

THE IMPACT OF LAND REFORM ON LAND TENURE AND THE DIVERSIFICATION OF AGRICULTURAL PRODUCTION: CASE STUDY OF NORTHEASTERN BRAZIL

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Abstract: In the mid-1980s and 1990s, the sugarcane industry in the Northeast region in Brazil entered into a deep crisis. With the liberalization of the state there was a cut in state subsidies and a number of sugarcane mills collapsed, leaving many workers unemployed. The rural workers, supported by different social movements, such as Landless workers Movement and Rural Workers Trade Unions, started to fight for access to land. Many of them managed to get a piece of land in the Land Reform Settlements. Our understanding is that land reform in Brazil is a multi-faced, multi-stage process and highly sight-specific. This article analyzes the effects of land reform on land tenure and production in the sugarcane region of northeastern Brazil during the 1990s. It is grounded on quantitative data, both secondary and primary sources, and qualitative data from semi-structured interviews. In this sense, we show that although important sections of the land in the region have been converted into family farms, land reform is still far from breaking the concentration of land and the dominance of the sugar cane in the region. However, land reform settlement have not only expanded the food production and employment opportunities but also contributed to the empowerment of social actors.

Resumo: Em meados da década de 1980 e 1990, a indústria sucro-alcooleira do Nordeste do Brasil entrou em uma profunda crise. Com a adoção de políticas liberais, houve um corte dos subsídios estatais e várias usinas faliram, deixando muitos trabalhadores desempregados. Os trabalhadores rurais, apoiados por diversos movimentos sociais, como o Movimento dos Trabalhadores Sem Terra e Sindicatos de Trabalhadores Rurais, começaram a lutar pelo acesso à terra. Muitos deles conseguiram um pedaço de terra nos Assentamentos de Reforma Agrária. Nosso entendimento é que a reforma agrária no Brasil é um processo multifacetado. Este artigo analisa os efeitos da reforma agrária sobre a posse da terra e produção na região canavieira do Nordeste do Brasil durante a década de 1990. Ele se baseia em dados quantitativos, fontes tanto primárias e secundárias, e em dados qualitativos colhidos através de entrevistas semi-estruturadas. Os dados mostram que, embora importante porção da área agrícola regional tenha sido convertida em agricultura familiar, a reforma agrária ainda está longe de quebrar a concentração de terras eo domínio da cana-de-açúcar na região. Contudo, a implantação de assentamentos de reforma agrária não só ampliou a produção de alimentos e as oportunidades de emprego, como também contribuiu para o empoderamento dos atores sociais.

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INTRODUCTION

This article⁵ analyzes the effects of land reform on land tenure and production in the sugarcane region⁶ of northeastern Brazil during the 1990s. With nine of Brazil's twenty-six states and roughly one quarter of the country's population, the Northeast was the economic and political center of Brazil in the early colonial period. Like the US South, the Northeast gradually lost importance in the national economy as industrialization occurred in the South and Southeast, especially in the state of São Paulo (PEREIRA, 1999, p. 2). Geographically, the Northeast consists of three main regions: the *Zona da Mata*, which characterizes the humid eastern coastline and derives its name from the former forest cover (ANDRADE, 1980, p. 222); the semi-arid *Sertão*, where beef cattle raising and cotton growing predominate⁷; and the *Agreste*⁸ where cattle-raising and subsistence agriculture dominate. From the beginning of colonization to the present, the occupation and organization of the first region, the *Zona da Mata*, has centered on the sugarcane plantation. However, even with the enduring dominance of sugarcane, the organization of production has varied over time in response to internal and external market conditions and the relationship between the industry and the state.⁹

In the 1970s, the *PROALCOOL* was implemented, it was a State Plan which aims to finance the expansion of sugar cane cultivated area and also the sector modernization. It funded around 80% and 100% of the investments on the sugar cane mills and the interest rate was 10% for the small holders and 26% for the large holders. (TARGINO and MOREIRA, 1992, p. 2-3). In that period, a significant percentage of the residents¹⁰

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⁶ By 'sugarcane region' we mean the geographical regions of northeastern Brazil that has historically been dominated by sugarcane. The most important region within this area is the *Zona da Mata* (literally, the forested region), which runs along the coast.

⁷ That is the more historical characterization of *Sertão*. Since the late 1970 and during the 1980s, the *Sertão* has gone through significant changes with the disappearance of cotton and the expansion of cattle raising (MENEZES, 1985).

⁸ "Sometimes [the *agreste*] is clearly demarcated, but on other occasions it can be confused with the *Zona da Mata* in its more humid stretches, and with the *Sertão* in its more arid" (ANDRADE, 1980, p.14).

⁹ For a broader analysis of the history of sugarcane plantation in Brazil, see Andrade 1980 and Schwarz 1985, 1992.

