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The Brazilian rural development model in the context of green economy

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THE BRAZILIAN RURAL DEVELOPMENT MODEL IN THE CONTEXT OF GREEN ECONOMY

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ABSTRACT

This paper discusses the Brazilian rural development model in the context of Green Economy and the debate about sustainable development, issues that have been discussed in international sphere. In this way, conceptions and new concepts have been defined which clarify the ideas and mechanisms involved in this new approach. In general terms, these conceptions and concepts have proposed the organization of another social order that looks beyond purely economic aspects. These themes were the starting point for the Rio +20 Conference in 2012. With these scenarios in mind, this paper will try to answer the following question: Is the green economy approach a good way to promote sustainable development in countries like Brazil? To answer this question we are concentrating our analysis in the agricultural sector. After a briefly discussion about the ideology and the thesis contemplated in the expression, "green economy" and the current development model in Brazil, we analyzed the Brazilian rural development model and the public investment in the agricultural and livestock sector, seeking to emphasize the government option towards primary commodity production for international markets. The main conclusions of the paper is that to understand the Brazilian society today we need to take in account the transition from an agrarian society to an industrial society, a process that occurred in Brazil during the 20th Century. This path Brazilian society has mapped since its inception is marked by the contradiction between abundance for a few portions of the population and famine for the great majority. It is important to register that this contradiction was enhanced during the post-war period and led Brazil to figure among the most contradictory countries in the world: if the year 2011 showed Brazil to be the 6th largest economy in the world, at the same time it continued to be the country with the greatest inequalities in the world and the greatest rates of social exclusion. So, we can conclude that these are exactly the social and political problems that continue to impede a more just and equal Brazilian society from taking shape, both in its rural and urban environments.

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INTRODUCTION

The environment and sustainable development are topics that have been discussed in international spheres since the 1960s. In 1968, the Rome Club was constituted, with the objective of discussing and analyzing the limits of an increase in a natural resource-based economic growth. *The Limits of Growth*, released in 1972, is the work of the Rome Club researchers led by Dennis L. Meadows. In it, they discussed the idea that due to the planet's finite natural resources, economic stability with respect to natural resource scarcity would require the freezing of global population growth and industrial capital, thus establishing an economic model of development based on *zero growth.* Per the Rome Club's publication, such a scenario would be the only way to avoid pending environmental catastrophe. Since then, the avenues of discussion concerning the environment, among actors of international impact have multiplied in such a way that diverse concepts have arisen in order to accommodate a multitude of environmental subjects and particularities. One of the most recurrent has been the concept of Sustainable Development. According to (2010), this is a normative concept that is known as eco-development. Developed initially in the early 1970s, it was officially introduced by Maurice Strong in 1973 (Layargues, 2007) after the Stockholm Conference realized in 1972. Later, Sachs (2009) built upon this concept by creating a table of sustainability strategies based on three basic pillars: economic efficiency, social justice, and ecological prudence. All these discussions led to a document called the "Brundtland Report", prepared by the World Commission on the Environment and Development and released in 1987. The report was written amid a set of controversies within the world's contemporaneous economic mindset, particularly due to the controversies created by the ideas of the Rome Club, which established a static analysis between economic growth and the environment.

This subject has garnered the systematic attention of the United Nations (UN) since the 1980s. The well-known international organization began its formal discussions concerning climate change in 1988 in Toronto, Canada, with the *Conference of the Changing Atmosphere*; followed by the creation of the *Intergovernmental Panel on Climate Change (IPCC)* in 1989; and then the *IPCC's, First Assessment Report* in Sundsvall, Sweden (August, 1990); which culminated with the *Framework Convention for Climate Change* (UNFCCC) at the *ECO-92* in Rio de Janeiro, Brazil (June-1992).

After the United Nations' Conference on Environment and Development (UNCED), also known as the Earth Summit or just Rio-92, was carried out, the following documents were published: Agenda 21 (1997), a program for global action with 40 chapters; the Rio Declaration, a set of 27 principles through which human beings should interact with nature; The Forest Principles; the Convention on Biological Diversity; and the Framework Convention for Climate Change. These documents, especially Agenda 21 and the Rio Declaration, outline the essential policies towards a model for sustainable development that attends those most in need and recognizes the limits of development on a global scale (SEQUINEL, 2002).

Five years later, the event that would legitimize global warming problems occurred in Kyoto, Japan; when a new document: the "Kyoto Protocol" was written. In it, a set of mechanisms geared towards the reduction of Greenhouse Gases (GG)[1] are proposed, highlighting the instrumental bases towards the creation and development of a carbon credit market, which has been set up in several regions throughout the world.

It was with this in mind, that the UN's Commission on Sustainable Development (CSD) suggested a new earth summit to be held in 2002: the World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa. The main objective of the Conference was to review the goals proposed via Agenda 21 and to direct actions towards the areas that would require additional efforts to implement, as well as to reflect upon the other agreements and treaties signed during Rio-92. This new World Summit, ten years after Rio-92, was supposed to define a global plan of action able to reconcile the legitimate needs of humanity's economic and social development as well as attending to the obligation of maintaining the planet inhabitable for future generations.

