

Is Reduction of Income Inequalities Enough for a Better Life? Poverty reduction and sanitation in Brazil

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Abstract

This paper seeks to analyze the main factors that lead to the reduction of income inequalities in Brazil in the last 17 years and argues that it is not sufficient to give population better living conditions, considering country's National Survey of Basic Sanitation. Brazil has long been distinguished as a country with high inequality and also by the persistence of poverty and extreme poverty. Regarding rapidly growing economies, the BRIC has attracted the world's attention during the last two decades, but income inequalities are still present and have even deepened in Russia, China and India, except for Brazil. Despite this positive aspect, the Brazilian Gross Domestic Product (GDP) average annual growth rate during the 1990s and 2000s was lower than in other developing countries - except for 2009 and 2010 compared to Russia. However, the reduction of income inequalities in Brazil does not seem to be explained by the growth of the GDP, as commonly suggested by neoclassical economic theory. What can possibly explain this fact is that the country has undergone substantial institutional changes since 1988 and specific public policies have been implemented since then, which allowed the reduction of poverty and inequality. Despite these good results, basic sanitation conditions did not improve as much as income distribution. Data that highlights the impact of some institutional changes and social policies is presented, with public transfers redistributing income to less developed regions. Statistics also show that sewage disposal systems and final destination of garbage are unsolved problems for many municipalities. This data is from the Ministry of Social Development, the Brazilian Institute of Geography and Statistics and the Institute for Applied Economic Research and is treated statistically using descriptive statistics. The main results are: real minimum wage increased 98% between 1995 and 2012, which had a positive impact on the amount of pension and social assistance. The amount of pension represents 4% of the Brazilian GDP and approximately 6% in the poorest region, the Northeast. The *Bolsa Família*, a conditional cash transfer program, is more important for poorer regions, representing approximately 0.8% and 1.5% of GDP in North and Northeast, respectively. Regarding constitutional transfers, the State Participation Fund was 5% of GDP for the North, 4% in the Northeast and less than 1% for other regions in 2010. For Municipalities Participation Fund, the transfer was about 2% and 3% of GDP for the North and Northeast, respectively. Although almost all municipalities have a general network of water supply, almost 45% of them did not have sewage treatment systems and data is even more alarming in the North region, where 87% did not have it in 2008. Only 4% of the municipalities of the poorer regions have selective collection of solid waste. Consequently, more than 60% of municipalities in the North and Northeast had basic sanitation related diseases – diarrhea, worm disease and dengue. The State played an important role in income distribution, but inclusion should be above all social and not only in the consumer market.

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Introduction

Emerging economies have drawn the world's attention in recent decades due to their rapid growth, though internal income inequalities still persist and have even worsened further in Russia, China, India and Indonesia, with Brazil being one of the few exceptions. Brazil is known as a country with high income concentration and also for the persistence of a good part of its 191 million inhabitants² living in conditions of poverty and even extreme poverty. This disparity is also reflected in the unequal conditions that characterize access to basic sanitation services by the population.

Although the nation has managed recently to reduce income inequalities, the average rate of increase in Brazil's Gross Domestic Product (GDP) in the past decade was lower than that for the other BRIC countries³ – except for 2009 and 2010 in comparison with Russia. Thus, reduction in income inequalities in Brazil cannot be explained by the rise in GDP, as suggested by part of neoclassical economic literature. Possible explanations for this fact may lie in the institutional changes occurring as from 1988 and specific public policies implemented since then that led to the reduction in income inequalities.

The improvement in income distribution, which lifted part of the population out of poverty and increased the number of persons in the Brazilian middle class⁴, led to enhanced monetization of the rural milieu and saw more people joining the consumer classes. This overall enhancement made it possible for lower- and middle-income families to have greater access to goods and services – electrical and electronic equipment, cosmetics, travel, motorcycles, automobiles, etc. – that were previously consumed by the more affluent classes. Joining the consumer market has brought more material satisfaction to low- and mid-income families, although other conditions essential to development have not improved as much as income distribution: public schools in general continue problematic in relation to the quality and infrastructure of the establishments, the quality of public health services is inefficient in most Brazilian municipalities and basic sanitation conditions⁵ continue to be precarious in the nation's poorer regions.

In this context, the question that arises is whether the reduction in income inequalities is sufficient to provide better living conditions for the populace in Brazil's less fortunate regions. Our central argument is that millions of people joining the consumer market is insufficient to improve their quality of life, given the lack of sanitation services, inadequate availability of urban solid waste disposal and the high incidence of water-borne diseases in many municipalities in outlying regions. In other words, enhanced income distribution does not suffice to improve the population's living conditions, as it is also necessary to provide access to public utility services in sufficient quantity and quality in order to meet the rising expectations of Brazilians.

² According to the 2010 Census (IBGE, 2013c).

³ The term BRIC is the acronym for Brazil, Russia, India and China created by Jim O'Neil in 2001.

⁴ Despite the controversy surrounding the concept of "middle" class among Brazilian researchers, the increase in the number of people who have risen to a higher income bracket is recognized by both governmental and private research institutes alike.

⁵ Besides the classic components of water supply and sanitation services, the concept of basic sanitation in Brazil includes the collection and treatment of solid wastes, stormwater drainage and control of vectors of transmissible diseases (Heller, 2007).

The aim of this article is to evidence the principal institutional changes and social policies that have permitted governmental transfers of income to Brazil's less developed regions and to show the statistics resulting from such policies and basic sanitation conditions, which are still unsatisfactory in many municipalities of these regions. We do not intend here to conduct an exhaustive analysis of the effectiveness of such changes and policies, but rather to sketch a preliminary balance of their contribution to improved income distribution in the country's outlying regions, demonstrating as well the slight advances made in terms of public utility services, especially as regards sewage treatment. This is one of the results of a survey underway aimed at going into greater theoretical and methodological depth on the subject.

The data on emerging countries has been obtained from publications issued by the World Bank, the United Nations Conference on Trade and Development (UNCTAD) and specialized journals. For empirical evidence on Brazil, we have used the databases compiled by the following Brazilian governmental organizations:

- Brazilian Institute of Geography & Statistics (IBGE - *Instituto Brasileiro de Geografia e Estatística*) – we accessed the Regional Accounts, the 2000 and 2010 Censuses, several years of the annual National Household Sample Survey (PNAD - *Pesquisa Nacional por Amostra de Domicílio*), the National Basic Sanitation Survey (PNSB - *Pesquisa Nacional de Saneamento Básico*) for 2000 and 2008, and the historical series of the National Consumer Price Index (INPC - *Índice Nacional de Preços ao Consumidor*) in order to restate monetary values to 2012 prices;
- Ministry for Social Development & Fighting Hunger (MDS - *Ministério do Desenvolvimento Social e Combate à Fome*) – we employed the data regarding the Family Allowance Program;
- Brazilian Treasury Department (STN - *Secretaria do Tesouro Nacional*) – we obtained the amounts of the State (FPE - *Fundos de Participação dos Estados*) and Municipal Participation Funds (FPM - *Fundos de Participação dos Municípios*);
- Social Security Ministry (MPS - *Ministério da Previdência Social*) – we used statistics on payment of retirement and social benefit payments.

The statistical treatment of the data was carried out by means of descriptive statistic methods.

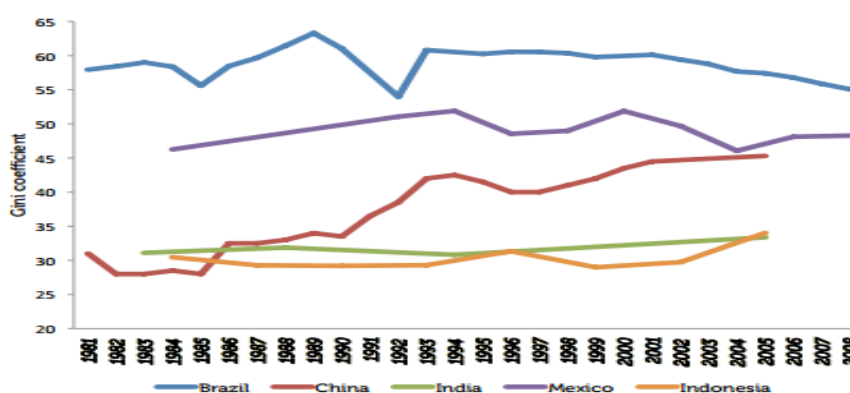
This article is divided into four sections in addition to this Introduction. Section 1 evidences the income disparities among countries and shows the reduction of inequalities among Brazil's regions, finalizing with a brief discussion of the concept of development used in this article. Section 2 describes the institutional changes and public policies that have probably contributed to easing regional inequalities, albeit pointing out that such changes and policies have not reached the basic sanitation sector. Section 3 shows empirical evidence regarding the contribution of such changes and policies to reducing regional inequalities, although with some basic sanitation services still being precarious, chiefly in outlying regions. Finally, Section 4 outlines our final considerations.

1 - Disparities in Income, Regional Inequalities and Development

The swift economic growth of emerging countries in the past two decades has drawn the attention of the entire world, but internal income inequalities still persist and have even increased in Russia, China and India, although not in Brazil (Lopez-Calva, 2012). This fact can be proven based on the Gini Index weighed by the population of the states of India, which in 1985 was just 0.165 and in 2003 had leaped to 0.256. For Brazil, this same index revealed values of 0.273 and 0.238 for the same years (Daumal, 2010).

Even with their GDP growth outpacing developed nations, the emerging countries still feature social and regional inequalities and some have even seen such disparities rise as measured by the Gini Index (Figure 1).

Figure 1. Gini Coefficient in Selected Developing Countries – 1981-2008



Source: Olinto; Saavedra (2012).

