of Belém.⁷⁷⁴ It was called the ALBRAS-ALUNORTE complex, and was built by the Brazilian state-owned company CVRD⁷⁷⁵ along with a Japanese consortium known as NAAC.⁷⁷⁶ The other plant called ALUMAR was built on the Atlantic coast, near the city of São Luis. It was “entirely owned by foreign multinationals: the American ALCOA, (...) 60 percent of the shares and, Billiton Metals, the mining subsidiary of Royal Dutch-Shell, with 40 percent.”⁷⁷⁷ As shown, both plants received substantial foreign investments, reflecting “the struggle between Japanese and US interests to gain control over the Amazon Basin’s mineral resources.”⁷⁷⁸

In order to be viable and competitive, both plants depended on improved infrastructure and cheap electricity. In 1984, the construction of a large hydroelectric complex, called Tucuruí, was begun on the river Tocantins. The BNDES granted loans to the construction of the complex that flooded an immense area. As Hall notes:

Industrial growth within Amazonia, particularly of the power-hungry mineral processing sector, is heavily dependent on abundant supplies of inexpensive electricity. Thus, the lynchpin in the whole Carajás Programme is the Tucuruí hydroelectric scheme on the River Tocantins,

⁷⁷⁴ Above note 762, p. 54.

⁷⁷⁵ In Portuguese, *Compania Vale do Rio Doce*. It was privatized in the 1990s and is now called *Vale*, being ranked as one the world’s largest mining companies.

⁷⁷⁶ Nippon Amazon Aluminium Compacy.

⁷⁷⁷ David Goodman and Anthony Hall. *The future of Amazonia: destruction or sustainable development?* Houndsmills and London: The Macmillan Press Ltd, 1990, p. 7.

⁷⁷⁸ Above note 762, p. 54. According to Goodman and Hall, ““Japanese aid advisors were also heavily involved in designing this regional development package, which has been condemned by some critics either as crude foreign interference or as constituting a distortion of the regional planning process primarily to support the global strategies of foreign transnationals rather than Brazilian development *per se*.” Above note 777, p. 7. In relation to the above criticism, see R. Cota, *Carajás: A invasão desarmada*. Petrópolis: Vozes, 1984; see IBASE, *Carajás: o Brasil hipoteca seu futuro*. Rio de Janeiro: Achiamé, 1983; see also Orlando Valverde, *Grande Carajás: planejamento da destruição*. Rio de Janeiro: Forense Universitária, 1989.

the largest ever built in a tropical rainforest area, and the fourth largest in the world.⁷⁷⁹

Analysis

The Great Carajás Program sought to attract investment, including foreign investment, to the then sparsely inhabited eastern Amazon. It succeeded in promoting mineral extraction and processing. Nevertheless, it absorbed many fewer investments related to the agriculture, livestock, and forestry sector, due to “its limited foreign exchange-earning capacity.”⁷⁸⁰ In view of the core elements of sustainable development, the thesis argues that the Program achieved mixed results.

First, the Program was not planned to fulfill the basic needs of local people such as clean water, food security, safe shelter, and improved health and educational systems. Even though the Program created job opportunities, most skilled job positions were filled by outsiders. For example, most engineers were brought from São Paulo in order to work in the construction of Tucuruí hydroelectric scheme.

In 1995, Roberts, an American sociologist, presented his study regarding to the benefits of the Carajás Program.⁷⁸¹ The central question was “Who benefits?”⁷⁸² That time, the politicians of the state of Pará argued that “Carajás was a project planned for outsiders for their own benefits.”⁷⁸³ In fact, his study pointed out that “only 13 percent of CVRD core workers were from Pará; of subcontractor workers living in Parauapebas only 6 percent were born in Pará.”⁷⁸⁴ In addition, “in terms of spending on mining and transportation equipment, in 1990 some 90 percent of the

⁷⁷⁹ Above note 762, p. 58.

⁷⁸⁰ Above note 762, p. 66.

⁷⁸¹ J. Timmons Roberts, “Trickling Down and Scrambling Up: The Informal Sector, Food Provisioning and Local Benefits of the Carajás Mining ‘Growth Pole’ in the Brazilian Amazon”, *World Development*, Vol. 23, No. 3, 1995, p. 385-400. This study was based on a set of interviews, analysis of government figures, and surveys of food markets and households.

⁷⁸² Ibid p. 387.

⁷⁸³ Ibid p. 388.

⁷⁸⁴ Ibid 390.

heavy mining equipment was still imported.”⁷⁸⁵ With regard to the financial benefits, Roberts observed that “the majority of money is transferred via large firms and wealthy individuals paying for shipments of material and remitting profits to their headquarters.”⁷⁸⁶ Rovais, a bank manager in Carajás said: “Very little money stays here: subcontractors are paid by CVRD and they pay their employees, and [they remit] the profits to home offices in Belo Horizonte and São Paulo.”⁷⁸⁷ Roberts argued that “relatively little priority, attention and capital were accorded by planners to the seemingly obvious multiplier of local small producers supplying the large demand for food such projects have generated.”⁷⁸⁸ He concluded that “Carajás has failed to use locally produced products, and therefore continue the trend of mining operations to function as ‘export enclaves.’”⁷⁸⁹

Second, regarding limitation as a core element of sustainable development, the Great Carajás Program promoted a giant wave of migration that was not guided by any demographic policy, but followed the generals’ motto “integrate in order not to forfeit”. To illustrate, the city of Carajás was built to accommodate an initial population of 10,000.⁷⁹⁰ In 1982, the World Bank reported that “the Project will draw large numbers of persons into the region (with direct employment alone of an estimated 5,000-6,000 persons at full operations).”⁷⁹¹ Today, the area of Carajás is densely populated, and around 200,000 inhabitants live in its largest city, Marabá. Unfortunately, the unplanned migration brought undesirable consequences. For example, the area is currently one of the country’s most violent cities.

Third, in terms of intra-generational equity, the Program exacerbated social inequalities inside the affected area. With regard to inter-generational equity, the Program did not meet the necessity of future generations in the field of environmental protection. Hall observes:

⁷⁸⁵ Ibid p. 390.

⁷⁸⁶ Ibid p. 390.

⁷⁸⁷ James Rodrigues Rovais was interviewed by J. T. Roberts. Above note 781, p. 390.

⁷⁸⁸ Above note 781, p. 395.

⁷⁸⁹ Above note 781, p. 396.

⁷⁹⁰ Above note 781, p. i.

⁷⁹¹ Above note 781, p. 8.

Since its official inception in 1980 the Great Carajás Programme has, by any yardstick, had a substantial and dramatic impact on the people and environment of eastern Amazonia. (...) Although the development of Amazonia throughout the 1960s and 1970s already followed Brazil's modernisation strategy of growth, the PGC [Great Carajás Programme] has accelerated and severely exacerbated the worst social and ecological consequences of this model.⁷⁹²

Finally, the Program did not integrate properly the three components of sustainable development. Unfortunately, the environmental dimension did not constitute an integral part of the development process in Carajás area. In a nutshell, the Program over-emphasized the economic dimension of development.

In 2010, Santos, a Brazilian historian, analyzed the Great Carajás Program and its main beneficial and adverse consequences for the eastern Amazon, particularly the city of Imperatriz (MA) and surroundings. Among the positive consequences, he identifies the development of regional infrastructure, including motorways, railways, and ports. He observes that the Program contributed to increase the regional GDP, in consequence, the income and tax collection. On the other hand, he notes that the Program caused significant environmental and social harm. The environmental damage included, among other things, deforestation and pollution. The adverse social consequences, in turn, are related to the exclusion of forest-dependent communities such as indigenous groups and the *babaçu* coconut breakers from economic opportunities.

Santos also explains that as a result of the Great Carajás Program, a number of development projects have emerged in the region. To illustrate, in the early 1990s, a company called Celmar implemented, in Imperatriz, a project related to the cultivation of eucalyptus towards the production of iron-ore. According to Santos, the forested areas with *babaçu* coconut trees were eliminated to make room for eucalyptus. This exacerbated the concentration of lands in the hands of few land holders. In addition, it broke "the traditional chain of work that relates food and

⁷⁹² Above note 762, p. 233.

income, but also teachings, experiences, art and social harmony.” Santos concludes that “local particularities were not among the concerns of the program.”

Lessons learnt

This Program provoked a change of attitude and a deepening of understanding by the development banks about the desirable actions for the eastern Amazon. To illustrate, in 2010 the BNDES took part in the Investment Participation Fund named *Vale Florestar*.⁷⁹³ The aim of the Fund has been to rehabilitate deforested or degraded areas; to encourage sustained social and economic development, and to contribute to the legal occupation of the eastern Amazon territory. The Fund focuses its operations in the Carajás area, with R\$ 605 million to be invested by 2014. The Fund is managed by the Global Equity⁷⁹⁴ and the BNDES holds about 20 percent of the quotas. According to the BNDES, “at the peak of its production, more than 4,000 direct jobs will be generated. Currently, *Vale Florestar* employs 1,500 people.”⁷⁹⁵

6.2. Donor-led development period (1990s)

As explained in Chapter 5, section 5.3, in the 1990s Brazil experienced a period of economic liberalization. It began under the administration of President Collor (1990-1992), but it was during President Cardoso’s administration (1995-2002) that this process was expanded significantly. It tackled the inflation that had been affecting the national economy for decades, and set up a rigid fiscal discipline scheme. In addition, it promoted an extensive privatization program. As a result of these new economic policies, Brazil began to receive much more foreign direct investment; in turn, a number of Brazilian corporations began to invest overseas. Importantly, the 1992 United Nations Conference on Environment and

⁷⁹³ In Portuguese, *Fundo de Investimentos em Participações (FIP) Vale Florestar*.

⁷⁹⁴ Located in Rio de Janeiro, the Global Equity Administradora de Recursos is a fund manager. For further information see <<http://www.globalequity.com.br>> December 2011.

⁷⁹⁵ BNDES, *BNDESPAR to take part in the Vale Florestar fund with R\$ 121 million*.

Available from:

<http://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Press/Noticias/2010/20100505_florestar.html> January 2011.

Development (UNCED) took place in Rio de Janeiro in this period, bringing together over 170 world leaders, and producing a number of international treaties in the field of sustainable development. Brazil signed and ratified all of them. In consequence, Brazil turned from its historical emphasis on national security, particularly in relation to the Amazon, to favoring external support to conserve its tropical forests.

Within this context, in the early 1990s the leaders of the G7 discussed a proposal to create a comprehensive program to protect Brazil's tropical forests, the Pilot Program to Conserve the Tropical Forests of Brazil (PPG7). The PPG7 is analyzed below. Before turning to this, however, Brazil has benefited from the support of a trustee fund called GEF (Global Environmental Facility). Created in 1991, it aimed for collaboration in the implementation of the action plan known as Agenda 21. Since it was established, the GEF has financed a number of activities promoting sustainable development in the Amazon.

6.2.1. Global Environmental Facility (GEF)

Overview

The Global Environmental Facility (GEF) is discussed here because the World Bank is one of its implementation institutions, and its programs and projects have contributed in promoting sustainable development in the Brazilian Amazon.

Initially established in 1991 as a Pilot Program, the GEF aimed to help developing countries in financing programs and projects that would protect what was referred to as the “global environment”. It focused on four sectors: global warming, protection of biodiversity, international waters, and the ozone layer. In 1992, during the UNCED Rio Conference, the work of GEF was discussed and assessed. The developing countries, in particular, argued that a “new” GEF should be established as a permanent and independent organization, operating according to a number of principles, among them, universality, transparency, new replenishments from the developed countries and the incorporation of new domains in accordance with

Agenda 21.⁷⁹⁶ As a result, the GEF was reformed and turned into a permanent institution from 1994.

During the donor-led period, the GEF became a trustee fund, with an independent organizational structure in relation to its implementation institutions: the United Nations Development Program (UNDP), the United Nations Environment Program (UNEP), and the World Bank, which also worked as a trustee. Its unique institutional model allowed this organization to work as a “bridge” between the Bretton Woods system and the United Nations system.⁷⁹⁷ The GEF adopted a voting system very innovative. It combined the United Nations voting system (“one country, one vote”) and the Bretton Woods voting system (“one dollar, one vote”). The council aimed to achieve consensus, and when this was not possible, the issue needed to be approved by at least sixty per cent of the votes of the nations. In addition, it was also required that the votes from donor nations were equivalent to at least sixty per cent of financial contributions.⁷⁹⁸

As from the 1990s, The GEF has encompassed three bodies: Assembly, Council, and the Secretariat⁷⁹⁹. The GEF has been a vital institution for promoting sustainable development in the Amazon Region, because its original institutional organization has legitimated its existence as a body concerned with the “global environment”. In fact, the GEF has already played a significant role in the promotion of sustainable development in the Brazilian Amazon. In the field of environmental protection, the GEF has executed three main development programs in the region: PROBIO, FUNBIO, and ARPA.

⁷⁹⁶ Jeanine Gama Sá Cabral. “O papel do Global Environmental Facility”. In.: Antonio Herman Benjamin, Eladio Lecey, Sílvia Cappelli (eds). *Mudanças climáticas, biodiversidade e uso sustentável de energia*. São Paulo: Imprensa Oficial do Estado de São Paulo, 2008, p. 433.

⁷⁹⁷ Above note 799, p. 440.

⁷⁹⁸ Above note 799, p. 435.

⁷⁹⁹ The Assembly meets each three years in order to analyze the GEF policies. It includes 178 states so far. The Council is the GEF’s main body. It decides how to expend the financial resources, among other duties. The Council encompasses thirty-two constituencies, eighteen being from beneficiary countries and fourteen from developed countries. The Secretariat is run by the GEF’s General Director, who is appointed by the implementation institutions.

Created in 1996, the Conservation and Utilization of Brazilian Biodiversity Project (PROBIO)⁸⁰⁰ has aimed to promote partnerships among a number of social actors, such as the government, the private sector, research institutions, and non-governmental institutions, in relation to projects promoting conservation and the sustainable use of Brazilian biodiversity. These projects have promoted a number of workshops taking into account the different Brazilian biomes (Amazonia, Atlantic Forest, Caatinga, Pantanal, etc.)⁸⁰¹. Adriana Moreira, a senior World Bank specialist in the environmental sector, points out a number of PROBIO's positive contributions; for instance, it has helped to refine Brazilian policies in the field of biodiversity conservation, and has contributed in formulating new federal projects, such as the Caatinga Project and the Ecological-Corridor.⁸⁰²

Created in 1996 with a GEF donation of about US\$ 20 million to complement the Brazilian government's efforts in the environment sector, the Brazilian Fund for Biodiversity (FUNBIO)⁸⁰³ is a non-profit organization to support government actions in the field of biodiversity conservation. For example, it has provided financial resources to appropriate sustainable development projects, including the Atlantic Forest Conservation Fund (AFCoF), the Tropical Forest Conservation Act (TFCA), and the Amazon Region Protected Areas Program (ARPA).⁸⁰⁴

One of the outcomes of the work undertaken by the GEF during the donor-led period was the ARPA,⁸⁰⁵ which was officially created in 2003 in order to help to

⁸⁰⁰ In Portuguese, *Projeto de Conservação e Utilização Sustentável da Biodiversidade Brasileira*.

⁸⁰¹ Adriana Moreira. "Proteção da biodiversidade no Brasil: programas e projetos do Banco Mundial", in Antonio Herman Benjamin (Editor). *10 anos da ECO-92: O Direito e o Desenvolvimento Sustentável*. São Paulo: Imprensa Oficial do Estado de São Paulo, 2002, p. 68.

⁸⁰² Ibid p. 69.

⁸⁰³ In Portuguese, *Fundo Brasileiro para a Biodiversidade*.

⁸⁰⁴ FUNBIO, "Soluções ARPA", available at <http://www.funbio.org.br/pt-br/oquefazemos/solu%C3%A7%C3%B5es/arpa.aspx>, accessed on 03/01/2012. The AFCoF and TFCA are not analyzed in this thesis. This is because these programs do not aim to promote biodiversity conservation in the Brazilian Amazon, but in other Brazilian biomes, including the Atlantic Forest and Cerrado (Brazilian Savannah), according to FUNBIO, "O que fazemos", available from: <http://www.funbio.org.br/pt-br/oquefazemos/soluções.aspx> January 2012.

⁸⁰⁵ In Portuguese, *Áreas Protegidas da Amazônia*.

create new protected areas for the conservation of Amazonian biodiversity. The ARPA is coordinated by the Federal Ministry for the Environment and implemented by the Brazilian Institute for Biodiversity Conservation (ICMBio),⁸⁰⁶ in partnership with state and local governments. It is also run by other bodies: FUNBIO,⁸⁰⁷ GEF, World Bank, KfW (German Cooperation Bank), GTZ (German Technical Cooperation Agency), and the WWF (World Wildlife Fund-Brazil).⁸⁰⁸

Analysis

The implementation of GEF projects in the Brazilian Amazon fulfilled the principles of sustainable development, particularly the Rio Declaration Principle 7: “States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem.” This international cooperation has benefited from the financial contributions of established and powerful international institutions, including the UNEP, UNDP, and the World Bank, partner in disbursing US\$ 600 per year. The GEF’s budget for the period 2006-2010 is about three billion dollars.⁸⁰⁹ Today, the GEF provides grants for projects within the four areas mentioned and in land degradation and persistent organic pollutants. To date, the GEF has provided grants for more than 2,700 projects in 165 nations.⁸¹⁰

In view of the above programs, the GEF is important to the promotion of sustainable development in the Brazilian Amazon for three main reasons. First, the GEF takes a global view of the Amazon’s value, which is largely its standing value (*e.g.* ARPA). Second, the GEF shares the viewpoint that “environmental issues are best handled with participation of all concerned citizens, at the relevant level”,⁸¹¹ as the PROBIO forges partnerships and promotes workshops in order “to strengthen endogenous

⁸⁰⁶ In Portuguese, *Instituto Chico Mendes de Conservação da Biodiversidade*.

⁸⁰⁷ The FUNBIO is responsible for the financial management of ARPA Program.

⁸⁰⁸ The discussion of ARPA is section 7.1 of Chapter 7 of this study.

⁸⁰⁹ Above note 799, p. 437.

⁸¹⁰ Global Environmental Facility, *What is the GEF*, available from: <<http://www.thegef.org/gef/whatisgef>> April 2011.

⁸¹¹ Rio Declaration Principle 10.

capacity-building for sustainable development.”⁸¹² Third, the GEF has excellent access to financial resources available increasingly for promoting sustainable development projects in the region (*e.g.* FUNBIO).

Considering the core elements of sustainable development described in chapter 3, the thesis concludes that the GEF projects in the Brazilian Amazon have been a positive contribution to replace the on-going predatory activities with sustainable forest productions.⁸¹³ Above all, the GEF focuses on the basic needs of local people, aiming to promote sustainable forest activities.⁸¹⁴ Unlike the projects of state-led development period (Polonoroeste and Great Carajás), the GEF projects have not promoted a flood of migrants to the sparsely inhabited parts of the Brazilian Amazon. In a nutshell, these projects have seen the demographic factor as a vital component for sustainable development in the region. In terms of equity, the sustainable forest activities have contributed to eradicate poverty, reduce social inequalities and conserve the environment. Finally, as the GEF projects are based on regional values, they can integrate more effectively the three dimensions of sustainable development: economic growth, social justice, and environmental protection.

Lessons Learnt

As described in chapter 1, the Amazon Region hosts approximately a quarter of all global biodiversity, and its forests contain 90-140 billion tons of carbon; therefore, the region is the planet’s ecological heartland.⁸¹⁵ Considering that the biome’s ecological sustainability is a concern of all of humanity, it is reasonable that the wealthy nations and international institutions, such as the MDBs, the UNEP, and the UNDP, should collaborate with Brazil in promoting sustainable development in the region. Thus, the work of the World Bank in the Brazilian Amazon through the GEF

⁸¹² Rio Declaration Principle 9.

⁸¹³ With regard to the region’s predatory activities, see the boom-bust cycle in above Chapter 4, section 4.3.

⁸¹⁴ As mentioned above, Rio Declaration on Environment and Development, in its principle 1, states: “Human beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.”

⁸¹⁵ With regard to the vital role of Amazon region, see section 1.2 of Chapter 1 of this study.

actions showed that international cooperation does not erode state power over the region but refines the concept of national sovereignty in light of the international agreements in the field of sustainable development. These actions have forged multi-actor arrangements, namely “hybrid-institutions” that comprise international bodies, the Brazilian state, local communities and the private sector. These “hybrid-institutions” have contributed to improve governance over the Legal Amazon, particularly in areas where the governance is weak, the rule of law is precarious and deforestation and violence are rampant.⁸¹⁶

6.2.2. The Pilot Program to Conserve the Tropical Forests of Brazil (PPG7)

Overview

In 1990, the leaders of the G7 met in the city of Houston, in the United States, in order to discuss, among other issues, a German proposal for a comprehensive program to promote environmental conservation in the tropical forests of Brazil, namely, the Amazon and the Atlantic rainforests. At that time, Brazil was facing serious economic problems; therefore it agreed to accept external support to conserve its tropical forests through a program based on foreign donations channelled to the Rain Forest Trust Fund. The donors designated the World Bank as trustee of the Fund. This was the PPG7, “the largest environmental program for a single country.”⁸¹⁷

The Program was implemented by “different public sector agencies with civil society participation under the leadership of the Ministry of Environment.”⁸¹⁸ Its long-term goals were “to reduce the rate of deforestation and support sustainable

⁸¹⁶ The discussion of the role of ARPA projects in promoting sustainable development in the Brazilian Amazon is in section 7.1 of Chapter 7 of this study.

⁸¹⁷ Ans Kolk, “From Conflict to Cooperation: International Policies to Protect the Brazilian Amazon”, *World Development*, Vol. 26, No. 8, 1998, pp. 1489.

⁸¹⁸ The World Bank, *Implementation Completion Report (TF-26659 TF-26655) on a Grant in the amount of US\$ 30 million to the Brazil for a RF Demonstration Projects – PDA*, September 20, 2004, available at , on 08/08/2011, p. 2.

development” in the tropical forests of Brazil.⁸¹⁹ The Program included a set of twelve projects, including institutional-capacity building, environmental management, biodiversity conservation, protected areas, indigenous lands, and transfer of technology.⁸²⁰

However, since its first stages of implementation, in 1994, the PPG7 showed that it had embodied two different, and possibly opposed, standpoints: on the one side, the viewpoint of the Brazilian government and, on the other side, that of the World Bank.⁸²¹ According to Mello, who managed one of the PPG7 subprograms, “the institutional model adopted by the donors, by appointing the World Bank to the Program’s management, reinforced positions inconsistent with the national ones.”⁸²² She observed that while the Bank’s reports showed the limitation factors and problems, the government emphasized the positive results.⁸²³ The tensions between the World Bank and Brazilian government can be divided into two categories. One of them involves the conflicts derived from different conceptual starting-points, for instance, the meanings of key concepts such as the “protection of tropical forests”, “resources”, “conservation”, “preservation”, and “sustainable development”, as well as their implementation on the ground.⁸²⁴ The other category is related disagreement over management issues, in particular, in relation to the fulfilment of a number of

⁸¹⁹ Above note 821, p. 2.

⁸²⁰ Above note 821, p. 2.

⁸²¹ Neli Aparecida de Mello, *Políticas territoriais na Amazônia*, São Paulo: Annablume, 2006, p. 110.

⁸²² Above note 824, p. 111. In Portuguese, “(...) *O modelo institucional adotado pelos doadores, ao atribuir ao Banco Mundial a gestão do Programa, reforça posicionamentos contrários aos nacionais*”. Free translation.

⁸²³ According to Mello, “while the reports formulated by the World Bank to provide support to the donors emphasized the limitation factors, the problems, the contribution of deforestation and burnings to climate change the government’s reports, even though they showed those issues, they also presented a positive balance, relating policies and action as qualified answers to the international and national pressures, and to the critical statistics regarding the Amazon deforestation. Above note 824, pp. 110-111. In Portuguese, “Enquanto os relatórios preparados pelo Banco Mundial para servir de subsídios aos doadores enfatizavam os fatores limitantes, os problemas, a contribuição do desmatamento e das queimadas às mudanças climáticas, os do governo brasileiro, ainda que mostrassem tais problemas, apresentavam um saldo positivo, relacionando políticas e ações como resposta qualificada às pressões internacionais e nacionais, e às estatísticas críticas do desmatamento amazônico”. Free translation.

⁸²⁴ Above note 824, pp. 134-136. With regard to the concept of sustainable development, see section 3.1 of Chapter 3 of this study.

the Bank's procedures, norms, and criteria, including the "no objection" procedure, which is the Bank's *sine qua non* condition to grant funds. According to Mello, these issues gave rise to insecurity among donors and within the Bank itself regarding Brazil's capabilities to carry out its tasks.⁸²⁵ Undoubtedly, those tensions constrained, to some extent, the Program's effectiveness.

These tensions are discussed here because they illustrate the World Bank facing up to the conceptual and practical difficulties of applying sustainable development in the Brazilian Amazon. In relation to the conceptual matters, the Bank argued that, "sustainable resource use was still emerging as a concept" and "forest conservation and management, community participation and the sustainable use of natural resources were not widely accepted concepts in much of Brazilian society and the public sector in the early 1990s."⁸²⁶ With regard to the management issues, the Bank argued that the Ministry of Environment's team "had little experience working with the Bank procedures, policies and rules, which were thus often perceived as rigid, even unreasonable."⁸²⁷

Another critical problem was related to the Program's spatial dispersal across the region that caused, in turn, a poor distribution of financial resources throughout the region, and also eroded the potential positive impacts in terms of reduced deforestation, even though this aspect was partially alleviated after 1999, as is explained below. Mello argues that, despite the above problems and the Program's novelty and complexity, the PPG7 produced positive results.⁸²⁸ She points to a number of projects in support of her argument, particularly the PPTAL, Extractive Reserves Project, Promanejo, and Provárzea. The PPTAL aimed to secure indigenous lands in the Brazilian Amazon for the traditional indigenous peoples, having secured 22 million hectares of indigenous lands by 2001. The Extractive Reserves Project, in turn, aimed to support four rubber tappers' reserves, including the Chico Mendes Reserve. The Promanejo encompassed a number of projects

⁸²⁵ Above note 824, p. 134.

⁸²⁶ Above note 821, p. 3.

⁸²⁷ Above note 821, p. 26.

⁸²⁸ Above note 824, pp. 134-135.

called the “forest management prominent initiatives” and, finally, the Provárzea focused on sustainable practices in the Amazon riverbanks.

In April 1999, the Midterm Meeting of the PPG7, held in Paris, concluded that “the PPG7 must become a comprehensive Program, (...) rather than a collection of projects.”⁸²⁹ The participants agreed that such a consolidation would require substantial changes; that Brazil should play a leading role in the Project; that the PPG7 should be integrated into other Brazilian policies such as the environmental and social ones; and that state governments and civil society should have the opportunity to participate more actively in the work of the PPG7.⁸³⁰ After April 1999 the Program incorporated these proposals, for instance, by increasing the role that the Brazilian government was to play in the Program, and focusing its projects on environmental risk areas.⁸³¹ According to London and Kelly,

Brazil insisted on being a major player in the PPG-7 project, which, in turn, required that it identify qualified participants by training a new generation of scientists, researchers, and social planners. This effort induced the birth in Brazil of a cadre of young people who were to populate international and national organizations and provide a thoroughly Brazilian imprint on environmental oversight of the Amazon.⁸³²

Analysis

Considering the core elements of sustainable development, the outcomes of the PPG7 for the Brazilian Amazon were satisfactory, as is explained below.

Unlike the programs of the state-led period (1980s), the PPG7 projects focused on the basic needs of local people, including the indigenous groups (*e.g.* PPTAL),

⁸²⁹ Above note 824, p. 141. In Portuguese, “O PPG7 precisa se tornar um Programa mais coerente, ao invés de uma coleção de projetos”. Free translation.

⁸³⁰ Above note 824, p. 141.

⁸³¹ Above note 824, p. 119.

⁸³² Above note 22, p. 46.

rubber tappers (*e.g.* the Extractive Reserves Project), and riverbank communities (*e.g.* Provárzea).⁸³³ In addition, the PPG7 did not promote a flood of migrants; therefore it supported limitation as a core element of promoting sustainable development in the region. Importantly, the Program aimed to promote sustainable patterns of forest production, and to integrate environmental protection as a pivotal component of development process in the Brazilian Amazon.