According to Lago (2006), the most significant results from the 2002 Johannesburg summit were the establishment or reaffirmation of the goals for the eradication of poverty, for waterworks and sanitation systems, health care, dangerous chemical disposal, and fishing and biodiversity; the inclusion of the two topics that presented the greatest challenges in numerous previous negotiations (renewable energies and corporate accountability) were the political decision to create a world solidarity fund to eradicate poverty and, the synergy among different social actors towards making partnership projects more dynamic and efficient.

The Rio +20 conference was to take place ten years after the World Summit (2002), in the hopes to foster ample debate concerning the planet's status and the current paths of civilization. Starting from the perspective of articulating different social actors' objectives, an agreement was sought concerning a new set of directives capable of effectively achieving their common goal of constructing a socially just, economically prosperous, and environmentally sustainable society. In general terms, these new directives propose the organization of another social order that looks beyond purely economic aspects. In the 20 years since the first Earth Summit, more harmonious social relationships between humanity and nature have been put forward.

1 The principle gases which have caused the Greenhouse Effect as established in the Kyoto Protocol are: CO_2 (Carbon dioxide), CH_4 (Methane), N_2O (Nitrous oxide), SF_6 (Sulfur hexafluoride), HFCs (Hydrofluorocarbons), and PFC_5 (Perfluorocarbons).

These topics were the starting point for the Rio +20 Conference. A great majority of the benchmarks established during Rio-92 needed to be reaffirmed 20 years later, keeping in mind that many countries - especially those considered developed - had yet to adopt the principles established 20 years prior.

On the one hand, the transformation from a principle to practical public policy was one of the most difficult to negotiate when seeking an agreement among chiefs of state and governments present at the last conference in 2012.

On the other hand, all these events were decisive to insert the sustainable development perspective into the heart of UN decisions such that it would be seamlessly integrated with national and international development strategies. In this case, the great question raised by the United Nations Environmental Program (UNEP) in recently years was: How can we attend the increasing demand of world population without depleting natural resources?

With these scenarios in mind, this paper will try to answer the following question: Is the green economy approach a good way to promote sustainable development in countries like Brazil? To answer this, the paper concentrated its analysis in the agricultural sector.

In order to attend such objectives, this chapter is organized as follows: Firstly, the current introduction; the following section discusses the ideology and the thesis contemplated in the expression "green economy", seeking to provide a historical context for this debate; next section offers a brief discussion of the current development model in Brazil, seeking to highlight the principle contradictions and challenges within a sustainable development perspective; the following section analyzes the Brazilian rural development model and the public investment in the agricultural and livestock sector, seeking to emphasize the government option towards primary commodity production for international markets. Finally, the last section presents the principle conclusions findings of this study, with emphasis in clarifying the key challenges towards constructing a model for sustainable development.

1. THE GENERAL APPROACH OF GREEN ECONOMY: CONCEPTS AND CRITICISMS CONCERNING THE "GREEN ECONOMY"

The UNEP defined a green economy as that which would result in greater well-being and social equality at the same time as it would significantly reduce environmental risk and ecological scarcity. It would achieve these aims through its support from three basic pillars: a low-carbon economy, efficient use of natural resources, and social inclusion.

For Peret (2012), a series of UN documents sought to elaborate a conceptual basis for a green economy. In February of 2009, the UNEP released a set of political proposals seeking to combat global warming and the financial crisis under the title, A Global Green New Deal (UNEP, 2009), inspired by the social and economic program undertaken by Franklin D. Roosevelt, President of the United States of America (USA), during the depression of 1929.

In June of 2009, ministers from 34 countries signed the *Declaration on Green Growth*[2], and in so doing attested that, "*economic recovery and environmentally and socially sustainable economic growth are key challenges all countries are facing today"(OECD, 2009:1-2)*. According to these ministers, green and growth are compatible. They solicit that the Organization for Economic Co-operation and Development (OECD)[3] create a strategy for green growth, as published in the document *Towards Green Growth,* published in May 2011 by the OECD. In December of 2009, the United Nations Department of Economic and Social Affairs (UNDESA) published a technical note called, *A Global Green New Deal for Climate, Energy, and Development*[4]*.*

In 2010 the World Business Council for Sustainable Development (WBCSD) published a report called, *Vision 2050 - a new agenda for business*[5], signed by 29 large corporations who make up a section of this organization. Vision 2050 was proposed as a tool to formulate public policies and decision-making over the next 40 years.

In 2011, the UNEP released a new report denominated *"Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication"*, which outlines a path for economic growth through 2050. It is the base document this organization intended to discuss during Rio +20. This report *"[…] is among UNEP's key contributions to the Rio+20 process and the overall goal of addressing*

2 http://www.oecd.org/dataoecd/58/34/44077822.pdf
3 The OECD - Organization for Economic Co-operation and Development is an international organization composed of 34 countries which accept the principles of representative democracy and free market economy, headquartered in Paris.
4(http://www.un.org/esa/dsd/resources/res_pdfs/publications/sdt_cc/cc_global_green_new_deal.pdf)
5 http://www.wbcsd.org/WEB/PROJECTS/BZROLE/VISION2050-FULLREPORT_FINAL.PDF
—Vision 2050 – a new agenda for business

poverty and delivering a sustainable 21st century"(UNEP, 2011:5-6). In it, the UNEP defines a green economy as *"one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities," (UNEP, 2011:9)*. However, some lines further along, this definition provides some measurements within the same ongoing paradigm of natural domination and exploration: *"The development path should maintain, enhance and, where necessary, rebuild natural capital as a critical economic asset and as a source of public benefits, especially for poor people whose livelihoods and security depend on nature, (UNEP, 2011:10-12)*. Thus, nature continues to be seen as an economic asset.