Nonetheless, even with a reduction in its Gini Index, Brazil continues to be a country with high income inequality and also with persistence of part of its population in conditions of poverty and even extreme poverty. Although the rate of poverty dropped from 43.4% in 1995 to 28.8% in 2008 and the rate of extreme poverty from 20.9% to 10.5% in the same period (IPEA, 2010) – fully 25.9 million Brazilians are no longer poor or extremely poor⁶ – there are still roughly 26.1 million people in such conditions⁷ (IPEA, 2011). According to IFAD (2013), 35% of the Brazilian population is poor, that is to say, they live on less than US\$ 2.00 (two United States Dollars) per day. The situation gets worse in rural areas, where poverty affects around 51% of the population (that is, about 18 million people), such that Brazil is home to the largest poor rural population in the entire West (IFAD, 2013).

Despite this positive aspect of partial reduction in income inequalities, Brazil's average growth rate as measured by its GDP was not only lower than Russia's among the BRIC countries in the period 1992 to 2000 and in the following decade was the lowest of all

⁶ According to Ipea (2010), the lines of extreme poverty and absolute poverty are equivalent to average household income per capita of up to 1/4 and 1/2 of the monthly minimum salary, respectively.

⁷ By Ipea standards (2011), a person considered extremely poor is one with monthly income of up to R\$ 67.00 in 2009, while a poor person has monthly income of between R\$ 67.00 and R\$ 134.00. In that year, the minimum salary was R\$ 465.00. Thus, considering the average household income per capita being equal to the monthly income of one person, the criterion used by Ipea (2010) would mean an extreme poverty line of R\$ 116.25 and a poverty line of between R\$ 116.25 and R\$ 232.50, so there would be much more than 26.1 million poor and extremely poor people in Brazil.

such nations – except for the years 2009 and 2010 in comparison with Russia, which was heavily affected by the 2008 world financial crisis (UNCTAD, 2010; 2012) (Table 1).

Table 1. Real GDP Growth Rate (%) for BRIC – 1992-2011

	1992/00	2000/10	2005	2006	2007	2008	2009	2010	2011
Brazil	2,9	3,7	3,2	4,0	5,7	5,2	-0,6	7,5	2,7
Russia	-1,8	5,4	6,4	7,7	8,1	5,6	-7,8	4,0	4,3
India	6,3	8,0	9,3	9,7	9,1	7,3	9,1	8,8	6,8
China	9,9	10,8	10,4	11,6	13,0	9,0	9,2	10,4	9,2

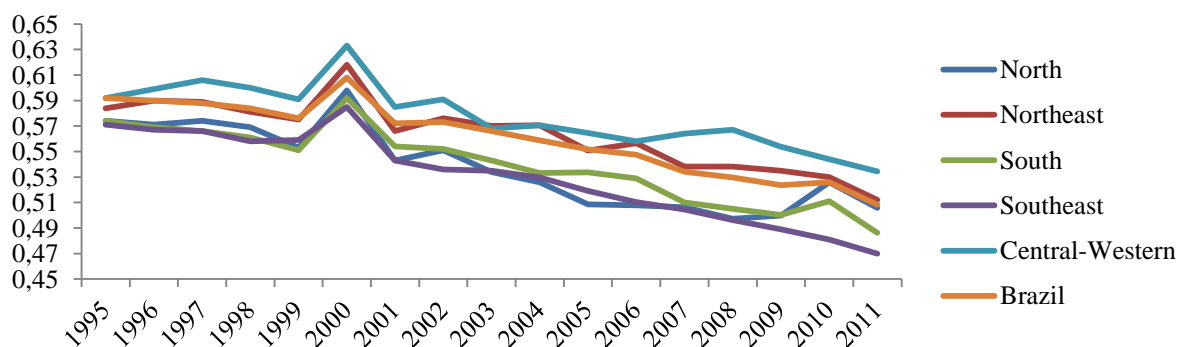
Source: Own elaboration from UNCTAD (2010, 2012).

Therefore, the reduction in income inequalities in Brazil cannot be explained by the growth in GDP, as suggested by neoclassical economic theories. What can explain this situation is the fact that the country underwent significant institutional changes and public policies were put into practice that as from 1988 made this reduction in poverty and inequalities possible.

The Federal Constitution of 1988 and the commercial opening of the nation's economy to world markets, which began in that same year, can be considered as the start of this process of changes, without giving short shrift to previous historical facts. As from 1994, the Real economic stabilization plan – which ended high inflation⁸ –, macroeconomic stabilization and institutional reforms in the Brazilian economy formed the bases for the shifts in the country's economic and social profile.

Hence, the restructuring of the Brazilian economy after 1995⁹ brought improvements in the distribution of regional income, as measured by the Gini Index for monthly per capita income (Figure 2). Improvements were posted in all regions, with development of historically peripheral regions standing out, in spite of the inequalities that still persist.

Figure 2. Gini Coefficient based on per capita monthly income (people with 10 years or more), according to Brazil and Regions – 1995 to 2011



Source: Own elaboration from IBGE (2013b, 2013c).

Although programs for direct transfer of income and the rise in the minimum salary have been important in reducing poverty and regional income disparities, the respective shares of Brazil's regions in the national GDP actually changed little from 1995 to 2010. Even though the Southeast (by far the nation's richest region) saw its share of GDP fall in this

⁸ The average annual inflation rate was 764% from 1990 to 1994.

⁹ The initial year of the analysis is 1995, as it was the first full year after implementation of the Real Plan.

period, it still accounted for more than 55% of total Brazilian output in 2010 (Table 2). Just the State of São Paulo, located in the Southeast, accounted for roughly one third (33%) of Brazil's GDP in that same year (IBGE, 2013a).

Table 2. Distribution of Brazilian GDP among Regions - 1995-2010

	North	Northeast	Southeast	South	Central-Western
1995	4,2	12,0	59,1	16,2	8,4
1996	4,3	12,5	58,4	16,2	8,6
1997	4,1	12,5	58,5	16,1	8,8
1998	4,2	12,4	58,2	16,2	9,0
1999	4,2	12,4	58,2	16,4	8,8
2000	4,4	12,4	58,3	16,5	8,4
2001	4,5	12,6	57,7	16,7	8,5
2002	4,7	13,0	56,7	16,9	8,8
2003	4,8	12,8	55,8	17,7	9,0
2004	4,9	12,7	55,8	17,4	9,1
2005	5,0	13,1	56,5	16,6	8,9
2006	5,1	13,1	56,8	16,3	8,7
2007	5,0	13,1	56,4	16,6	8,9
2008	5,1	13,1	56,0	16,6	9,2
2009	5,0	13,5	55,3	16,5	9,6
2010	5,3	13,5	55,4	16,5	9,3

Source: IBGE (2013a).

The disproportional distribution of Brazilian GDP among the nation's regions has historical roots that are difficult to eliminate, despite the improvements in income posted in the wake of macroeconomic stabilization. In the country's Northern region, for instance, there is the better part of the world's largest tropical rainforest, the Amazon. This accounts for the North's slight share of Brazil's GDP, characterized as the region is by its poverty and slight development. The region has few industrial activities, except for the Manaus Duty-Free Zone, which produces electronic equipment. Primary activities are much more important, especially the mining of iron ore and the felling of timber.

The Northeast is the country's poorest region, with no less than 58% of its population being ranked as poor (IFAD, 2013), even though it has fairly well developed metropolitan regions. Besides the inheritance of cane sugar mono-culture and concentrated agrarian structure, the Northeast has extensive semi-arid territories inland, with adverse climactic conditions and limited natural resources, thus hindering implementation and diversification of farming and livestock-raising activities. In the 1990's there was industrial de-concentration in Brazil, away from the Southeast, and the Northeast was one of the regions benefited. Even today, however, the region has the highest concentration of rural poverty in all of Latin America, with two thirds (67%) of its population in such a condition (IFAD, 2013).

The Southern region of Brazil was basically occupied by European immigrants who came to Brazil to work on coffee farms at the end of the 19th Century and gradually took over small- and medium-sized properties. The South's industry has recently been diversifying and has benefitted from the industrial de-concentration of the Southeast. In the Central-Western region there is the country's capital, Brasília. Construction thereof in 1961 was a powerful impetus for regional economic growth. At present, the region is an important agricultural

frontier, with extensive soya farming and cattle ranching for exportation. Even though its actual share of Brazil's GDP is less than that of the Northeast, it can hardly be considered a poor region, since its economic activities are expanding by leaps and bounds.

The reduction in income disparities and the persistence of regional inequalities in Brazil lead us to the issue of development. Given the broad scope of this topic and the various concepts and focuses encountered in the literature on the subject, we have elected to deal in the next few paragraphs with some of the concepts of development so as to include the matter of quality of life, more specifically that of basic sanitation, in the discussion. Our aim is therefore not to discourse about the issue of development but rather to seek out in the applicable literature a concept that appropriately buttresses the argument of this article.

Along general lines, we can identify three visions of development (Veiga, 2008). The first identifies development with economic growth – the rise in productive capacity –, confirmed in several theoretical, empirical and historical surveys. This manner of defining development also means simplifying the manner of measuring it, since suffice it to use an indicator of growth in output, such as GDP per capita, which in general is strongly correlated with other social indicators (infant mortality, life expectancy, schooling, etc.). This reductionism of the concept of development has received several critiques after it was discovered that late industrializing countries, including Brazil, increased their GDP in the 1960's but did not improve their social indicators. This critique was reinforced after creation of the Human Development Index (HDI) in 1990 by the United Nations, combining income, educational and health indicators in order to measure development.