As argued above, the tensions between the World Bank and the Brazilian government constrained the Program's effectiveness. Yet it is important to put this in historical perspective. The PPG7 was proposed in 1990, but the concept of sustainable development had been formulated by the Brundtland Report only in 1987, thus the conflicts derived from conceptual matters were understandable. In relation to the management issues, the distrust on the part of the World Bank and the donors in relation to Brazil's capabilities to carry out its tasks was reasonable, because at that time Brazil was an infant democracy, and had a record of poor implementation or insufficient enforcement of socio-environmental standards.

As was discussed in Chapter 1, section 1.5, a number of historical events have shaped the perception of many Brazilians about foreigners' activities in the Legal Amazon; in consequence, they show extreme nationalist feelings when the topic is the role of international/foreign agencies in the region. In this context, it was helpful that Brazil gained more power in the Program after the Midterm Meeting, in 1999. In short, a sense of trust and ownership is an important feature in promoting sustainable development in the Brazilian Amazon. Importantly, as environmental protection constitutes an integral part of the development process,⁸³⁴ the Brazilian government's leading role in the PPG7 was a vital component to integrating the Program to other national and local policies.

Lessons Learnt

⁸³³ The Rio Declaration Principle 12.

⁸³⁴ See the discussion of integration as a core element of sustainable development in section 3.1.2 of Chapter 3 of this study.

With regard to the Amazon, this Program changed significantly the terms of the relationship between Brazil and the international community of nations. This relationship had been based on conflict, yet it shifted to one of cooperation.

From the World Bank's perspective, the Program was an opportunity to show the governments around the world and the civil society organizations such as the NGOs and grassroots movements, "the policy changes within the World Bank."⁸³⁵ Kolk explains:

As part of an overall structuring, the organization has started to pay more attention to small-projects and to the participation of local NGOs. Forced to build up environmental expertise by international NGO pressure, the World Bank points at the gravity of the environmental situation to underline the need for its activities and partly to legitimate its existence.⁸³⁶

Kolk argues that this increasing involvement of "local organizations in the preparation and implementation of projects [has] enlarged the Bank's influence in borrowing countries' policies."⁸³⁷

From the Brazilian government's perspective, in turn, the Program helped to demonstrate that international cooperation need not erode the sovereignty of Brazil over the Legal Amazon. To the contrary, the implementation of PPG7 projects on the ground strengthened the power of the Brazilian government at the local level, for example, by securing indigenous lands (*e.g.* PPTAL), supporting rubber tappers' reserves (*e.g.* Extractive Reserves Project), and replacing unproductive (sometimes illegal) activities with the sustainable practices in the region (*e.g.* Promanejo and Provárzea). As mentioned above in section 1.5, the main challenge to Brazil in relation to its sovereign power over the Legal Amazon is how to "give back to the

⁸³⁵ Above note 820, p. 1491.

⁸³⁶ Above note 820, p. 1491.

⁸³⁷ Above note 820, p. 1491.

local people a land that can be explored rationally as long as they get the help, supervision and financial resources from the entire world.”⁸³⁸

The PPG7 provided the lesson that alliances between global and local actors can be positive in promoting sustainable development in the Brazilian Amazon. In addition, it showed that international cooperation and transfer of resources are feasible goals of international environmental law,⁸³⁹ since this Program was based on donations granted by developed countries, and managed by the World Bank.

Compared to the early 1990s, the international context today has changed substantially. The emerging economies, including Brazil, have played a major role in the global economy.⁸⁴⁰ Within this context, in 2008, Brazil created the Amazon Fund to reduce its greenhouse gas emissions derived from tropical deforestation, and appointed the BNDES, rather than the World Bank, to manage it. The capital of this Fund comprises donations from governments, multilateral institutions, NGOs, and corporations. In fact, the Amazon Fund is a good legacy of the international alliance against tropical deforestation forged by PPG7 during the 1990s.

One of the most important lessons learned from the PPG7 projects in the Brazilian Amazon is that integrating the economic, social, and environmental needs requires greater cooperation, among nations, international institutions, public sector agencies, local community organizations, and private sector. In short, the integration requires “multi-actor arrangements”. The World Bank learned from its activities in the PPG7 that “negotiation of long-term partnerships takes time”, and that “the partnership should be built on a long-term commitment, where both parties understand that sustainable economic results will take time”.⁸⁴¹ The Bank drew the

⁸³⁸ Marcelo Coelho, “Quem disse que é nossa?” in *Jornal Folha de S. Paulo, Ilustrada*, 30/01/2008, p. E8. “[Trata-se] de devolver às populações locais uma terra que pode ser explorada racionalmente se contar com ajuda, fiscalização e verbas do mundo inteiro”. Free translation.

⁸³⁹ According to the Rio Declaration Principle 7: “States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem.” For a more specific account of the principles of sustainable development, see section 3.1.2 of Chapter 3 of this study.

⁸⁴⁰ With regard to the emerging economies, see section 1.3.2 of Chapter 1 of this study.

⁸⁴¹ Above note 821, p. 32.

lesson that “a wise division of labor between the partners is needed. Each should concentrate on what he can do best.”⁸⁴² A number of “hybrid-institutions” are analyzed later in the thesis, in Part 4.

6.3. Hybrid model-led development period (2000s)

As explained in chapter 5, section 5.3, even though the administration of President Lula da Silva (2003-2010) did not change the orthodox monetary policies that had been originally implemented by his predecessor, it increased the role of state agents, by establishing a model of development in which the state and the private sector shared projects.⁸⁴³ According to Schapiro, during this period Brazil adopted:

a model of State intervention, which lies halfway between the legacy of activism of the developmental State, and the identification of the State’s limited capacity to establish and pursue, without collaboration from other actors, the socially desirable results. A type of compromise solution between State and market, leading to public intervention articulated with the dynamics of the private sector.⁸⁴⁴

This new model left its mark on the character of development in the Brazilian Amazon during this period. One change was that the state-owned banks, particularly the BNDES and BASA, increased their operations in the region. They played a vital role in promoting agribusiness and the energy sector. Clearly, with these banks more involved, it became easier to find finance for these sorts of economic activities than before. The government also saw an opportunity, as in the Polonoroeste case, to utilize the resources of the Amazon to address problems elsewhere in Brazil which were creating social tension. Carvalho explains:

In 2001, Brazil was forced to cope with an electricity shortage that had gone unaddressed for several years. Since 1993, the increase of energy

⁸⁴² Above note 821, p. 32.

⁸⁴³ Above note 471, p. 79.

⁸⁴⁴ Above note 471, p. 113.

generating capacity at 3 percent per year was surpassed by the increase in consumption that had been growing at 5 percent per year in the same period.

The growth in demand and lagging supply led to a deficit that became obvious to the public during the 2001 drought. Many analysts blamed the energy shortage on lack of planning, lower investments in the energy sector, and a drought that left many reservoirs at 34 percent of their capacity.

This situation provided a renewed impetus for updating energy policy in Brazil, and specifically for promoting projects that expand energy-generating capacity. It also provided the Brazilian government with a window of opportunity to pursue energy development projects despite their environmental and social costs.⁸⁴⁵

Lula da Silva focused his administration's energy development policy in two main sectors: hydropower and natural gas.⁸⁴⁶ Within this context, the Amazon Basin was perceived by state agents and the private sector as a new frontier of energy generation.⁸⁴⁷ For example, in 2009 two large dams began to be built on the

⁸⁴⁵ Georgia O. Carvalho, "Environmental Resistance and the Politics of Energy Development in the Brazilian Amazon", *Journal of Environment & Development*, Vol. 15, No. 3, September 2006, p. 248.

⁸⁴⁶ Ibid p. 249. For further information about the current context of energy development in Brazil, see Empresa de Pesquisa Energética do Ministério de Minas e Energia do Brasil, *Plano Decenal de Expansão de Energia 2011-2020*, available from: <<http://www.epe.gov.br/PDEE/Forms/EPEEstudo.aspx>> January 2012; see also the World Bank Group, *Project Appraisal document on a proposed loan in the amount of US\$ 49,604,127 to the Federative Republic of Brazil for the Energy and Mineral Sectors Strengthening Project (Report No: 63151-BR)*, 17 November 2011, available from: <http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2011/12/01/000386194_20111201000256/Rendered/INDEX/631510PAD0P1260Official0Use0Only090.txt> January 2012.

⁸⁴⁷ According to Luiz Pinguelli Rosa, a Brazilian physician and academic at UFRJ (Federal University of Rio de Janeiro), who served as president of Eletrobrás (2003-2004), most of the country's hydroelectric energy to be harnessed is located in the Legal Amazon. He argues that Brazil hosts the world's largest potential capacity in the field of hydroelectric energy, with a potential capacity of about 8.2 cubic km., followed by Russian Federation (4.5 cubic km., and Canada (2.9 cubic km.). However, as he says, today Brazil's installed capacity regarding to hydroelectric electricity is still smaller than that of China, USA, and Canada. Rosa concludes that Brazil should not reject its potential hydroelectric capacity

Madeira River (western Legal Amazon). The BNDES granted finance resources for these projects. In 2010, the national environmental agency (IBAMA) granted a licence for the construction of a giant hydroelectric power plant in the Xingú River (eastern Legal Amazon), and the BNDES decided to grant loans for this project as well. These three hydroelectric generation plants are analyzed below.

6.3.1. The Hydroelectric Power Plants (Jirau, Santo Antonio, and Belo Monte)

The Madeira River Dams

Situated in western *Amazônia*, the Madeira River is the Amazon's biggest tributary. At present, two large dams have been built on that river. Undoubtedly, these projects are seen by the Brazilian government as vital to promote both national and continental development throughout the twenty-first century. In other words, the dams are critical to Brazil's hegemonic role in South America, because they will link the Atlantic and the Pacific Ocean. Not surprisingly, the dams are top priorities in the so-called Initiative for the Integration of Regional Infrastructure in South America (IIRSA), which encompasses a set of development projects that aims to promote integration across South America. As noted above, the IIRSA aims "to transform [the Madeira River] into an international corridor for grains to be cultivated in forested areas and surroundings."⁸⁴⁸

The dams are also important in terms of energy supply. In the age of climate change, Brazil is uniquely placed, because about 44 per cent of its energy supply is from renewable sources.⁸⁴⁹ Nevertheless, Brazil's focus on hydroelectric energy has required the advance of the Amazonian frontier. It is said that "state studies of Brazil's rivers and basins claim 80,000 megawatts (MW) of hydroelectric power

located in the Legal Amazon. See Luiz Pinguelli Rosa, "A razão das hidrelétricas", *Folha de S. Paulo*, Tendências/ Debates, 12/02/2011, p. A3.

⁸⁴⁸ Carlos Tautz, "Pressão pela força", *Le Monde Diplomatique Brasil*, Ano 2, n. 19, Fevereiro 2009, p. 8. In Portuguese, "(...) transformá-lo em um corredor internacional de grãos que seriam plantados em áreas de floresta e no entorno". Free translation.

⁸⁴⁹ With regard to Brazil's energy matrix, see section 1.4.3 of Chapter 1 of this study.

could be harnessed from the Amazon's tributaries.”⁸⁵⁰ In order to harness this power, the Madeira dams were included in Brazil's Accelerated Growth Program (PAC),⁸⁵¹ which was one of the main programs of Lula da Silva's second administration (2006-2010). The PAC also contained other hydroelectric dam projects for the Amazon Basin, such as the construction of Belo Monte, which has begun on the Xingú River.⁸⁵²

The construction of two hydroelectric dams on the Madeira River has already begun. The Santo Antonio dam is located only 10 Km from Porto Velho, the state capital of Rondônia (RO). The other, the Jirau dam, is located nearly 110 km from Porto Velho. The BNDES awarded loans to build both dams. Concerns were raised about the economic, social, and environmental impacts on the region, concerns which are well illustrated by the case of the Santo Antonio Hydroelectric Plant. In December 2008, the BNDES awarded loans of R\$ 6.1 billion (approximately US\$ 3.5 billion) to the consortium that had won the bid to build this plant.⁸⁵³ By the time the Bank awarded the loans, the project had already been licensed by the IBAMA, although the licences contained a number of conditions to mitigate the anticipated negative impacts on local communities and the natural environment.

The Santo Antonio Plant required an immense reservoir of about 270 square kilometres, causing significant loss of biodiversity.⁸⁵⁴ The project's general manager, Mr. Nelson Caproni, agreed that “obviously, the dam is going to have

⁸⁵⁰ Christiana Sciaudone, *Brazil construction: tensions rise over licensing of dams*, p. 16, available from: <<http://www.rechargenews.com>> February 2009.

⁸⁵¹ In Portuguese, *Programa de Aceleração do Crescimento*.

⁸⁵² The Belo Monte Dam is studied below.

⁸⁵³ The winner consortium called *Madeira Energia* encompasses the following companies: Furnas Centrais Elétricas (with 39% of stakes), Amazônia Energia Investment Fund (20%), Odebrecht (19%), Andrade Gutierrez (12%), and Cemig Geração Transmissão (10%). Source: Eco-Finanças Notícias, *Madeira Energia plans US\$ 682mn debentures issue*, available from: <<http://ef.amazonia.org.br/index.cfm?fuseaction=imprimirNoticia&id=306971>> April 2009.

⁸⁵⁴ IBAMA, *Parecer Técnico No. 45/2008 – CHID/CGENE/DILIC/IBAMA*, available from: <http://www.santoantonioenergia.com.br/upload/portal_mesa/pt/usina_santo_antonio/licenciamento/An%C3%A1lise%20da%20solicita%C3%A7%C3%A3o%20de%20emiss%C3%A3o%20da%20Licen%C3%A7a%20de%20Instala%C3%A7%C3%A3o.pdf> December 2011.

impacts. We have to identify what they are, and which are most relevant, and do what's necessary. We're not going to say that all of them [living beings] will survive, because that's nonsense.”⁸⁵⁵

Along with the adverse environmental impacts, there were negative social and economic consequences. The social impacts were related to displacement and diseases. It is said that over 800 families were displaced. In addition, the stagnant waters caused an increasing incidence of diseases such as malaria. The economic concern relates to the project's location, which is situated far from Brazil's most populated region, where the energy demand was much higher, meaning that very large transmission lines were needed.⁸⁵⁶

Against this, the Santo Antonio Dam had a number of positive impacts as well. It is expected to generate 3,140 MW, and to employ “about 9,000 workers at the peak of construction in 2010-2011, with an estimated 27,000 indirect jobs created as a result”⁸⁵⁷. The Odebrecht, one of the consortium's companies, set up a R\$ 12 million (nearly US\$ 7 million) training program called *Acreditar* (Believe), which has already trained the local people in the fields of electrical engineering, truck driving and administration. Altogether, the program is expected to train approximately 25,000 workers.⁸⁵⁸ Moreover, by the time construction is over, the state and local governments will be receiving money derived from royalties. In addition, Porto Velho will become a regional strategic port, from where commodities will be shipped to other continents. The Santo Antonio Dam will change completely that portion of the Brazilian Amazon. Many people will be attracted to Porto Velho, as will many farmers and cattle ranchers.

⁸⁵⁵ Nelson Caproni is quoted by Christiana Sciaudone, above note 853, p. 17.

⁸⁵⁶ To illustrate, the transmission line to São Paulo will be 2,500 km in length, implying significant loss of energy and money.

⁸⁵⁷ Above note 853, p. 19.

⁸⁵⁸ Above note 853, p. 18. In March 2011, the construction of both the Jirau and Santo Antonio hydropower plants were suspended for many days because the workers held strikes on the ground that they were being forced to endure to inadequate work conditions. Source: *Folha de S. Paulo*, “Manifestação impede volta de obras no rio Madeira”, 25/03/2011, p. B3.

Like the Santo Antonio, the Jirau Dam will have both positive and negative impacts in the region. In January 2009, the BNDES awarded loans of R\$ 7.2 billion (US\$ 4 billion) to this project, representing 70 per cent of the total needed. The IBAMA issued the environmental licenses containing a number of mitigation and compensation measures. *Energia Sustentável do Brasil*,⁸⁵⁹ the consortium that won the bid, has begun the construction of the dam that currently generates 3,300 MW, and created 12,000 jobs directly and 30,000 indirectly.⁸⁶⁰ However, the Jirau Dam created a reservoir covering 302.6 square kilometres and flooded the municipality of Jaci Paraná, where nearly 1,800 people lived. Even though new houses were offered to the displaced families, the community itself and its existing social fabric were destroyed.

The Belo Monte Dam: an overview

Xingú River is one of the Amazon's most important tributaries. It is located in the eastern Amazon Basin, and hosts great biological and cultural diversity. An immense hydroelectric dam called Belo Monte (Beautiful Mount) will be built in the region, near the Transamazon Highway (BR -230) and the city of Altamira, in the Brazilian state of Pará (PA). This development project "was first proposed by Eletronorte, a state-owned utility company, in 1975, and its initial design was based on two initial dams in the Xingú River. Originally, the combined area to be flooded was estimated at 14,500 square kilometers." According to Carvalho:

The environmental and social impact of the original plan was such that it led to extensive mobilization at the grassroots level, and national and international NGOs. Together, they organized a media campaign and lobbied the World Bank – the main funding source for the project – and

⁸⁵⁹ The consortium *Energia Sustentável do Brasil* encompasses the following companies: Suez (with 50.1 percent of shares), Companhia Hidroelétrica do São Francisco (20 percent), Eletrosul (20 percent), and Camargo Correa (9.9 percent). Source: Eco-Finanças Notícias, Brazil's Madeira hydro plants reach close, available from: <<http://ef.amazonia.org.br/index.cfm?fuseaction=imprimirNoticia&id=303809>> April 2009.

⁸⁶⁰ Above note 853, p. 19.

European and U.S. governments regarding the environmental and social impacts of the project.

In 1989, the indigenous peoples of Xingú organized a meeting that brought more than 1,000 participants to Altamira.

The timing of this alliance between environmentalists and indigenous people, and at a crucial moment for the World Bank that was under pressure for its poor environmental record, led to the cancellation of the loan to Eletronorte.⁸⁶¹

In the mid-2000s, under the administration of Lula da Silva, this project was seen as a top priority, and was included in the Accelerated Growth Program (PAC). Once completed, the Belo Monte Dam will be ranked as the world's third largest power plant, followed by the Three Gorges, in China (18,000 MW) and Itaipú, in Brazil and Paraguay (14,000 MW). Belo Monte will generate approximately 11,233 megawatts (MW) of hydroelectric power and create about 18,000 jobs directly and 80,000 indirectly.⁸⁶² According to the IBAMA and Environment Ministry, nearly 12,000 people will be displaced due to the construction of Belo Monte Dam, which will submerge an area of nearly 516 square kilometres.⁸⁶³ Even though Brazil's Environment Minister, Carlos Minc, gave assurances that no indigenous communities will be displaced, most forest-dependent communities oppose the project, due to its potential indirect impacts. In addition, environmental NGOs such as ISA oppose the project on the basis that the environment licence contains systematic problems.⁸⁶⁴ Marcelo Furtado, a Greenpeace director in Brazil, argues that this project will remove about 230 million cubic metres of land, that is, even more land than that removed to build the Panama Canal. He adds that the project will require the construction of about 260 km of new roads, and cause deforestation

⁸⁶¹ Above note 848, pp. 257-258.

⁸⁶² O Estado de S. Paulo, *BNDES prepara crédito especial para Belo Monte*, Economia, 01/04/2010, p. B6.

⁸⁶³ Ibid.

⁸⁶⁴ Ibid.

of 12,000 square kilometres of rain forest.⁸⁶⁵ Nevertheless, Minc predicts that “there will not be any environmental disaster in this project.”⁸⁶⁶

In February 2010, the IBAMA granted an environmental licence, containing forty conditions, which are related to its potential environmental and social impacts. These conditions include a number of environmental protection requirements, among them, environmental conservation of aquatic and terrestrial ecosystems, and construction of educational, medical and sewage facilities,⁸⁶⁷ involving total additional costs of approximately R\$ 1.5 billion (nearly US\$ 800 million). It is estimated that the construction of Belo Monte Dam will cost over R\$ 20 billion (US\$ 12 billion). The BNDES will award special long-term loans to the private sector. The BNDES may become famous internationally as the bank that destroys rain forests.⁸⁶⁸

⁸⁶⁵ Marcelo Furtado, “O futuro da energia no retrovisor”. *Folha de S. Paulo*, Tendências/Debates, 12/02/2011, p. A3

⁸⁶⁶ “Não vai haver o desastre ambiental na obra”. Free translation. Above note 865.

⁸⁶⁷ Above note 865.

⁸⁶⁸ In April 2010, the famous Canadian filmmaker James Cameron (Avatar) visited the Xingú River and its local people. He said: “I am not so beautiful, nor is my singing voice any good, but I will use my voice and my films to attempt to alert people about this project that will destroy indigenous and riverbank communities.” In Portuguese, “Não sou tão bonito e nem tenho uma boa voz para cantar, mas vou usar minha voz e meus filmes para tentar alertar sobre essa obra destruidora de populações indígenas e ribeirinhas”. Free translation. “BNDES prepara crédito especial para Belo Monte”, *O Estado de S. Paulo* (Economia), 01/04/2010, p. B6. In turn, Cao Hamburger, a Brazilian filmmaker who is currently making a documentary on the Xingu Indigenous Park, wrote: “The Belo Monte [Hydroelectric] Plant wants to dam the Xingu River. The river that is the soul and foundation of life of indigenous communities in the region. A low blow in the name of progress. Progress with the old parameters of 19th and 20th century that has led the world to the social and environmental collapse. Is this what we want? If our leaders and society as a whole were interested in understanding the philosophy, culture and intelligence of indigenous peoples, they would abort any project that threatens them. And we could inaugurate a new paradigm of progress. The Progress of balance. We would be in the world forefront of 21st century. That is the demand.” Carlos Império Hamburger, “O Xingu do século 21 ameaçado”. *Folha de S. Paulo*, Tendências/Debates, 06/02/2011, p. A3. In Portuguese, “A megausina de Belo Monte quer represar o rio Xingu. O rio que é a alma e a base da vida das comunidades indígenas da região. Um golpe baixo, em nome do progresso. Progresso com os velhos parâmetros dos séculos 19 e 20, que tem levado o mundo ao colapso social e ambiental. É isso que queremos? Se nossos dirigentes e a sociedade com um todo se interessassem em entender a filosofia, a cultura e a inteligência dos povos indígenas, abortariam qualquer projeto que os ameaçasse. E poderíamos inaugurar um novo paradigma de progresso. O progresso do equilíbrio. Seríamos a vanguarda mundial do século 21. Essa é a demanda.” Free translation.

In April 2011, the Inter-American Commission on Human Rights (IACHR) granted precautionary measures⁸⁶⁹ for the members of indigenous communities of the Xingú Basin.⁸⁷⁰ The IACHR requested that “the State of Brazil immediately suspend the licensing process for the Belo Monte Hydroelectric Plant project and stop any construction work from moving forward until certain minimum conditions are met.”⁸⁷¹ According to the Commission, the environmental licensing process for the hydropower plant did not ensure the effective participation of the affected indigenous groups. In consequence, the Commission requested the adoption of a number of measures to fully ensure the participation mechanism. In addition, the Commission also requested that the State of Brazil adopt a number of measures to protect “the life and physical integrity of the members of the indigenous peoples in voluntary isolation of the Xingú Basin, and to prevent the spread of diseases and epidemics among the indigenous communities being granted the precautionary measures as a consequence of the construction of the Belo Monte hydropower plant.”⁸⁷² A few days later, Brazil’s Ministry of Foreign Affairs (ITAMARATI) issued a communiqué defending the licensing process for the Belo Monte Dam on the ground that the environmental licence fulfills the legal requirements, including public meetings.⁸⁷³ The communiqué classified the Commission’s request as “precipitous and unwarranted”.⁸⁷⁴ In October 2011, Brazilian officials boycotted the IACHR meeting held in Washington,⁸⁷⁵ presumably, indicating their intention to ignore the IACHR’s request.

⁸⁶⁹ PM 382/10.

⁸⁷⁰ Inter-American Commission on Human Rights, *Precautionary measures granted by the Commission during 2011*. Available from: <<http://www.cidh.org/medidas/2011.eng.htm>> April 2011. The Indigenous communities are the following ones: the Arara of Volta Grande do Xingu; the Juruna of Paquçamba; the Juruna of "Kilômetro 17"; the Xikrin of Trinchira Bacajá; the Asurini of Koatinemo; the Kararaô and Kayapó of the Kararaô indigenous lands; the Parakanã of Apyterewa; the Araweté of the Igarapé Ipixuna; the Arara of the Arara indigenous lands; the Arara of Cachoeira Seca; and the Xingú Basin indigenous communities in voluntary isolation.

⁸⁷¹ Ibid.

⁸⁷² Ibid.

⁸⁷³ Ministério das Relações Exteriores, “Nota N. 142 - Solicitação da Comissão Interamericana de Direitos Humanos (CIDH) da OEA”, available from: <<http://www.itamaraty.gov.br/sala-de-imprensa/notas-a-imprensa/solicitacao-da-comissao-interamericana-de-direitos-humanos-cidh-da-oea>>, December 2011.

⁸⁷⁴ Ibid.

⁸⁷⁵ Revista Fórum, “Belo Monte: após boicotar audiência, Brasil é cobrado na CIDH/OEA”, 28/10/2011, available from:

Analysis

Given the current stage of technological progress, these large dams are not suitable for the Brazilian Amazon, which is - as described in chapter 1 - a fragile biome, containing significant natural and cultural diversity. As the Brazilian Amazon is located in an equatorial region, obviously other sources of renewable energy should be preferentially harnessed, particularly the wind and solar energy and biomass, along with small-scale hydroelectric plants.

Considering the core elements of sustainable development, large-scale hydroelectric plants are not promoting sustainable development in the Brazilian Amazon. The construction of the Madeira River Dams focuses on the needs of outside groups but not the basic needs of local people. As mentioned above, these plants will generate power to fulfill the energy demand in other regions of Brazil, since the current local economy does not require the construction of two large hydroelectric plants. In addition, most skilled job positions have been filled by outside professionals, and many forest-dependent families have been relocated to urban areas; thus, these projects are not promoting intra-generational equity in Rondônia. Above all, these projects do not take the view that environmental sustainability is an integral part of the development process, because the conditions attached to the environmental licenses only aim to mitigate and/or compensate the environmental harm.⁸⁷⁶

Nor does the construction of Belo Monte fulfill the requirements of sustainable development. The project-affected area still is sparsely populated, and the local people clearly do not need over 11,000 MW of electricity. Today they demand, above all, improved health and education systems. In short, Belo Monte does not focus on the basic needs of local people, but the energy demand in others parts of Brazil. Considering that the Xingú Basin is one of the country's poorest regions, with low socio-economic development, the local people are not in a position to fill

<http://www.revistaforum.com.br/conteudo/detalhe_noticia.php?codNoticia=9557>
December 2011.

⁸⁷⁶ Rio Declaration Principle 4 states: "In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."

the skilled job positions. Therefore, Belo Monte will not promote intra-generational equity in the region. In fact, the project will exacerbate the social inequalities, because about 12,000 people, including forest dwellers, will be relocated to areas where the economic activities are completely different from those they have executed so far. In terms of inter-generational equity, as mentioned above, Belo Monte Dam will submerge over 500 square kilometres of rain forests; therefore, the construction will affect a number of species, including unknown ones. How many medicinal plants are still hidden in the project affected-area? The answer will be denied to the future generations if the construction begins in the Xingú area.

As demonstrated above, the Belo Monte Dam does not appropriately integrate the three dimensions of sustainable development. In short, the project was designed to avoid an electricity shortage in Brazil, not to meet the basic needs of local people. Therefore, Belo Monte embodied the historical pattern of Amazon development. Again, the Amazon's local people and natural environment are sacrificed to satisfy demands of outside groups.

Lessons learnt

Although the dams are considered top priorities by the continental and national programs (respectively, the IIRSA and PAC), and although the IBAMA has issued the environmental licences in accordance with Brazilian law, the BNDES should have refused to award the loans. The head of BNDES is appointed by the President of Brazil. As a result, the dividing line between the public interest and the interests championed by a given administration has been poorly applied. As Rei argues, “we would need to have, for the development banks, the profile of financial lines and management of international resources linked to “pluriannual” policies that goes beyond the administration’s periods.”⁸⁷⁷ If the BNDES’ environmental strategies or guidelines were binding on it, the environmental issues would be treated differently.