Throughout the publication of these documents, one can see that the UNEP gradually and continuously approached the business world's perspective, of large corporate interests, both through partnerships and the organization of various events. It becomes clear that the common denominator among all these documents is the search for a strategy of new economic policies, investments, incentives, and technological innovation clustered with environmental policies so that the economy could recover and new job opportunities were created, ever seeking capital growth and accumulation.

The UNEP, through its discussion paper *"A Global Green New Deal",* suggests that world economic recovery requires a combination of political actions which face the *"[…] immediate global crises due to climate change, fuel uncertainty, the growing scarcity of clean water, the deterioration of eco-systems, and above all the worsening of world poverty."(UNEP, 2009:10-11).* The purpose is to reduce our dependency on carbon fuels, protect eco-systems and water sources, and reduce poverty.

As it deals with a relatively new nomenclature, diverse questions and polemic discussions were generated as a result. On the one hand, one notes that some governmental and civil society sectors agree with the adopted strategy, assuming the validity to incorporate social and environmental demands with economic activities in such a way as to conduct a sustainable development process. On the other hand, others show that this proposal translates to risk through providing incentives for the expansion of commoditization processes concerning nature and towards humanity's common goods. Such a trajectory would result in a greater concentration of power and wealth and consequently, expanded social inequities.

For such critics, it is not enough to "green" the capitalist means of production, as in the face of incessant profit-maximization, the environment would become another commodity used to maximize earnings. Thus, they defend that reprimanding the misguided use of natural resources is not enough. Instead, it becomes necessary to provide for people's well-being throughout the planet, incorporating damages caused to eco-systems and society as a whole, via economic agents that influence the pricing system.

Many criticisms that have arisen since the conference point out the superficiality of its propositions, since they do little to penetrate the real causes behind processes of social and environmental degradation. As such, one notes the limited attention given to official documents concerning the causes of hunger and poverty worldwide; the energy crisis; climate change, etc. They are all elements which could offer greater consistency to the sustainable development argument through using the relentless struggle to diminish inequality, both among and within nations, as its central catalyst. This can only be possible when one has clarity concerning the causes that lead to such inequality generating processes.

For Amazonas (2012), despite the existence of vast euphoria in defense of a Green Economy, which for many is a manifestation of the concretization of Sustainable Development precepts, the idea of a Green Economy does little more than constitute a type of downgrade with respect to Sustainable Development. The Development concept is multidimensional, including an economic concept -- as it presumes economic growth -- but is not limited to economics. It is a fundamentally asocial and political concept, longing to empower human betterment. The concept of sustainability is also multidimensional, including not only an environmental dimension, but social, economic, political, and cultural dimensions as well. The concept of a Green Economy reduces Development to Economics sphere and Sustainable to the environmental dimension of "Green".

For the author, the definition of Green Economy is partly a step back from Sustainable Development, but not necessarily a regression. It is also a cutout from Sustainable Development. While a reduction may be little or complete, it may also provide greater focus. Such focus may be positive if it offers boundaries that are able to effectively give rise to concrete policies and actions. It may however, produce such isolated results that little sense and less effective change may arise given the more ample and relevant reality at hand. Thus, it may bring about gradual and cumulative changes that afterwards lead to profound structural changes. But it may also inspire insubstantial changes.

2. THE MAIN CHARACTERISTICS AND CONTRADICTIONS OF THE RECENT BRAZILIAN ECONOMIC DEVELOPMENT MODEL

After several decades of stagnation, the Brazilian economy fostered important changes as of the turn of the 21st century. In so doing, it started a new cycle of growth, which steered some governmental actions towards fighting social inequalities and resuming the search for a new pattern for development, while maintaining the structural conditions of a peripheral economic system.

This new phase of the Brazilian economy was bolstered through the use of several political-economic instruments, which allowed the country greater insertion in world arena while simultaneously alleviating the effects of the then current crisis, in 2008. This economic period is both under scrutiny and questioned as this chapter goes to print, as problems directly and indirectly generated in this crisis have led to greater effects within social strata, the most expressive being the instauration of simultaneous social protest in most major cities during the month of June, 2013.

The current process involving social protests, has reinforced the myth, since 2003, that Brazil was enjoying a new phase of development, based on overcoming two essential factors: poverty for a large part of the population and an extreme dependence on foreign capital. This wave of optimism, which has been predominant until recently, in truth, covers a collection of fragilities and contradictions within the Brazilian mode, which have been pervasive for years.

From an aggregate economic performance perspective, one observes that from 2003 through 2011 Brazilian GDP grew consistently, with growth rates of 3.6% annually on average. In and of itself, such numbers are not exceptional when one considers the need to maintain 5% levels in order to keep pace with annual labor growth. In addition, Brazilian economic performance rates were lower than the majority of Latin American countries over the same time frame.

Brazilian economic growth over this period was considered possible due to the favorable international scenario, in terms of an expanded demand for commodities in global markets and their subsequently increased prices. In addition, the economic climate provided a recovered internal market to stimulate demand for durable consumption, largely as a function of a credit policy resulting from international liquidity surpluses through 2008.