In the second vision, “... *development is nothing more than feeble illusion, belief, myth or ideological manipulation*” (Veiga, 2008, p.17). The main authors who share this vision of development¹⁰, albeit using different arguments, are: Giovanni Arrighi, Oswaldo Rivero, Majid Rahnema, Gilbert Rist and Celso Furtado.

For Celso Furtado, development is a myth, since “... *myths function as headlights that illuminate the field of perception of social scientists, allowing them to have a clear view of certain problems that have nothing to do with one another, at the same time as they provide them with intellectual comfort ...*” (Veiga, 2008, p.29). According to this Brazilian author, around 90% of the literature on economic development is based on the idea of the universalization of development, that is, that “*the consumption patterns of the minority of humanity that currently lives in the highly industrialized countries can be accessible to the great masses of the rapidly expanding population that makes up the periphery*” (ditto).

The third vision of development was proposed by Amartya Sen, for whom the expansion of individual liberty is the principal means and end of development. Economic growth is a means for expanding liberties, but it does not suffice. Thus, “*development requires removing the main sources of privation of liberty: poverty and tyranny, lack of economic opportunities and systematic social destruction, negligence of public services and intolerance or interference of repressive states*” (Veiga, 2008, p.34). This vision of development supports the argument of this article, such that improved living conditions are associated with the removal of privations of liberties that thus leads to development. More equitable distribution of income among Brazilians, with millions of people joining the

¹⁰ For further details, see Veiga (2008).

consumer market, may be a form of liberty, but has still not been generalized, and can still be seen as submission to the logic of the market. Hence, we cannot consider just improved income distribution in Brazil as a path to development, since traces of privation of liberties still prevail, such as negligence regarding public utility services, specifically basic sanitation.

2 – Institutional Changes and Social Policies in Brazil

One of the main factors accounting for reduced income inequalities in Brazil was the macroeconomic stabilization that occurred beginning in 1994 with the launching of the Real Plan, which did away with hyperinflation that was not neutral from a distributive standpoint (Ferreira et al., 2009). Added to the institutional changes began at the end of the 1980s and the social policies implemented after economic stability, a new economic and social order took hold of the nation since that time.

These two non-economic factors – public institutions and policies – are the keys to analyzing the decline in income inequalities and thus the decrease in regional disparities in Brazil, since GDP-measured economic growth cannot explain such trends. Thus, we do not aim here to analyze public policies, but instead to describe them and to show comparative data among the nation's richest and poorest regions.

As regards institutions, according to North (1991, p.97), they can be defined as "...*the humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights)*". Institutions and organizations are two distinct concepts: institutions are to the rules of the game as organizations are to the players. Analysis of institutional changes is thus fundamental to understanding the changes that have occurred in the Brazilian economy, since "*considering that institutions define the set of opportunities, the basic system of incentives and transaction costs associated with economic interactions, the institutional environment can determine income differences between countries*" (Yano and Monteiro, 2008, p.2) and their internal per capita income levels.

The institutional changes and public policies that led Brazil to this new economic and social order can be divided into three periods¹¹: the first began in 1988, with the New Federal Constitution, and lasted until 1995, the beginning of Fernando Henrique Cardoso administration. The second period corresponds to the government of the later president, from 1995 to 2002, and the third to Luiz Inácio Lula da Silva administration, from 2003 to 2010. In the rest of this section we describe the main institutional changes and public policies implemented in each period that are considered important in reducing regional disparities.

The first period of important institutional changes began towards the end of the 1980's, highlighted by the New Constitution of 1988. Attempts to curb persistent inflation¹²

¹¹ These periods have been chosen since they involve well-defined high points, as will be described over the course of this section.

¹² Annual inflation, as measured by the General Price Index for Domestic Demand (IGP-DI), was 40.81% in 1978 and rose to 77.25% and 110.24% in 1979 and 1980, respectively (www.ipeadata.gov.br).

and generate macroeconomic stability began in 1986, through a series of economic plans¹³, though all met with failure. Hence, this period was marked by attempts to adjust the economy and by the structural reforms of a liberalizing nature, oriented to the market and strongly influenced by the "Washington Consensus" (Yano and Monteiro, 2008).

Due to these priorities of governmental policies, social policies and reduction of regional inequalities were marginalized. "*In the 1980's the national state lost track of the path that, by hits and misses, it had begun to take to reduce differences between the living conditions of Brazilians residing in different regions*" (Guimarães Neto, 1997, p.71).

The 1988 Constitution led to greater autonomy of Brazil's states and substantial modifications in the rural social security program. One important alteration leading to greater financial autonomy of the states was the hike in the percentages of the federal Income Tax (IR) and Excise Tax (IPI) turned over to the State Participation Fund (FPE). The FPE was first created in 1965, and transfers were begun in 1967, and the share of the states in the net proceeds from such taxes was 10%. This percentage was reduced to 5% in 1968 and rose each year from then on until it reached 14% just before the new constitution took effect in 1988, when it became 18%; from then it gradually rose until it reached 21.5% as from 1993. Complementary Law 62 of 1989, still in effect, established the following allocation of the FPE: 85% for states in the North, Northeast and Central-Western regions and 15% for other regions (Brasil, 2012). Accordingly, the FPE was created to be an instrument for reduction of regional inequalities and does not feature specific earmarking.

Changes in Social Security for rural areas began with the 1988 Constitution and were regulated in 1991 by Laws 8.212 and 8.213. Rural workers and others covered based on the family production system began to be entitled to the normal benefits of the General Brazilian Social Security System. That is, rural retirement benefits and pensions began to be based on the minimum monthly salary, applicable as well to the benefits granted previously. Moreover, women began to be entitled as well to retirement benefits, independent of their husbands, even if the later were already beneficiaries (Schwarzer, 2000). These and other modifications in the rural Social Security program¹⁴ led to enhanced integration of the rural population into the nation's monetary economy.

Another important institutional change was the opening up of the country to international trade, which began in 1988 with reductions in tariff and non-tariff barriers inherited from the import substitution process, following world economic trends, and was accentuated in 1990. This greater commercial opening facilitated importation of merchandise to meet rising demand after the economic stabilization that began with the Real Plan, making a greater quantity of foreign products available to Brazil's population. Once the demand was satisfied, there was no longer pressure for prices to rise and thus the purchasing power of local salaries was kept stable.

Another consequence of trade liberalization was the process of industrial restructuring due to greater exposure of local industrial companies to international competition. The Industrial & Foreign Trade Policy (PICE - *Política Industrial e de Comércio Exterior*) of 1990 was compared by Erber and Vermulm (1993) to a pair of pliers: one side exercised

¹³ The first attempt to do away with high annual inflation rates was the Cruzado Plan in 1986, followed by the Bresser (1987), Summer (1989), Collor I (1990) and Collor II (1991) plans.

¹⁴ For further details see Schwarzer (2000).

competitive pressure on industrial companies, resulting from greater exposure to foreign trade, and the other created stimuli to make them more competitive. Even so, the latter side of the pliers was shorter than the former, i.e., many companies were unable to restructure at the same pace as the unilateral trade liberalization was moving and could not withstand the competitive pressure. Some industries, such as textiles, underwent major structural changes, such that, although several companies were entirely shut down, the industry overall was more competitive at the end of the decade.

The process of privatizing state-owned enterprises also began during this period¹⁵, with the main arguments on which this process was ground were the following: the fiscal crisis faced by the Brazilian state and the inefficiency of the state-owned enterprises (SOE's) that it commanded, as they were running huge deficits for a series of reasons, among them creation of a plethora of "jobs" for political purposes.

Another important change was the financial reform and liberalization of the nation's capital account. Following general Latin American economic trends at the time, Brazil began in the middle of the 1980's to liberalize its domestic financial system in relation to foreign capital. As from the 1990's, however, change in the structure and regulations of the Brazilian financial system were accentuated.

"The principal transformations that occurred were highlighted by the elimination of barriers to the entrance of foreign investments; the entrance of international financial institutions into Brazil through acquisition of shareholding control over local institutions and/or installation of subsidiaries; and the viability that came about in terms of access on the part of Brazilian residents to new types of foreign financing, namely the issuance of stocks, shares and bonds on international capital markets" (Yano and Monteiro, 2008, p.7).

Furthermore, the Constitutional Amendment of 1994 made foreign companies equivalent to Brazilian companies. Such changes led to the increase in direct foreign investment, chiefly at the end of the 1990's.

The second period that led Brazil to the new economic and social order began with the economic stabilization achieved as 1995, the result of the Real Plan introduced in 1994, and also the beginning of the federal administration headed by President Cardoso. Some of the reforms begun in the previous period were concluded, such as trade liberalization and privatizations, and others were implemented, as were social policies that became possible thanks to macroeconomic stability.

In 1995 a new phase of privatizations began, one of the major axles of overhauling government in Brazil. SOE's providing public utility services – electricity, transportation and telecommunications –, besides the portion of the financial sector run by state governments, were the targets of this new phase, generating revenues for governments and new investments in these industries, despite many criticisms leveled at the model of privatization adopted. Twenty-four SOE's in the electrical and transportation industries were privatized, thus making it necessary for creation of public utility service regulatory agencies. This period featured the greatest participation of foreign capital in the privatizations, "... to the point

¹⁵ From 1990 to 1994 a total of 33 companies were privatized, resulting in a gain of US\$ 11.9 billion. Some of them belonged to the steel, petrochemical and fertilizer industries (Yano and Monteiro, 2008).

where it reached 53% of the total raised by governments in the entire Brazilian privatization process" (Yano and Monteiro, 2008, p.5).