⁸⁷⁷ Fernando Rei, interview in São Paulo, on 25/03/2009. In Portuguese, “Nós precisaríamos ter, em bancos de desenvolvimento, o perfil de linhas de financiamento e gestão de recursos internacionais atrelados a políticas plurianuais, que ultrapassassem períodos de governo”. Free translation.

Therefore, the BNDES must clarify what is its role in promoting sustainable development in Brazil, particularly in the Legal Amazon.

Considering the above cases, there has not been an issue of non-compliance with the BNDES environmental policies and strategies, since they are broadly worked and open to a range of interpretations. Yet these environmental policies, as interpreted in the large-scale hydroelectric plants located in the Brazilian Amazon, are not consistent with sustainable development. In consequence, BNDES can award large loans to the construction of these large dams and still be within its environmental policies. With regard to the Santo Antonio, the loan to the private consortium will represent 65.7 per cent of the total costs. In relation to the Jirau, in turn, the loan will represent 68.5 per cent of total costs.⁸⁷⁸ Regarding Belo Monte, the role of BNDES in the funding operation remains unknown, but it is very likely that the Bank will be the main source of financing.

6.3.2. The Meat-Packing Plants

Overview

In the late 2000s, Brazil became the world's largest producer and exporter of beef. It produced annually about 7.8 million tons of beef.⁸⁷⁹ The meat-packing corporations with the Brazilian capital controlled over 50 per cent of global processed meat,⁸⁸⁰ and Brazilian companies bought their competitors. At that time, the JBS Friboi, the world's largest company in the sector, bought a number of companies in the United States and Argentina: the Marfrig Group bought companies in Europe and in South

⁸⁷⁸ O Estado de S. Paulo, "BNDES prepara crédito especial para Belo Monte", *Economia*, B6, 01/04/2010.

⁸⁷⁹ Paulo Barreto, Ritaumaria Pereira, and Eugênio Arima, *A pecuária e o desmatamento na Amazônia na era das mudanças climáticas*. Belém: Instituto do Homem e Meio Ambiente (IMAZON), p. 13, available from: <http://www.imazon.org.br/novo2008/arquivosdb/120849pecuaria_mudancas_climaticas.pdf> July 2010.

⁸⁸⁰ Amigos da Terra – Amazônia Brasileira: *A hora da conta: pecuária, Amazônia e conjuntura*, available at <<http://www.amazonia.org.br/arquivos/308285.pdf>>, p. 21, accessed on 22/08/2010.

America; and the Bertin Group bought industrial units in China and South America.⁸⁸¹

In the late 2000s, nearly 36 percent of the country's cattle, about 71.4 million head,⁸⁸² were located in the Legal Amazon.⁸⁸³ Moreover, the cattle ranching sector was growing faster in the Amazon than anywhere else in the country. According to Barreto *et. al.*, in 2005 the Amazon's cattle ranching activities produced 2.8 million tons of beef, 70 percent of this were produced by sixty-five meat-packing plants.⁸⁸⁴ As is discussed later in this section, at that time the screening of cattle was flawed; in consequence, this sector still included a number of illegal slaughter-houses located in the region.

The cattle ranching sector was growing so rapidly in the Amazon due to a convergence of three factors: good rainfall distribution, subsidized credit, and the low cost of land.⁸⁸⁵ The provision of credit for cattle ranching by the development banks in the region was critical to ensuring the growth of this industry. According to a Report formulated in 2010 by the well-known environmental NGO *Amigos da Terra – Amazônia Brasileira* (Friends of the Earth – Brazilian Amazon):

The recent proliferation of meat-packing plants and acquisition of many of them by large groups, which extend and equip them, is primarily funded by the BNDES, and to some extent by the multilateral banks such as IFC (World Bank Group) and Inter-American Development Bank (IDB), as well as state-owned banks [BASA, Bank of Brazil] and private banks.⁸⁸⁶

⁸⁸¹ Ibid.

⁸⁸² Ibid.

⁸⁸³ Paulo Barreto and Daniel Silva, *The challenges to more sustainable ranching in the Amazon*, p. 1, available from: <http://www.imazon.org.br/novo2008/arquivosdb/170440oea_n14_eng.pdf> July 2010.

⁸⁸⁴ Above note 882, p. 13.

⁸⁸⁵ Ibid.

⁸⁸⁶ Ibid.

In the late 2010s, the BNDES was the main source of financing for the country's agribusiness activity.⁸⁸⁷ For instance, in 2008 the Bank granted about R\$ 6 billion in loans to the meat-packing plants in Brazil,⁸⁸⁸ representing nearly 50 per cent of the Bank's loans for the national industry sector as a whole.⁸⁸⁹ It shows that the meat-packing sector was seen by the institution as a strategic one for Brazil's economic development. Not surprisingly, in 2008 the four largest financial operations of the BNDES in the industry sector were granted to giant meat-packing groups, namely the Bertin, JBS Friboi, Independência and Marfrig.⁸⁹⁰ Moreover, BNDES's activities in the Legal Amazon were growing rapidly, particularly the sum invested in agribusiness, which increased from R\$ 1,375 billion in 2000 to R\$ 12,605 in 2008. The BNDES usually operated along with the other state-owned banks, particularly the Bank of Amazon (BASA). As mentioned previously, the BASA is responsible for about 74 percent of total long-term loans for the region.⁸⁹¹ The BASA manages the Constitutional Fund to Finance Northern Brazil (FNO).

In 2010, "less than 6 percent of total funding for cattle ranching in the [Brazilian] Amazon [was] for the deployment and improvement of grazing land, while 75 percent seeks the animals' acquisition and expenses."⁸⁹² Not surprisingly, "between 1985 and 2006, the Amazon's grazing lands grew 44.18 percent." Therefore, this funding scheme has promoted the advance of the Amazonian frontier, by transforming the region's fragile and diverse ecosystem into inefficient cattle ranching.

Analysis

In view of the concept and core elements of sustainable development, the thesis concludes that these loans were not promoting sustainable development in the

⁸⁸⁷ Ibid.

⁸⁸⁸ Ibid.

⁸⁸⁹ Ibid.

⁸⁹⁰ Ibid.

⁸⁹¹ Author's interview with Oduvaldo Lobato (BASA), on 19/08/2009.

⁸⁹² Above note 883. In Portuguese, "menos de 6% de todo o financiamento para a atividade pecuária na Amazônia é destinado à implantação e reforma de pastagens, enquanto 75% visam aquisição e custeio de animais." Free translation.

Brazilian Amazon, but boosting short- and medium-term economic growth. From the socio-environmental perspective, this funding scheme was unsustainable because it did not integrate the three dimensions of sustainable development, but perpetuated the old boom-bust cycle of “development.”⁸⁹³ In fact, it provided large profits to giant meat-packing groups, but not long-term benefits to local people.

The thesis does not oppose the promotion of cattle ranching in the Brazilian Amazon. It argues that this sector must be developed in light of principles of sustainable development. Sustainable cattle-ranching is one that integrates the three dimensions of sustainable development, that is, that takes them as interdependent and mutually reinforcing components of long-term development for the region.

Sustainable cattle-ranching requires socio-environmental standards, and enforcement of these standards. It also requires transparency and access to information. To illustrate, as beef is currently an international commodity, consumers around the world must be informed in relation to the socio-environmental impact of the beef they eat. Whether the beef is produced in full compliance with the principles of sustainable development or in an unsustainable way is a concern that has gradually become an influential factor in retailer companies’ decision-making.

In this context, the imposition of a requirement of full disclosure in order to ensure consumers apply heavy demand-side pressure on the meat-packing sector might be a powerful mechanism in the processes of sustainable development in the Brazilian Amazon. In addition, to impose self-regulation in order to ensure cattle-ranchers and their financiers, including development banks, adopting sustainable development standards for the Brazilian Amazon might also be an influential tool in promoting sustainable cattle ranching activities in the region. The challenges to achieving full disclosure and self-regulation in order to promote sustainable cattle ranching in the region are discussed below.

⁸⁹³ See discussion of the boom-bust cycle of development in section 4.3 of Chapter 4 of this study.

Lessons learnt

To a number of senior researchers such as Barreto, from the Belém-based NGO Imazon,⁸⁹⁴ and Dias-Filho, from the Brazilian Agricultural Research Corporation (EMBRAPA),⁸⁹⁵ it is possible to promote sustainable cattle ranching in the Brazilian Amazon. The region could even increase its livestock from its current 71 million head to nearly 100 million head, but without advancing on the Amazonian frontier. If the cattle ranching sector applied the modern technologies already available, it could exploit about 100 million head of cattle, reducing by 35 per cent the region's grazing lands (baseline 2006). This change would cost around R\$ 14.5 and 39 billion.⁸⁹⁶ However, Brazil's state-owned banks, including the BNDES and BASA, are run in accordance with short- and medium-term objectives, not long-term ones. To explain, cattle-ranching generates jobs, income, and taxes.⁸⁹⁷

With regard to the MDBs' actions in this sector, the World Bank Group has been internally ambivalent. In 2009, the Independent Evaluation Group World Bank Group launched a Report called "Annual Review Development Effectiveness 2009: Achieving Sustainable Development". The Report's foreword was written by Vinod Thomas, a former director of the World Bank's program in Brazil from mid-2001 to mid-2005, and later became the Director-General of IEG. The Report stated,

(...) there have also been occasions when IFC and the Bank have pursued different approaches or priorities – for example, differing approaches to development in the Brazilian Amazon. These coordination issues are presently being addressed through World Bank Group collaboration on the preparation of the new Environment Strategy, scheduled for launch in 2010.⁸⁹⁸

⁸⁹⁴ Above note 882.

⁸⁹⁵ Moacyr Bernardino Dias-Filho, *Pastagens no trópico úmido*, Belém: Embrapa Amazônia Oriental, Documentos (241), 2006.

⁸⁹⁶ Above note 883.

⁸⁹⁷ Paulo Barreto, *O desmatamento é desnecessário*, Folha de S. Paulo, Tendências/Debates, 27/06/2009, p. A3.

⁸⁹⁸ The Independent Evaluation Group – World Bank Group, *Annual Review of Development Effectiveness 2009: Achieving Sustainable Development*, p. 49, available

Fortunately, the IFC is already tackling this issue. With regard to the meat-packing sector, in 2007 the IFC invited the main meat-packing corporations, among others, the Bertin, JBS-Friboi, Frigol, Mercosul, Quatro Marcos, and Independência, along with the state-owned banks such as the BNDES, and the main NGOs, to formulate an agreement towards the promotion of sustainable ranching in the Brazilian Amazon.⁸⁹⁹ As a result of this new approach to ranching in the Amazon, the IFC requested from Bertin a comprehensive socio-environmental plan as a condition to approve a loan of about US\$ 90 million to expand and modernize its meat-packing plant located in the eastern Brazilian Amazon, to be precise, in the municipality of Marabá (Pará state).⁹⁰⁰ Bertin already had a slaughtering capacity of about 5,400 head per day, and with the loan the company would increase significantly its capacity by 5,000 head per day.⁹⁰¹ The loan condition was related to the livestock's origins. In a nutshell, the cattle could not be brought from deforested areas. In addition, Bertin also applied for a loan of US\$ 250 million from the IDB in order to invest, among other things, in building a new plant in the municipality of Sorriso (Mato Grosso state). Like the IFC, the IDB argued that the loan concession would have to take into account the environmental risks, particularly deforestation.

In 2008, due to the agreement's positive results, the IFC, along with the giant meat-packing companies such as JBS Friboi and Mafrig, as well as a number of powerful retailer companies, among other the Wal-Mart, Carrefour and Pão de Açúcar, signed an agreement to ban any meat sourced through the region's illegal deforestation.⁹⁰² According to Belém-based senior researchers, namely Barreto, Pereira and Arima, "although these are positive initiatives, the credibility and effectiveness of them depend largely on an effective and transparent monitoring of operations. In the case of cattle ranching, you still need to improve monitoring, because the current

from: <http://siteresources.worldbank.org/EXT2009ARDE/Resources/arde09_web.pdf>
March 2010.

⁸⁹⁹ Above note, p. 883.

⁹⁰⁰ Above note, p. 883.

⁹⁰¹ International Finance Corporation, *IFC Disclosure - FAQs: Brazil Bertin Project*, p. 1, available from: <http://www.ifc.org/ifcext/disclosure.nsf/Content/Brazil_Bertin_FAQ>
March 2010.

⁹⁰² Conexões sustentáveis: São Paulo - Amazônia. Available at <http://www.amazonia.org/arquivos/289437.doc>, accessed on 07/07/2010.

screening of cattle is admittedly flawed.”⁹⁰³ In turn, Roberto G. Fonseca, the president of Brazilian Beef Export Industries Association (Abiec)⁹⁰⁴, wrote:

For those who observed closely the experience of expansion of agricultural frontiers in Brazil over the 1970s and 1980s, it is paradoxical to see the criminalization of the heroes of a recent past. The winds have changed in the last 20 years, and the issues related to climate change gained legitimized relevance.

[The Abiec] is promoting, together with its thousands of suppliers across the country, the adoption of good sanitation and environmental practices, that in the near future will be monitored by electronic tracking systems of great efficiency and reliability. But the serious problem remains to be solved of thousands of illegal slaughter houses that are found throughout the country and that in addition to evading taxes, do not observe health and environmental controls. About 19 million head of cattle are subjected to this informal segment of beef production.⁹⁰⁵

In 2009, Paulo Barreto⁹⁰⁶ commented that “the basic conditions for a good credit do not exist in many communities, particularly in the rural zone.”⁹⁰⁷ He explained that,

⁹⁰³ Above note, p. 882. In Portuguese, "Apesar de essas iniciativas serem positivas, a credibilidade e eficácia delas dependerão em grande parte de um monitoramento eficaz e transparente das operações. No caso da pecuária, ainda será necessário melhorar o monitoramento, pois o atual rastreamento do gado é reconhecidamente falho." Free translation.

⁹⁰⁴ In Portuguese, *Associação Brasileira das Indústrias Exportadoras de Carne*.

⁹⁰⁵ Roberto Giannetti da Fonseca, *Meio ambiente e alimentos, juntos para sempre*, Folha de S. Paulo, Tendências/Debates, 27/06/2009, p. A3. In Portuguese, “Para quem observou de perto a experiência da expansão das fronteiras agrícolas do Brasil nos anos 70 e 80, é paradoxal assistir hoje à criminalização dos heróis de um passado tão recente. (...) Os ventos mudaram nos últimos 20 anos, e temas ligados às mudanças climáticas ganharam legítima relevância. (...) [A Abiec] está promovendo, com seus milhares de fornecedores em todo o país, a adoção de boas práticas sanitárias e ambientais que, em futuro próximo, serão fiscalizadas por sistemas de rastreamento eletrônico de grande eficácia e confiabilidade. Mas resta ainda resolver o grave problema dos milhares de abatedouros clandestino que estão espalhados por todo o país e que, além de sonegar impostos, não observam controles sanitários e ambientais. Cerca de 19 milhões de cabeças de gado estão submetidas a esse segmento informal de produção de carne bovina, (...)”. Free translation.

⁹⁰⁶ Mr. Barreto is an IMAZON senior researcher.

⁹⁰⁷ Author’s interview with Paulo Barreto, on 29/01/2009.

due to the loan granting procedure for local slaughterhouses, the International Finance Corporation (IFC) requested a number of social and environmental conditions such as land regularity (security of land and /or title), minimum labour standards and environmental licensing. These conditions should be fulfilled by the slaughterhouse's suppliers, that is, the local cattle ranchers. Unfortunately, in the late 2000s, land tenure was precarious in the region, most workers did not earn minimum wages, and environmental standards could usually not be met. In this context, the clients did not fulfil those requirements, and the IFC could not grant the loans.⁹⁰⁸ Barreto concluded:

There is a vicious cycle that is very complicated. Basically, if some of these [development] banks keep insisting on those policies, they will have problems, because their clients will have difficulties to operate and implement those requirements. Therefore, there is a serious risk that is the following one: on one hand, if the deal is done containing those requirements - those criteria - then the targets will not be reached. On the other hand, if the requirements are eliminated, the bank's policies would be questioned. At present, the banks are facing a very crucial phase, involving the way they will behave.⁹⁰⁹

During the hybrid model-led development period, the role of development banks in promoting sustainable cattle-ranching in the region depended on the Brazilian government's capabilities to carry out its socio-environmental duties. These capabilities, in turn, could be improved due to externally-imposed pressures (*e.g.* by civil society organizations and international institutions). Therefore, the case study draws the lesson that the promotion of sustainable development in the Brazilian Amazon requires new multi-actor arrangements, comprising international

⁹⁰⁸ Ibid.

⁹⁰⁹ Ibid. "Há um ciclo vicioso e muito complicado. Basicamente, alguns destes bancos, se eles continuarem com estas políticas, eles vão acabar tendo problemas, porque os clientes vão ter muitas dificuldades de operar e implementar estas exigências. Portanto, há uma situação de risco muito grande, que é a seguinte: faz o acordo que vai implementar estas restrições, estes critérios de sustentabilidade, e aí não tem condições de implementar, e então vai tentar implementar uma situação que envolve bastante irregularidade, e aí toda uma política será questionada". Free translation.

institutions, state, local community and private sector. As these “hybrid-institutions” are vital for promoting new mechanisms for sustainable activities in the region, they are discussed below.

PART 4

NEW MECHANISMS FOR PROMOTING SUSTAINABLE DEVELOPMENT IN THE BRAZILIAN AMAZON: THE ROLE OF DEVELOPMENT BANKS

The concept of sustainable development was articulated two decades ago. It entails the challenge of integrating economic, social, and environmental needs. It has been a tough task to transform the concept into development policies and strategies, mainly because there is not a single development model to be copied across the world. In other words, sustainable development must be closely tied to local circumstances. As mentioned above, the challenge of integrating economic, social, and environmental needs is even greater in the Amazon Basin, one of the most diverse regions on Earth. Above all, the challenge requires more extensive cooperation, among nations (including their national development banks), international institutions (including the MDBs), corporations, NGOs, and local organizations.

Part 4 aims to analyze new mechanisms for promoting sustainable development in the region. There is a common denominator that unifies them: the mechanisms are derived from new multi-actor arrangements, encompassing the international institutions, the Brazilian state, local communities, and the private sector. These new mechanisms have ignored false dichotomies, among others, economic growth and environmental protection, international cooperation and national sovereignty, and external beneficiaries and the bill payers (local people). These “hybrid-institutions” aim to create a win-win situation in the Brazilian Amazon.

Chapter 7

International Community-led Mechanisms

7.1. Protected Areas

In 1998, the World Bank Group and the NGO WWF⁹¹⁰ established the “Alliance for Forest Conservation and Sustainable Use”. This alliance set up three targets to be achieved by 2005. First, the Alliance aimed to create – by legislation – about 50 million hectares of new protected areas worldwide. Second, it aimed to secure under effective environmental management 50 million hectares of existing protected, but highly threatened areas. Finally, it aimed to promote forest certification to cover an area of about 200 million hectares of forest.⁹¹¹ As of 2005, the Alliance achieved success in relation to its target of creating new protected areas, because it supported the creation of about 55 million hectares of protected areas worldwide. In addition, the Alliance achieved relative success regarding its target of securing existing protected areas. In fact, 40 million hectares of existing areas were secured under proper management.⁹¹²

In Brazil, the Alliance established a partnership with the national government, and this partnership was responsible for creating the program known as the Amazon Region Protected Areas (ARPA).⁹¹³ Created in 2002, during the World Summit on Sustainable Development, held in Johannesburg (South Africa), the ARPA initially sought “to commit 50 million hectares (...) to protected areas over a decade and will, if successful, triple the area of protected forests in Brazil”,⁹¹⁴ covering an area

⁹¹⁰ World Wide Fund for Nature (formerly known as the World Wildlife Fund).

⁹¹¹ David Humphreys, *Logjam: deforestation and the crisis of global governance*. London and Sterling: Earthscan, 2006, p. 171.

⁹¹² Above note 914, p. 171. The Alliance’s target of promoting forest certification was not met, because it covered an area of only 25 million hectares. With regard to forest certification, see section 9.3 of Chapter 9 of this study.

⁹¹³ In Portuguese, *Áreas Protegidas na Amazônia*.

⁹¹⁴ Above note 914, p. 171.

the size of Spain.⁹¹⁵ In consequence, the ARPA has been described as the largest tropical forest preservation program in the world.

The Program has been coordinated by the Federal Ministry for the Environment and implemented by the ICMBio,⁹¹⁶ along with the state governments and FUNBIO.⁹¹⁷ It has also been supported by the World Bank Group, GEF, WWF, and two German bodies, namely the KfW (German Development Bank), and the GTZ (German Technical Cooperation Agency).

The ARPA differs from the PPG7, basically due to the fact that, while the former focuses on promoting environmental protection through the protected areas (PAs), the latter provides support to sustainable economic activities in the region.⁹¹⁸ The ARPA's main goals are, among others, the creation of 285 thousand square kilometers of new strict-use PAs, in addition to another 90 thousand square kilometers of new sustainable-use PAs; the effective environmental management of over 125 square kilometers of existing PAs; and the creation of a Fund for the long-term maintenance of those PAs.⁹¹⁹

The ARPA Program is divided into three phases. The Program Phase One (2003-2008) met its targets. Fortunately, due to the Program, about 24 million hectares of new PAs were created in the region, and approximately 8.5 million hectares of existing PAs were consolidated. Moreover, the ARPA Endowment Fund was created, and capitalized about US\$ 40.5 million. The Program's Phase Two (2010-2014) began its implementation actions in late 2010. Its goals are to create about 20 million hectares of new PAs, and to consolidate approximately 22 million hectares of existing PAs, and to capitalize about US\$ 80 million for the Fund. The goals under Phase Three (2014-2016) are to create 3.5 million hectares of new PAs, to

⁹¹⁵ Fundo Brasileiro para a Biodiversidade – FUNBIO, “2008 Annual Report”. Available at <http://www.funbio.org.br/publicue/web/media/rel2008.pdf>, accessed on 04/06/2009, p. 34.

⁹¹⁶ Chico Mendes Institute for Biodiversity Conservation. In Portuguese, *Instituto Chico Mendes de Conservação da Biodiversidade*.

⁹¹⁷ The FUNBIO was analysed above in Chapter 6, section 6.2.

⁹¹⁸ Cláudio C. Maretti, “Civil Society and the Amazon Region Protected Areas Program (ARPA)”, in Nurit Bensusan et. al. (organizers), *What on earth is biodiversity*. São Paulo: Peirópolis, p. 198.

⁹¹⁹ *Ibid*, pp. 198-199.

consolidate 29.5 million hectares of existing PAs, and to capitalize US\$ 80 million for the Fund. Therefore, in the period 2003-2016, the ARPA Program aims to create in total about 47.5 million hectares of new PAs, and to consolidate 60 million hectares of existing ones, and to capitalize US\$220.5 million for the ARPA Endowment Fund.⁹²⁰

One of the strengths of the Program is that it acknowledges that the region is not an empty place, but home to over 25 million people, and consequently that it is vital to integrate all three dimensions of sustainable development. For example, the ARPA Program channels funds not only to strict-use PAs, but also to the creation and consolidation of sustainable-use PAs. Therefore, from the Program's viewpoint, to "lock up" the forest does not mean to exclude the local residents and their economic activities. Moreover, the Program takes into account that the Amazon's diversity should be incorporated into a type of development which preserves its richness. In other words, the Program is based on the pillars for Amazonian development, because it respects the great natural and cultural diversity found in the region.

Nevertheless, one of its weaknesses is that the Program suffers from financial constraints. As argued in Chapter 6, the Brazilian Amazon is becoming rapidly an important region for the production and export of agricultural communities and beef. In consequence, the model of development supported by the ARPA Program has to compete with other development models that are already supported by a number of powerful economic players. Due to the insufficiency of funding for sustainable development, the Program must be very selective, focusing its projects on the Amazon frontier.⁹²¹

To conclude, the ARPA Program is a remarkable example of a "multi-actor arrangement" that aims to create win-win situations in the Brazilian Amazon. It aims to combine the interests of international/foreign bodies and Brazilian society in

⁹²⁰ Global Environmental Facility (GEF), *Project Identification Form*, available from: <[http://www.gefonline.org/ProjectDocs/Biodiversity/Brazil%20-%20\(4085\)%20-%20Amazon%20Region%20Protected%20Areas%20Program%20Phase%202/1-22-09%20-%20Revised%20PIF%20doc%20-%204085.pdf](http://www.gefonline.org/ProjectDocs/Biodiversity/Brazil%20-%20(4085)%20-%20Amazon%20Region%20Protected%20Areas%20Program%20Phase%202/1-22-09%20-%20Revised%20PIF%20doc%20-%204085.pdf)> April 2011.

⁹²¹ With regard to the Amazon frontier, see section 4.3 of Chapter 4 of this study.

terms of sustainable development. The Program's goals may be achieved by 2016 if the ARPA is developed in close coordination with other ongoing programs such as the Amazon Fund, which is analyzed below.

7.2. Non-reimbursable financing mechanisms

In 2006 and 2007, the Brazilian delegation to the 12th and 13th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC),⁹²² held in Nairobi and Bali respectively, presented a proposal for the creation of an international fund to provide incentives to Brazil and other nations with tropical rainforests to reduce their greenhouse gas emissions derived from deforestation. Afterwards, in August 2008 Brazil created the fund called the Amazon Fund (*Fundo Amazônia*) by Decree n. 6,527.

The capital of this newly created fund is made up of donations by governments, multilateral institutions, NGOs, and corporations. It is expected that nearly US\$ 21 billion will be channelled to the fund by 2021. Two agreements had been signed by December 2011. In February 2009, the first agreement was signed between the BNDES and the Norwegian government, in which the Bank received US\$ 110 million for the fund. In addition, the Norwegian Government is committed to gradually disburse US\$ 1 billion by 2015, in accordance with a comprehensive program of conservation goals and their measured targets. In December 2010, the BNDES and the German Bank of Development (KfW)⁹²³ signed an agreement in which the latter committed to contribute about \$ 21 million for the fund.⁹²⁴ In addition, other nations are also expected to make regular donations to the fund; these include Japan, South Korean, Sweden, and Switzerland. Furthermore, in the near future, any citizen will be entitled to contribute to this fund that aims to protect the Amazon, that is after all, the planet's ecological heartland, due to its special

⁹²² Regarding to the UNFCC and other related treaties, see section 3.1 of Chapter 3 of this study.

⁹²³ In German, *Kreditanstalt für Wiederaufbau*.

⁹²⁴ *Amazon Fund - Donations*, available from: http://www.amazonfund.gov.br/FundoAmazonia/fam/site_en/Esquerdo/doacoes/ January 2012.

relevance to humanity derived from its great biological diversity and vital role in the field of global climate equilibrium.⁹²⁵

The Amazon Fund aims to harmonize both the interests of international donors related to the region's environmental sustainability and the concerns of Brazilian authorities in terms of socio-economic development and national sovereignty. As Jacques Marcovitch, a former rector of University of Sao Paulo (USP), explains:

Even without interference in the application of resources, the donor countries can veto withdrawals from the fund if Brazil does not provide positive results in its forest management. If in the year of withdrawal the deforestation rate is greater than the average rate of the previous ten years, there will be no withdrawal.

In this context, the motto of the Amazon Fund is “Brazil protects it, the world supports it, everybody wins”.⁹²⁶ The Amazon Fund is managed by the BNDES, “which is also in charge of fundraising, project selection and contracting, as well as project monitoring and evaluation.”⁹²⁷ The Amazon Fund has two key committees: the Guidance Committee (COFA)⁹²⁸ and the Technical Committee (CTFA).⁹²⁹ The COFA is in charge of setting up the fund's guidelines, and following up the projects' achievements and compatibility with the guidelines, as well as with other key Amazonian policies and strategies such as the Sustainable Amazon Plan (PAS), and the Amazon Deforestation Prevention and Control Program (PPCDAM).⁹³⁰ The COFA is a three-block committee encompassing the federal government, state governments and civil society.⁹³¹ The CTFA is responsible for “testing the quantity of greenhouse gas emission reductions from deforestation and forest

⁹²⁵ With regard to the vital role of the Amazon region, see section 1.2 of Chapter 1 of this study.

⁹²⁶ Above note 927.

⁹²⁷ BNDES, *The Amazon Fund*, available from: <<http://www.bndes.gov.br/english/amazonfund.asp>> May 2009.

⁹²⁸ COFA is the acronym for *Comitê Organizador do Fundo Amazônia*.