Even with governmental authorities noting that the country would face a crisis by adopting counter-cyclical policies driven by internal demand, one verifies that investment rates -- the base for endogenous growth -- were practically stagnant at 17% throughout the first decade of Brazil's 21st century. It is also notable that these rates are much less than levels obtained from the Brazilian economy from 1970 to 1990.

Despite such poor indicators, the country managed to maintain inflation rates under control, which permitted expansion of various international financial flows towards Brazil. At the same time, a situation was created in which the largest country in Latin America became an international lender. In turn, the scene was misleadingly set such that external accounts problems were definitely resolved. This favorable scenario towards international investment also contributed to the confirmation of the view that the country began to increase its relevance on the world's stage. As a proof of such prestige, one can point to the allocation of two of the globe's sporting mega-events: the 2014 World Cup and the 2016 Summer Olympics, on Brazilian soil.

2.1. An internal market based strategy

The strong expansion of credit, first and foremost from state banks, helped to maintain economic activity. In terms of employment behavior, one observes that from 2003 to 2010, more than 14 million formal jobs were created in Brazil, decisively contributing to reduce job market instability by diminishing the informal sector. However, it is necessary to note that the large majority of these new occupations were for low salaries. Brazilian workers continued to average 44-hour work weeks and labor turnover increased during the first decade of the 21st century. At the same time, one observes policies adopted to appreciate the minimum monthly salary between 2003 and 2010. Such efforts promoted a 60% recovery of the value of this salary base (Tavares Soares, 2011, IPEA 2010a).

As such, Brazilian per capita income, stagnant for more than two decades, grew at an average rate of 2.8% per year during the period from 2003 to 2011. These indicators provoked positive effects on the equality of income, molding the historical separation between the average incomes at both ends of the spectrum: The income inequality between the 10% richest Brazilians was reduced to 53 times the average income of the 10% poorest. According to the government, the consequence of such income disparity was that approximately 20 million Brazilians were lifted out of poverty (IPEA, 2010b; Pochmann, 2007).

Parallel to these economic movements, the social policies both in welfare and pension policies, as well as income transfer policies adopted by the governments of this period were decisive in keeping the consumer market warmed up, since more than 13 million families benefitted through the year 2011. However, it must be stated that these factors did not significantly alter ongoing consumption within the socio-economic disparities still present in Brazilian society (IPEA, 2013; O ESTADO DE SÃO PAULO, 2010).

Even focusing on the importance of this process for government spending expansion into the social sphere, one sees a great contradiction present in this model: while social policies received financial support equivalent to 1% of GDP from 2003 to 2010, expenditures on public debt interest payments surpassed 3%

over the same period. For as much as governments claim to prioritize their attention to social demands, such a discrepancy concerning actual spending reveals that they in fact seek to effectively guarantee financial capital profitability (AKB, 2010; FUNDAP, 2011; IPEA, 2012).

The most visible consequence of this contradiction revolves around two spheres. On the one hand, even with the amplification of formal work positions, one observes the existence of a substantial portion of the work force -- almost 40% -- that is unemployed or sub-employed (IPEA 2010A; 2010b), that is, living on income inferior to the minimum salary. On the other hand, a contingency of more than 30 million people live in a state of poverty, a number greater than the total populations of many Latin American countries.

Finally, it is important to mention that the strategy to align the Brazilian economy to the global logic of capitalist accumulation has led to a reconfiguration of this economy within the international division of work, imposing a deindustrialization process in the country. This is supported by the low competitiveness of Brazilian products in global markets. It is possible to note increasing shares of commodities based on the exploration of natural resources within international commerce accounts in Brazil, as can be seen in the following section.

2.2. The primary commodity export strategy

In the beginning of the 21st Century, a strategy begins to consolidate within Brazil towards strengthening the global commercial insertion linked to the international circuit of primary commodities based on the intensive use of natural resources, both those of an agricultural nature and those derived from mineral extraction activities. By so doing, the country positions itself as one of the largest exporters worldwide, but without competitive international insertion, especially in the industrial sector. This phenomenon, known as the primarization process of Brazilian exports, does not result merely from good price performance in some commodities in global markets boosted by growing Chinese demand. It is also due to the lack and/or low competitiveness of Brazilian industrialized products in the face of competitors within international commerce.

A decrease in products with greater aggregate value on the agenda of Brazilian exports is a recent phenomenon which reveals a process of structural change within the country's own economy; considering that during the last decade of the 20th Century primary products constituted less than 37% of total exports. In 2010, they make up 51% of the total. With this, the market share of primary commodities (the country's participation in the world commodities market) rose to 4.66% of the world's exports of such products (IPEA, 2011; Mattei, 2012; Governo Federal, 2010).

At the end of 2011, governmental economic authorities celebrated the achievement of yet another record, as an export surplus of U$ 30 billion was reported. However, it is important to note that two types of products led such balances: agricultural commodities and products derived from natural resource exploration, especially iron mining. As such, a dominant characteristic for business relationships is consolidated within the country based on exporting products with low levels of technology.