As regards constitutional transfers, an important change came about with the 14th Amendment to the Constitution in 1996, which created the Fund for Maintenance and Development of the Fundamental Education and Valorization of Teaching (FUNDEF – *Fundo de Manutenção e Desenvolvimento da Educação Fundamental e de Valorização do Magistério*). This fund was comprised as follows: "... through deduction of 15% from transfers of the State Participation Fund (FPE), Municipal Participation Fund (FPM), Complementary Law 87/96, Tax on the Circulation of Merchandise and Interstate and Intermunicipal Transportation Services and Communications (ICMS) and Industrialized Products Tax (IPI) on exports" (Brasil, 2012, p.3). Accordingly, there was no "new money" injected by the federal government¹⁶ into the Fundef and nor was there reduction of the amount of constitutional transfers to the states and municipalities, but rather the earmarking of the use of such funds to fundamental education (Mendes, 2001).

Among the social policies of the Cardoso administration was the Organic Law for Social Assistance (LOAS - *Lei Orgânica de Assistência Social*), guaranteeing a minimum monthly salary for aged and handicapped people, direct income transfer programs – School, Income and Food Allowances – and the Childhood Labor Eradication Program (PETI - *Programa de Erradicação do Trabalho Infantil*) (Giambiagi et al., 2005).

Other institutional changes after 1999, during Cardoso's second term, permitted the adjustment of governmental accounts: continuity of the privatization process, end of state monopolies, changes in rules for foreign capital, house-cleaning of the banking system, partial reformulation of Social Security, renegotiation of the debts of the states, approval of the Fiscal Responsibility Law (*Lei de Responsabilidade Fiscal* - Complementary Law 101 of 2000) imposed on all three levels of government, financial adjustment, creation of regulatory agencies for public utility services, and establishment of the inflation targets system (Giambiagi et al., 2005).

The third period analyzed began in 2003 with the commencement of the Lula administration, which also implemented policies that resulted in positive consequences for reducing income inequalities: rise in the real minimum salary, the effects of which were highly important for the productive sector in less developed regions¹⁷, but also for pensions and the LOAS (pegged to the minimum salary); the combining of the income transfer programs implemented by the previous administration into a single program – the Family Allowance – and gradual expansion thereof; and greater ease of access to consumer credit.

The Fund for the Development of Basic Education and Appreciation of the Teaching Profession (FUNDEB – *Fundo de Manutenção e Desenvolvimento da Educação Básica e de Valorização de Profissionais de Educação*) was created in 2006 to replace the Fundef, likewise a constitutional transfer. The new fund did not advance substantially over its predecessor, as its resources were also linked to education, though it did incorporate the

¹⁶ There was a minimum annual amount to be spent per student, set by the federal government, and when the state did not reach it, the federal government complemented the funds in order to reach the threshold. The states receiving this compensation were Pará, Alagoas, Bahia, Ceará, Maranhão, Paraíba, Pernambuco and Piauí (Mendes, 2001), three of which are among those with the highest poverty rates in Brazil.

¹⁷ Monthly salaries in less developed regions are lower than in other regions, such that a rise in the minimum salary has a tremendous impact on purchasing power.

education of youths and adults, black squatters and Indian tribes, besides those with special needs (Wincler and Santagda, 2007). To finance the fund, other percentages of state and municipal taxes were incorporated, along with the percentage contributions of the FPM and FPE.

Government income transfers to poorer regions, either through programs for transfer of income, social assistance and food security, or through such constitutional obligations as the FPE and FPM, are important for a considerable part of the nation's more impoverished regions, where the means of production are fragile and lack articulation, as in the case of the semi-arid Northeast, constituting what Maia Gomes (2001) termed a "*new economy, based on appropriation of income produced in other regions*". Hence, owing to their capillarity and volumes transferred, federal funds have created a strong consumption movement that makes trade and services dynamic, though without representing a program involving productive investments.

These institutional changes and public policies implemented in the economic, financial and social spheres in Brazil over the course of these decades have not reached the basic sanitation sector. Indeed, little has changed in the past half century, from the end of the 1960's through 2007, when the basic sanitation sector was regulated in Brazil¹⁸.

In 1967, Law 5318 instituted the National Sanitation Policy and created the National Sanitation Council. The National Sanitation Plan (Planasa) was the first initiative on the part of the federal government for the sector; it was instituted in 1969 and put into practice at the beginning of the 1970's. Until that time, it was the responsibility of municipalities to provide such services, the supply of which was insufficient. This plan was a response to the rising urbanization that was occurring in Brazil as from the end of the 1960's.

The National Sanitation System was implemented by means of the Planasa, and each state created its own State Basic Sanitation Company (CESB – *Companhias Estaduais de Sanamento Básico*), which "... retains through municipal concessions, a monopoly over the administration, operation, maintenance, construction and sale of water and drain services" (Arretche, 2013). Thus, the supply and expansion of water and sanitary sewage services, as well as the charging of tariffs, were no longer the responsibility of municipalities and were instead passed on to the states, through their respective CESB's (Heller, 2007). Certain municipalities, however, elected not to grant such services to the CESB's and maintained their autonomy or signed agreements with some agency linked to the Ministry of Health.

In spite of the increased supply of such services throughout the nation, we can cite the following aspects as the key results of the Planasa:

- The water supply network expanded much more swiftly than the sewage network, due to the former's lower cost and faster returns on investments due to the tariffs in effect, heeding the logic of economic viability to the detriment of social need (Heller, 2007; Arretche, 2013).
- Brazil's richer regions, the Southeast and South, were more privileged, above all in the housing of the more affluent classes of the big cities (Arretche, 2013). Accordingly, municipalities with the best coverage networks and quality of water supply and sanitary drainage are also those with higher human development indices (HDI's) and larger

¹⁸ For an analysis of basic sanitation policies in Brazil see Rezende and Heller (2002).

populations. No priority was given to municipalities with less than 20 thousand inhabitants (Heller, 2007).

The evidence leads us to believe that the model instituted by the Planasa contributed to worsening the asymmetries existing between the nation's richer and poorer regions, probably because of its orientation of following market logic in the search for economic feasibility of the business (Heller, 2007).

The Planasa was extinguished in 1990 and from then on an institutional gap was created for the sector. This gap was only filled with the enactment of Law 11.445 of 2007, which established the national directives for basic sanitation, the National Basic Sanitation Plan. "*The Law defined instruments and rules for the planning, inspection, performance and regulation of the services, with social control being established over all such functions*" (Galvão Jr. and Paganini, 2009, p.80).

The new law imposes changes in the basic sanitation sector, though the inheritance of the Planasa management model still persists due to economic and political interests in the control of this type of service, mainly at local and regional levels. It has thus become necessary for there to be reorganization of the institutional arrangements existing between the different governmental spheres and the providers of basic sanitation services, establishing a more democratic and participative process (Heller, 2007).

We cannot yet evaluate, by means of statistical data, the impacts of Law 11445/2007 on the conditions of the country's basic sanitation. The last version of the National Basic Sanitation Survey (PNSB – *Pesquisa Nacional de Saneamento Básico*) was conducted in 2008 and investments in this sector take several years before their results can be measured. Such fact does not invalidate the central argument of this article, however, since up to the year the last PNSB was conducted the results of institutional changes and social policies favoring better income distribution were already observable. The empirical evidence is presented in the following section.

3 – Reduction of Regional Income Inequalities and Sanitary Conditions

The empirical evidence of the results of the institutional changes and social policies that led to a reduction in regional inequalities are shown in the following sub-sections, breaking down the amounts of the transfers per region in comparison with the regional GDP and per inhabitant. Basic sanitation data appears at the end of this section, comparing the years 2000 and 2008 of the PNSB.

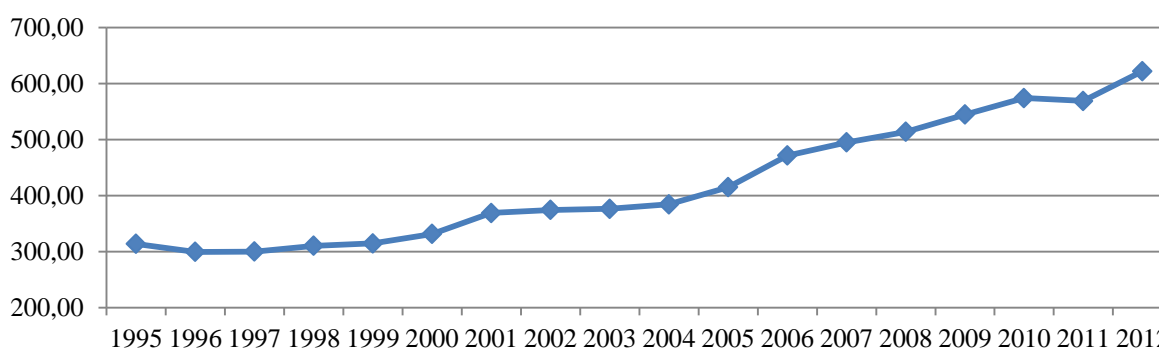
3.1 National Minimum Salary

One of the factors that has most contributed to improving income distribution in Brazil was the end of high inflation for over 15 years, owing to the 1994 Real Plan. The national minimum monthly salary practically doubled in real terms between 1995 and 2012, rising from R\$ 313.51 (in 2012 prices) to R\$ 622.00¹⁹ in those same years (Figure 3). In other

¹⁹ About US\$ 170.00 in 1995 and US\$ 338.00 in 2012, at the exchange rate of January 2, 2012.

words, the purchasing power of the minimum salary increased 98.4% in such period, benefiting a substantial part of the Brazilian population, given that according to government estimates the earnings of 45.5 million people are referenced to the minimum salary (BRASIL, 2013a), including Social Security benefits (see sub-section 3.2 below).