⁹²⁹ CTFA is the acronym for *Comitê Técnico do Fundo Amazônia*.

⁹³⁰ PAS and PPCDAM are analysed in above section 3.4 of Chapter 3 of this study.

⁹³¹ Its structural organization is very democratic, because each block holds one vote on committee decisions. In addition, each member holds one vote inside its block. For example, the state of Amazonas holds one vote inside the block of state governments

degradation.”⁹³² It is “composed of six renowned specialists.”⁹³³ Arguably, the CTFA will play a vital role inside the fund, because the donations and their disbursements are anchored in measured targets.

Basically, there are four categories of project to be supported by the fund. First, there is a category of projects related to the Protected Areas. As mentioned above in section 3.4, today about 42 per cent of the Brazilian Amazon is considered as protected areas, which includes the conservation units, indigenous lands, *quilombolas* lands, and military area. According to satellite images, the forest degradation is considerably lower inside the perimeter of conservation units than outside, and the fire occurrence is four times lower inside than outside the indigenous lands. Nevertheless, these protected areas could provide better results in terms of environmental protection. In this regard, the financial resources channelled to the Amazon Fund are expected to contribute to improve significantly the effectiveness of Brazil’s National System of Conservation Units (SNUC),⁹³⁴ particularly in relation to the system’s monitoring and enforcement.

As a complement to environmental conservation in the protected areas, there is a second category of projects that aims to promote economic activities derived from the sustainable use of Amazonian biodiversity. Third, due to the fact that sustainable use requires substantial progress in the sectors of science, technology, and innovation, there is category of projects related to these fields. For example, the Fund may channel financial resources to research projects from universities and research centers, including projects in the field of bio-industry.⁹³⁵ Finally, there is a fourth category regarding the institutional development and enhancement of forest management systems. According to Marcovitch:

⁹³² Above note 931.

⁹³³ Above note 931. “The specialists are appointed by the Ministry of the Environment, upon consultation with the Brazilian Climate Change Forum. Each mandate will last three years, extendable once for an equal period of time.”

⁹³⁴ SNUC is the acronym for Sistema Nacional de Unidades de Conservação.

⁹³⁵ According to Márcio Macedo da Costa (BNDES). Source: Jacques Marcovitch’s interview with M. Costa. Above note 929, p. 250.

The best destination for the [Amazon Fund's] contributions is investment in science and technology, with the parallel incentive to industries able to translate biodiversity into wealth and to prove [that their activities are] more profitable than activities related to the continuous extraction of timber or the livestock. International money to fund repressive or enforcement actions will solve little.

As mentioned in Chapter 1, the Amazon Biome encompasses eight South American countries. A number of indigenous communities and ecosystems are located in more than one single nation; in consequence, the Amazonian problems require much more complex and extensive international cooperation. Taking into account these circumstances, the Amazon Fund can (but currently does not) support projects in other Amazonian nations such as Bolivia, Colombia, Peru, and Venezuela, among others. This holistic standpoint in relation to Amazonian challenges is very important. Nevertheless, it is undeniable that the Fund will enhance the increasing Brazilian hegemonic role in the continent in general, and in the Amazon Region particularly, because the Fund is managed by the BNDES, rather than by a multilateral institution such as the World Bank, IDB, or ACTO. Moreover, the Amazon Fund can (but currently does not) support projects in other Brazilian biomes, such as the Brazilian Savannah (*Cerrado*), because the Amazonian environmental quality depends on the conservation of other biomes, and vice-versa. However, the financial resources may be applied in other biomes only exceptionally; otherwise, the Fund will be diverted from its main goal, which is the reduction of greenhouse gas emissions derived from Amazonian deforestation and degradation.

To conclude, the Amazon Fund may become a powerful and influential instrument to change the historical pattern of Amazonian boom-bust “development” promoted by a predatory model of “development” that has caused significant environmental degradation, social exclusion, and violence in many parts of the region.⁹³⁶ It is a modern instrument in the sense that it seeks to reconcile a number of apparently

⁹³⁶ With regard to the boom-bust pattern of Amazonian “development”, see section 4.3 of Chapter 4 of this study.

opposed interests. For instance, with regard to the tensions between environmental protection and economic growth, the Fund aims to improve Brazil's protected areas system (SNUC), and to boost the regional economic activities linked to sustainable use of Amazonian biodiversity. Moreover, in relation to the tensions between global interests and national sovereignty, the Fund may be able to bridge their differences. For example, as the capital of the Fund is made up basically from international donations, obviously Brazil will have to respect the principles of transparency and accountability in relation to the implementation of projects towards the Amazonian conservation. Undoubtedly, if one country makes donations to another, it is entitled to know what is being done with the money; thus the donor will exert some sort of influence. In addition, as the Fund is also channelled to other Amazonian nations, it may highlight the need for more continental cooperation, probably enhancing the vital role of multilateral institutions, including the ACTO that is analyzed below.

7.3. Cooperation among the Amazon Countries

Mother Nature does not recognize political borders. The Amazon Biome, for instance, is located in eight South American countries. As mentioned above in Chapter 1, section 1.1, these nations share a number of common goals, among others, poverty alleviation, social inclusion, improved sanitation, environmental protection, and avoiding damaging climate change. In the age of economic globalization, it is even more important to those Amazon nations to enhance regional cooperation and integration.⁹³⁷ In this context, the role of the Amazon Cooperation Treaty Organization (ACTO) is vital in promoting sustainable development in the region.

The Amazon Cooperation Treaty was signed in 1978⁹³⁸ and entered into effect in 1980. According to Quiroga, the treaty's historic evolution can be divided into three

⁹³⁷ With regard to the historical evolution of regional cooperation in the Amazon, see Beatriz Garcia, *the Amazon from an international law perspective*. New York: Cambridge University Press, 2011.

⁹³⁸ ART II of ACT states: This Treaty shall be in force in the territories of the Contracting Parties in the Amazonian Basin as well as in any territory of a Contracting Party which, by

phases.⁹³⁹ The first phase (1978-1989) was characterized as defensive-protectionist, because the member states were facing increasing international pressure and intervention which were perceived by them as real threats in relation to their sovereign rights over the region.⁹⁴⁰ The second phase (1989-1994) was portrayed as one of political strengthening. In 1989, the presidents of member countries gathered in Manaus, state capital of Amazonas (Brazil). They signed a declaration that aimed at a joint participation in the United Nations Conference on Environment and Development (Earth Summit), held in Rio de Janeiro, in 1992.⁹⁴¹ At the Rio Conference, the ACTO country members positioned themselves as a unified body in order to “establish a more equitable environment of dialogue among developed countries and the Country Members.”⁹⁴² The third phase of institutional development (1994-2002) witnessed diplomatic efforts towards the creation of “a Permanent Secretariat and its transition to the Amazon Cooperation Treaty Organization.”⁹⁴³ Finally, in early 2003 the ACTO Permanent Secretariat was established in Brasília, the federal capital of Brazil.

The Permanent Secretariat initially focused on formulation of the ACTO Strategic Plan for the period 2004-2012, which was signed in the city of Manaus in September 2004. The Strategic Plan states:

[T]he increasing global concern for viable ways of sustainable development and the importance of the Amazon region to humanity, cause ACTO to be a contemporary tool to induce global sustainability, as well as to serve as a concrete arena for cooperation among the Amazon

virtue of its geographical, ecological or economic characteristics is considered closely connected with that Basin.

⁹³⁹ Antonio Aranibar Quiroga, *La ACTO, algunas claves de su evolución histórica*. Brasília: Consultancy Report, 2003, *apud* ACO Strategic Plan 2004/2012, available from: <http://www.otca.info/PDF/Strategic_Plan.pdf> May 2009.

⁹⁴⁰ ACTO Strategic Plan 2004/2012, p. 11, available from: <http://www.otca.info/PDF/Strategic_Plan.pdf> May 2009. With regard to the tensions between national sovereignty and international pressure and intervention, see section 1.5 of Chapter 1 of this study.

⁹⁴¹ With regard to the Rio Conference (Earth Summit), see Chapter 3 of this study.

⁹⁴² Above note 945.

⁹⁴³ Above note 945, p. 12.

countries. Moreover, in a more ample context, ACTO leads to strengthening international relations of a South-South nature, with the common thread being the Amazon.⁹⁴⁴

The Strategic Plan is structured around three strategic goals. The first goal is the ACTO's major challenge, that is, to promote the region's economic development based on sustainable uses of its natural resources. The second goal is the generation and management of knowledge, and technology transfer in the region. In fact, the ACTO has contributed to the work of both the Association of Amazon Universities (UNAMAZ) and the Cooperative Program of Research and Technology Transfer for the South American Tropics (PROCITROPICOS). The third goal relates to the issues of regional integration and competitiveness. The Initiative for the Integration of Regional South American Infrastructure (IIRSA) is portrayed as "a notable partner to ACTO that is assisting it in achieving the physical integration, launching communication networks and establishing energy resources, hence is permitting the Amazon markets to become integrated to the markets of their own nations."⁹⁴⁵ Today, the IIRSA encompasses about 506 projects in the fields of transport, energy, and communication, budgeted at US\$ 608 billion.⁹⁴⁶ These projects aim "to provide the regional infrastructure to extract, in levels never ever seen before, all kinds of commodities (putting emphasis on energy, grains, wood, and minerals) and to export them to the rich markets in North America, the Euro Zone, and Asia (in particular, China and Japan)".⁹⁴⁷

⁹⁴⁴ Above note 945, p. 9.

⁹⁴⁵ Above note 945, p. 31.

⁹⁴⁶ The IIRSA is discussed in Chapter 7 because the BNDES and IDB are its key actors, as main finance source and technical secretary, respectively. In addition, a number of IIRSA's activities are located in the Amazon Region. For example, eight projects are related to the Madeira River, which is the Amazon River's biggest tributary. These projects includes from the construction of large hydroelectric dams to channels aiming "to transform it [Madeira River] into an international corridor for grains to be cultivated in forested areas and surroundings." Carlos Tautz, *Le Monde Diplomatique Brasil*, Pressão pela força, Ano 2, n. 19, Fevereiro 2009, p. 8. In Portuguese, "(...) transformá-lo em um corredor internacional de grãos que seriam plantados em áreas de floresta e no entorno". Free translation.

⁹⁴⁷ Carlos Tautz, *Le Monde Diplomatique Brasil*, "Pressão pela força", Ano 2, n. 19, Fevereiro 2009, p. 8. In Portuguese, "(...) dotar a região de infraestrutura para extrair, em níveis nunca vistos, todo tipo de commodity (com ênfase em energia, grãos, madeiras e minérios) e exportá-la para os ricos mercados compradores da América do Norte, Zona do Euro e Ásia (leia-se, China e Japão)." Free translation.

Regarding international cooperation issues, the Plan states that lasting ties are being sought with the multilateral development banks, namely the World Bank and the Inter-American Development Bank, as well as other multilateral organizations such as WHO, UNCTAD, PNUMA, UNESCO, and FAO. Fortunately, the ACTO has already established closer ties with the Inter-American Development Bank. For instance, in July 2005, the ACTO and IDB signed an agreement of technical cooperation (ATN/OC-9251-RG). It refers to the ACTO Biodiversity Program, which aims to strengthen the joint regional management for the sustainable use of the Amazonian biodiversity. The IDB channelled about US\$ 1.9 billion to the executive body, that is, ACTO.

According to Becker, a professor of geography at the Federal University of Rio de Janeiro (UFRJ) and a specialist in Amazonian issues, “the ACTO can constitute a key institution for resistance and integration.”⁹⁴⁸ The resistance refers to the Amazonian occupation derived from foreign military bases in Colombia and Ecuador. The integration refers to the need for much more continental cooperation in the fields of technology, science, and finance, among others. Becker illustrates this by pointing out the positive outcomes related to the work of the UNAMAZ. In turn, Luis Aragón, a Colombian researcher, argues:

The Amazon Cooperation Treaty may be the necessary mechanism to induce cooperation programs that lead to the strengthening of the integration of the Amazon. The ACTO, since strengthened, could be converted in the organization capable of formulating and implementing a new vision of development based on regional interests. Issues related to regulation of markets for natural resources, transport and regional integration, environmental preservation and conservation, control of

⁹⁴⁸ Bertha Becker, *Amazônia: geopolítica na virada do III milênio*, Rio de Janeiro: Garamond, 2007, p. 56.

biopiracy and drug trafficking, and many others, can only be processed once we consider the Amazon as a whole.⁹⁴⁹

One of the ACTO's main strengths is that it encompasses all eight Amazon countries; therefore it is a promising arena for regional cooperation to tackle major challenges in the fields of economic growth, social justice, and environmental protection. If French Guyana (France) was a member country, the ACTO would be strengthened significantly, in political, economic, and technological terms. For example, France might provide a bridge between the common interests of European Union and the ACTO member countries in relation to the development of biotechnology industry, which is vital sector to build a developed economy based on sustainable use of the Amazon's natural resources.

Nevertheless, there are a number of obstacles to be overcome before the ACTO becomes an influential and powerful institution in the Amazon Region. One of its weaknesses is that some of its member countries are not stable democracies. As known, autocratic governments usually tend to concentrate powers rather than share responsibilities. In addition, there are diplomatic tensions in the region, for instance, between Colombia and Venezuela. Above all, there is not a common view of the optimal economic approach to development in the region. While a group of countries, including Brazil, Colombia, and Peru have supported a market forces-based development model, on the other side, the ALBA member countries, including Bolivia, Ecuador, and Venezuela have advocated a "Bolivarian socialism" approach to development. Of course, these completely opposed views have constrained the ACTO's political strengthening and institutional development.

⁹⁴⁹ Luis E. Aragón. De quem é esta floresta, afinal. In: Ulisses Capozzoli. *Amazônia: destinos*. São Paulo: Duetto Editorial, 2008, p. 21. In Portuguese, "O tratado de cooperação amazônica pode ser o mecanismo necessário para induzir programas de cooperação que conduzam ao fortalecimento da integração amazônica. A otca, desde que fortalecida, poderá ser convertida na organização capaz de formular e implementar uma nova visão de desenvolvimento voltado aos interesses regionais. Temas relacionados com a regulação dos mercados de recursos naturais, o transporte e a integração regional; a preservação e a conservação ambiental; o controle da biopirataria e do narcotráfico, e muitos outros, só poderão ser tratados se considerada a Amazônia como um todo." Free translation.

To conclude, a regional cooperation scheme should include all eight Amazon countries, as well as French Guyana (France). With regard to the Amazon Region, these nations currently share many more common interests than competing ones. For example, all nine nations would benefit from a prosperous economy based on the standing forest. Thus, the Amazon countries should get together to reach a non-destruction cooperation agreement to guide the work of development actors operating in the region. Such an agreement should be built upon the core values of the international community of nations, which are enshrined in the international treaties in the fields of human rights, sustainable development, and economic liberalisation.

Chapter 8

State-led mechanisms

With regard to the promotion of sustainable development in the Brazilian Amazon, there is a need for a lead institution, namely the Brazilian government. It should play a stronger role in promoting multi-actor arrangements, comprising its development banks, particularly the BNDES and BASA, and their multilateral counterparts, the World Bank Group and IDB. Two state-led mechanisms are analyzed below.

8.1. Incentive Mechanisms

As analyzed in Chapter 3, section 3.4, environmental protection in the Brazilian Amazon can be understood as comprising two distinct approaches. One involves the use of command-and-control mechanisms, and, historically, Brazilian institutions have focused on that approach. However, as the region encompasses over five million square kilometers, including a number of remote areas, enforcement of environmental laws and standards has failed dramatically. Despite the potential importance of command-and-control mechanisms in promoting the Amazon's conservation and the sustainable use of its natural resources, better results may be derived from the other main approach to environmental protection in the region, which utilizes incentive mechanisms.

According to Ferraro and Kiss, there are two categories of incentive mechanisms to preserve the ecosystems and species. On the one hand, there are direct incentives, such as land purchases, leases, easements, performance payments, and tax relief.⁹⁵⁰ These incentives are based on “payments [that] are conditional on conservation outcomes.”⁹⁵¹ In general, direct incentives are applied more widely in developed countries, even though some developing nations have implemented them as well. On the other hand, there are a number of indirect incentives to conserve

⁹⁵⁰ Paul J. Ferraro and Agnes Kiss, “Direct payments to conserve biodiversity”, *Science*; 29 Nov. 2002, Vol. 298, p. 1718.

⁹⁵¹ Ibid p. 1718.

biodiversity, which are generally adopted by developing nations to “encourage rural communities to maintain biodiversity by helping them to use it sustainably”, by providing “alternative sources of products, income, or social benefits (schools, wells, clinics, etc.)”⁹⁵²

Some such mechanisms do exist for the Brazilian Amazon. Under Brazilian environmental legislation, a private landowner can transform a given portion of his/her rural property into a protected area in return for tax relief.⁹⁵³ Additionally, a number of projects have been supported by the development banks, such as those projects related to the Pilot Program to Conserve the Tropical Forests of Brazil (PPG7).⁹⁵⁴ Apart from these incentive mechanisms, there is an increasing consensus among academics and policymakers that new incentive mechanisms must be designed for the Amazon. *Payment for Environmental Services* (PES) is one promising mechanism of a number for promoting sustainable development in the region.

In fact, a range of mechanisms related to PES has already been designed elsewhere, such as in Costa Rica, Ecuador, France, and the United States.⁹⁵⁵ Wunder explains the “core idea of PES” as being “that external beneficiaries of environmental services make direct contractual *quid pro quo* payments to local landowners and land users in return for adopting land and resource uses that secure ecosystem conservation and restoration.”⁹⁵⁶ He identifies five criteria in a working definition of the PES:

- (1) a voluntary transaction in which
- (2) a well-defined environmental service (or a land use likely to secure that service)
- (3) is “bought” by a

⁹⁵² Ibid p. 1718.

⁹⁵³ By protected area this chapter means the “conservation unit” (*unidade de conservação*) known as the National Heritage Particular Reserve (RPPN - *Reserva Particular do Patrimônio Nacional*). See Federal Law No 9984/2000, article 21.

⁹⁵⁴ Regarding to the PPG7, see section 6.2.2 of Chapter 6 of this study.

⁹⁵⁵ Sven Wunder (editor). *Pagamentos por serviços ambientais: perspectivas para a Amazônia Legal*. Brasília: MMA, 2008, p. 34. Available from:

<http://www.mma.gov.br/estruturas/168_publicacao/168_publicacao10032009102701.pdf>
May 2009.

⁹⁵⁶ Ibid p. 49.

(minimum of one) buyer (4) from a (minimum of one) provider (5) if and only if the provider continuously secures the provision of the service (conditionality).⁹⁵⁷

Within the PES schemes, a number of environmental services⁹⁵⁸ have been sold worldwide, among others, greenhouse gas sequestration, carbon storage, and the protection of biodiversity.⁹⁵⁹

As the world's largest rainforest and carbon sink, the Amazon provides critical environmental services to humanity.⁹⁶⁰ These services could be sold by local landowners and land users under a PES scheme to external beneficiaries (within Brazil and across the world). Considering the Amazon Forest, Pereira sees the PES as “an attempt to encourage forest dwellers to maintain forests by compensating them at equivalent or better rates than other activities that would otherwise provoke deforestation.”⁹⁶¹ To date, at least three PES schemes have been promoted in the Brazilian Amazon: the Program for the Socio-Environmental Development of Rural Family Production, or *Proambiente* (Pro-Environment), the *Bolsa Floresta* (Forest Allowance) Program, and the project *Extractive Reserves/Natex Factory*. The development banks, along with private banks, have participated in promoting those programs.

The *Proambiente* is a national PES program that aims to “reward small farmers and other producers for providing environmental services in 12 key areas or “poles”

⁹⁵⁷ Ibid p. 50.

⁹⁵⁸ By environmental services, Daily means “the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfil human life.” G. Daily, *Nature's services: societal dependence on natural ecosystems*. Washington, DC: Island Press, 1997, p.3, *apud* Anthony Hall, *Better RED than dead: paying the people for environmental services in Amazonia*, in *Philosophical Transactions of the Royal Society B* (Biological Science), 363, p. 1926, available from:<
<http://rstb.royalsocietypublishing.org/content/363/1498/1925.abstact>> May 2009.

⁹⁵⁹ Sven Wunder. “The efficiency of Payments for Environmental Services in Tropical Conservation”. *Conservation Biology*, Volume 21, N. 1, p. 49.

⁹⁶⁰ With regard to the Amazon and its importance to humanity, see Chapter 1 of this thesis.

⁹⁶¹ Simone Novotny Couto Pereira, “Payment for Environmental Services in the Amazon Forest: How can Conservation and Development be Reconciled?” *The Journal of Environment & Development* 19 (2), p. 172.

distributed over several Amazon states.”⁹⁶² These farmers are rewarded for their multi-functional contributions in economic, social, and environmental terms.⁹⁶³ According to Hall, the *Proambiente* has achieved only modest success. For instance, although 12 poles were originally envisaged, only “10 have become operational with some 4200 participating families, of whom a total of 1768 (42 percent) have received total payments averaging R\$ 650 (US\$ 325) per household.”⁹⁶⁴ This rather limited outcome derives from the program’s lack of a permanent fund. As Brazil does not have a national PES policy so far, the national funds cannot be channelled to PES programs on a regular basis. As a provisional solution, the Demonstration Projects of the PPG7 have provided financial supported to the *Proambiente*.

If the *Proambiente* is to have a substantial effect, Brazil must set up a national PES policy urgently. Fortunately, the national government has already addressed a draft bill related to that policy.⁹⁶⁵ Article 14 states that the funds will be provided by public budgets (national/state/local), private sector, and bilateral and multilateral agencies. Therefore, the *Proambiente* (along with other possible national PES programs) could in the future be financed by development banks, among other funding sources. Arruda *et. al.* point out that the BNDES could be one of these sources.⁹⁶⁶ Taking into account the need to provide compensation for REDD [Reduced Emissions from Deforestation and Degradation], Hall states that “many people believe that further funding could be released, either through the market or via donor trust fund. The World Bank, for example, has set up a US\$ 300 million FCFP to pilot REDD schemes”.⁹⁶⁷

⁹⁶² Anthony Hall, Better RED than dead: paying the people for environmental services in Amazonia, *Philosophical Transactions of the Royal Society B (Biological Science)*, 363, p. 1927, available from: <http://rstb.royalsocietypublishing.org/content/363/1498/1925.abstact> > May 2009.

⁹⁶³ Ibid p. 1926.

⁹⁶⁴ Ibid p. 1928.

⁹⁶⁵ Newspaper article from *Folha de S. Paulo*, “Especial Vida e Sustentabilidade”, 25/09/2009, p.H6. This draft bill had not approved by December 2011.

⁹⁶⁶ M. Arruda and Carlos Frickmann Young, *Fundamentos Econômicos da Proposta de Pacto Nacional pelo Desmatamento Zero na Floresta Amazônica*. Bensenville, IL: Mimeo, *apud* Above note 967, p. 1931.

⁹⁶⁷ Ibid p. 1928.

Bolsa Floresta (Forest Allowance) is an outstanding PES scheme. It has been implemented by the state of Amazonas, northwestern Brazil, based on article 5, II, of the State Law on Climate Change, Environmental Conservation and Sustainable Development, enacted in June 2007.⁹⁶⁸ Pereira explains that “various organizations were involved from the outset of *Bolsa Floresta*: from large international organizations such as the World Bank and the global environmental facility [GEF] to a number of grassroots organizations such as the National Council of Rubber Tappers.”⁹⁶⁹ To manage this PES program, the state of Amazonas created an institution called the “Sustainable Amazonas Foundation” (FAS)⁹⁷⁰, with an initial fund of about US\$ 23 million granted by the state government (50 percent) and Brazil’s second largest private bank, namely Bradesco Bank (50 percent).⁹⁷¹

The *Bolsa Floresta* Program is a CCBA-certified program (Climate, Community and Biodiversity Alliance)⁹⁷² which grants allowances to forest dwellers. Covering an area of 10 million hectares by 2009 “the program rewarded 6,800 families living in 14 state conservation units.”⁹⁷³ It is argued that over 27,000 people were registered in that program. The allowances aim to “support traditional populations in their pursuit of non-destructive activities such as extractivism, fishing and tree fruit cultivation and to discourage illegal deforestation.”⁹⁷⁴ According to Pereira:

If local forest dwellers were willing to join *Bolsa Floresta*, they had to commit themselves to nonexpansion of crop and pasture areas, attend a 2-day training program on environmental awareness, enroll children in

⁹⁶⁸ Art. 5. For establishing the State Policy, object of this Law, the following Programs are hereby created: (...) II – *Bolsa Floresta* (Forest Allowance) Program, with the goal of instituting the payment for environmental services and products provided by the traditional communities in favour of the sustainable use of natural resources, conservation, environmental protection and the incentive to the voluntary policies for the reduction of deforestation. Available from: <<http://www.fas-amazonas.org/en/index.cfm?fuseaction=conteudo&id=14>> May 2009.

⁹⁶⁹ Above note 966, p. 179.

⁹⁷⁰ In Portuguese, *Fundação Amazonas Sustentável*.

⁹⁷¹ Above note 966, p. 179.

⁹⁷² *Jornal Folha de S. Paulo*, Especial Vida e Sustentabilidade, 25/09/2009, p.H7.

⁹⁷³ Above note 966, p. 179.

⁹⁷⁴ Above note 967, p. 1928.

school, and actively participate in implementing plans for conservation which could affect their way of living.⁹⁷⁵

In this PES scheme, as mentioned above, the funds have come from sources other than development banks. The Bradesco Bank is a commercial bank, one of the country's most powerful private financial institutions. The *Bolsa Floresta* Program illustrates that even private banks can collaborate in PES schemes. In order to extend the number of affected families, and to improve the family allowance, which is currently very low,⁹⁷⁶ the BNDES should be invited to participate in the Bolsa Floresta Program.

Pereira notes that "the program was criticized for being top-down and very focused on Manaus",⁹⁷⁷ that "local communities did not take part in the project design from the outset";⁹⁷⁸ and most projects are located in already protected areas rather than in endangered areas.⁹⁷⁹ She also observes that "the continuity of payment is ultimately dependent on the state's will."⁹⁸⁰ In light of these obstacles, she argues that "forest dwellers have to be entitled to devise the rules they are subject to."⁹⁸¹ She concludes:

The importance of drawing on local knowledge to craft institutions was already identified elsewhere. In practical terms, as the UNFCCC discusses the potential inclusion of programs aimed at REDD into a post-Kyoto regime, a consideration of the role of forest inhabitants in the definition of environmental risks may help to ensure that deforestation avoidance programs succeed in the long run.⁹⁸²

⁹⁷⁵ Above note 966, p. 182.

⁹⁷⁶ Above note 967, p. 1928.

⁹⁷⁷ Above note 966, p.180.

⁹⁷⁸ Above note 966, p.180.

⁹⁷⁹ Above note 966, p.180.

⁹⁸⁰ Above note 966, p.183.

⁹⁸¹ Above note 966, p.186.

⁹⁸² Above note 966, p.186.

Finally, the PES scheme *Extractive Reserve/Natex Factory* is based on the Acre State Law known as the Chico Mendes Act.⁹⁸³ It establishes the remuneration for environmental services through the payment of additional amounts for the latex extracted from rubber trees located in the state of Acre Extractive Reserves. These subsidies are justified on the grounds that the rubber tappers are well-known forest keepers. At present, added value from the Extractive Reserve scheme is about R\$ 0.70 (US\$ 0.35) per kilogram. In addition, in 2008 the state company Natex was established close to those reserves situated in Xapuri (north-western Brazilian Amazon) in order to produce condoms made from **that** subsidized rubber. The company hopes to produce annually 100 million condoms, which will be channelled to the promotion of HIV/AIDS national preventive programs. The facility currently provides 150 direct jobs, and consumes the latex produced by nearly 700 rubber tapper families. Undoubtedly, it is an outstanding PES scheme, because it addresses the three dimensions of sustainable development:⁹⁸⁴ the economic (economic growth in Xapuri); the social (job opportunities and maintaining communities); and the environmental (nature conservation). The Inter-American Development Bank is one of the partners in this project.⁹⁸⁵

In view of the fact that the Amazon holds about a quarter of all global biodiversity, and plays a critical role in global climate stabilization, the potential for PES programs in the region is enormous. Nevertheless, the PES schemes are still incipient in the region. One of the main reasons is the lack of a legal framework. As mentioned above, Brazil does not yet have a national PES scheme policy; consequently, there is currently a lack of funding for PES programs. In addition, these programs have to compete with other sources of income. Today, it is difficult to encourage rural communities to maintain biodiversity, because the agribusiness sector, particularly cattle ranching, may provide better incomes to local people. Nevertheless, contrary to the predatory cattle ranching operating in many parts of

⁹⁸³ In Portuguese, *Lei Chico Mendes*.