Analyzing the different product groups among Brazilian exports given their technological intensity from the period of 2000 to 2010 reveals a rather unpleasant scenario for Brazil. While products with high technological intensity decreased from 18% in 2000 to 9% in 2010, the share of primary commodities increased over the same time period from 37% to 51%. Products with average technological intensity saw their participation diminish from 18% to 14% during those ten years (Mattei, 2012, AKB, 2010, FUNDAP, 2011, Serrano & Summa, 2011). These numbers show the increased participation of agricultural and mining products on the Brazilian agenda. Even if these products have compensated the lack of competitiveness among other sectors, they do not generate sufficient employment or income to meet the needs of the population. Therefore, it becomes necessary to revive the role of the industry within the country's development process, through demanding new investment both public and private, in areas considered to be scientific or technological.

It is in this component of investment in which two serious problems are present. On the one hand, Brazilian economic growth over recent years has shown that the little existing investment was strongly induced through increased domestic demand. This reveals a macro-economic fragility. On the other hand, the level of public investment in Brazil has historically been low when compared to international standards, placing itself currently below 3% of GDP (Governo Federal, 2010; Mattei, 2012; AKB, 2010).

Over the last year participation of basic raw materials has increased in Brazilian trade balances. The segment accounts for 52% of the country's total sales. Thus, more than half of the resources obtained through international trade refer to the intense natural resource commodities sector, highlighting products like iron mines, meats, soy, coffee, and sugar (IPEA, 2011; Mattos & Jaime Jr., 2011).

For a number of analysts this movement, of the often called *primarization of exports*, is associated with a systematic economic problem related to issues in infrastructure, distorted tax burden, and the overvaluing of the national currency against foreign currencies for long periods, which severely increases Brazilian production costs when measured in dollars. *Ceteris paribus*, currency overvaluation is the most significant factor, as it makes imports relatively cheaper and manufactured goods for export more expensive.

The main problem with the country de-industrializing itself, is the previously mentioned pattern in which the gains acquired throughout the 20th century will be lost, possibly regressing to a primary-export based economy in the 21st century; whose dynamism becomes ever more conditioned to the center of the world economy. While this happens, other nations whose development would be driven by industry and technological progress would be able to generate quality employment and the necessary income for the social development of its population.

3. AGRICULTURAL SECTOR: PUBLIC INVESTMENT, RESULTS, AND MAIN CONTRADICTIONS

3.1. Evolution of the agrarian structure

Rural property distribution in a determined country is one of the fundamental indicators that measures the democratic character (or lack thereof) within societies that are constituted upon agrarian bases. The Brazilian case is such a society.

In Brazil, the debate over agrarian organization is intimately linked to the country's historical development process. From the period of hereditary captaincies, through a number of primary economic markets (sugar, mining, livestock, cotton, and coffee), to modern times, the question of land ownership continues to persist within national political debate.

This scenario was significantly worsened in the second half of the 20th Century when an agricultural modernization policy was adopted (Mattei, 1998). This process caused profound transformations in the agricultural production sphere. It also provoked a series of environmental and social consequences, particularly due to the population migration within Brazil which occurred during the same period, leading more than 80% of the total population to urban centers (IBGE, 2011).

One can affirm in large part, that the social conflict that was introduced in rural areas of the country is directly related to Brazil's agrarian development model, anchored to two basic pillars: The first is land concentration and the second is social exclusion of traditional family farmers. This is an important aspect to be considered when analyzing the effects of public policy concerning agricultural organization. In the Brazilian case, one notes that concentration of land ownership strongly increased during the modernization process within agriculture. With that, extreme inequality has continued into the current day and age.

Label 1: Evolution of land concentration in Brazil (Gini Index)

YEARS	GINI INDEX
1975	0,800
1985	0,820
1995	0,856
2006	0,872

Source: Brazilian Institute of Geography and Statistics (IBGE, 2009).

According to official statistical data, the Gini index[6] has grown over the past four decades, reaching its peak of 0,872 in 2006, when the last agricultural census was carried out in Brazil. These indicators place Brazil among the group of countries with the largest rates of land concentration in the world.

Agrarian reform is a public policy that should promote a profound modification in the agricultural structure of the country. It should occur in such a fashion so that access to land is democratized. Unfortunately, this is not the case in Brazil, as throughout recent decades the public policies adopted by the country in various arenas have ended up facilitating greater concentration of land ownership. As such, an unfavorable perspective is envisioned for this country, since public policies concerning rural issues are not even able to attend the layers of family farmers who are displaced from the agricultural sector year after year. This scenario returns the historical need for ample agrarian reform in Brazil to the public agenda.

3.2. The contradictions of the country's rural development model

The countryside comprises a diversity of physical environments, natural resources, eco-systems, ethnicities, cultures, social relationships, technological patterns, and forms of social and political organization. They demonstrate that the Brazilian rural landscape is diverse, plural and heterogeneous. Even with such rural diversity, it is still strongly influenced by an unequal and unfair agrarian structure with a historical tendency to concentrate land ownership. Such a process provokes social exclusion and systematic poverty. It ends up constituting an impediment towards the country's development.

Historically, this heterogeneity has provided for the concurrent existence of antagonistic projects confined to the same geographical space. On the one hand the business agriculture (agribusiness) reproduces within the country a model based on monoculture and landlordism. In turn, it generates environmental degradation, agricultural labor exploration, social exclusion, and the concentration of lands and income. On the other hand, one finds family farming,

6 The Gini index measures the level of inequality among income distribution or other resources, varying from zero to one. Indicator closer to zero, means better distribution of that resource. In opposing, indicator closer to one means greater inequality of that resource.

whose means of production seek to establish productive systems focused on biodiversity, family work values, the production of foods destined to the population's food safety, and the promotion of environmental sustainability.