Figure 3. Real Values of Minimum Monthly Salary - Brazil (adjusted by the INPC index) – 1995-2012 – R\$ (2012)



Source: Own elaboration from Brasil (2012) e IBGE (2012).

3.2 Social Security Benefits

The benefits of Brazil's General Social Security System (RGPS) fall into three types: Social Security Benefits (retirement, pensions due to death, allowances, maternity leave, family allowance, permanence bonus and civil service benefits), Accident-related (permanent disability, pension for death and allowances) and Assistance-related (protection in the form of assistance²⁰, monthly lifetime pensions and monthly lifetime income). The Social Security Benefits involves the biggest share in the total amounts paid out by the nation's official Social Security, around 88%. Retirement benefits alone have an enormous weight on official Social Security payments, approximately 61% (Table 3).

Table 3. Share (%) of Types of Benefits in the Total Amounts Paid out by RGPS – 2010

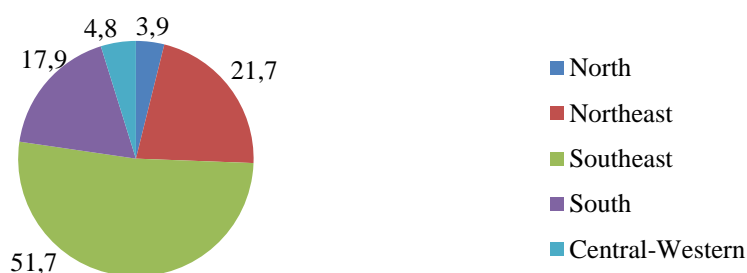
Social Security Benefits	88,2
Retirement	60,9
Pensions due to death	22,4
Accident-related	2,7
Assistance-related	9,0
Protection in the form of assistance	8,2

Source: Own elaboration from Brasil/MPS (2012).

Distribution of the benefits paid by RGPS is not uniform among the country's regions (Figure 4). The richer regions together receive about 70% of the benefits, while the North and Northeast get 4% and 22%, respectively.

²⁰ Established by the Organic Law for Social Assistance (LOAS) of 1998.

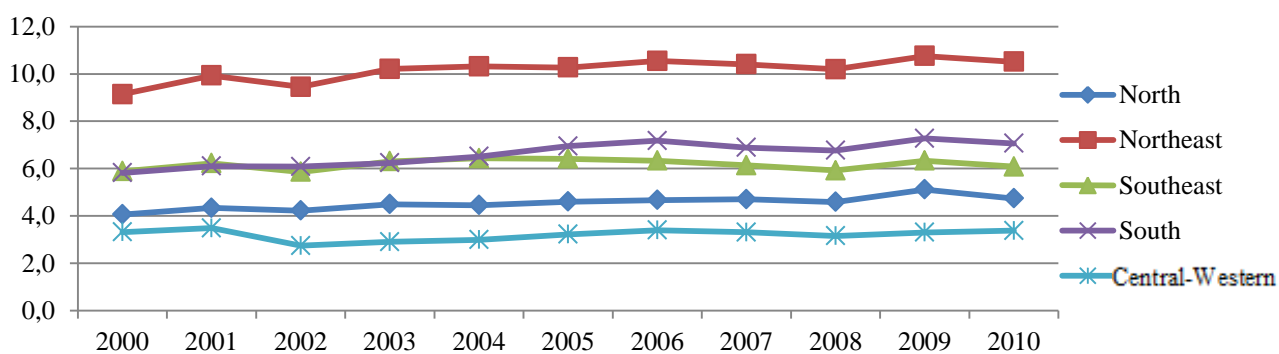
Figure 4. Distribution (%) of the Benefits Paid by RGPS among regions – 2010



Source: Own elaboration from Brasil/MPS (2012).

Notwithstanding such greater share enjoyed by the Southeast and South in distribution of RGPS benefits, they are actually more important for the poorer region, if we consider their representation in terms of GDP, roughly 10% for the Northeast during the decade of 2000 (Figure 5). Thus, the RGPS funds transferred to this region are important as regards income transferred by the federal government. Retirement benefits, which are pegged to the minimum salary, accounted for 6.3% of the Northeast's GDP in 2010 (Brasil/MPS, 2012).

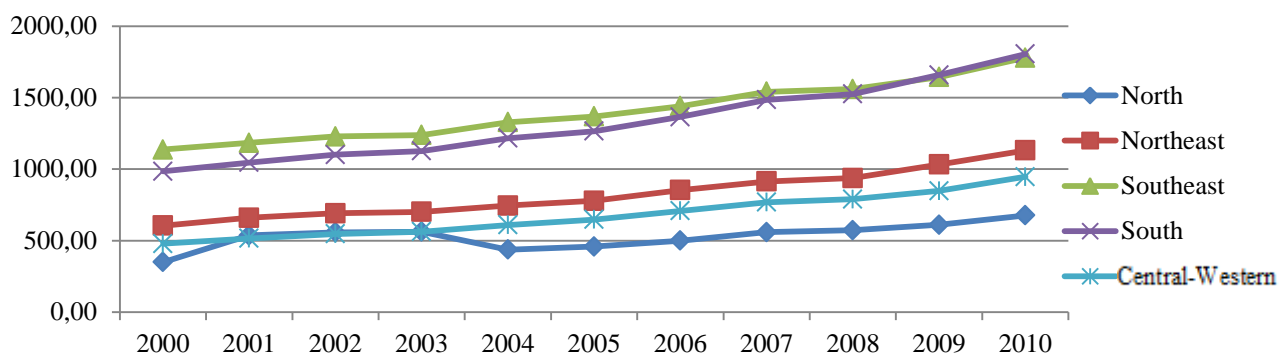
Figure 5. Representation (%) of the Benefits Paid by General Social Security System in Terms of GDP, by Region – 2000-2010



Source: Own elaboration from Brasil/MPS (2012) e IBGE (2013a).

Nonetheless, the amount of benefits per capita, in constant 2012 prices, is greater in the richer regions, which can be explained by the higher values of the individual benefits paid in the Southeast and South (Figure 6).

Figure 6. Total Amount of Benefits Paid out by RGPS per Capita, by Region (adjusted by the INPC index) – 2000-2010 – R\$ (2012)



Source: Own elaboration from Brasil/MPS (2012) e IBGE (2012, 2013b, 2013c, 2013d).

Worthy of highlighting is the proportion of urban and rural pension payments. Although about 84% of the Brazilian population is urban (IBGE, 2013c), the share of rural pension payments of the total amount of pension payments of the poorer regions is greater than in the richer regions (Table 4). This proves the argument put forth by Schwarzer (2000) that rural pensions are an important instrument for fighting rural poverty in Brazil, even more so because they are pegged to the minimum salary, which virtually doubled between 1995 and 2012.

Table 4. Share (%) of Urban and Rural Pension Payments, by Region and Brazil - 2010

	North	Northeast	Southeast	South	Central-Western	Brazil
Urbana	41	44	91	76	70	76
Rural	59	56	9	24	30	24

Source: Own elaboration from Brasil/MPS (2012).

3.3 Participation Funds

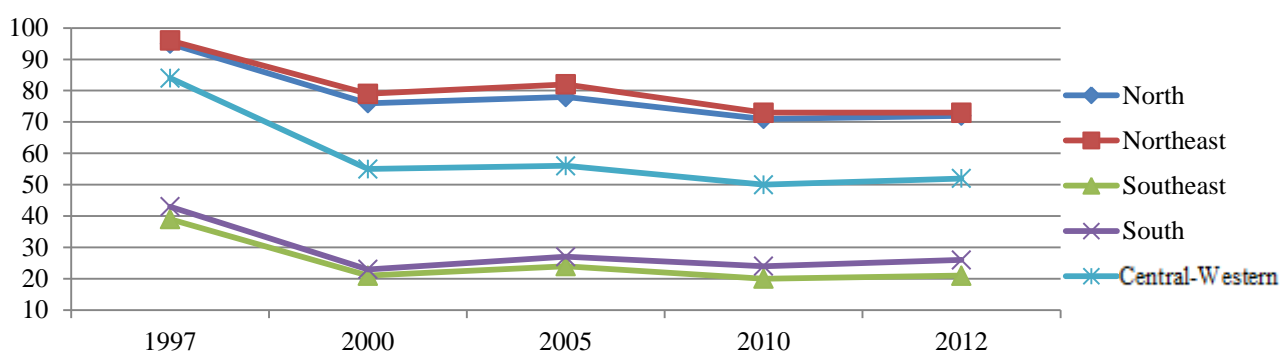
3.3.1 State Participation Fund – FPE

Among Brazil's constitutionally mandated transfers, the State Participation Fund (FPE) stands out as an instrument for reduction of regional inequalities. The total amount of financial resources distributed by this fund is broken down as follows²¹: the North with 25.4%, the Northeast with 52.5%, the Southeast with 8.5%, the South with 6.5% and the Central-West with 7.2%. In short, the nation's poorer regions effectively received more financial resources from this fund (Brazil/MF, 2013).

The share of the FPE in the constitutional transfers to other states has fallen over time (Figure 7), since other transfers have been created through constitutional amendments, with part of such resources thus being transferred to be earmarked for expenditures on education. Hence, the FPE, which accounted for almost all of the state transfers to the nation's poorer regions in 1997, saw its share reduced to around 70% in 2012 to the North and Northeast, although it still has a significant weight in constitutional transfers to these regions.

²¹ The allocation of the FPE among the states and the Federal District (Brasília), and therefore among the regions, was established by Complementary Law 62/1989.