⁹⁸⁴ In relation to the dimensions of sustainable development, see section 3.3 of Chapter 3 of this study.

⁹⁸⁵ See *Preservativos Natex*, available from: <<http://www.preservativosnatex.com.br/index.html>> May 2009.

the Brazilian Amazon,⁹⁸⁶ the PES programs fulfil the core elements of sustainable development.

The PES programs operating in the region aim to reward the forest-dependent communities; therefore they place the basic need of local people at the centre of their concerns. These programs are promoting intra-generational equity in the sense that they provide training and job opportunities, and support to health programs. They are helping to identify or create alternative sources of income and social benefits. Therefore, the PES schemes see environmental protection as an integral part of the development process in the Brazilian Amazon. New opportunities might be created if the government and private sector were to pour money into research to build a developed economy based on the sustainable use of natural resources. This topic is discussed below.

8.2. Financing research to build a local economy based on the standing forest

The challenge of transforming the Amazon's vast natural capital into economic value through sustainable practices can be seen as a unique task. In short, there is no development model to be copied or adapted. In fact, there is no known instance of a developed country located in a tropical area with an economy based on standing forest resources. To date, the natural capital (except the soil and subsoil) has been underestimated in Brazil and most tropical countries. As mentioned in Chapter 1, in the Brazilian Amazon the rural properties with forest cover are usually worth much less than those without it. Therefore, it is vital to the future of the Amazon that its conserved natural resources can be harnessed in a sustainable manner, in ecological and economic terms. As a consequence, science, technology, and innovation (ST&I) must be seen as pillars to formulate new development models for the Amazon(s).

⁹⁸⁶ With regard to cattle ranching activities in the Brazilian Amazon, see section 6.3.2 of Chapter 6 of this study.

Unfortunately, the region has suffered from a lack of investment in ST&I. For example, although Brazil graduates over eleven thousand higher-degree scientists per year, the Brazilian Amazon graduates only 700 science PhDs per year. In addition, most of them do not stay in the region, due to a lack of opportunities in the fields of ST&I.⁹⁸⁷ Unfortunately, only 5 per cent of Brazilian scientists are currently working in the Legal Amazon.⁹⁸⁸ The DBs should consider this issue to be as important as the creation of new protected areas, because, while these areas usually provide few economic and social opportunities, ST&I can dramatically transform a local/regional economy, showing new and reasonable ways to live inside the rain forest, without destroying it.

This proposal is perfectly feasible, because similar cases have already happened in Brazil. For example, in 1950 the Aeronautics Institute of Technology (ITA)⁹⁸⁹ moved from Rio de Janeiro to São José dos Campos, which was then a small town of twenty thousand people living in a backward agrarian economy. The ITA built up an impressive industry sector in the city, where a number of important Brazilian companies are currently located, such as EMBRAER, which is now one of the four largest aircraft manufacturers in the world. The National Institute for Space Research headquarters is also located in this city. To sum up, as the ITA has developed a highly technological sector in the interior of Brazil, an Amazonian Institute of Technology could develop and conserve the Amazon Region. In other words, there is a need for an Amazonian “ITA”. Naturally, it does not mean that the Amazon should be developed and conserved through construction of modern airplanes. Actually, this study argues that Amazonian biodiversity has to be studied in depth in order to transform its seeds and fruits into pharmaceutical, cosmetic, and nutritional products, which in turn would motivate the local people to preserve the

⁹⁸⁷ Academia Brasileira de Ciências, *Amazônia: desafio brasileiro do século XXI*. São Paulo: Fundação Conrado Wessel, 2008, pp. 17, 23, 28.

⁹⁸⁸ Ibid p. 53.

⁹⁸⁹ In Portuguese, *Instituto Tecnológico da Aeronáutica*. In the 1950s and 1960s, the ITA was considered the “Brazilian MIT”. The first rector of ITA came from the Massachusetts Institute of Technology’s Department of Aeronautics. See interview with rector of ITA, Folha, Mercado, 22/12/2011, “Novo reitor da ITA defende inovação na agenda pública”, available from: <<http://www1.folha.uol.com.br/mercado/1024728-novo-reitor-do-ita-defende-inovacao-na-agenda-publica.shtml>> , January 2012.

forest, while their increasing income would improve the Amazonian human development indices.

According to the Brazilian Academy of Sciences (ABC),⁹⁹⁰ to promote science and technology in the Legal Amazon,⁹⁹¹ there is a need for financial investment of approximately 3 million reais per year over the next decade, totalling R\$ 30 million (reais) for the period 2008-2018.⁹⁹² This amount of money represents only 1.9 per cent of the region's GDP and about 0.2 of Brazil's GDP.⁹⁹³ It means nearly US\$ 18 million to formulate a new development model to protect the largest rain forest in the world, as well as to directly improve the living conditions of 23 million people. The transfer of science and technology is pointed to as a key factor to promote sustainable development, according to a number of international treaties, such as the Rio Declaration on Environment and Development⁹⁹⁴ and the Convention on Biological Diversity⁹⁹⁵ as well as Agenda 21.⁹⁹⁶ The development banks, which have channelled billions of US dollars for infrastructure projects in the Amazon,⁹⁹⁷ have a moral obligation to finance ST&I in the field of sustainable development. To promote science and technology in the Legal Amazon, the Brazilian state must also play a leading role in inducing the construction of new multi-actor arrangements, namely "hybrid-institutions" that comprise the international community, the Brazilian state, the community sector, and the private sector.⁹⁹⁸ This thesis points

⁹⁹⁰ In Portuguese, *Academia Brasileira de Ciência*.

⁹⁹¹ Academia Brasileira de Ciências, *Amazônia: desafio brasileiro do século XXI*. São Paulo: Fundação Conrado Wessel, 2008.

⁹⁹² Ibid p. 20.

⁹⁹³ Ibid p. 20.

⁹⁹⁴ Principle 9: "States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies."

⁹⁹⁵ Article 18. Technical and Scientific Cooperation: "1. The Contracting Parties shall promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity, where necessary, through the appropriate international and national institutions.

⁹⁹⁶ Chapter 35. Science for sustainable development.

⁹⁹⁷ See case studies in Chapter 6 of this study.

⁹⁹⁸ Bertha Becker analyses the role of multi-actor arrangements ("arranjos institucionais coletivos") in promoting scientific-technological development in the Brazilian Amazon.

out three scientific and technological institutes located in the region: the CBA, Emilio Goeldi, and INPA.

The newly created Amazon Biotechnology Center (CBA)⁹⁹⁹ has headquarters located in the city of Manaus and should be seen as a key institution to play the critical role of fostering innovation in the Amazon Region.¹⁰⁰⁰ The CBA was created in 2002 to “foster technological innovation processes linked to local products, stimulating and creating the basics conditions to support the development of industrial activities based on sustainable exploration of Amazon biodiversity (...).”¹⁰⁰¹ The CBA’s main goal is “to transform the knowledge generated by research institutes that already exist, into products with value added at all stages of production.”¹⁰⁰² The CBA seems to be adequately equipped to achieve this goal.¹⁰⁰³ Unfortunately, to date the CBA does not exist as a legal entity. According to Marquesini, a Greenpeace staff member based in Manaus, the Amazon Biotechnology Center is “a ghost”.¹⁰⁰⁴ Today, the institution is bound to the Suframa, which is a federal body that coordinates the Manaus Free Trade Zone.¹⁰⁰⁵ Therefore, the current legal status of CBA is precarious, and constrains its functioning, for instance, in terms of intellectual property rights.

Apart from the CBA, the Legal Amazon also hosts two other state-owned research institutions that rank among the best Brazilian ones.¹⁰⁰⁶ Created in 1866, the Emilio

⁹⁹⁹ In Portuguese, *Centro de Biotecnologia da Amazônia*.

¹⁰⁰⁰ Field research on CBA was carried out by the author in January 2009.

¹⁰⁰¹ Amazon Biotechnology Center, available from: http://www.suframa.gov.br/cba/cba/mission_ing.cfm > November 2008.

¹⁰⁰² Above note 1006.

¹⁰⁰³ The CBA has “25 laboratories, four areas for support, one extract production plant, business incubators, housing for researchers, and administrative support installation.” According to Marcovitch, in the biotechnology sector, the institution is one of the world’s best equipped ones. He adds that the institution’s structure “offers for firms the requirements for transformation and industrialization of natural products into a wide range of applications such as pharmaceutical, cosmetics, biological pesticides, food industries, dyes, flavoring and essential oils.” Free translation. Above note 929, pp. 59-60.

¹⁰⁰⁴ Author’s interview with Marcelo Marquesini (Greenpeace Brazil), on 05/03/2009.

¹⁰⁰⁵ Superintendence of Manaus Free Trade Zone. In Portuguese, *Superintendência da Zona Franca de Manaus*.

¹⁰⁰⁶ Above note 929, p. 58.

Goeldi Museum¹⁰⁰⁷ is the oldest. It is a federal institution located in the city of Belém,¹⁰⁰⁸ and has the aim of researching the natural and cultural systems of the Amazon. It also has the mission of enlarging public awareness regarding the region's scientific knowledge. According to Marcovitch, "it is not possible to talk about the Amazon without using as source the books and articles published by the Goeldi staff of researchers. The Goeldi disseminates a number of educational information and scientific and museum communications. It also provides qualified human resources to the design of public policies."¹⁰⁰⁹ In January 2009, the author visited the institution, and saw that much of its research infrastructure, including the Botanic Garden and Zoological Park, needs to be revitalized urgently. In this regard, the thesis argues that the BNDES should channel financial resources to improve this institution.

Created in 1956, the National Institute for Amazonian Research (INPA)¹⁰¹⁰ is a federal educational and research institution with headquarters in the city of Manaus.¹⁰¹¹ Its main mission is to promote the sustainable use of natural resources. Marcovitch argues that the institution is currently a world leader in the field of Tropical Biology.¹⁰¹² Unfortunately, in the last years, the INPA staff has been reduced.¹⁰¹³

¹⁰⁰⁷ In Portuguese, *Museu Paraense Emílio Goeldi*

¹⁰⁰⁸ Field research on the Emilio Goeldi Museum (*Museu Paraense Emílio Goeldi*) was carried out by the author in January 2009.

¹⁰⁰⁹ Above note 929 p. 59. In Portuguese, "Não há como discorrer sobre a Amazônia sem usar como fontes os livros e artigos publicados por sua equipe de pesquisadores. Difundem-se, por seu intermédio, informações educativas, comunicação científica e museológica. Formam-se, igualmente, recursos humanos qualificados para a concepção de políticas públicas." Free translation.

¹⁰¹⁰ In Portuguese, *Instituto Nacional de Pesquisas Amazônicas*. In January 2009, the author visited its headquarters in Manaus.

¹⁰¹¹ The INPA has other research units in the Brazilian states of Acre, Amazonas, Roraima, and Rondonia.

¹⁰¹² Above note 929, p. 58. The INPA also focuses its research activities in the fields of Botanic, Aquatic Biology, Ecology, Aquaculture, Food Technology, Tropical Forestry, Health Science, Forest Products, Natural Products, Entomology, Agronomy, Climate and Social Sciences.

¹⁰¹³ According to Fearnside, an American senior research at INPA, the institution's staff members dropped from 1,000 to 800 members, including only approximately 250 researchers. Jacques Marcovitch's interview with P. Fearnside. Above note 929, p. 259.

To date, as London and Kelly observe, Amazonian natural resources have been heavily exploited, but local people have not benefited effectively from that exploitation. They illustrated:

Drug companies constantly scour the region for plants that will provide them with the next major pharmaceutical breakthrough, but there are no production facilities in the Amazon. Nor is there any inclination on the part of any of these companies to acknowledge the intellectual property and patent rights they may have appropriated from Brazil's forest floor. Recently, the pharmaceutical company Squibb discovered that the venom of the Amazon viper jararaca worked well as a blood-pressure medicine. This venom became the base for captopril, which at its peak was the largest-selling product for Bristol-Myers Squibb, grossing \$1.6 billion in 1991. None of these profits were returned to the Amazon.¹⁰¹⁴

It is estimated that about 25,000 species of plants are currently used to produce medicinal drugs worldwide.¹⁰¹⁵ According to Costa, a professor of Geography at University of Sao Paulo (USP), Brazil hosts the largest number of venomous animals, most of them being located in the Legal Amazon.¹⁰¹⁶ As noted in Chapter 1, the Amazon hosts a quarter of all global biodiversity, thus the region may generate great opportunities for the biotechnology sector. To illustrate, Milliken (Centre for Economic Botany, Royal Botanic Gardens, Kew, U.K.), conducted fieldwork in the Brazilian Amazon (Roraima state) in order to "identify locally occurring plant species with demonstrable anti-malarial activity."¹⁰¹⁷ In his survey, "at least 99 plant species, of 82 genera and 41 families, were found to be used

¹⁰¹⁴ Above note 22, p. 249.

¹⁰¹⁵ Wanderley Messias da Costa, "Tendências recentes na Amazônia: os sistemas produtivos emergentes", in Wanderley Messias da Costa, Bertha K. Becker, Diógenes S. Alves, *Dimensões Humanas da Biosfera-atmosfera na Amazônia*. São Paulo: Editora da Universidade de São Paulo, 2007, p. 96.

¹⁰¹⁶ Ibid p. 98.

¹⁰¹⁷ William Milliken, "Traditional anti-malarial medicine in Roraima, Brazil". *Economic Botany*, Vol. 51, No. 3 (Jul. – Sep. 1997), pp. 215.

specifically in the treatment of malaria in Roraima.”¹⁰¹⁸ His study concluded that “the general subject of anti-malarial plants is still very poorly known both nationally and worldwide. If similarly detailed studies were conducted in other regions [of the Amazon], they would doubtless reveal numerous other species which are attributed with anti-malarial properties. Most of these plants have not been screened or studied.”¹⁰¹⁹ In turn, Bernestein and Chavin (Harvard Faculty of Medicine), suggest that the cure for cancer might be hidden inside the Amazon rain forest.¹⁰²⁰ In a nutshell, the role of research institutions in the region is vital not only for the future of the Amazon rainforest, but also to tackle a number of intractable human diseases.

Marcovitch analysed the main challenges to promoting good governance in the Amazon, and concluded that there is currently “the convenience of a redirection of the labor force employed in deforestation for sustainable activities that remunerate local people in a rewarding manner. This preventive way is the most appropriate one to preserve the rainforest.”¹⁰²¹ Of course, science and technology are vital instruments to promote this economic redirection in the region. Unfortunately, today a number of local seeds, fruits and plants such as *cupuaçu* and *açai* have been patented by international companies, and the local people have not seen an equitable benefit-sharing related to the access to their genetic resources and traditional knowledge.

As mentioned in Chapter 1, section 1.5, since the late nineteenth century, when Sir Henry Wickham sent a sample of Amazonian rubber seeds to Sri Lanka and Malaysia, Brazilians have accused foreigners of “bio-piracy”. Nevertheless, Brazilians should boost investments in science, particularly applied science, rather than blaming others. Research institutions are key mechanisms to add economic value to natural resources and generate new job opportunities other than those

¹⁰¹⁸ Ibid p. 217.

¹⁰¹⁹ Ibid p. 234.

¹⁰²⁰ Aaron Bernestein and Eric Chavin, *Sustaining life: how human health depends on biodiversity*. London: Oxford University Press, 2008.

¹⁰²¹ Above note 929, p. 214. In Portuguese, “a conveniência de um redirecionamento da mão de obra empregada no desmatamento para atividades sustentáveis que a remunerem de forma compensadora. [E]ste caminho preventivo, (...) é a via mais adequada para a preservação florestal.” Free translation.

related to the predatory activities such as unproductive logging and cattle-ranching. These institutions can boost the region's economic growth, and satisfy the local people needs through the creation of qualified jobs, consequently, meeting the standards of social justice. In addition, as the biotechnology sector depends on the standing forest, it works to preserve the natural environment; therefore, one of its strengths is that the sector integrates and boosts all three dimensions of sustainable development. To conclude, the work of development banks in the Brazilian Amazon should be focused on the field of science, technology, and innovation, in order to help the local people to add economic value to their sustainable forest activities.

Chapter 9

Market-led mechanisms

This thesis proceeds from the premise that a market-based economic system is to be preferred to more centralized, state-controlled systems and is, realistically, the system which Brazil will follow in the future; therefore, it envisages a primary role to be played by market forces in promoting sustainable development worldwide, particularly in the Brazilian Amazon. Nevertheless, the performance of market forces in promoting environmental sustainability has not been fully satisfactory, basically due to the fact that natural capital, including intangible goods such as ecosystem services, has not been valued properly within markets.¹⁰²²

Biological diversity and the natural ecosystems in which it exists provide significant economic and life-support benefits for all of humanity, for example, climate regulation and clean water supply.¹⁰²³ These services are known as “ecological services”. The economic value of these services is estimated “in the range of US\$ 16-54 trillion annually, compared to a global gross national product of \$18 trillion annually.”¹⁰²⁴ Nevertheless, as Heal says, “most of these services are not captured in markets or conventional economic accounts.”¹⁰²⁵ He points to an unequal distribution of costs and benefits derived from maintaining the ecosystem services. He calls for mechanisms to “charge the beneficiaries in order to reimburse and provide incentives to those in a position to maintain the services in question.”¹⁰²⁶

Considering the Brazilian Amazon, the costs and benefits related to its environmental conservation are unequally distributed, because the costs are paid by local people who are deprived of the use of their lands for economic activities,

¹⁰²² See discussion of the tensions between economic growth and environmental protection in section 3.3.1 of Chapter 3 of this thesis.

¹⁰²³ Geoffrey Heal, *Markets and Sustainability*, in *Environmental law, the economy, and sustainable development*. Richard L. Revesz, Phillipe Sands and Richard B. Stewart. Cambridge: Cambridge University Press, 2008, p. 411.

¹⁰²⁴ *Ibid* p. 411.

¹⁰²⁵ *Ibid* p. 411.

¹⁰²⁶ *Ibid* p. 412.

including timber industry, cattle-ranching, agribusiness, and mining sector.¹⁰²⁷ On the other hand, the benefits of Amazonian conservation are mostly enjoyed by all of humanity, because of the vital role of the Amazon in the fields of climate regulation and biodiversity.¹⁰²⁸ In view of this unstable situation, in which local people pay the bill in order for all humans to eat the meal, Heal concludes that the bill payers will drop out; therefore, “we can only expect the forest to be conserved if some of the benefits from conservation accrue to the bill payers.”¹⁰²⁹ The question arises of how the development banks can influence economic forces to change this situation in the Brazilian Amazon. This question is addressed below through the analysis of three types of mechanisms: Disclosure-based Mechanisms, Self-regulation in the Financial Industry, and Carbon Markets.

9.1. Disclosure-based Mechanisms

In Brazil and worldwide, consumers are often unwilling to buy products derived from environmental destruction. They may ask themselves: “has this product contributed to tropical deforestation?” Unfortunately, it is very hard to find out the true answer, because although unplanned deforestation is rampant in a number of areas of the Brazilian Amazon,¹⁰³⁰ there is sustainable logging in the region as well; in consequence, consumers may have difficulty in distinguishing sustainable forest products from predatory ones.

If the Brazilian government is failing to protect the rain forests, the role that consumers can play by refusing products produced by predatory and unsustainable development is important. Nevertheless, most consumers, inside and outside Brazil, buy agricultural and mineral commodities produced there regardless of the products’ origin, that is, whether those commodities were produced in conformity

¹⁰²⁷ See discussion of the main economic activities in the Brazilian Amazon in section 3.3.1 of Chapter 3 of this thesis.

¹⁰²⁸ See discussion of the vital role of the Amazon region in section 1.2 of Chapter 1 of this thesis.

¹⁰²⁹ Above note 1028, p. 412.

¹⁰³⁰ See discussion of the Brazilian Amazon’s deforestation rates from 1980 to 2011 in section 1.4.1 of Chapter 1 of this thesis.

¹⁰³⁰ Above note 1028, p. 412.

with the principles of sustainable development or not.¹⁰³¹ For example, from January to November 2011 Brazil exported about US\$ 40 billion worth of products to China, including US\$ 18 billion in iron, US\$ 10 billion in soy, and US\$ 4.3 billion in crude oil.¹⁰³² As described in Chapters 4 and 6, these commodities have been increasingly derived from the Brazilian Amazon, including iron-ore produced in the state of Pará (PA), and soy beans produced in the state of Mato Grosso (MT), and oil crude produced in the state of Amazonas (AM).¹⁰³³ Unfortunately, these economic activities have contributed significantly to deforestation and burning in the region.¹⁰³⁴

In this context, labelling and certification schemes can emerge as influential tools to protect the remaining rain forests. These disclosure-based mechanisms might play a powerful role in the pursuit of policies to make production and consumption processes more sustainable in the Brazilian Amazon. The questions arise of how effective these schemes really are at altering consumer behaviour, what these schemes mean for local producers, and why they fear that these schemes will be costly, complicated, and used for protectionist purposes, and even that they will reduce their access to markets. For this reason, it is important to analyse the role of development banks in promoting these schemes in the region.

In general, these disclosure-based mechanisms provide consumers and retailers with relevant information about particular properties and features of products or

¹⁰³¹ For further information about the principles of sustainable development, see section 3.1 of Chapter 3 of this study.

¹⁰³² In 2011, the Brazil's surplus trade with China increased 125 percent, and reached about US\$ 11.5 billion. *Folha de S. Paulo*, "Saldo comercial brasileiro com a China mais do que dobrou em 2011", Mercado, 05/01/2012, p. B5.

¹⁰³³ See the discussion of iron-ore production in section 4.1 of Chapter 4 and in section 6.1.2 of Chapter 6 of this study. See also discussion of soy bean production in section 4.2 of Chapter 4 of this study. In Brazil, most oil fields are found off-shore. Yet a small part of oil production comes from the state of Amazonas (AM), particularly in the municipality of Coari.

¹⁰³⁴ See the discussion of the link between the main economic activities (e.g. agribusiness and mining sectors) and the main threats to the vital role of the Amazon (e.g. biodiversity loss) in sections 1.3 and 1.4 of Chapter 1 of this study. See also the adverse environmental impacts of mining sector on the Carajás area in section 6.1.2 of Chapter 6 of this study.

production processes.¹⁰³⁵ The labelling and certification schemes not only help purchasers to make more informed choices about the goods and services they buy, but also signal more clearly their preferences to manufacturers and services providers.¹⁰³⁶ In the last two decades, purchasers, mainly the Western ones, have increasingly signalled their preference for ecologically friendly products and services. According to de Boer, “at least a number of buyers are willing to pay extra for a product that has been created in a more sustainable manner.”¹⁰³⁷ Apart from widening socio-environmental awareness in society, the schemes also “promote food safety, serve quality objectives, help [to] prevent deceptive practices, and support consumers’ right-to-know.”¹⁰³⁸

Even though the disclosure-based mechanisms have made important contributions to the field of sustainable development, they may cause some unwanted consequences. For example, the eco-labelling may be misused to create barriers to international trade.¹⁰³⁹ According to the Center for International Environmental Law (CIEL),¹⁰⁴⁰

Developing countries have expressed particular concerns about the use of eco-labels. They fear, first, that labeling schemes may reduce their access to markets for their goods and services in countries applying the schemes and, second, that participation in and compliance with such schemes may entail significant cost, information requirements, and technical expertise, especially if schemes vary across countries.

¹⁰³⁵ Joop de Boer, “Sustainability labelling schemes: the logic of their claims and their functions for stakeholders.” *Business Strategy and the Environment* 12, 2003, p. 255.

¹⁰³⁶ Center for International Environmental Law, *Eco-labeling standards, green procurement, and the World Trade Organization: significance for World Bank borrowers*. Washington: CIEL, 2005, p. 2, Available from: <http://www.ciel.org/Publications/Ecolabeling_WTO_Mar05.pdf> September 2011.

¹⁰³⁷ Above note 1040, p. 255.

¹⁰³⁸ Above note 1041, p. 3.

¹⁰³⁹ For discussion of the tensions between free international trade and the import prohibition measures derived from environmental concerns see generally the Appellate Body of the World Trade Organisation AB-1998-4 (Shrimp-Turtle Case), 12 October 1998. Available from: <http://www.wto.org/english/tratop_e/dispu_e/58abr.pdf> December 2011.

¹⁰⁴⁰ The CIEL is a civil society organization that provides environmental legal services in international and comparative environmental law.

More specifically, developing countries suspect that labeling schemes, which have been created mainly in developed countries, tend to favor developed countries' domestic producers and service providers and ignore developing country considerations. Adding to their concerns, developing countries face barriers to creating their own eco-labeling schemes and to participating in, and reaping benefits from, international negotiations and standard setting processes.¹⁰⁴¹

Developing country concerns about eco-labelling and certification could be eliminated or reduced and the development banks could help them with this. According to the CIEL, the World Bank could address cost concerns by channelling funds to help developing countries to “make the transition to cleaner products, services, processes and production methods; help defray costs of testing, conformity assessments, and certification; to enable developing countries to participate in international standard setting processes.”¹⁰⁴² In addition, the World Bank could address concerns about capacity by “sponsor[ing] workshops; provid[ing] information and analysis on green market trends; creat[ing] pilot projects for selected products; assisting developing countries in creating and promoting their own labelling standards and criteria setting schemes.”¹⁰⁴³

Unfortunately, Brazil has not taken advantage of the economic opportunities created by these disclosure-based mechanisms in any significant way. The mechanisms might have a beneficial effect for the local producers' competitive position in the international market. Due to the vital role of the Amazon, a number of consumers and big retailers are highly motivated to factor pro-forest protection considerations into their purchasing decisions.¹⁰⁴⁴ Recently, some environmental groups have

¹⁰⁴¹ The barriers refer to “costs and technical challenges of testing and certification; lack of scientific data for establishing thresholds and limits; lack of access to ‘clean’ technologies; and the high cost of participating in international discussions and rule-making.” Above note 1041, p. 3.

¹⁰⁴² Above note 1041, p. 31.

¹⁰⁴³ Above note 1041, p. 32.

¹⁰⁴⁴ For further information about the importance of ecological labelling at altering retailers' behaviour, including companies such as Walmart, Gap, JC Penney, Levi Strauss, Nike,

campaigned for a ban on Amazon products derived from environmental degradation.¹⁰⁴⁵ Therefore, in the near future civil society will be increasingly interacting with market forces to ensure the Amazon products are produced in a more sustainable manner. In a context of growing demand for environmentally sustainable products, disclosure-based mechanisms are vital to the Amazonian development, because they may both create new economic opportunities and avoid a ban on local products. The section below discusses the role of the World Bank in helping local producers to participate in and benefit from certification schemes.

World Bank and Forest Certification

In 1991, the World Bank expressed support for a forest certification scheme.¹⁰⁴⁶ A group of international environmental NGOs such as the WWF, Greenpeace, and Forest Alliance were invited to create a global forest certification scheme built on performance-based standards. As Humphreys says, “there was agreement between the WWF and the World Bank that protected areas could only be effective over the long term if they were surrounded by zones of sustainably managed forests.”¹⁰⁴⁷ He concludes, “With the Alliance advocating that protected areas be surrounded by sustained managed forests, it was necessary for the World Bank and the WWF to agree an independent approach for assessing sustainable management. The solution chosen was forest certification.”¹⁰⁴⁸ Even though neither the World Bank nor the

Marks and Spencer, Adidas, H&M and Li&Fung, see *Financial Times* (FT.com), “Big groups back global eco-label scheme”, available from: <http://www.ft.com/intl/cms/s/0/e0808bd6-436c-11e0-8f0d-00144feabdc0.html#axzz1WdOHLNf3> August 2011.

¹⁰⁴⁵ In 2009, Timberland and Nike established agreements with international NGO Greenpeace in order to ensure their consumers are not purchasing goods derived from illegal deforestation. For further information see *Greenpeace USA, Amazon Rainforest Deforestation*, available from: <http://www.greenpeace.org/usa/en/campaigns/forests/forests-worldwide/amazon-rainforest/our-history-in-the-amazon/> August 2001.

¹⁰⁴⁶ Above note 914, p. 116.

¹⁰⁴⁷ Above note 914, p. 173.

¹⁰⁴⁸ Above note 914, p. 173.