Throughout recent years, it is undeniable that increased competitiveness in agribusiness through productive specialization, adopting modern technologies, and large-scale production has been fundamental towards obtaining foreign trade surpluses and helping to balance the nation's economic accounts. However, in regions occupied predominantly by this agricultural sector, one also observes the existence of diverse economic, social, and environmental problems.

Agribusiness' domino scenario has contributed to the conformation of a mistaken view of the rural world, as all the remaining forms of production that have not become part of agribusiness are taxed, delayed, and stilled in time. Thus, one conforms to a conception of rural development focused exclusively on the principles of modernization as defined by the green revolution.

Even facing a productive growth, the Brazilian rural development, settled within, agribusiness has generated some contradictions. In demographic terms, it has promoted an enormous population transfer towards urban areas, both mid-sized cities inland and large metropolitan centers towards the Brazilian coastland. With such a migration after the conclusion of the "Brazilian economic miracle" of the 1970s, part of this contingency has not been absorbed by the urban job market, maintaining them in precarious living conditions with low salaries earned for their labors, if employed at all.

This situation has been further aggravated over recent decades with the liberal policies that have provoked a growing liberation of labor, even in moments of economic growth and increases to productive investments, especially in the industrial and agricultural commodities sectors. In this way, one may affirm that a large part of the urban crisis which has been exacerbated over the past two decades in practically every region of Brazil through an unorganized occupation of its territory with constant pressure upon public services (housing, sanitation, health care, and education) and more recently, a wave of social violence has its roots in the model of development and the complete abandonment of rural populations concerning basic services the State should guarantee.

From an environmental sustainability perspective the situation becomes even more somber, given that agricultural modernization has induced irreparable damages to natural resources such as water contamination, the silting of rivers, lakes, dams; the loss of cultivatable soils; predatory deforesting; and the destruction of biomes. Beyond this, accelerated agriculture production in the direction of other regions such as the Brazilian Wetlands (*Pantanal*) and the Amazon River Basin have placed greater doubts upon the sustainability of this model for future generations.

Even facing this avalanche commanded by agribusiness, the family farming sector resisted and kept itself alive within the country's rural setting. The elevated number of this type of farmers -- in truth approximately 80% of rural establishments are family-based (IBGE, 2009) -- demonstrates the existence of another type of agriculture that does not follow the modernization paradigm and that possesses a distinct operational logic.

In large part, family agriculture follows the logic of diversification in crops, production as well as animal husbandry, combining agricultural production with raising livestock, the premise being concern for environmental preservation. Counter to the single crop model, these family productive units more intensely use family-based work and become less dependent on external inputs. This is one form of agriculture in typically agrarian societies where the majority of the population maintains its traditional knowledge accumulated over different generations, preserves its own culture, and keeps to their rural ways of life.

In summary, the Brazilian rural setting continues to be extremely complex and diverse. When all productive sectors are equally supported by public policies, the results will be seen in benefits to society as a whole. This has been the case of the family farm, which in the last two decades has received important government support, as will be shown in the following section.

3.3. Public policies for family farm support

The Brazilian Agricultural Census carried out in 2006[7] by IBGE – National Governmental Statistic Bureau, by its Portuguese acronym - revealed that the country has 5.176.636 agricultural establishments. Of these, 809.369 were classified as employer originated (agribusiness) while 4.366.267 were classified as family farms. Internal market consideration of the family farming segment[8] shows that more than 60% of the 4 million family-based establishments were composed by farmers with annual family incomes less than R$ 3.000,00 (US$ 1.500). Such amounts characterize them as part of the extremely poor. In addition, the great majority of these farmers under this condition of poverty are geographically located in the North and Northeast Regions of Brazil. In other words, family farms make up 85% of Brazil's rural property total.

Until the 1990s, the principle public policy to support Brazilian agriculture -- the rural credit system -- presented great internal contradictions. They led to an extension of the exclusion process of practically all the family farming segments, throughout all the geographic regions of Brazil. In truth, state intervention, during the period of agricultural modernization from 1960 to 1980, led to an increase in the marginalization process throughout rural Brazil. This process was especially felt by the family farmer, the most weakened sector of production in terms of its access to financial resources and agricultural product markets themselves.

7 Most recent official data.
8 Brazilian family farming is very distinct across large geographic regions.

In order to face and overcome the problem at hand, in 1996 the National Family Farming Strengthening Program (*Programa Nacional de Fortalecimento da Agricultura Familiar* - PRONAF) was created. Its objective was to stimulate the expansion of family farming in Brazil. In a few short years this program spread through all the major regions of the country. Today, it is present in the vast majority of municipalities in Brazil. However, the adoption of this policy also sought to attend the most representative sector of Brazilian agriculture, as previous statistics have shown.

Along this short trajectory, the policy has suffered diverse alterations of both normative and institutional natures that have sought to enhance its actions especially concerning the financial system. Family farmers are classified according to their annual gross income levels and have access to financing at advantageous interest rates subsidized by the Brazilian Federal government.