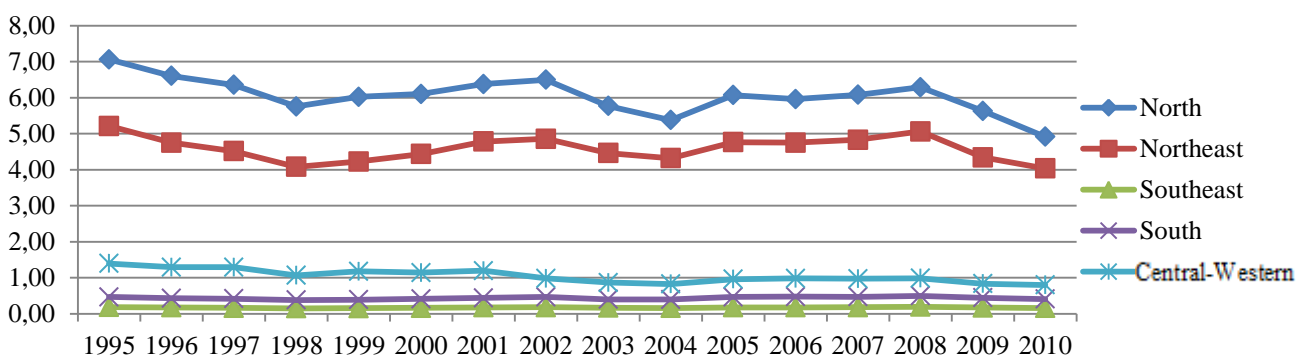
Figure 7. Share of the FPE in the Constitutional Transfers, by Region* - 1997, 2000, 2005, 2010 e 2012



* Since 1998, the values of FPM, FPE, IPI-Exportação and ICMS LC 87/96, is already discounted the portion of 15 % (fifteen percent) designed to FUNDEF. Since 2007, the values of FPM, FPE, IPI-Exportação and ICMS LC 87/96 and of ITR, is already discounted the portion designed to FUNDEF.
Source: Own elaboration from Brasil/MF (2013).

To confirm the importance of the FPE for poorer regions, figures show that the share contributed by the FPE to regional GDP is more significant in the North and Northeast, with 5% and 4%, respectively, in 2010 (Figure 8). Albeit with declining values over the course of the period analyzed, such resources continue to be quite important for these regions.

Figure 8. Representation (%) of the State Participation Fund in Terms of GDP, by Region – 1995-2010

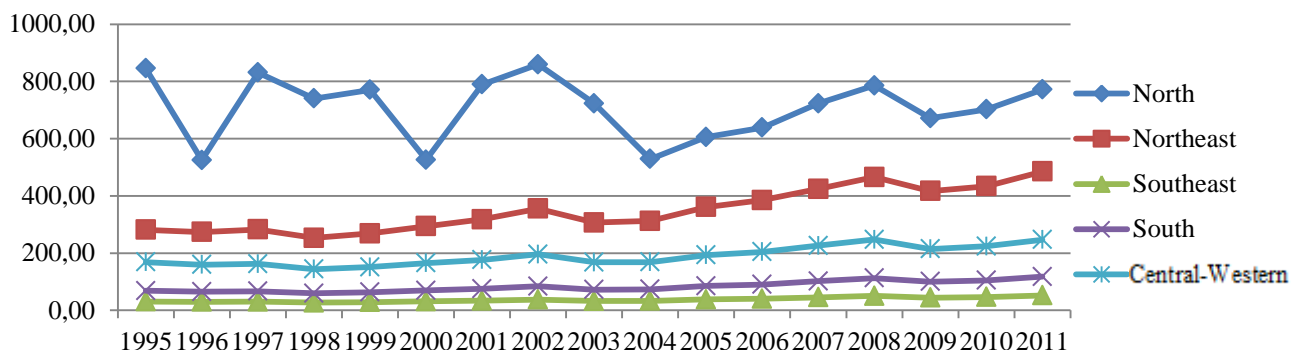


Source: Own elaboration from Brasil/MF (2013) e IBGE (2013a).

The significance of the FPE for the nation's poorer regions is also proven by the amount of the fund per inhabitant, in constant 2012 prices, restated by the National Consumer Price Index - INPC (Figure 9). Inasmuch as the growth rate for the Brazilian population has been outstripped by that of the FPE, even with part of the resources being directed to other types of transfers, the amounts passed on to poorer regions are greater than those transferred to other regions. Accordingly, the Northeast began the period under analysis with about half a minimum salary per inhabitant and in 2011 received the equivalent of 0.8 of a minimum salary per capita (in terms of 2012 prices and minimum salary). The amount of the FPE per

inhabitant transferred to the North in 2011 was equivalent to 1.2 of a minimum salary per inhabitant (again in terms of 2012 prices and minimum salary)²².

Figure 9. Total Amount of the State Participation Fund per Capita, by Region (adjusted by the INPC index) – 1995-2011 – R\$ (2012)



Source: Own elaboration from Brasil/MF (2013) e IBGE (2012, 2013b, 2013c, 2013d).

The behavior of the amounts transferred to the North is irregular owing to the population statistics utilized. Up to the year 2003 the National Household Sample Survey (PNAD) considers only the urban zones of the North, except for the State of Tocantins. In the years when the population was counted (1996 and 2007) and in the most recent Censuses (2000 and 2010), the rural zone was computed as well.

3.3.2 Municipal Participation Fund – FPM

According to its distribution criteria, the Municipal Participation Fund (FPM) does not transfer a greater volume of resources to all poorer regions. Of the amount appropriated to the FPM, 10.0% is distributed among capital cities, 86.4% among the other municipalities and the remaining 3.6% among inland municipalities with over 156,216 inhabitants. After this division, the individual coefficient for the share of each municipality is determined by the Federal Accounting Board (TCU) according to the number of inhabitants (Brasil/MF, 2011).

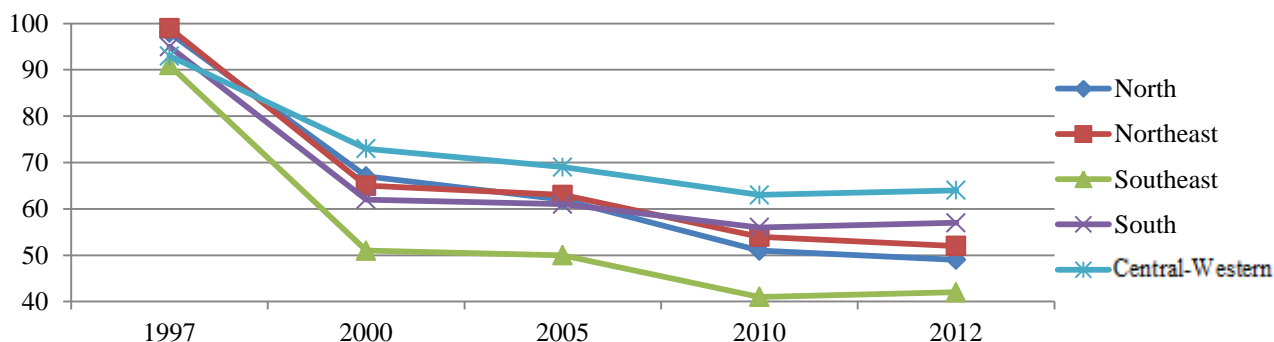
Due to the criteria established, the more populous regions and those with a greater number of municipalities and capital cities are the ones that benefit the most, in other words, the richest region, the Southeast, and the poorest, the Northeast. The distribution of financial resources has remained practically invariable over the course of the years analyzed, with the following distribution in 2012: 8.6% to the North, 35.7% to the Northeast, 31.1% to the Southeast, 17.4% to the South and 7.2% to the Central-West (Brasil/MF, 2013).

Just as in the case of the FPE, the share of the FPM in constitutional transfers to municipalities has fallen over time for the same reasons. Starting in 1998, when 15% of the resources of this fund began to be transferred to the Fundef, the FPM's share in total constitutional transfers dropped by roughly 30% for some regions. As from 2007, when the Fundeb began, the transfer percentages increased, rising to 16.7% in 2007, 18.3% in 2008 and starting in 2009, 20% (Brasil/ME, 2008). Hence, is no longer the most important

²² This equivalence was drawn up by the author of this article, based on Brasil/MF (2013).

constitutional transfer to Brazilian municipalities, accounting for 50% of such transfers to poorer regions in 2012 (Figure 10).

Figure 10. Share of the FPM in the Constitutional Transfers, by Region* - 1997, 2000, 2005, 2010 e 2012

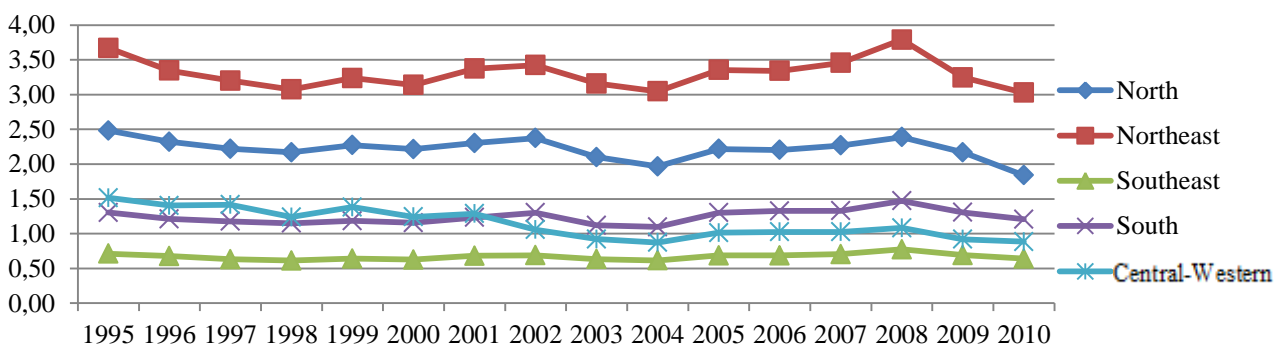


* Since 1998, the values of FPM, FPE, IPI-Exportação and ICMS LC 87/96, is already discounted the portion of 15 % (fifteen percent) designed to FUNDEF. Since 2007, the values of FPM, FPE, IPI-Exportação and ICMS LC 87/96 and of ITR, is already discounted the portion designed to FUNDEF.