WWF endorses any certification scheme, the Forest Stewardship Council (FSC)¹⁰⁴⁹ principles reflect the Alliance's viewpoint with regard to forest protection.¹⁰⁵⁰

In 1993, the first FSC assembly took place in Toronto, Canada; one year later, the FSC principles for forest stewardship were adopted.¹⁰⁵¹ These principles stipulate, among other standards, compliance with national law (principle 1), recognition of indigenous peoples' rights (principle 3), and respect for community relations and workers' rights (principle 4). In addition, principle 5 states that "forest management operations shall encourage the efficient use of the forest's multiple products and services to encourage economic viability and a wide range of environmental and social benefits."¹⁰⁵² The certification of plantations is allowed, according to principle 10. Therefore, these principles embodied the three goals of sustainable development: economic growth, social justice, and environmental protection.¹⁰⁵³

At present, "in Brazil, approximately three-quarters of FSC-certified timbers is harvested from plantations."¹⁰⁵⁴ The certification of plantations is an acceptable mechanism for promoting sustainable development in the deforested zones of Brazilian Amazon, for a number of reasons. First, it may provide for local people an alternative to the boom-bust model of development.¹⁰⁵⁵ Second, it can reduce the pressures on pristine vegetation by assisting existing plantations to become more profitable. Third, it contributes to the global fight against climate change, because the new trees absorb carbon through their photosynthesis processes.¹⁰⁵⁶ It has been

¹⁰⁴⁹ The FSC is a civil society organization. Today, it is represented in over fifty countries around the world. See Forest Stewardship Council, *About FSC*, available from: <<http://www.fsc.org/about-fsc.html>> December 2011.

¹⁰⁵⁰ Above note 914, p. 173-174.

¹⁰⁵¹ In 1996 and 2000, the FSC principles were revised. At present, there are ten principles. Above note 914, p. 118.

¹⁰⁵² Above note 914, p. 120.

¹⁰⁵³ "The central feature of FSC certification is", according to Humphreys, "the chain of custody", because the FSC accredits independent third-party certifying organizations" that operate in the fields of "both forest certification and supply chain certification." Above note 914, p. 119.

¹⁰⁵⁴ Above note 914, p. 118.

¹⁰⁵⁵ See discussion of the boom-bust pattern of "development" in section 4.3 of Chapter 4 of this thesis.

¹⁰⁵⁶ See discussion of the interplay between the Brazilian Amazon and climate change in section 1.4.2 of Chapter 1 of this thesis.

possible to this scheme into practice there because most deforested areas are currently occupied by unproductive cattle-ranching that do not provide jobs and income, so are unable to compete successfully with the greater opportunities that plantation production can offer to local people.¹⁰⁵⁷

Apart from the FSC, there are many other forest certification schemes such as the Canadian Standards Association (CSA), the US Sustainable Forestry Initiative (SFI), and the Pan-European Forest Certification (PEFC). While the North American schemes are based on ISO 14000 standards, the European counterpart endorses national certification schemes worldwide, such as those of Australia, Brazil, and Chile.¹⁰⁵⁸ By 2005, while “the PEFC had certified over 186 million hectares of forests in 19 countries”, “the FSC had certified over 68 million hectares in 66 countries.”¹⁰⁵⁹

Demanding adherence to eco-labeling and certification

Apart from the role of promoters, the development banks could also provide a role model by ensuring that they themselves comply. In other words, they could include adherence to eco-labelling and certification in their loan agreements. To illustrate, the BNDES is currently the main source of funding for the construction of large hydroelectric power plants in the Brazilian Amazon.¹⁰⁶⁰ Nevertheless, the BNDES awarded loans to the consortium that had won the bids to build these plants in the region regardless of adherence to eco-labeling and certification schemes. Even though these projects had already been licensed by the national environment

¹⁰⁵⁷ According to Barreto and Silva, “pastures for ranching occupy 75 percent of deforested areas in the [Legal] Amazon and most deforestation has been illegal.” For this reason, they recommend a number of measures to boost sustainable ranching in the region, including forest conservation actions. They envisage the link between the development of forest conservation actions and the increased productivity of ranching in the region. Paulo Barreto and Daniel Silva, *The challenges to more sustainable ranching in the Amazon*, pp. 1 and 4, available from: http://www.imazon.org.br/novo2008/arquivosdb/170440oea_n14_eng.pdf December 2011.

¹⁰⁵⁸ Above note 914, p. 129.

¹⁰⁵⁹ Above note 914, p. 129.

¹⁰⁶⁰ See discussion of the hydroelectric schemes in the Madeira river (Jirau and Santo Antonio) and the Belo Monte hydroelectric scheme in the Xingu river in section 6.3.1 of Chapter 6 of this thesis.

protection agency (IBAMA), and the environmental licences contained a number of social and environmental conditions to mitigate the undesirable consequences, the BNDES could have played a role as a model, by ensuring that, for example, the timbers consumed in building these plants were certified.

It is questionable whether the forest certification schemes operating in Brazil can provide certified timbers to meet the current domestic demand for timber generally. Nevertheless, the Bank could ensure that at least a share of the timber consumed in these projects is certified by the certification schemes above. Considering that the BNDES is the leading institution in the country's funding sector, the other state-owned banks, including the BASA, would comply with the same rules, and the forest certification schemes would then be far more influential in promoting sustainable development in the Brazilian Amazon.

9.2. Self-Regulation in the Financial Industry

In the last four decades, Amazonian deforestation has been driven by loggers, farmers, ranchers, and, above all, the State, through its infrastructure projects such as roads (*e.g.*, BR-364, BR-230),¹⁰⁶¹ and large-scale hydroelectric plants (*e.g.*, Tucuruí, Balbina, Jiraú, and Santo Antônio).¹⁰⁶² All those activities have been supported by financial institutions, either the DBs or commercial banks. Even though the existing infrastructure has been critical to provide better market access for local products, by making them less expensive and more competitive, the adverse environmental and social impacts of these projects on the Brazilian Amazon could have been eliminated or reduced if the banks had contributed in improving their funded-projects in the region, for example, by proposing mitigation and compensation measures before approval.

¹⁰⁶¹ The discussion of the construction of large roads in the Brazilian Amazon, specially the BR-364 road and the BR-230 (Transamazon) is in section 4.1 of Chapter 4 of this thesis. At present, there are other important roads crossing the Brazilian Amazon, including the BR-316 (Pará-Maranhão); BR-174 (Boa Vista-Manaus); BR-401 (Boa Vista-Venezuela); BR-163 (Cuiabá-Santarém); BR-210 (*Perimetral Norte*); and PA-150 (Pará).

¹⁰⁶² See discussion of the construction of large hydroelectric power plants in the Brazilian Amazon in Chapter 6 of this study, particularly the discussion of Tucuruí dam in section 6.1.2, and that of the Madeira dams in section 6.3.1.

For this reason, this section analyses the importance of industry self-regulation to altering the environmental and social performance of the financial sector, in particular the role of development banks in promoting and adopting self-regulation-based mechanisms. The questions arise of what these mechanisms mean in terms of benefits and costs for the adopting financial institutions, why some NGOs assert that the mechanisms may be used for window dressing or “greenwashing”, how effective these mechanisms really are to altering bank operations in the Brazilian Amazon, and whether adopting these mechanisms actually makes a difference in the region. This section proceeds by examining the Equator Principles and two corporate sustainability indexes.¹⁰⁶³

The Equator Principles

In 2002, aiming to promote banks’ compliance with international law in the field of sustainable development, the World Bank’s private arm, the International Finance Corporation (IFC), and the ABN Amro Bank, hosted a meeting in London. The meeting gathered a group of international banks to discuss “the possibility of a set of guidelines that would enable investment banks to evaluate the environmental and social risks of development projects when considering future funding.”¹⁰⁶⁴ In July 2006, at the IFC’s headquarters, a set of guidelines was launched “in order to ensure that the projects finance[d] are developed in a manner that is socially responsible and reflect sound environmental management practices (...).”¹⁰⁶⁵ This voluntary set of guidelines was formulated based on the environmental and social standards used by World Bank and IFC, including the World Bank Pollution, Prevention and Abatement Handbook; the IFC safeguard policy OP 4.36 (Forestry); and the IFC environmental, health and safety guidelines for industry.¹⁰⁶⁶ Originally, only ten

¹⁰⁶³ The industry uses the word “indexes” rather than the word “indices” that is the plural of index.

¹⁰⁶⁴ Above note 914, p. 186.

¹⁰⁶⁵ The Equator Principles, Preamble.

¹⁰⁶⁶ Above note 914, p. 187.

banks¹⁰⁶⁷ signed the document that came to be known as the Equator Principles (EPs).

The EPs apply exclusively to financing projects with values of at least US\$10 million.¹⁰⁶⁸ The EPs contain ten principles, stipulating that the financial institutions categorise the projects that are proposed for financing based on the magnitude of their potential environmental and social risks¹⁰⁶⁹ (principle 1), conduct an assessment project and develop an action plan to address the impact of the proposed projects¹⁰⁷⁰ (principles 2 and 4), and comply with IFC Performance Standards (principle 3). With regard to the affected communities' concerns, Principles 5 and 6 stipulate that consultation and disclosure measures must be developed, and grievance mechanisms must be established by the borrower, in order to ensure that these concerns are taken into account in an effective manner. In addition, Principle 8 stipulates that measures may be applied in cases of non-compliance with the EPs. Finally, Principles 7, 9, and 10 envisage the need for monitoring and reporting systems. Therefore, these principles embodied the core principles of sustainable development, enshrined in the 1992 Rio Declaration and the 2002 Johannesburg Declaration.¹⁰⁷¹

¹⁰⁶⁷ ABN Amro, Barclays, Citygroup, Crédit Leonnay, CSFH, HypoVereinsbank, Rabobank, Royal Bank of Scotland, WestLB, and Westpac.

¹⁰⁶⁸ Initially, the Equator Principles were applied to projects involving finance amounting to US\$ 50 million or more.

¹⁰⁶⁹ The categorisation is based on the IFC's criteria: "Category A - Projects with potential significant adverse social and environmental impacts that are diverse, irreversible or unprecedented; Category B - Projects with potential limited adverse social and environmental impacts that are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures; and Category C - Projects with minimal or no social or environmental impacts." See Equator Principles, available from: <http://www.equator-principles.com> December 2011.

¹⁰⁷⁰ Project assessed as being either Category A or Category B requires the Social and Environmental Assessment to "propose mitigation and management measures relevant and appropriate to the nature and scale of the proposed project." The project also requires an action plan addressing the findings and conclusions of the Assessment.

¹⁰⁷¹ See discussion of the concept, core elements, and legal status of sustainable development in section 3.1 of Chapter 3 of this study, specially discussion surrounding principle 4 (integration), principle 12 (cooperation), principle 15 (precautionary approach), and principle 16 (environmental impact assessment) of the Rio de Janeiro Declaration on Environment and Development (1992); also see paragraph 5 of the 2002 Johannesburg Declaration on Sustainable Development.

Scholtens and Dam identify a number of benefits and costs of adopting the EPs. The benefits include “a better reputation, better market access, the potential to charge a premium price for its product, or enhanced possibilities to recruit and/or retain high quality employees.”¹⁰⁷² The costs, in turn, might involve “consumer boycotts, environmental scandals, employee actions, pressure from NGO’s, negative publicity, or law suits.”¹⁰⁷³ For an increasing number of financial institutions, the benefits of adopting the EPs far outweigh the costs of adopting them. Today, over 70 banks in 27 countries have adopted the EPs, including the main Brazilian private banks, such as Banco Itaú-Unibanco and Banco Bradesco, as well as the state-owned Banco do Brasil (BB) and Caixa Econômica Federal (CEF).

Recently, some export credit agencies have also adopted the EPs, including Export Development Canada and the Ex-Im Bank (U.S.); the European Bank for Reconstruction and Development (EBRD) is increasingly drawing on the same standards as the EPs.¹⁰⁷⁴ Even though the MDBs and their Brazilian counterparts, the BNDES and the Bank of Amazon, have not yet signed the EPs, they are also drawing on the same standards as the EPs. For example, in 2008 five of Brazil’s state-owned banks, including the BNDES and BASA, signed the Protocol of Intent for Socio and Environmental Responsibility, containing principles and mechanisms similar to those found in the EPs, including the consultation, disclosure and grieving mechanisms, as well as the monitoring and reporting systems.¹⁰⁷⁵

¹⁰⁷² Bert Scholtens and Lammertjan Dam, “Banking on the Equator. Are Banks that Adopted the Equator Principles Different from Non-Adopters?”, *World Development*, Vol. 35, No. 8, 2007, p. 1309.

¹⁰⁷³ *Ibid* p. 1310.

¹⁰⁷⁴ The Equator Principles, *About the Equator Principles*, available from: <<http://www.equator-principles.com/index.php/about-ep>> December 2011

¹⁰⁷⁵ See Protocolo de Intenções pela Responsabilidade Socioambiental que entre si celebram o Ministério do Meio Ambiente, o Banco Nacional de Desenvolvimento Econômico e Social – BNDES, a Caixa Econômica Federal, o Banco do Brasil S.A., o Banco da Amazônia S.A. e o Banco do Nordeste do Brasil – BNB, available from: <http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/em_presa/download/ProtocoloVerde.pdf> February 2012.

Humphreys writes that the EPs are acquiring “the status of an industry-wide set of standards”.¹⁰⁷⁶ To illustrate, if an adopting financial institution and a non-adopting one are involved in a consortium, they may encounter problems operating jointly since they may not share a common baseline and framework for project financing.¹⁰⁷⁷ Criticism has also been made of the EPs, with NGOs accusing the adopting financial institutions of promoting window dressing or “greenwashing”;¹⁰⁷⁸ they argue that the EPs do not aim to integrate the three dimensions of sustainable development in the method of funding, stipulating only that environmental and social impacts are factors to be considered by adopters in their project financing. In light of this criticism, Scholtens and Dam analyzed the performance of banks that adopted the EPs.¹⁰⁷⁹ They concluded that adoption is not mere window-dressing. They found that while “adoption comes at some costs ... it also improves the adopters’ reputation and, as such, positively impacts the risk profile of the adopter.”¹⁰⁸⁰ Nevertheless, due to lack of data, they could not assess “whether the Equator Principles really result in the intended goals”¹⁰⁸¹, which are to ensure that the projects financed by the adopters finance are fully developed in a manner that is environmentally and socially sustainable. Humphreys is, however, more sceptical in relation to the EPs. He writes,

The implementation and monitoring mechanisms of individual banks are far from transparent, as are the dispute settlement procedures. It is not clear what resources individuals or groups have if they believe that the principles have been violated. The Equator Principles apply only to large projects (...). Despite the adoption by some major investment banks of the principles, their independent normative pull is unclear. The principles are very much a neoliberal product; they are purely voluntary, no other stakeholders were consulted, and there is no independent third-party

¹⁰⁷⁶ Above note 914, p. 186.

¹⁰⁷⁷ Above note 914, p. 186.

¹⁰⁷⁸ Above note 1077, p. 1311.

¹⁰⁷⁹ The scope of Scholtens and Dam’s study was to “find out whether adopting the Equator Principles actually makes a difference”. Above note 1077, p. 1312.

¹⁰⁸⁰ Above note 1077, p. 1322.

¹⁰⁸¹ Above note 1077, p. 1322.

monitoring. It is unlikely that the Equator Principles will lead to an effective system of private sector governance that rigorously upholds environmental and social standards.¹⁰⁸²

Nevertheless, these defects could be eliminated or at least reduced significantly. To illustrate, criticisms that the EPs apply only to large projects were partially addressed, since originally the EPs applied to financing project amounting US\$50 million or more, and now they apply to projects with total project capital costs of US\$10 million. In addition, even though the EPs are voluntary set of guidelines; and not legally binding, they are acquiring the status of an industry-wide set of standards. This mechanism certainly has the potential to play a complementary role with the other market mechanisms towards the promotion of sustainable development worldwide.

Considered at December 2011, the impact of the EPs on the Brazilian Amazon probably has been limited, for a number of reasons. First, although the Bank of Amazon (BASA) accounts for approximately 60 per cent of long-term credits that are channelled to the region, the Bank has not yet adopted the Principles. Second, the BNDES has not yet adopted the EPs either. Third, in relation to the Brazilian financial institutions that have already adopted them, it has never been reported so far that any project financing has been refused by those Brazilian banks on the grounds that it was evaluated as inadequate in light of the EPs. Finally, as already discussed, the EPs contain intrinsic defects that constrain their effectiveness as a market mechanism to promote sustainable development worldwide, including in the Brazilian Amazon.

Corporate Sustainability Indexes

In stock markets, the leading sustainability-driven companies have shown superior performance compared with conventional ones.¹⁰⁸³ This is because the demand for

¹⁰⁸² Above note 914, p. 186.

their shares has not dropped significantly during the financial crises, but has increased sharply in prosperous periods.¹⁰⁸⁴ This trend has benefited from the establishment of corporate sustainability indexes around the world. According to the International Finance Corporation (IFC),

In order to be included in a sustainability index, companies have to demonstrate the quality of their sustainability practices, a process that could improve the company's competitiveness and may lead to an enhanced reputation (in both the financial, and the product and services markets).¹⁰⁸⁵

As at 2009, there were about 50 sustainability indexes worldwide,¹⁰⁸⁶ including the Dow Jones Sustainability Indexes (DJSI) and the BM&FBOVESPA Corporate Sustainability Index (ISE). These indexes are analysed below and have been chosen because of their contributions to the promotion of sustainable development in the Brazilian Amazon.

Considering that most of the ecological and social services are not captured in financial markets, as is described below, these indexes inform public opinion of the environmental and social performance of companies, including of those banks that are granting funds to unsustainable projects in the Brazilian Amazon, as they are excluded from the sustainability indexes.

Launched in 1999, the DJSI aims to inform investors about the sustainability performance of listed companies.¹⁰⁸⁷ It offers an index known as the DJSI World

¹⁰⁸³ See International Finance Corporation, *BM&FBOVESPA Sustainability Index & the Responsible Practices of Brazilian Corporations – Issue Brief*, p. 2, available from: <<http://www.ifc.org/sustainableinvesting>> November 2011; see also Instituto Amanhã, *Guia Sustentabilidade Meio Ambiente*, Ano 3, 2010, p. 11.

¹⁰⁸⁴ See Instituto Amanhã, *Guia Sustentabilidade Meio Ambiente*, Ano 3, 2010, p. 11.

¹⁰⁸⁵ International Finance Corporation, *BM&FBOVESPA Sustainability Index & the Responsible Practices of Brazilian Corporations – Issue Brief*, p. 2, available from: <<http://www.ifc.org/sustainableinvesting>> November 2011.

¹⁰⁸⁶ Ibid p. 2.

¹⁰⁸⁷ Dow Jones Indexes and SAM. Available from: <http://www.sustainability-index.com/djsi_pdf/news/PressReleases/110908-djsi-review-2011-e-vdef.pdf> November 2011.

and four regional indexes. By sustainability, the DJSI World means the three dimensions of sustainable development; therefore, the listed companies are evaluated according to economic, social, and environmental criteria.¹⁰⁸⁸

The DJSI, in collaboration with SAM,¹⁰⁸⁹ identifies annually the top company in each of the nineteen supersectors.¹⁰⁹⁰ In the 2011-2012 SAM Report, for example, the lead company in the financial service supersector is a Brazilian one: Itausa (In Portuguese, *Investimentos Itaú S.A.*)¹⁰⁹¹ The Report offers a strong message to the other financial institutions operating in the Brazilian Amazon, including the BNDES and BASA: it is currently possible to finance in a manner that is environmentally and socially responsible.

In 2005, the BM&FBOVESPA, the Stock Exchange located in Sao Paulo, together with many other institutions, including the World Bank Group (IFC), launched the ISE¹⁰⁹² in order to promote environmentally and socially responsible investments in Brazil. In 2010, the ISE listed thirty-four companies in total which had been scrutinized in relation to their economic and socio-environmental performance.¹⁰⁹³ The ISE is an important disclosure-based mechanism for promoting sustainable

¹⁰⁸⁸ While the economic dimension of sustainability includes, for example, corporate governance, risk & crisis management, and codes of conduct/compliance/corruption & bribery, and industry specific criteria, the environmental dimension of sustainability are evaluated by environmental reporting and industry specific criteria, and the social dimension of sustainability is based on human development criteria. See Dow Jones Sustainability Indexes - in collaboration with SAM. *Dow Jones Sustainability World Indexes Guide Book Version 11.6, 7 September 2011*, p. 11, available from: <http://www.sustainability-index.com/djsi_pdf/publications/Guidebooks/DJSI_World_Guidebook_11%206_final.pdf> December 2011.

¹⁰⁸⁹ SAM is an investment agency focused on sustainability investing sector.

¹⁰⁹⁰ The nineteen “supersectors” encompasses travel & leisure, automobiles & parts, utilities, construction & materials, financial services, chemicals, personal & household goods, telecommunications, retail, media, food & beverage, industrial goods & services, oil & gas, healthcare, technology, real estate, insurance, banks, and basic resources.

¹⁰⁹¹ Above note 1092.

¹⁰⁹² In Portuguese, *Índice de Sustentabilidade Empresarial da Bolsa de Valores de São Paulo (ISE-BM&FBOVESPA)*.

¹⁰⁹³ See discussion of the economic/financial, social, and environmental criteria adopted by the ISE-BM&FBOVESPA in BM&FBOVESPA, ISE (English version), available from: <http://www.bmfbovespa.com.br/Indices/download/ISE_Questionario2009I.pdf> December 2011.

development in the Brazilian Amazon because an increasing number of investors are considering this index as a means to show their values within their portfolios. As of 2010, the ISE listed three financial institutions: Bradesco, Itausa, and Itaú-Unibanco.¹⁰⁹⁴ In 2010, the IFC commissioned an evaluation of the ISE's impact on the sustainability performance of corporations, comparing member companies with those that were never part of the ISE. The Report concluded.

The ISE had a considerable impact on the corporate sustainability practices of companies, both the member companies as well as those that were never part of the Index. The ISE served as a reference guide for initiation of sustainability practices as well as for their continuous improvement.¹⁰⁹⁵

The BNDES and BASA have not participated in either the ISE or in the Equator Principles. Unfortunately, these development banks have not shown superior environmental and social performance compared with other financial institutions operating in the region. The lack of sustainability practices of these state-owned banks, which is reflected in their non-participation in these disclosure-based mechanisms, has undermined the promotion of sustainable development in the Brazilian Amazon, because these banks are the main sources of long-term loans that are granted in the region.¹⁰⁹⁶

9.3. Carbon Markets

As analysed in Chapter 1, section 1.4, since 1900 the earth's temperatures has increased by approximately 0.76° C; in addition, an increase of about 0.2°C per decade is projected for global temperatures in the next two decades. According to the IPCC, the global warming is primarily due to fossil fuel use and land-use change since the Industrial

¹⁰⁹⁴ Instituto Amanhã, *Guia Sustentabilidade Meio Ambiente*, Ano 3, 2010, pp. 84-85.

¹⁰⁹⁵ International Finance Corporation, *BM&FBOVESPA Sustainability Index & the Responsible Practices of Brazilian Corporations – Issue Brief*, p. 3, available from: <<http://www.ifc.org/sustainableinvesting>> November 2011.

¹⁰⁹⁶ See the discussion of the scale and scope of funding of Brazilian Amazon by the development banks in Chapter 2 of this study.

Revolution. Since the more industrialized countries emitted the most greenhouse gases (GHG) into the atmosphere during the last century, most voluntarily adopted quantified emission reduction obligations under the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

The Kyoto Protocol established three market-based mechanisms: International Emissions Trading (IET), Joint Implementation (JI), and Clean Development Mechanisms (CDM). These mechanisms have provided “the backdrop for the carbon finance activities.”¹⁰⁹⁷ Today, a number of carbon markets exist worldwide, including the European Union Emissions Trade Scheme (EUETS) and the U.S. Regional Greenhouse Gas Initiative (RGHI). Up to 2010, the total value of the global carbon market was about US\$ 142 billion.¹⁰⁹⁸

Under the Kyoto Protocol’s Clean Development Mechanism (CDM), in order to meet the GHG emission reduction targets by 2012, developed countries may buy carbon credits, that is, certified emission reductions (CERs)¹⁰⁹⁹ that were generated by CDM projects in developing nations. By 2010, Brazil had implemented nearly 457 CDM projects and was ranked as the world’s third host nation in terms of total number of projects.

Among the Brazilian states, the state of Sao Paulo (SP) is the leader in terms of numbers of CDM projects, followed by other states located outside the Legal Amazon, such as Minas Gerais (MG), Rio Grande do Sul (RS), Santa Catarina (SC), and Paraná (PR).¹¹⁰⁰ Almost all the CERs are generated in Brazil’s most industrialized states. Most CDM projects in Brazil are not located in the Legal Amazon. Unfortunately, the land-use, land-use change, and forestry (LULUCF) has not received much attention from the politics of climate change regarding the first

¹⁰⁹⁷ “Carbon finance is the generic name for the revenue streams generated by projects from sale of their greenhouse gas emission reductions, or from trading in carbon permits.” The World Bank, *Carbon Finance at the World Bank: Ten Years of Experience – Insights from working with the Kyoto Mechanisms, Executive Summary*, p. 1.

¹⁰⁹⁸ World Bank, *State and Trends of the carbon Market 2010*, p. 9.

¹⁰⁹⁹ One CER is equivalent to one tonne of carbon dioxide (CO₂).

¹¹⁰⁰ See Map of Brazil.

commitment period (2008-2012) of the Kyoto Protocol.¹¹⁰¹ This is unacceptable because between 1850 and 1998, LULUCF accounted for about 14 percent of global carbon emissions.¹¹⁰² By 2007, carbon emissions due to LULUCF and agriculture accounted for approximately 31 percent of global GHG emissions, while the carbon emissions produced by electricity and heating accounted for 27 percent.

It is critical for the success of the Kyoto Protocol's second commitment period (2013-2017) that compensatory mechanisms for reduced emissions from deforestation and forest degradation (REDD) are included in the center of global mitigation efforts. Basically, there are three mechanisms to finance REDD initiative, Viana *et al.* write.¹¹⁰³ One mechanism is donations from the rich countries to high-forested tropical countries (*e.g.* the Amazon Fund).¹¹⁰⁴ The second mechanism is non-compensatory resources from the carbon market. According to Viana *et al.* "a percentage of the money raised when carbon emission allowances are auctioned can be transferred to developing countries to finance NAMAs (Nationally Appropriate Mitigation Actions) and REDD projects."¹¹⁰⁵ Finally, compensatory market mechanism for REDD can be used to meet part of the Kyoto Protocol obligations of the most industrialized countries. The questions arise of how effective carbon emission trading schemes really are to curbing climate change, what these schemes mean for emerging economies, including Brazil, and what role the development banks can play in promoting these schemes in the Brazil Amazon.

Carbon Markets and the Development Banks

With regard to the relation between carbon markets and the development banks, the World Bank Group is the leader. As at 2010, the Bank Group managed more than US\$ 2.5 billion through its carbon funds and facilities, including the Forest Carbon

¹¹⁰¹ "The UNFCCC has not seen LULUCF development as it should: less than 6 per cent of the over 1,900 registered projects under the CDM can be classified as LULUCF." Virgílio Viana, Gabriel Ribendoim, Thais Megid, Victor Salviati, *REDD Working Papers: REDD and sustainable development – Perspective from Brazil*. London: International Institute for Environment and Development (IIED), 2010, p. 1.

¹¹⁰² Ibid p. 1.

¹¹⁰³ Ibid p. 27.

¹¹⁰⁴ See the discussion of the Amazon Fund in section 7.2 of Chapter 7 of this study.

¹¹⁰⁵ Above note 1106, p. 3.

Partnership Facility (FCPF) and the BioCarbon Fund.¹¹⁰⁶ Created in 2008, the FCPF aims to reduce emissions from deforestation and forest degradation. In other words, it funds projects which generate carbon credits from avoided deforestation. The FCPF has become an important instrument in promoting sustainable development in the Amazon region, including the Bolivian Amazon, Colombian Amazon, and Peruvian Amazons, but not the Brazilian Amazon.