After the adoption of this Brazilian family farming public policy, the small farmer began to obtain greater notoriety within the rural sector, both in terms of family farming participation within this sector in the general sense of national agricultural production as in terms of the socio-economic impacts caused by the program, especially in the smaller and medium-sized cities of the Brazilian countryside. But recently, the incorporation of instruments, which support agro-ecological production, for example, has contributed to the debate about the need to adopt sustainable agricultural practices on a broader scale within Brazil.

With another decade of experience on which to build, one observes that PRONAF ended up segmented in order to better attend the diverse sectors of family farming (PRONAF agro-ecology, agribusiness, forests, rural tourism, and PRONAF youth and women). According to the federal government this diversification seeks to support family farming in order to establish a new pattern of sustainable development throughout rural Brazil. Thus, looking to value economic, social, and environmental diversity within the family farming system, the government understands that it is possible to combat existing inequalities among all regions of the country.

Ten years later (1996-2006) one notices that this public policy is implanted in almost all of Brazil's more than five thousand municipalities. With it, one perceives that in 2006 approximately 1.8 million farmers were attended, at the same time that financial resources made available by the federal government towards the program grew from R$ 500 million in 1996 to more than R$ 10 billion in 2006. Collectively, more than R$ 55 billion were invested in Brazilian family farming during this period (Governo Federal, 2010; Schneider & Aquino; Mattei, 2011).

The results of this public policy were immediate. According to the Agricultural Census of 2006, the Brazilian farming family sector had the following performance: it increased its share to 40% of gross national agribusiness production; accounted for 75% of all the people occupied rurally; and significantly amplified its participation in total national production, both in products of vegetable and animal origin[9].

Even with all the positive results widely documented in specialized literature (Schneider, 2007; Schneider & Aquino, 2010; Mattei, 2005 & 2008; Bittencourt, 2003), this public policy still involves a series of problems, of which the following are most notorious:

a) Concentration of the program's application, especially in terms of financial resources in southern Brazil, while the greatest number of family farmers resides in the North and Northeastern regions. This situation happens as the southern family farmers are more organized and have more participation in the banking system;

b) Availability of rural credit to segments of family farming that are much more capitalized, due to the criteria the program adopted based on annual gross income. This has segmented the beneficiary public and hindered access for the portion of the poorest farming families;

c) Continuity of the productive and sector bias, specifying the political effects so that family farming is not able to foster significant alterations in the pattern of agricultural development in place in rural Brazil, as it will be shown in the following section.

3.4. Governmental support for agribusiness

Historically, in Brazil, the elite agricultural stakeholders have been associated with urban elites and led State institutions, seeking to make policies that attend their interests. Within this context, agricultural policies have maintained a class bias and provided benefits for the rural enterprise sector. This has happened, in large part, as the significant political weight that this sector wields, both within distinct legislative representation, as well as within the arena of the Brazilian federal executive branch.

Even recently, when Brazil elected a president who came from an underprivileged upbringing (Lula Government 2003-2010) one observes that a broad political alliance was formed which included out-of-date sectors from the dominant agrarian class. Some of these people were even nominated to appointed positions during the administration's first presidential term. In large part, one can affirm that this expansive alliance ended up impeding more effective governmental actions from presenting more significant results, especially in the realm of land policies.

9 Some national production indicators from family farming: 87% of manioc; 70% of beans; 46% of corn; and 34% of rice. As well as being responsible for 59% of the pork production market; 50% poultry; and 58% of all dairy produced in Brazil.

With this, the Lula administration was extremely dubious in the sense of delivering stronger action that would benefit the majority of Brazil's farmers. Thus, for as much support was waved about through popular segments, effective strategies sought to first and foremost attend the interests of the rural enterprise sector that had provided significant legislative support in the National Congress. Through fiscal incentives and exemptions, the productive agribusiness commodities sector geared towards external markets was strongly benefitted. At the same time, agrarian policies and agriculture destined to promote the family farming sector were more and more marginalized within government systems. As a result, government actions geared towards family farming were nearly compensatory in nature, without any real capacity to alter the predominant logic fueling the rural development model in effect since agriculture has been modernized in Brazil.

The so-called "Ruralist Council" (*Bancada Ruralista*) – political articulation within the National Congress to represent the interests of the rural enterprise sector – maintained expressive political participation during the Lula administration's two terms in charge of Brazil's executive branch. In fact, they acquired diverse advantages directly associated to agrarian elite interests. Among the principal measurements adopted in favor of the rural sector, one may highlight the visible increase in the volume of financial resources destined to agribusiness; the establishment of fiscal incentives towards agricultural commodity exports; the deregulating of genetically modified crops (GMOs); and renegotiated agricultural debt from the enterprise sector, etc.

In large part, these governmental actions reveal a clear political agenda aimed at benefitting the commodity agro-export sector in detriment of more concrete actions that sought the effective strengthening of family farming, peasant life, and the very sustainable rural development program itself that the government publicized. The result of these actions over this period was increased competitiveness in agribusiness via productive specialization, adopting cutting-edge technologies, and large-scale production. This was fundamental in order to obtain favorable balances in foreign trade accounts, which helped to balance Brazil's external accounts. However, in regions where agribusiness is predominant, one also observes fragility among networks formed by micro and small businesses, detainees of undeniable potential to revitalize local economic dynamics. Therefore, the growth and intensification of the agricultural commodities has contributed little towards the diversification of rural localities.