Source: Own elaboration from Brasil/MF (2013).

Although the Northern region does not benefit from the highest percentages in the distribution of the FPM's resources, the extent to which the FPM is represented in regional GDP is more important for poorer regions, about 2% for the North and 3% for the Northeast (Figure 11), even with less representation than the FPE in the respective regional GDP's.

Figure 11. Representation (%) of the Municipal Participation Fund in Terms of GDP, by Region – 1995-2010



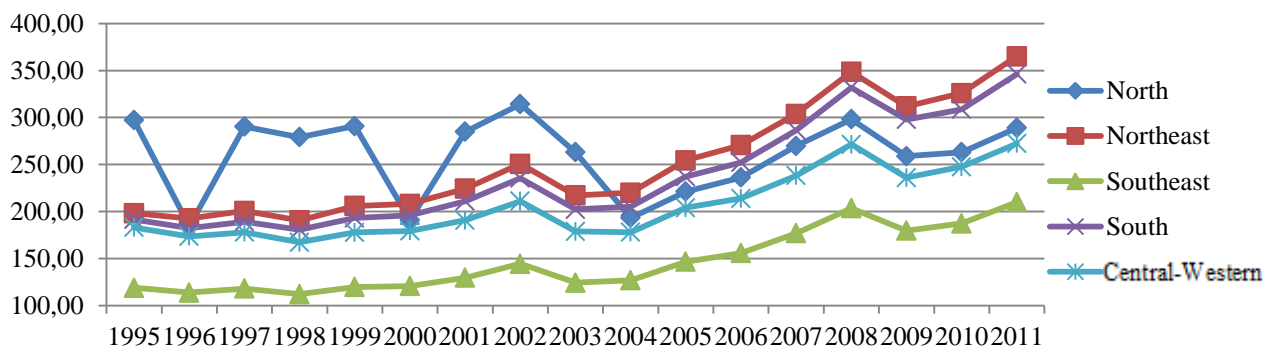
Source: Own elaboration from Brasil/MF (2013) e IBGE (2013a).

Analyzing the FPM from the angle of regional distribution per inhabitant, in constant 2012 prices, we can see that it is greater for the Northeast, though it did not contribute to reduction in regional disparities in relation to the North (Figure 12), despite its irregular behavior up to 2003²³. As in the case of the FPE, even with part of its resources headed for the Fundef as from 1997, the amounts thereof rise for all regions. The Northeast benefits the most in terms of distribution of this fund per capita, beginning the period under analysis with

²³ The explanation for the irregular behavior of the FPM per inhabitant in the North is the same as that relating to the FPE (sub-section 3.3.1).

approximately one third of a minimum salary per inhabitant and ending it with about 0.6% (in terms of 2012 prices and minimum salary).

Figure 12. Total Amount of the Municipal Participation Fund per Capita, by Region (adjusted by the INPC index) – 1995-2011 – R\$ (2012)



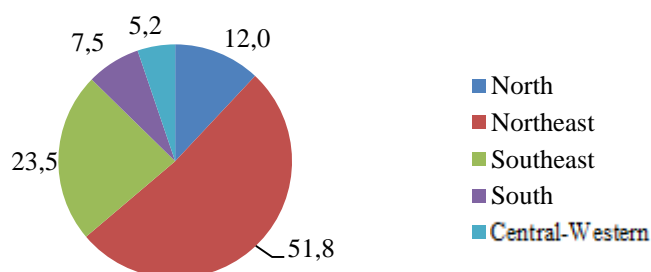
Source: Own elaboration from Brasil/MF (2013) e IBGE (2012, 2013b, 2013c, 2013d).

To conclude, in relation to the participation funds, which were created in order to serve as instruments to cut down on regional disparities, the nation's poorer regions received amounts relatively higher than other regions. The representation of these funds reaches the neighborhood of 7% of the GDP of the North and Northeast. Hence, these funds created in the 1960's received more resources beginning in 1988 and may have contributed to the reduction of Brazil's regional inequalities²⁴.

3.3 Family Allowance Program (*Programa Bolsa Família*)

The Family Allowance is a program for conditional transfer of direct income, as explained earlier in this article. The share of the various regions in the total transfers under this program has remained virtually unaltered since its creation in 2003, with the poorest region, the Northeast, receiving more than half of these resources. Even so, the North gets just 12% of the total, versus around 24% for the Southeast, the richest region (Figure 13).

Figure 13. Distribution (%) of Total Transfers under the Family Allowance Program among Regions

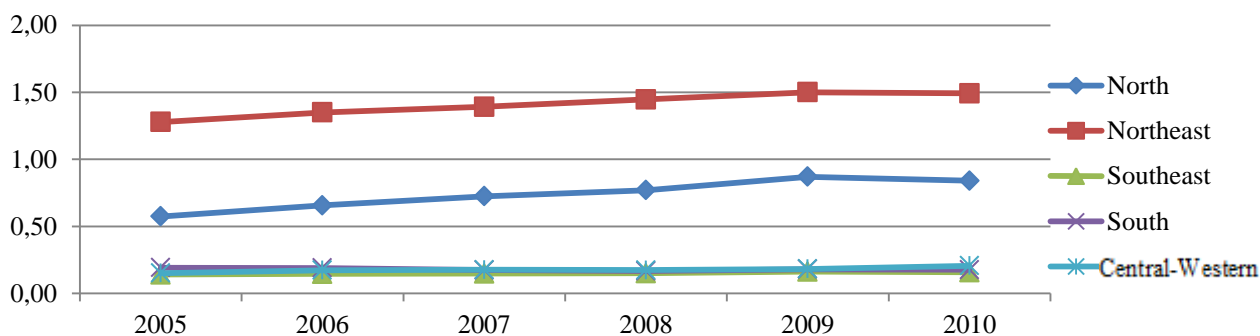


Source: Own elaboration from Brasil/CGU (2013).

²⁴ To ascertain whether the FPE and FPM effectively contributed to reducing regional inequalities it is necessary to evaluate the destination and application of such resources, as they are not earmarked. Since this is not the aim of this article, it is inferred that if the resources have been well used they have made a contribution towards reduction of the disparities between the various regions of Brazil.

Despite the lower share received by the North in the Family Allowance total, its representation in regional GDP, 0.8% in 2010, was higher than for the country's richer regions, with this share taking on greater importance for the Northeast, rising from 1.3% in 2005 to 1.5 in 2010 (Figure 14).

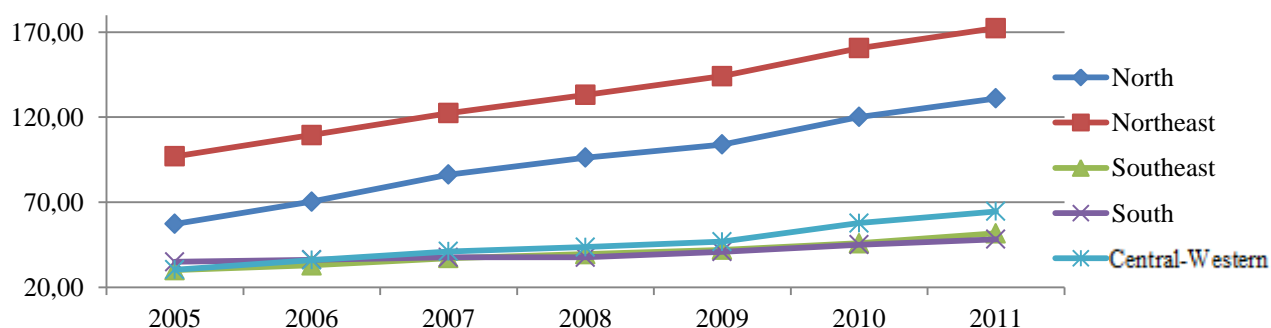
Figure 14. Representation (%) of the Total Transfers under the Family Allowance Program in Terms of GDP, by Region – 2005-2010



Source: Own elaboration from Brasil/CGU (2013) e IBGE (2013a).

Analyzing the amounts involved in Family Allowance transfers per inhabitant, it can be perceived that that are greater for Brazil's less developed regions, R\$ 172.40 for the Northeast and R\$ 131.05 for the North in 2011, in terms of constant 2012 prices (Figure 15).

Figure 15. Total Transfers under the Family Allowance Program per Capita, by Region (adjusted by the INPC index) – 2005-2011 – R\$ (2012)



Source: Own elaboration from Brasil/CGU (2013) e IBGE (2012, 2013b, 2013c, 2013d).

The amounts transferred per inhabitant posted real increases in the period analyzed, being lower for more developed regions. The highest growth rate occurred in the North, followed by the Central-West and Northeast (Table 5).

Table 5. Growth Rate of Total Transfers under the Family Allowance Program per Capita, by Region (adjusted by the INPC index) – 2005-2011 – R\$ (2012)

North	Northeast	Southeast	South	Central-Western
129%	78%	72%	38%	113%

Source: Own elaboration from Brasil/CGU (2013) e IBGE (2012, 2013b, 2013c, 2013d).

3.4 Basic Sanitation

Even though basic sanitation is considered essential to improve the population's quality of life, including variables other than income in verifying the reduction in regional inequalities, the institutional changes and policies for the sector have not evolved in the period being analyzed by this article. This institutional inertia in relation to basic sanitation can be verified empirically by the data compiled in the PNSB.