The BioCarbon Fund aims to promote “projects that sequester or conserve carbon in forest and agro-ecosystems; the portfolio includes Afforestation, and Reforestation, Reducing Emissions from Deforestation and Degradation.”¹¹⁰⁷ The Fund, together with the Brazilian NGO Fundação Amazonas Sustentável (FAS), has developed a new methodology for measuring emission reductions from projects that reduce unplanned deforestation. This methodology is seen as “crucial to enabling the development of REDD projects in the Brazilian Amazon”, said Virgilio Viana, CEO of FAS.¹¹⁰⁸

With regard to the BNDES, in December 2010 at the COP-16 held in Cancun (Mexico), the Bank and the Sao Paulo Stock Exchange (BM&FBOVESPA), launched the Carbon Efficient Index (ICO2), which aims to provide support to

¹¹⁰⁶ The World Bank Carbon Funds and Facilities: Prototype Carbon Fund, Community Development Carbon Fund, BioCarbon Fund, Netherlands CDM Facility, Netherlands European Carbon Facility, Italian Carbon Fund, Danish Carbon Fund, Spanish Carbon Fund, Carbon Fund for Europe, Umbrella Carbon Facility, Carbon Partnership Facility, and Forest Carbon Partnership Facility. In December 2011 at the COP-17 held in Durban (South Africa), the World Bank's Carbon Finance Unit (CFU) announced two new carbon initiatives, the Carbon Initiative for Development and the BioCarbon Fund Tranche 3, to help the development of low carbon projects in poorest countries. See discussion of these World Bank's carbon initiatives in The World Bank/Carbon Finance Unit, Carbon Finance at COP 17 in Durban, South Africa: November 28 - December 9, 2011; available from: <<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTCARBONFINANCE/0,,contentMDK:23048419~pagePK:64168445~piPK:64168309~theSitePK:4125853~isCURL:Y,00.html>> December 2011.

¹¹⁰⁷ Carbon Finance Unit/World Bank, *BioCarbon Fund*, available from: <<http://wbcarbonfinance.org/Router.cfm?Page=BioCF&ItemID=9708&FID=9708>> November 2011.

¹¹⁰⁸ The World Bank, *New Methodology for Measuring Emission Reductions from Reduced Deforestation Stands to Unlock Carbon Revenues for Poor Communities*, available from: <<http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22962585~pagePK:64257043~piPK:437376~theSitePK:4607,00.html>> November 2011.

companies in adopting transparent practices regarding their GHG emissions.¹¹⁰⁹ The calculation of shares in this index takes into consideration the companies' GHG emissions and free float of stocks.¹¹¹⁰

Considering that the BM&F is one of the world's largest market exchanges in market value, and that this initiative could be copied by other market exchanges in Latin America, it is reasonable to conclude that ICO2 could be a benchmark for the finance sector in Brazil in terms of boosting a low carbon economy in the region. Hopefully the ICO2 will be taken into account by the state-owned banks operating in the Brazilian Amazon, and the BNDES and BASA will provide special credit lines to companies with efficient levels of GHG emission. As at December 2011, these state-run banks had not yet established any special credit anchored in the principles of ICO2. To conclude, these banks have increasingly played the role of promoters of market-led mechanisms for promoting sustainable development in the region (*e.g.* FSC, Equator Principles, ISE etc.), but not yet provided a role model by ensuring that they themselves comply.

¹¹⁰⁹ BNDES, *BM&FBOVESPA and BNDES present new portfolio for the carbon efficient index*, available from: <<http://www.bmfbovespa.com.br/en-us/News/2011/BMFBOVESPA-and-BNDES-present-new-portfolio-for-the-Carbon-Efficient-Index-2011-09-06.aspx?tipoNoticia=1&idioma=en-us>> December 2011.

¹¹¹⁰ While the GHG emissions are assessed annually the free float is every four months. The portfolio valid as December 2011 is constituted of 38 stocks, available at BM&F BOVESPA, *Carbon Efficient Index – ICO2*, available from: <<http://www.bmfbovespa.com.br/indices/ResumoCarteiraQuadrimestre.aspx?Indice=ICO2&idioma=en-us>> December 2011.

CONCLUSION

CLASHES AND RECONCILIATION IN THE AMAZON REGION

The thesis began describing an important tourism destination in the Amazon region: the “clash of the waters” in the city of Manaus, where the Negro River meets the Solimões River. It is remarkable that these waters take about thirteen kilometres to reach reconciliation. This natural phenomenon has been a source of great inspiration to local artists, including handcrafters, painters, and writers.¹¹¹¹ It also triggers reflections in those concerned with the future of the Amazon region, where not only waters seem to be fighting with each other, but also the development models.¹¹¹²

As described in Chapters 4 and 6, there are two models of development in the region. One is connected to the increasing demand for agricultural commodities and raw materials such as iron and timber.¹¹¹³ The other model is related to the global importance of the Amazon, where approximately a quarter of all global biodiversity and trees containing 90-140 billion tons of carbon are found and which is therefore a region of great importance to all of humanity due to its vital role in terms of biodiversity conservation and global climate equilibrium.¹¹¹⁴ The challenge of reconciliation between these apparently opposed, competing, and conflicting models may be summarized in the question of how to improve the economic and social standards of the local people without causing environmental harm and ecological scarcities in the Amazon region. As there is no example of a developed country with an economy based on standing forest products, there is no pre-existing recipe for development in tropical areas. In consequence, the Amazon region must find its own development path, by reducing clashes and boosting reconciliation.

¹¹¹¹ See Introduction to this study.

¹¹¹² See Chapter 4 of this study.

¹¹¹³ See Chapter 1 of this study and in particular section 1.3.2.

¹¹¹⁴ See Chapter 1 of this study and in particular section 1.2 and 1.4

Chapter 1 showed that the Brazilian Amazon is a land of contrasts. It contains great biological and cultural diversity; nevertheless, it is the country's poorest region.¹¹¹⁵ This paradox occurs because the region's great natural capital has been undervalued. There are currently six main economic sectors in the region: agribusiness, logging, extractive, mining, industry and urban activities.¹¹¹⁶ Unfortunately, they are not fully engaged with the dynamics of a new approach to development. The need for an environmentally responsible and socially inclusive economy is indicated by a number of factors, including the region's high deforestation rates and low social indicators.

Considering the main threats to the vital role of the Amazon - biodiversity loss, climate change, and the energy crisis -¹¹¹⁷ Chapter 1 concluded that it is critical to all of humanity that a sustainable development model is fully adopted in the entire region.

IDENTIFYING THE MAIN DEVELOPMENT ACTORS

Chapter 2 demonstrated that the DBs have been important actors in relation to the processes of development in the Brazilian Amazon. Even though the amount of financial resources granted by the World Bank and the IDB has been very limited in view of the great challenges involved in the construction of a new approach to development in the world's largest rainforest, the MDBs have been essential in the field of capacity-building in a region where the governance is still weak.

The state-owned banks have been particularly powerful institutions in the Brazilian Amazon. They grant most long-term loans that are channelled to the region. The BASA is the oldest development bank operating in the Brazilian Amazon and enjoys significant presence across the Amazon region. As the BNDES has grown into one of the world's largest development banks, it has become increasingly involved in financial operations in the region. Together, these state-owned banks

¹¹¹⁵ See Chapter 1 of this study and in particular section 1.3.1.

¹¹¹⁶ See Chapter 1 of this study and in particular section 1.3.2.

¹¹¹⁷ See Chapter 1 of this study and in particular section 1.4.

have boosted the region's economy, contributing to its constant expansion (about 8 percent in 2010). Unfortunately, the region's economic development has also had unwanted consequences, including deforestation, burning, and the displacement of forest-dependent communities. The overall conclusion reached in Chapter 2 was that it is not possible to promote sustainable development in the region without the DBs' full commitment to sustainable development.

INTEGRATING THE THREE DIMENSIONS OF DEVELOPMENT: THE ROLE OF DBs

Chapter 3 analyzed the concept and core elements of sustainable development. This Chapter showed that sustainable development involves the challenge of integrating three goals: economic growth, social justice, and environmental protection.¹¹¹⁸ The overall conclusion reached in Chapter 3 is that these goals are mutually supportive and mutually destructive of each other. Nevertheless, the tensions among them can be mitigated if the recommended policies and strategies are set up, and suitable actions are put in place.¹¹¹⁹

From an Amazonian perspective, then, reconciling these three dimensions requires an approach to development that makes the rainforest worth more standing than cut. Moreover, it also requires that the local people are put at the centre of concern, in other words, that the economic benefits from environmental protection accrue to people living in the Amazon region in order to satisfy their basic needs.¹¹²⁰

In Chapter 4, however, this study demonstrated that parts of the Brazilian Amazon have followed a boom-bust cycle underpinned by a predatory approach to "development" which has caused environmental degradation and social exclusion, but which has not resulted in sustainable development.¹¹²¹ The analysis in Chapter 4 also demonstrated that the development banks have tended to act in the interest of

¹¹¹⁸ See Chapter 3 of this study and in particular section 3.1.

¹¹¹⁹ See Chapter 3 of this study and in particular section 3.2.

¹¹²⁰ See Chapter 3 of this study and in particular section 3.3.

¹¹²¹ See section 4.3 of Chapter 4 of this study.

their shareholders rather than responding to the needs of local people. Overall, the interests of shareholders are primarily related to exploiting the global demand for agricultural commodities and raw materials.¹¹²² On the other hand, the interests of people living in the Amazon region are primarily related to clean water, food security, and improved educational and health systems.¹¹²³

In the state-led development period of the 1980s, the banks focused on rural development and infrastructure projects, including the construction of highways, railways, ports, and hydroelectric power plants. Unfortunately, these development schemes caused great environmental and social harm.¹¹²⁴ The condemnation of such an approach to development (by international NGOs and grass-roots movements) had a powerful impact on the work of MDBs in the region. Chapter 5 showed that the undesirable consequences of large-scale projects in developing countries, including the Polonoroeste Program and Great Carajás Program, provoked a change of attitude and a deepening of understanding by the MDBs about desirable development in the Brazilian Amazon.¹¹²⁵ The BNDES and BASA, by contrast, were not at the centre of concern of civil society organizations; in consequence, in the 1980s they did not significantly alter how they addressed the environmental impact of the projects financed by them in the region.¹¹²⁶

In the 1990s, the MDBs changed their role in the region dramatically. The World Bank, for instance, became a leading institution in managing multilateral environmental programs, including the GEF, PPG7, and ARPA.¹¹²⁷ Chapter 6 demonstrated that these programs have gradually changed the terms of the relationship between Brazil and the international community of nations from a relationship that had been based on conflict to one of cooperation. The case studies related to the donor-led development period illustrated that the work of the World Bank in GEF and PPG7 projects did not erode state power over the region, but refined the concept of national sovereignty in light of international agreements in

¹¹²² See sections 4.2 and 4.3 of Chapter 4 of this study.

¹¹²³ See sections 4.4 of Chapter 4 of this study.

¹¹²⁴ See section 6.1 of Chapter 6 of this study.

¹¹²⁵ See sections 5.1. and 5.2 of Chapter 5 of this study.

¹¹²⁶ See section 5.3 and 5.4 of Chapter 5 of this study.

¹¹²⁷ See section 6.2.1 and 6.2.2 of Chapter 6 and section 7.1 of Chapter 7 of this study.

the field of sustainable development. The IDB has, in turn, focused on urban issues in the Brazilian Amazon, particularly in the fields of water and sanitation in the large cities, including Belém and Manaus.¹¹²⁸

In the 2000s, particularly during the administration of President Lula da Silva (2003-2010), Brazil increased the role of state agents, by establishing a model of development in which the state and the private sector shared projects.¹¹²⁹ The thesis traced the impact of this hybrid economic model on the character of development in the Brazilian Amazon. Chapter 5 showed that the state-owned banks significantly increased their financial operations in the region. For instance, the BNDES and BASA played a vital role in promoting agribusiness and the energy sector, including the construction of large-scale hydroelectric schemes in the Madeira River.¹¹³⁰ Even though these banks do see environmental impacts as “a factor to be considered” in their operations in the Brazilian Amazon, they have not adopted sustainable development as their overarching objective for the region.

Over these three decades, the Brazilian Amazon has seen a clash of development models. On the one side stands the traditional development model, which is based on, *inter alia*, timber extraction, iron-ore mining, and agribusiness. On the other side stand a number of new models of development, stressing that Amazonian development does not depend on the destruction of the rain forest, but rather on its survival. Based on the region’s great ecological and cultural diversity, these emerging models focus on the establishment of a more inclusive and sustainable economy in the region. The MDBs have played a pivotal role in a number of new mechanisms for promoting sustainable development in the Brazilian Amazon. To illustrate, the World Bank has been an influential actor in the promotion of forest certification schemes, particularly the FSC,¹¹³¹ and in the establishment and development of improved environmental and social standards to be used by banks in

¹¹²⁸ See section 5.2 of Chapter 5 of this study.

¹¹²⁹ This model of economic development has continued during the administration of President Dilma Rousseff., which began in January 2011.

¹¹³⁰ See section 6.3.1 of Chapter 6 of this study.

¹¹³¹ See section 9.1 of Chapter 9 of this study.

their financial operations.¹¹³² The thesis drew attention to the potential role of the Equator Principles in promoting “green credits” for the region.¹¹³³ The IDB is increasingly involved with the dynamics of that new economy. For instance, the IDB is one of the partners of the PES scheme called Extractive Reserve/Nantex Factory in the western Legal Amazon.¹¹³⁴

Like the MDBs, the BNDES has played a leading role in a number of new mechanisms for promoting sustainable development in the region. For example, the BNDES has managed the Amazon Fund.¹¹³⁵ In addition, in 2010 the bank took part in *Vale Florestar*, which aims to rehabilitate deforested and degraded areas, and to encourage sustainable actions in the Carajás area.¹¹³⁶ Therefore, the negative impacts of past projects provoked a change of attitude by the BNDES. The BASA has, in turn, made efforts to move to a platform of sustainable development in relation to its financial operations in the region. For example, in 2008 the BASA signed the Protocol for Socio and Environmental Responsibility, containing four principles to guide the state-owned banks’ policies and practices in order to ensure their operations in the region are environmentally responsible.¹¹³⁷

However, the DBs operating in the Brazilian Amazon have not yet fully embraced the paradigm of sustainable development. First, they continue to grant funds to unsustainable practices. For example, the banks have funded the proliferation of meat-packing plants in the region, yet the advance of unproductive cattle-ranching in the Amazon frontier has been one of the main causes of deforestation and burning.¹¹³⁸ Second, they have not focused primarily on the interests of local people, as shown in the case studies related to the hydroelectric dams.¹¹³⁹ Third, they have not yet been fully involved with the dynamics of a socially and environmentally responsible economy. Surprisingly, the banks still see economic growth and

¹¹³² See section 9.2 of Chapter 9 of this study.

¹¹³³ See section 9.2 of Chapter 9 of this study.

¹¹³⁴ See section 8.1 of Chapter 8 of this study.

¹¹³⁵ See section 7.2 of Chapter 7 of this study.

¹¹³⁶ See section 5.3 of Chapter 5 of this study.

¹¹³⁷ See section 5.4 of Chapter 5 of this study.

¹¹³⁸ See section 6.3.2 of Chapter 6 of this study.

¹¹³⁹ See section 6.3.1 of Chapter 6 of this study.

environmental conservation as competing objectives rather than mutually supportive ones.¹¹⁴⁰

IDENTIFYING A NEW DEVELOPMENT PARADIGM

This study showed that the future of the Amazon rainforest depends on development models that add economic value to the standing forest. Considering that there is no pre-existing formula for development in tropical areas, because there is no case of a developed country located in a tropical area with an economy based on standing forest resources, new mechanisms are required for promoting sustainable activities in the region. Chapters 7, 8, and 9 of this study identified a number of new mechanisms. The DBs have contributed to putting them in place.

Chapter 7 demonstrated that while conservation programs are crucial in preventing the advance of the boom-bust cycle into pristine areas, they are not sufficient to engage the local people in sustainable yet profitable activities. The ARPA Program, for example, involves the creation and consolidation of protected areas across the Amazon region.¹¹⁴¹ Coordinated by the Brazilian government and supported by the World Bank, GEF, German Development Bank (KfW) and WWF, the Program takes into account that the Amazon's diversity should be incorporated into a type of development which preserves its richness. Nevertheless, the Program suffers from insufficiency of funding for sustainable development, and has to compete with other development models which are increasingly supported by powerful economic players related to the rising demand for commodities such as soybean, beef, iron, and timber. Therefore, conservation programs such as the ARPA Program should focus projects on the Amazon frontier, where governance is still weak, the rule of law is precarious, and deforestation and violence are rampant.

Chapter 7 identified other sustainable development mechanisms, including the compensatory schemes for reduced emissions from deforestation and forest degradation. In this context, the Amazon Fund has been as an increasingly

¹¹⁴⁰ See Chapter 6 especially the discussion of the DBs operations in the Brazilian Amazon.

¹¹⁴¹ See section 7.1 of Chapter 7 of this study.

important instrument to reconcile a number of apparently opposed interests. For example, while it seeks to improve Brazil's protected area system (SNUC), it also aims to boost a more socially inclusive and environmentally responsible economy for the region. In addition, it aims to bridge the differences between global interests concerning the vital role of Amazon, and the interests of national sovereignty and socioeconomic development. While the capital of the Fund is made up from donations by foreign nations, including Norway and Germany, and its financial resources can be channelled to support sustainable development projects in other Amazon countries, the Fund is managed by the BNDES. The Fund also holds a three-block committee (COFA), encompassing the federal government, state governments, and civil society, in charge of setting up the fund's guidelines, and following up the projects achievements and compatibilities with the guidelines, because the donations and disbursements are anchored in measured targets.¹¹⁴²

One of the strengths of these conservation and compensatory schemes is that they encompass multi-actor arrangements, namely "hybrid-institutions" that comprise international/foreign bodies (*e.g.* World Bank, KfW), the Brazilian government (*e.g.* BNDES, state governments), civil society organizations (*e.g.* WWF), and the private sector. This institutional structure is important for sustainable development in the region because these multi-actor arrangements help to reconcile apparently conflicting objectives. In other words, they forge "win-win" outcomes. Yet these schemes could be much more effective in promoting sustainable development in the region if the eight South American countries located in the Amazon region moved to a common platform of sustainable development. Chapter 7 identified the ACTO as a key institution for this to occur. Unfortunately, to date the DBs have not established close ties with the ACTO.¹¹⁴³

The discussion in Chapter 8 showed that the incentive mechanisms championed by the Brazilian government are critical for promoting sustainable development in the region, because the use of command-and-control mechanisms has failed dramatically. In this context, Chapter 8 analyzed a number of Payment for

¹¹⁴² See section 7.2 of Chapter 7 of this study.

¹¹⁴³ See section 7.3 of Chapter 7 of this study.

Environmental Services (PES) schemes, including the Proambiente and *Bolsa Floresta* (Forest Allowance), which aim to reward the forest-dependent communities for maintaining the standing forest. To date, these schemes have achieved modest success, due to financial constraints related to the lack of a legal framework.¹¹⁴⁴ In Chapter 8, this study identified the *Extractive Reserve/Natex Factory*, which has the IDB as one of the project partners as a PES scheme of paramount importance to the region, because this scheme integrates the three dimensions of sustainable development.¹¹⁴⁵

The need for greater investment in science, technology, and innovation was identified in Chapter 8 as one of the pillars to formulate new development models for the region. This is because research institutions in these fields could add economic value to sustainable economic activities, for example, the local seeds, fruits, and plants could be studied in order to transform the natural resources into new pharmaceutical, cosmetic, and nutritional products. Unfortunately, the existing scientific and technological institutions, including the Amazon Biotechnology Center (CBA), INPA, and the Emilio Goeldi, have suffered from a lack of funding for their activities, and the development banks have not help them yet properly¹¹⁴⁶

Last, this study analyzed the performance of market forces in promoting sustainable development in the Brazilian Amazon. Chapter 9 explored three types of market-based mechanisms: disclosure-based mechanisms, self-regulation in the financial industry, and carbon markets. The overall conclusion reached in Chapter 9 of this study is that the performance of market-led mechanisms has not been fully satisfactory. First, the region's great natural capital has been undervalued within markets. For example, the rural lands with forest cover are much cheaper than those without forest cover. Second, the disclosure-based mechanisms such as eco-labelling and forest certification have not been influential and powerful instruments to change the patterns of production in the Brazilian Amazon.¹¹⁴⁷ This is because these schemes have been effective at altering consumer behavior of only a very

¹¹⁴⁴ See section 8.1 of Chapter 8 of this study.

¹¹⁴⁵ See section 8.1 of Chapter 7 of this study.

¹¹⁴⁶ See section 8.2 of Chapter 8 of this study.

¹¹⁴⁷ See section 9.1 of Chapter 9 of this study.

small portion of consumers, essentially the rich buyers who can afford to pay extra for a product that has been produced in a more sustainable manner. Recently, Brazil has deepened its commercial ties with other emerging economies where environmental and social regulations are frequently lower than those found in the developed countries. For this reason, the contribution of certified timber schemes, for example, to altering the Amazon producers' behaviour is likely to remain marginal in the near future.

Nevertheless, the BASA controls about three-quarters of long-term loans that are granted by banks in the Brazilian Amazon, and most of the large-scale development projects are funded by the BNDES. Accordingly, the performance of disclosure-based mechanisms in promoting sustainable development in the region could be far more effective if these banks were to include provisions regarding to eco-labelling and forest certification in the loans agreements. For example, borrowers could be required to use a given percentage of forest certified materials in the development projects, such as in the construction of roads and dams.

The establishment of self-regulation in the financial industry may become an influential mechanism for altering the environmental and social performance of banks operating in the Brazilian Amazon. The World Bank Group has played the role of promoter of these schemes, including the Equator Principles and BM&FBovespa Corporate Sustainability Index (ISE). The state-owned banks such as the BNDES and BASA have drawn on the same standards as the Equator Principles to create the Protocol of Intent for the Socio and Environmental Responsibility, containing principles and mechanisms similar to those found in the Equator Principles.¹¹⁴⁸ The ISE listed three financial institutions: Bradesco, Itausa, and Itaú-Unibanco. These private banks have significant operations in the region, and compete with the state-owned banks such as the BASA, Bank of Brazil and CEF. For this reason, the adoption of these self-regulation mechanisms by private banks is likely to become a benchmark for the financial sector in Brazil, and other banks seeking to operate in the Brazilian Amazon may have to emulate them in the near future.

¹¹⁴⁸ See section 9.2 of Chapter 9 of this study.

With regard to the carbon markets, since 2008 the uncertainties regarding the Kyoto Protocol's second commitment period have contributed to decrease the value of the CDM market.¹¹⁴⁹ Nevertheless, the DBs have promoted other segments of carbon markets. Chapter 9 demonstrated that the World Bank is a leading international institution in this market, as manager of about twelve funds and facilities. Moreover, the BNDES launched the ICO2 to inform the public in relation to the "carbon footprint" of companies.¹¹⁵⁰ One of the weaknesses of the ICO2 is that the state-owned banks have not yet established any special credit scheme anchored in the objectives of ICO2. These banks should design a subsidized credit scheme to benefit the economic sectors with greatest potential for reducing GHG emissions. To conclude, the development banks have increasingly played the role of promoters in carbon markets, but these banks have not yet provided a role model by ensuring that they themselves comply with the principles of sustainable development.

THE WAY FORWARD

The MDBs

During the 2008-2009 global financial and economic crisis, the text of the Leaders of the Group of Twenty (G20) met in London on 2 April 2009. They reaffirmed the primary role of market forces in promoting development worldwide, but stressed the need for institutional reform. According to London Communiqué from this meeting:

3. We believe that the only sure foundation for sustainable globalisation and rising prosperity for all is an open world economy based on market principles, effective regulation, and strong global institutions.

¹¹⁴⁹ World Bank, *State and Trends of the Carbon Markets*, p. 9. With regard to the international talks regarding to the Kyoto Protocol's second commitment period, see the COP-17 agreement referring to the Durban Platform for Enhanced Action, available from: <http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_durban_platform.pdf> December 2011.

¹¹⁵⁰ See section 9.3 of Chapter 9 of this study.

4. We have today therefore pledged to do whatever is necessary to:

- restore confidence, growth, and jobs;
- repair the financial system to restore lending;
- strengthen financial regulation to rebuild trust;
- fund and reform our international financial institutions to overcome this crisis and prevent future ones;
- promote global trade and investment and reject protectionism, to underpin prosperity; and
- build an inclusive, green, and sustainable recovery.

In this context, the thesis proceeded from the premise that a market-based economic system is to be preferred to more centralized, state-controlled systems,¹¹⁵¹ notwithstanding the capital misallocation that caused the global crisis which started in 2008/2009 and which unfolded in 2010/2011. In order to “build an inclusive, green, and sustainable economy” based on market principles, the international community of nations could take the lessons learned from the global financial crisis to improve the international institutional framework for sustainable development.

One of the major deficiencies of the current international institutional system relates to the financial institutions (IFIs), including the IMF and World Bank. They were created in the post-War economic and political context of the Bretton Woods Conference, and their structures still reflect the concerns of 1944.¹¹⁵² Created in 1959, the Inter-American Development Bank (IDB) inherited the circumstances of the Cold War.¹¹⁵³ However, the global order has changed dramatically. For example, the emerging countries, including China, Brazil, and India, are already among the world’s largest economies¹¹⁵⁴ In 2012, there is much scope for international institutional reform. First, the IFIs could expand their funding

¹¹⁵¹ See discussion in Chapter 9 of this study.

¹¹⁵² See discussion in sections 5.1 of Chapter 5 of this study.

¹¹⁵³ See discussion in sections 5.2 of Chapter 5 of this study.

¹¹⁵⁴ See discussion of the BRIC economies in sections 1.3.2 of Chapter 1 of this study.

capacity.¹¹⁵⁵ Second, the IFIs could operate more efficiently in developing countries if key positions inside the institutions were filled by nationals of these emerging countries.¹¹⁵⁶ In the current context, this suggestion is feasible and could spread a sense of ownership and trust among the developing countries. The Brazilian Amazon could benefit from an improved multilateral lending institutional framework in which the Brazilian citizens had a stronger role in decision-making process.¹¹⁵⁷

A further proposal is the creation of a new body within the UN.¹¹⁵⁸ The principal environmental body of the UN, the UNEP, was created in 1972 but has not been a powerful institution within the UN system. Due to the multi-dimensional nature of the concept of sustainable development, any required action must be articulated and implemented by a number of bodies and agencies, including the UNDP, UNCTAD, and UNESCO. Importantly, this proposed body must be placed at a similar hierarchical level to the Security Council. In this context, this proposed body could provide binding guidelines to other UN bodies in relation to sustainable development. In addition, the work of MDBs in the field of sustainable development could benefit significantly from this institutional reform, because the international institutional framework would overcome the current uncoordinated guidelines in the field of sustainable development. Moreover, this proposed suggestion could contribute to overcoming the main financial and technical constraints regarding the new mechanisms for promoting sustainable development in the Brazilian Amazon. The June 2012 United Nations Conference on Sustainable Development (Rio+20) could be a great opportunity for the international community of nations, and the

¹¹⁵⁵ See discussion in sections 5.1 of Chapter 5 of this study, specially surrounding footnotes 516.

¹¹⁵⁶ See discussion in sections 5.1 of Chapter 5 of this study.

¹¹⁵⁷ See discussion on voting power system in sections 5.1 and 5.2 of Chapter 5 of this study.

¹¹⁵⁸ See discussion of the role of UNEP within the UN system in section 3.1.1 of Chapter 3 of this study.

international institutions, including the MDBs, to build a new international framework for sustainable development.¹¹⁵⁹

BNDES and the Bank of the Amazon

Even though this thesis stressed a primary role should be played by market forces in promoting sustainable development in the Brazilian Amazon,¹¹⁶⁰ it also argues the importance of state involvement in policies and actions for the region.¹¹⁶¹ As this study demonstrated, today governance is still weak, the role of law is precarious, and violence is rampant in many parts of the Brazilian Amazon. Therefore, the role of the Brazilian government is vital to the building of an inclusive and sustainable economy in the region.

Since the early 2000s, the Brazilian government has been far more active in the region due to a number of factors. First, the rising demand for agricultural commodities in international markets, particularly in Asian markets, has contributed to the rapid advance of cattle-ranching and agriculture across the region.¹¹⁶² Second, the increasing demand for renewable energy in Brazil has shown the importance of the Amazon basin as a new frontier for the development of large hydroelectric power plants.¹¹⁶³ Third, the rising demand for mitigation actions to address global

¹¹⁵⁹ According to Achim Steiner, “Rio+20’s two themes are a Green Economy in the context of sustainable development and poverty eradication and an institutional framework for sustainable development.” Speech by Achim Steiner: Green Economy Towards Rio+20 – UNEP, p. 3. Available from: <<http://www.unep.org/newscentre/>> November 2011.