Considering the more than 70% growth in overall production of grains over recent decades as the only indicator of this success, this model for agricultural development is thought by many analysts to be a great success. These analysts indicate the occurrence of a sharp increase in crop productivity, even with the costs of intensifying single crop practices and the expansion of dependency on chemical inputs and improved seeds, as proof of its undeniable success. However, they also point out the continued expansion of the rural exodus and stimulus to destroy natural resources.

At the end of 2011, governmental economic authorities celebrated yet another record with export surpluses to the tune of U$ 30 billion, an achievement in itself. However, one must note that such positive differences in trade balances continue to be dominated by two types of products agricultural commodities and products originating from natural resources. In the same year, Brazil's trade balance presented one of its largest surpluses in its history, counting upon the decisive participation of basic raw-materials present in the commodities circuit, based on the intensive use of natural resources. In this case, beyond iron mining, the substantial weight of agricultural commodities such as beef, soy, coffee, and sugar, seems obvious.

Such intense participation in the grain segment, especially in soy, in the country's export basket raised the volume exported from the rural sector. The result of this process had direct political consequences, since the enterprise sectors that generated such expressive surpluses amplified their bargaining political powers within the National Congress as well as the Federal Executive Branch, nearly leaving the acting administration at the mercy of their special interests.

4. SOME CONCLUSIONS

In Brazil, the environmental question has provoked a fierce polarization between the two sectors involved in rural production. As agriculture is an activity that necessarily deals with natural resources, both productive systems (family farms and agribusiness) have come to interfere in the environment. However, it is necessary to qualify the dimension and the specific impacts of each productive sector upon said natural resources.

On the one hand, and viewed from the perspective of family farming, one verifies that the large majority of family based properties have seen a reduction in areas involved, provoking the intense use of these lands. In this process, generally all the available areas are cleared and utilized, whether for vegetable production or animal husbandry. This process is compounded due to income problems typical for this segment of farmers, who have limited conditions to invest in modern natural resource conservation techniques.

On the other hand, with its enormous expansion into diverse natural eco-systems in various parts of the country parallel to expressive increases in total production volumes, the agribusiness sector presents considerable risks with respect to Brazil's environmental future. Examples of this are found in areas in where single crop predominates. Such cases exist with soy in the state of Mato Grosso and sugarcane in the state of São Paulo. In these places, one notes that the natural habitat has been completely modified: within this system of production, sustainability becomes unpredictable as a result.

In this work, it has been shown that family farming and agribusiness are not so different from each other in the economic role performed specifically by each sector. However, analyses also need to consider important elements of these productive relationships that go beyond the economic sphere. In this case, the social role of family farming becomes more relevant due to the large number of rural properties involved in the family farming system. If adequate public policy instruments were made available to them, this research believes that the environmental responses from this sector would be more promising in comparison to those heretofore given by a production model seated exclusively on agricultural exploration based on vast extensions of land with few people on them.

In terms of public investment, it has been shown that both sectors (family farming and agribusiness) have received important government support but have demonstrated concerning results in both spectra. In the case of family farming, one notes that PRONAF had limited effect in the sense of reducing regional or social inequalities. Beyond this, their actions have had also limited reach in the sense of stimulating the implementation of a new model of rural development based in agroecology production system.

The model based on commodity production destined for international markets simultaneously provokes diverse contradictory and conflicting processes. On the one hand it stimulates the vacancy of rural lands, contributing to the aggravation of regional inequalities and the precarious living conditions for most of the families who inhabit the regions that are typically rural. On the other hand, this system of production based on single crops and large scale production also aggravates the environment, whether through its high levels of deforestation and landscape conversion into uniformed environments geared toward large scale agricultural production or whether through the accentuated degradation process of natural reserves, which are the only means of survival for traditional populations, such as indigenous tribes and descendants of escaped Brazilian slaves (*quilombolas*). This scenario permits us to affirm that the Brazilian rural ambient continues to be structurally marked by the concentration of wealth, by the political and economic domination of traditional oligarchies, by the dependence of transnational corporations and international markets, and consequently by the profound social and regional inequalities that generate social exclusion and systematic poverty.

Even if structural traits have gained new contours in modern times, they have remained large parts of the original configuration. Thus, the internationalization and monopolization processes of agricultural production processes, changes in the technological standard, the valuing of products derived from agricultural commodities, and the very expansion of the agricultural frontier reveal the continuity of the forms of dependency with respect to the hegemonic model of international agricultural production.

In summary, this research understands that these analyses must consider the fact that the transition from an agrarian society to an industrial society -- a process that occurred in Brazil during the 20th Century -- consolidated and amplified many of the customs and values inherited from its colonial past, in which new components within the national development process without altering the course of history. However, the path Brazilian society has mapped since its inception is marked by the contradiction between abundance for a few portions of the population and famine for the great majority. It is important to register that this contradiction was enhanced during the post-war period and led Brazil to figure among the most contradictory countries in the world: if the year 2011 showed Brazil to be the 6th largest economy in the world, at the same time it continued to be the country with the some of the largest inequalities in the world and the greatest rates of social exclusion. Poverty and misery, themes that have recently become priorities within the national political agenda, reflect exactly this historically contradictory situation. Thus, the main conclusion is that these are exactly the social and political problems that continue to impede a more just and equal Brazilian society from taking shape, both in its rural and urban environments.

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