The following data show the basic sanitation situation per region for 2000, the first year of the survey, and 2008, the last for which statistics are available. The shift in the regulatory framework for the sector, which took place in 2007, can thus not be noted based on the data posted. Of all the data on services comprising basic sanitation, that relating to the control of vectors of transmissible diseases is not presented, since it is not part of the PNSB.

3.4.1 Water supply

As a result of the Planasa, put into practice at the beginning of the 1970's, the percentage of Brazilian municipalities without a general water supply network is very low for all regions, with almost total coverage for this type of service throughout the nation (Table 6). As mentioned earlier in this article, this fact is due to the greater economic viability of this service in relation to the others that are part and parcel of basic sanitation.

Table 6. Percentage of Municipalities without a General Water Supply Network - Brazil and Regions - 2000 and 2008

	Brazil	North	Northeast	Southeast	South	Central-Western
2000	2,1	6,0	3,6	0,0	1,5	1,6
2008	0,6	1,6	1,2	0,0	0,3	0,4

Source: IBGE (2013d).

3.4.2 Sewage disposal

With respect to sewage, the percentage of municipalities with a sewage disposal system²⁵ is high in the Southeast and low in the Northeast, South and Central-West. Coverage in the North is extremely low, just over 13%. Moreover, the increase in this service hardly evolved at all from 2000 to 2008, with the Central-Western being the only region with reasonable growth, around 10% (Table 7). This situation is a further consequence of the Planasa and the subsequent absence of a regulatory framework for the sector. Given the market logic of this plan, sewage services were not economically viable enough to be implemented.

²⁵ The types of sewage disposal systems are: Unitary or mixed, Conventional separator, Condominium separator.

Table 7. Percentage of Municipalities with a Sewage Disposal System – Brazil and Regions – 2000 and 2008

	Brazil	North	Northeast	Southeast	South	Central-Western
2000	52,2	7,1	42,9	92,9	38,9	17,9
2008	55,2	13,4	45,7	95,1	39,7	28,3

Source: IBGE (2013d).

Aggravating this sewage disposal system situation is the fact that in 2008 the percentage of municipalities with sewage treatment²⁶ is low for all regions, especially for the poorest – approximately 8% and 17% for the North and Northeast, respectively. Even in the Southeast, just 47% of sewage collected in drains was treated (Table 8). This precarious situation, both regarding collection and treatment of sewage, is heavily reflected in the incidence of waterborne diseases, as will be seen in the following sub-sections.

Table 8. Percentage of Municipalities with a Sewage Disposal System and Sewage Treatment – Brazil and Regions – 2008

	Brazil	North	Northeast	Southeast	South	Central-Western
2008	27,2	7,8	17,2	46,9	22,8	25,1

Source: IBGE (2013d).

3.4.3 Management of solid residue and selective collection

Although the management of solid wastes²⁷ occurs in all Brazilian municipalities, the percentage of selective collection is low in some municipalities and virtually non-existent in poorer regions, where in 2008 only 4% of their municipalities had this type of service available. From 2000 to 2008 there was a rise in selective collection, but since it was practically absent in some regions, such evolution was not sufficient for a significant number of municipalities to begin having this service available for the local population (Table 9).

Table 9. Percentage of Municipalities with Management of Solid Wastes and Selective Collection – Brazil and Regions - 2000 and 2008

	Brazil		North		Northeast		Southeast		South		Central-Western	
	with manag	selec collect	with manag	selec collect	with manag	selec collect	with manag	selec collect	with manag	selec collect	with manag	selec collect
2000	99,4	8,2	99,1	0,2	99,0	1,5	100,0	8,4	99,1	23,6	100,0	2,0
2008	100,0	16,6	100,0	4,0	99,9	4,1	99,9	22,1	100,0	36,7	100,0	6,0

Source: IBGE (2013d).

²⁶ The types of sewage treatment are as follows: biological filter, activated mud, anaerobic reactor, oxygenation vale, anaerobic pond, aerobic pond, aerated pond, facultative pond, mixed bod, maturation pond, wetland/in-soil application, aquatic plants, and condominium septic tank.

²⁷ Law 12.305 of 2010 defines that the public utility service of urban cleaning and management of solid urban wastes is comprised of the following activities: collection, transshipment and transportation of wastes; sorting for reuse or recycling, treatment, including composting, and final disposal of the wastes; sweeping, cutting and trimming of trees on public streets and squares, and such other services as pertain to public urban cleaning.

3.4.4 Rainwater management

As concerns underground urban stormwater drainage, in 2008 the nation's municipalities in its poorer regions were the most bereft of this service, over 50% of them. By contrast, the richer regions had a high percentage of stormwater drainage coverage, over 90% for the Southeast and South. The Central-West was the only region that upped its coverage in terms of this service, with a rise of roughly 13% from 2000 to 2008 (Table 10).

Table 10. Percentage of Municipalities with Underground Urban Stormwater Drainage – Brazil and Regions – 2000 and 2008

	Brazil	North	Northeast	Southeast	South	Central-Western
2000	67,0	30,5	44,7	84,6	93,8	58,1
2008	72,2	42,1	48,0	91,4	93,9	70,8

Source: IBGE (2013d).

Notwithstanding the greater coverage of underwater urban stormwater drainage in the richer regions, the percentage of municipalities that suffered from inundations or floods in the past five years increased for all regions from 2000 to 2008, reaching an increase of almost 20% for the Southeast (Table 11), which boasted the highest percentage of municipalities with underground drainage in 2008.

Table 11. Percentage of Municipalities that Suffered from Inundations or Floods in the Past Five Years – Brazil and Regions – 2000 and 2008

	Brazil	North	Northeast	Southeast	South	Central-Western
2000	22,4	12,7	13,3	32,4	30,7	10,1
2008	40,9	33,4	35,9	51,0	42,8	26,0

Source: IBGE (2013d).

As a consequence of the lack of certain basic sanitation services in poorer regions, a higher incidence of diseases associated with the lack of such services is noted²⁸. As expected, Brazil's less fortunate regions are the most affected, with over 60% of their municipalities compromised by certain types of these diseases. The occurrence of diarrhea, verminosis and dengue fever (breakbone fever) affects 40% or more of the municipalities in the North and Northeast. Such diseases chiefly affect children and poor people (Table 12).

Table 12. Percentage of Municipalities with Incidence of Certain Types of Diseases Associated with the Lack of Basic Sanitation Services – Brazil and Regions –2008

	Brazil	North	Northeast	Southeast	South	Central-Western
Total	40,4	67,7	61,1	32,1	12,8	33,9
Diarrhea	27,3	49,7	42,0	20,1	9,3	20,6
Verminosis	25,1	45,9	39,1	20,1	6,4	16,1
Dengue fever	27,8	44,1	49,0	18,9	3,4	24,7

Source: IBGE (2013d).

²⁸ The diseases verified in the PNSB are: diarrhea, leptospirosis, verminosis, cholera, diphtheria, dengue fever, typhoid fever, malaria, hepatitis, yellow fever, dermatitis and respiratory tract infections.

Besides the tremendous incidence of such diseases, they represent an additional cost for the hard-pressed public health services, and children with verminosis cannot readily absorb food, with serious consequences for their physical growth and learning capacity. Diseases that affect adults, such as dengue, lead to morbidity and absence from work, at times representing a reduction in the earnings of self-employed workers.

Further, although data on basic sanitation in Brazil is wide-ranging and frequently updated, quantitative indicators prevail, to the detriment of qualitative ones such as quality of services – regularity and tariff equity – and drinking water standards (Heller, 2007).

Final Considerations

Brazil is one of the few countries that managed to reduce its income disparities at the beginning of this century, even though important regional inequalities persist. Given that the growth of Brazil's GDP in this same period was lower than that of other emerging nations, one of the possible explanations for this merit lies in the institutional changes and social policies implemented since 1988.

Starting with the New Constitution and liberalization of trade at the end of the 1980's, the country underwent major transformations, one of them being the end of the persistent inflation that was not neutral from a distributional standpoint. From 1995 to 2011, we were able to note greater amounts involved in the institutional transfers being made to states and municipalities, more resources being aimed at education due to the Fundef and Fundeb, economic and financial reforms, implementation of social programs, an increase in the minimum salary of 98% and the resulting rise in Social Security payments, among other changes, all of which led Brazil to a new economic and social order.

The nation's poorer regions benefited from this process: pensions represent 4% of Brazilian GDP and 6% of the GDP of the poorest region, the Northeast. The Family Allowance program is more important for the poorer regions, representing approximately 0.8% and 1.5% of the GDP of the North and Northeast, respectively. In relation to constitutional transfers, the FPE represented 5% of the North's GDP, 4% of the Northeast's and less than 1% for the other regions. As regards the FPM, such transfers represent 2% and 3% of the regional GDP for the North and Northeast, respectively.

In spite of these benefits for the nation's poorer regions, the basic sanitation sector was marginalized in this process. The institutional gap was the hallmark of the period analyzed and, indeed, only in 2007 was a new institutional and regulatory framework created for the sector. It is precisely the poorer regions that are most affected by the lack of a network for collecting and treating household sewage, the absence of selective garbage collection and the incidence of waterborne diseases.

Therefore, in discussing the issue of eliminating poverty, we should not just note the income accrued by regions and their inhabitants. Better living conditions, obtained through public basic sanitation services provided in appropriate quantity and quality, are essential to putting the nation on the road to development, besides such other requisites education, health and public safety. The simple transfer of income may lead to a process of dependency on the

part of poorer regions, which in order to leave their peripheral situation should develop their productive base, generating income in an endogenous manner that leads to social and productive inclusion.

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