¹¹⁶⁰ See the discussion of the role to be played by market forces in promoting sustainable development in the Brazilian Amazon in Chapter 9 of this study.

¹¹⁶¹ See the discussion of the role to be played by Brazilian government in promoting sustainable development in the Brazilian Amazon in section 3.3 of Chapter 3 of this study.

¹¹⁶² See the discussion of cattle-ranching activities in section 1.3.2 of Chapter 1 and section 6.3.2 of Chapter 6 of this study.

¹¹⁶³ See the discussion of the energy crisis in section 1.4.3 of Chapter 1 and discussion on the hydroelectric schemes in the Amazon region in section 6.3.1 of Chapter 6 of this study.

climate change has drawn attention to the vital role of the Amazon rainforest as a carbon sink.¹¹⁶⁴

The underlying difficulty in promoting sustainable development in the region is that the Brazilian government has to satisfy all these demands simultaneously in ways that are not coordinated with the principles of sustainable development. To illustrate, in the period 2003-2010, while the Ministry of Agriculture encouraged the advance of the agribusiness sector in the Amazon frontier, and the Ministry of Energy championed the construction of a number of large hydroelectric schemes, the Ministry of the Environment promoted the creation and implementation of Protected Areas across the region.¹¹⁶⁵ Importantly, the head of government supported all these different initiatives. This *modus operandi* affected the work of the state-owned banks operating in the Brazilian Amazon. The BNDES and BASA granted funds to the agribusiness activities, the construction of hydroelectric plants, and to the environment sector.¹¹⁶⁶ Therefore, the second level of difficulty appears to be that to date these state-owned banks do not have binding guidelines to coordinate these apparently opposed objectives.¹¹⁶⁷ For this reason, this study proposes that the development banks should change their articles of agreement, policies, strategies, and internal procedures to incorporate stronger environmental and social protection criteria in their decision-making processes.¹¹⁶⁸

Today, the contribution of international-led mechanisms, including conservation programs (e.g. the ARPA Program) and REDD+ programs (e.g. the Amazon Fund), as well as the state-led mechanisms (e.g. the PES programs), and the market mechanisms, including disclosure-led measure (e.g. the FSC-certified timbers), the self-regulation schemes (e.g. the Equator Principles), and the carbon markets, for

¹¹⁶⁴ See discussion on climate change, and the role of Amazon region as a “carbon sink”, in section 1.4.2 of Chapter 1 this study.

¹¹⁶⁵ See section 3.3 of Chapter 3 of this study.

¹¹⁶⁶ See section 6.3 of Chapter 6 of this study.

¹¹⁶⁷ See sections 5.3 and 5.4 of Chapter 5 of this study.

¹¹⁶⁸ See discussion of the IBRD Articles of Agreement in footnotes 485-490, and the IFC Articles of Agreement in footnote 491-494. Two dimensions of sustainable development, social justice and environmental protection are neglected by these Articles of Agreement. With regard to the state-owned banks, see the discussion of BNDES in section 5.3 of Chapter 5 of this study, accompanying footnote 703, and the discussion of BASA in section 5.4 of this study, accompanying footnote 723.

the promotion of sustainable development in the Brazilian Amazon, have been undermined by the current subsidized credit scheme that benefits the unsustainable activities in the region.¹¹⁶⁹ For this reason, this thesis proposed a fiscal policy reform for the region. Considering that both the BNDES and BASA grant subsidized credits, the subsidized credit schemes should be designed and implemented in the economic sectors with greatest potential for reducing GHG emissions, including the development of new, clean technologies and sustainable forest management.

The final analysis

It is very likely that, over the near- and medium- terms, the development banks will continue to be powerful and influential institutions in the Brazilian Amazon. It is also very likely, nevertheless, that their activities will be far more selective. On one hand, in view of the fact that the primary role in funding will be played by the private banks, the development banks will concentrate on the development projects of longer maturity and higher risk, particularly in the Amazon frontier. On the other hand, the development banks will increase their strategic role as “think tanks”. Ultimately, the great challenge for development banks will be to help local people in improving governance in order to channel communities’ energy to build a developed economy based on the products and services provided by the Amazon region.

¹¹⁶⁹ See section 6.3.2 of Chapter 6 of this study.

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Recourse to Article 21.5 by Malaysia (US-Shrimp Article 21.5)* WTO Doc
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1973 Convention on International Trade in Endangered Species of Wild Fauna and
Flora

1982 Convention on the Law of the Sea

1987 Convention for the Protection of the Ozone Layer

1992 Convention on Biological Diversity

1992 Framework Convention on Climate Change

1997 Kyoto Protocol to the Framework Convention on Climate Change

NATIONAL LEGISLATION

1965 Forest Code (Federal Law No. 4774)

1967 Fauna Protection Act (Federal Law No. 5197)

1981 National Environmental Policy Act (Federal Law No. 6938)

1988 Federal Constitution

1998 Environmental Crimes Act (Federal Law No. 9605)

2000 National System of Conservation Units (Federal Law No. 9985)

2005 Biosecurity Act (Federal No. 11105)

ANNEX

THE EMPIRICAL STUDY

To analyze the past and present processes of development in the Brazilian Amazon, and the role of DBs in those processes, this thesis undertook two categories of empirical study: field research and interviews.

FIELD RESEARCH

Field research is a key component of this thesis. It included a number of visits to different parts of the Brazilian Amazon.

Belém (Pará state)

To attend the National Conference of the Office of the Director of Public Prosecution on the Environment, in April 2008.

To attend the World Social Forum (WSF), in January 2009.

Macapá (Amapá state)

To visit the Law School of Amapá (EJAP), in December 2009.

Manaus (Amazonas state)

To visit two key research institutions, namely the National Institute of Amazonian Research (INPA), and Amazon Biotechnology Center (CBA), in January 2009.

Novo Airão (Amazonas state)

In January 2009, to explore the Amazon rainforest, particularly the Anavilhanas National Park, located in the lower Negro River.

THE INTERVIEWS

The interviews encompass two different types of questionnaires. All interviews start with a common questionnaire, containing general questions such as those related to the importance of the Amazon Region to all of humanity, the interface between Amazonian deforestation and climate change and the energy crisis, the sovereignty of Brazil over the Amazon, and the concept of sustainable development, as well as more specific questions related to the nature of exploitation of and development in the Amazon, the dilemma between environmental conservation and economic/human development, the work of the DBs in the Brazilian Amazon. After that, the interviews go to questionnaires for each category of interviewees.

Since all interviews are classified as semi-structured, they allow the researcher and the interviewees to discuss other issues that were not formulated before.

The Interviewees

Category A: Staff of the Development Banks

The World Bank Group

Garo Batmanian (The World Bank's Amazon Cluster Coordinator), on 06/05/2009.

The National Development Bank (BNDES)

Eduardo Bandeira de Mello, on 29/07/2009.

The Bank of Amazon (BASA)

Oduvaldo Lobato, on 19/08/2009.

Category B: Brazilian Officials Having Responsibility over the Environmental Sector

Federal Environment Ministry

Marco Condi, on 05/11/2009

Sao Paulo State Environment Agency (CETESB)

Fernando Rei, on 25/03/2009

Category C: The Judiciary

Supreme Court of Amapá (TJ/AP)

Justice Carmo Antonio de Souza, on 14/10/2009.

Category D: Members of Non-governmental Organizations (NGOs)

Greenpeace

Marcelo Marquesini, on 05/03/2009.

IBASE

Luciana Badin, in 04/04/2009

IMAZON

Paulo Barreto, on 29/11/2009.

The Nature Conservancy (TNC)

David Cleary, on 10/03/2009.

Category E: Academics and Researchers;

Brazilian Society of International Environmental Law

Márcia Leão, on 19/02/2009.

The Catholic University of Sao Paulo (PUC/SP)

Erika Bechara, on 09/09/2009.

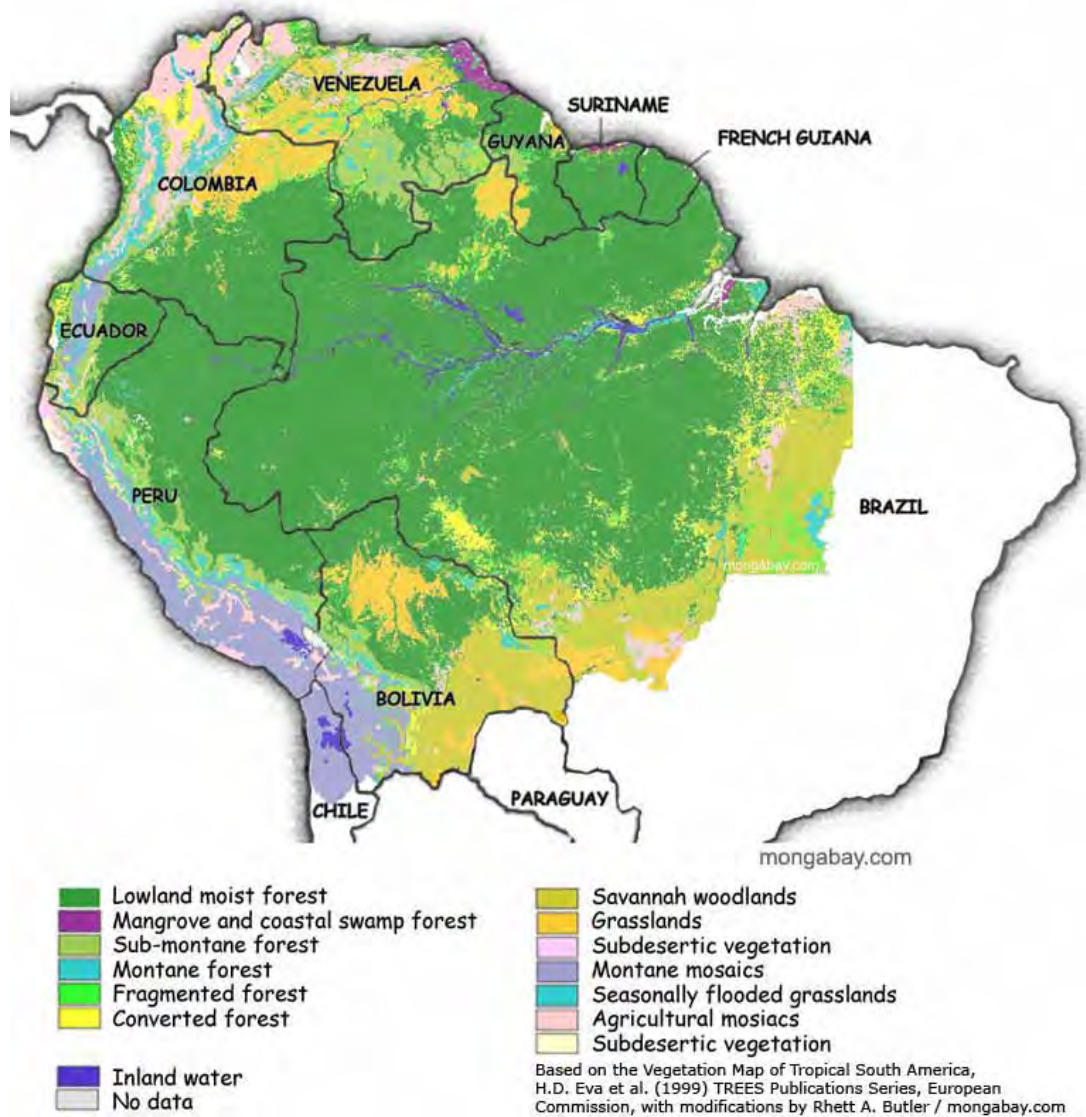
Sao Paulo Institute of Technological Research (IPT)

Vicente Mazzarella, on 13/08/2009.

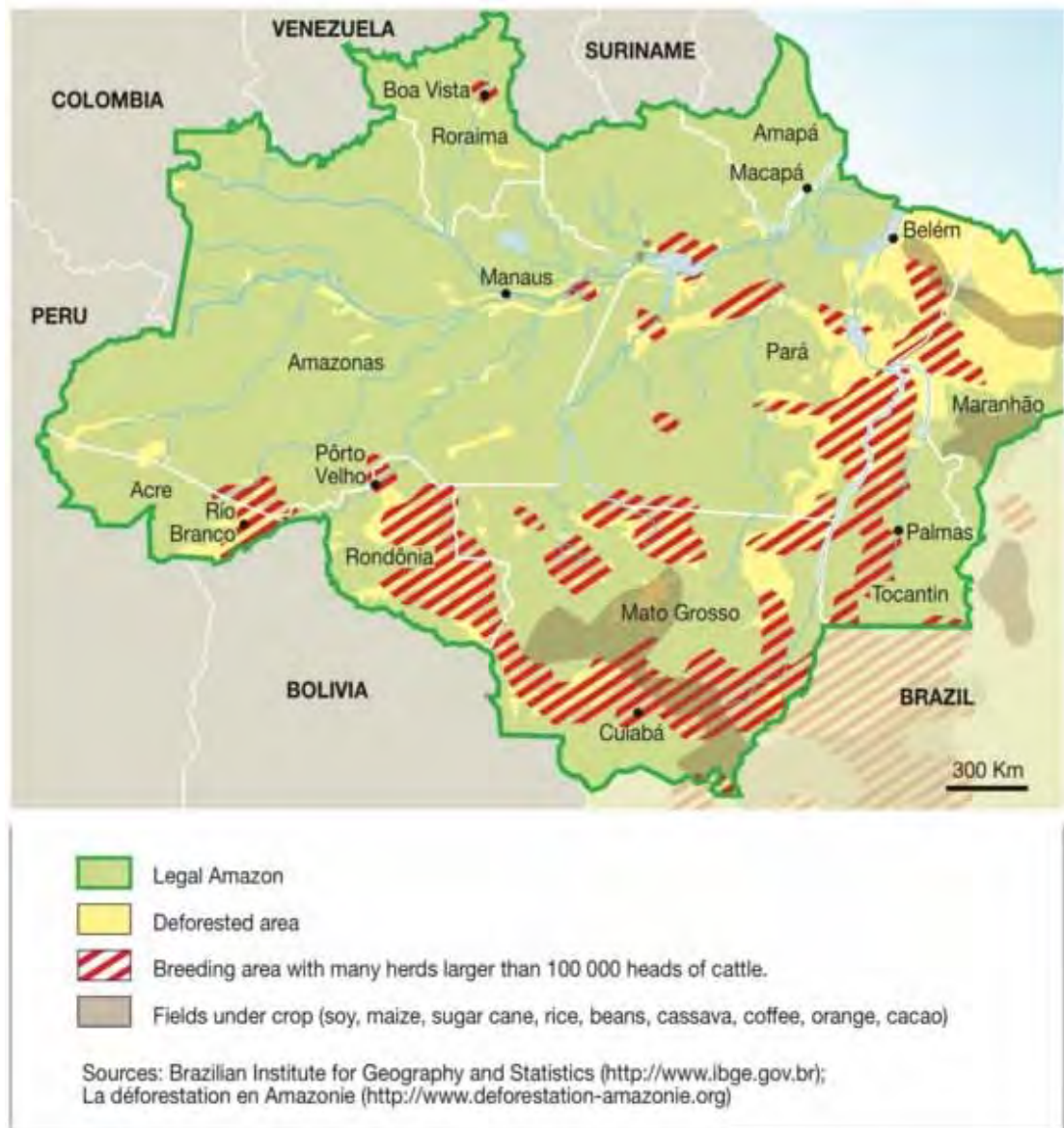
Category F: Legal Practitioners in the field of Sustainable Development

Édis Milaré, on 13/08/2009.

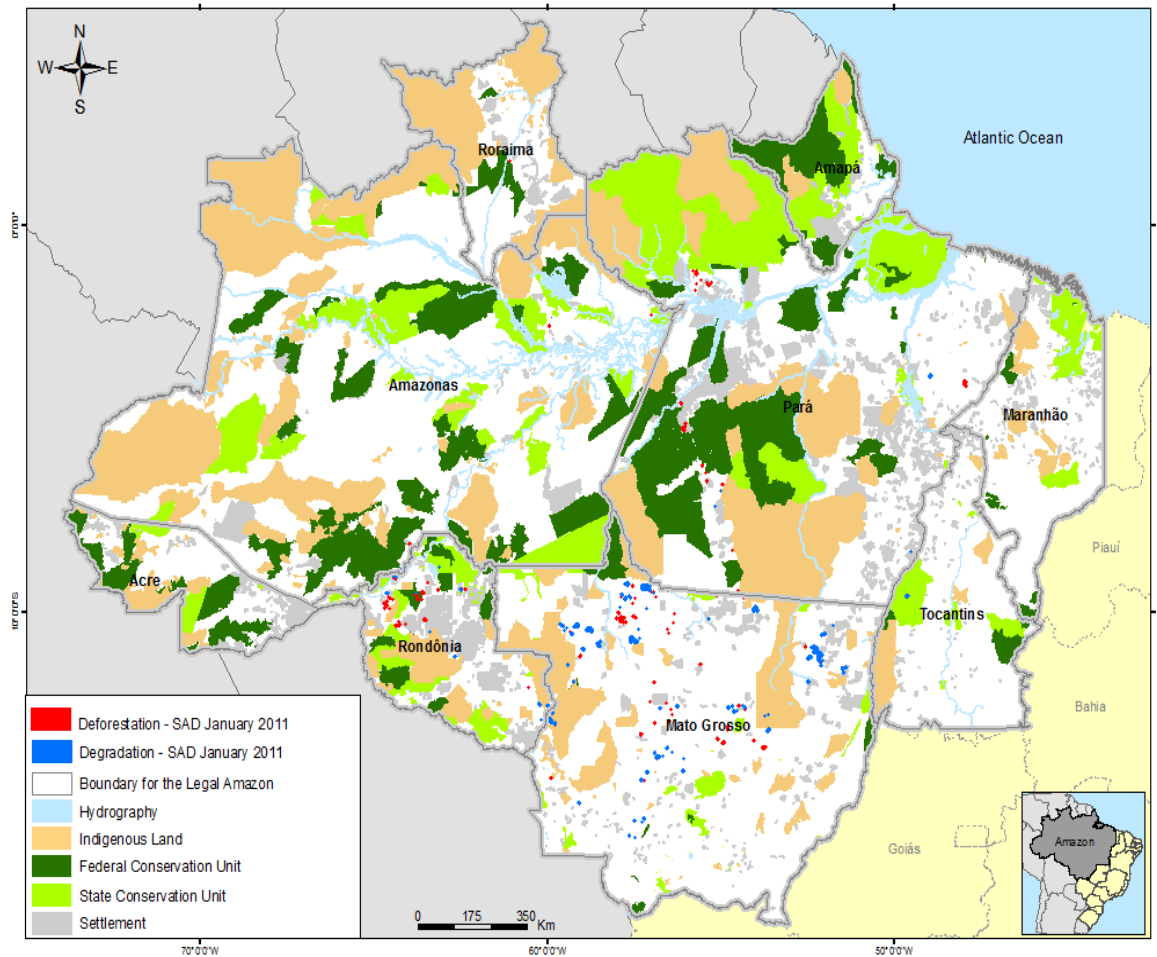
MAP 1: THE AMAZON REGION



MAP 2: THE BRAZILIAN AMAZON



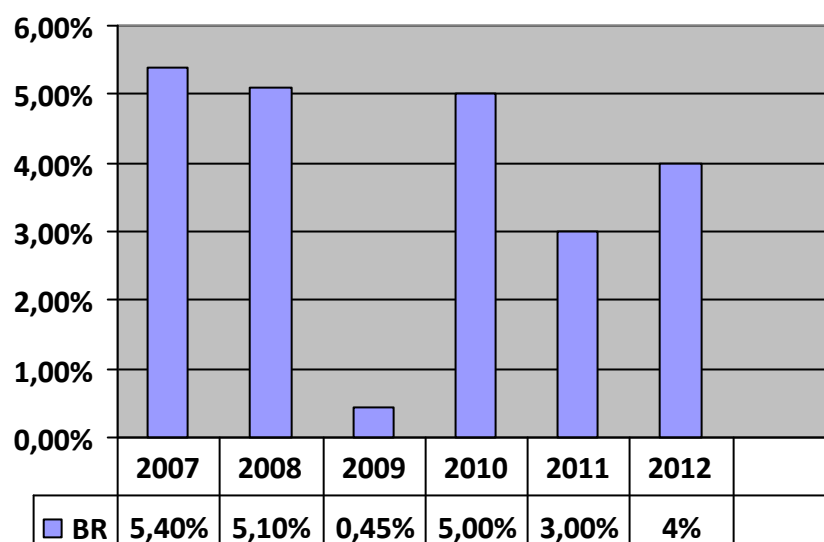
MAP 3: DEFORESTATION IN THE BRAZILIAN AMAZON



Source: IMAZON

(http://www.imazon.org.br/mapas-en/monthly-deforestation-in-the-legal-amazon-2011/deforestation-january-2011/image_view_fullscreen)

FIGURE 1: GDP GROWTH - BRAZIL



2012: GDP Growth Projection

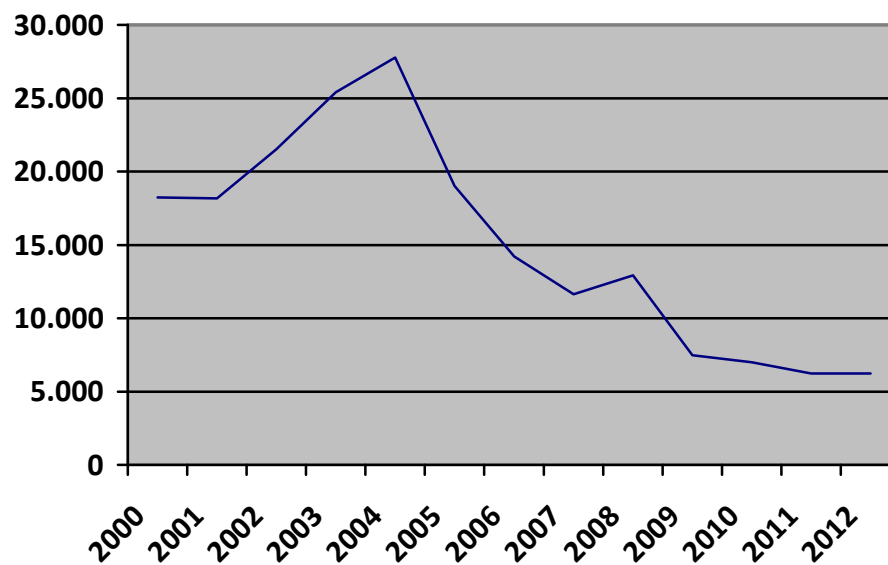
Sources: Brazil' Central Bank and Ministry of Treasury

FIGURE 2: THE WORLD'S LARGEST ECONOMIES

	2011	2020 (projection)
1	US	US
2	CHINA	CHINA
3	JAPAN	JAPAN
4	GERMANY	RUSSIA
5	FRANCE	INDIA
6	BRAZIL	BRAZIL
7	UK	GERMANY
8	ITALY	UK
9	RUSSIA	FRANCE
10	INDIA	ITALY

Source: The Centre for Economics and Business Research (CEBR), Annual World Economic League Table (2011)

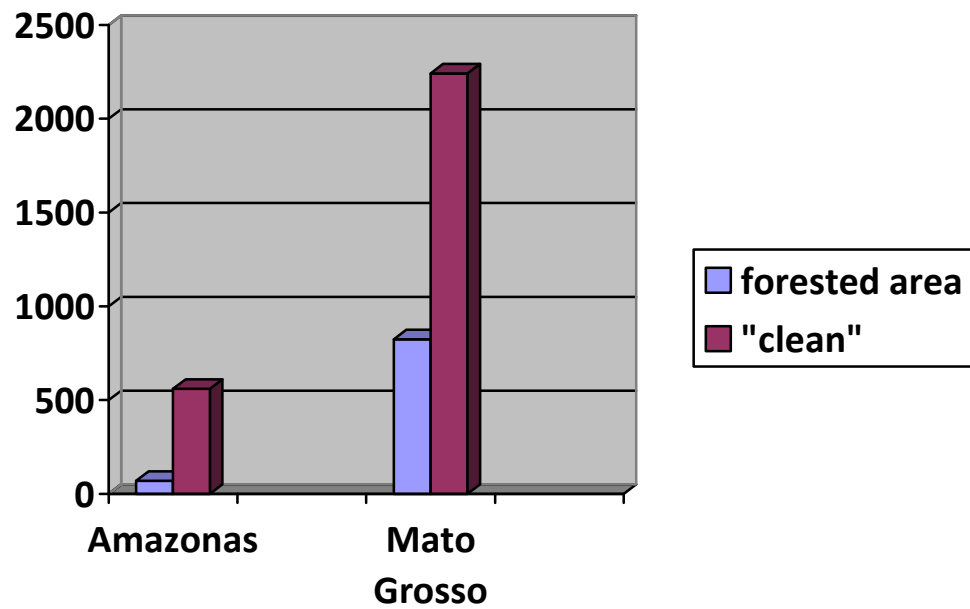
FIGURE 3: DEFORESTATION RATES IN THE BRAZILIAN AMAZON
(sq. km/year)



2012: Deforestation Rate Projection

Source: National Institute for Space Research – INPE

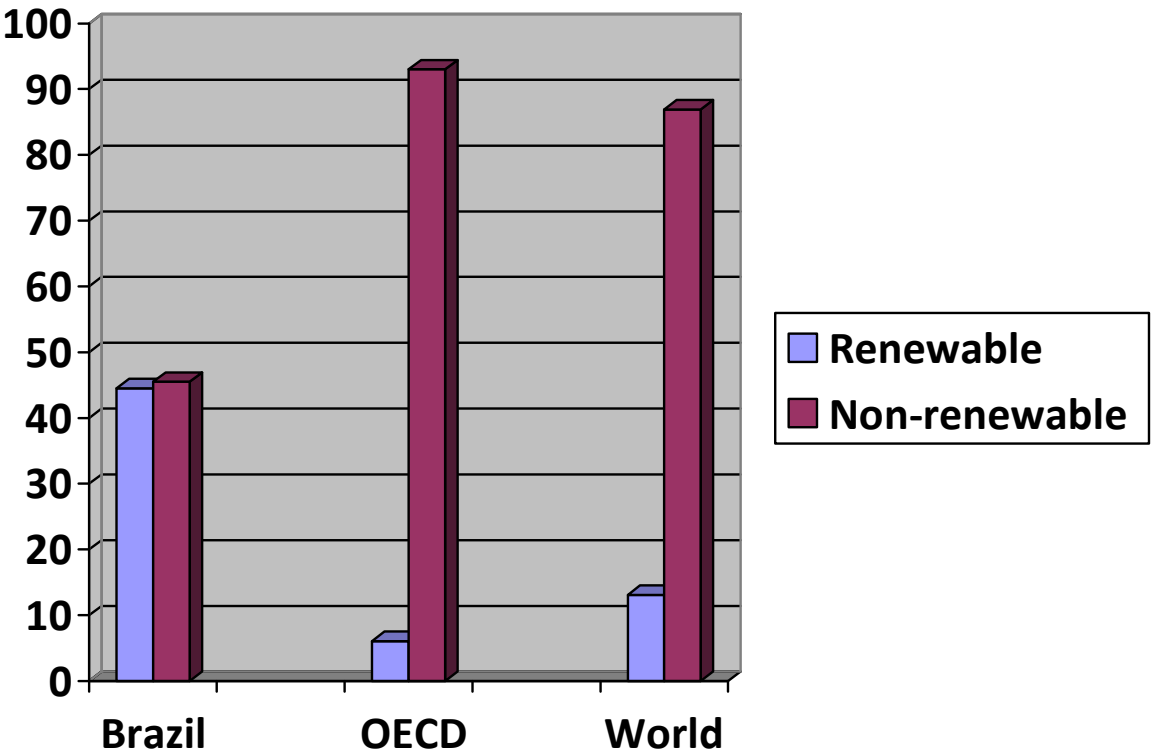
FIGURE 4: AVERAGE COSTS OF LAND IN THE BRAZILIAN AMAZON
(R\$ Brazilian reais/hectare)



Source: Consultoria FNP

FIGURE 5: ENERGY MATRIX

(percentage of domestic energy supply)



Source: Brazil’s Federal Ministry for Mines and Energy