¹⁰ Residents is the English translation for 'moradores'. In the book *The Land and People of the Northeast* (ANDRADE, 1980), the term is translated as 'squatters'. However, I thank Wendy Wolford for calling my attention to the fact that squatters would be a more adequate translation for the rural workers in Brazil called "posseiros." Andrade (1980, p. 94) describes 'moradores' (residents) as "those who reside on mills or fazendas and receive a house to live in and a parcel of land on which to grow subsistence crops. The

had already been expelled from sugarcane plantations in the Zona da Mata. Sigaud (1979, p. 33) points out that during the 1950s and more specifically, after the military coup d'état in 1964, a considerable number of residents started to leave the land that they had in the former *engenhos* (small, old-fashioned sugar mills, see Andrade, 1980, p. 220). These workers moved to the urban areas and the landowners largely refused to contract new residents.

Suarez (1977, p. 46-55 and Sigaud, 1979, p. 37) argue that this process was caused by the expansion of cultivated land with sugarcane and a desire on the part of the landowners to avoid paying workers' rights that had been recently achieved in the course of the workers' movement in Pernambuco. Novaes adds that the proletarianization of sugarcane workers was also caused by technological innovations and the rationalization of labor process (NOVAES, 1993, p.89). The sugarcane workers who moved to the urban areas were segmented into two categories: the 'legal' which includes people who have a formal or legal labor contract and are called *fichados* and the 'illegal' which includes people who are recruited under the table by the middlemen and are called *clandestinos* (NOVAES, 1993, p. 102; SIGAUD, 1979, p. 129). Although the great majority of sugar cane workers live off of the plantation, this process of expulsion was never totally complete and some workers still live on the plantations.

In the mid-1980s and 1990s, the sugarcane industry entered into a deep crisis. With the liberalization of the state there was a cut in state subsidies and a number of sugarcane mills collapsed, leaving many workers unemployed. The crisis also had negative consequences for the peasants who were employed seasonally in the cane harvest, many of whom lost their primary source of cash income. Research carried out by FETAPE – the Agricultural Workers' Federation of the State of Pernambuco - found that 50 percent of the workers interviewed were unemployed in the sugarcane region of Pernambuco (ANDRADE, 1994, p.344). Supported by many different political organizations, the rural workers have mobilized to demand the conversion of large landholdings into family farms.

The Sugarcane Crisis and Grassroots Movements

In the 1990s many different categories of rural workers, including both **the plantation** residents and the wage workers, became involved in social movements fighting for access to land. With the return to democracy in 1985, a new phase began in the struggle for land in response to the organization of workers by rural trade unions, the Catholic Church (through the Pastoral Land Commission, or CPT), and the Landless Movement (Movimento Sem Terra). At the same time, the landowners organized in groups called the National Confederation of Agriculture (CAN) and the Rural Democratic Union (the UDR). At this time, the discussion of agrarian reform focused on the redistribution of wealth and the pursuit of social justice, as opposed to simply focusing on agricultural

house, always small and humble, varies considerably in comfort and construction from one region to another”.

production as was previously the case.¹¹ The main and most effective way in which social movements put pressure on the Brazilian government has historically been by organizing direct-action land occupations (ALENTEJANO 1997; CUNHA *et al.* 2004; LEITE 2004; MOREIRA *et al.* 2003; FERREIRA, 1994; WOLFORD, 2001).

The fight for land in the Northeast, and particularly in Pernambuco, is supported by many different social movements. Although the MST was founded in 1984 in the South of Brazil (STÉDILE, 1997), it only became established in the northeastern states much later.¹² With the MST expansion into the Northeast, other social agents involved in the fight for land adopted the movement's methods. Until the early 1980s, the Catholic Church and rural trade unions had mainly focused on legal means of supporting the workers against labor exploitation. In the late 1980s, they were joined by rural workers, sharecroppers, landless, and the rural poor who not only resisted expulsion and labor exploitation but also began fighting for land by staging occupations of unproductive land and forming encampments there. This strategy has been adopted by rural trade unions and the Catholic Church's Pastoral Land Commission. Overall, it seems evident that the sugarcane crisis weakened the mill owners' power which enabled social movements to implement strategies such as encampments and land occupations.

Through these strategies, some workers have successfully managed to get access to land in what are known as 'land reform settlements'. Settlements can be created from three different situations of pre-existing land tenure. First, land titles can be regularized for land occupied by squatters; second, land titles can be awarded in areas of social conflict occupied by sharecroppers and third, land can be expropriated and re-distributed if it is unproductive and occupied by the Landless Movement, rural workers trade unions or other organizations. In all cases, the land reform settlers come from many different social backgrounds such as: squatters (*posseiros*); sons and daughters of poor small farmers; small farmers who are victims of large public projects (primarily hydro-electric dams), rural wage workers and people who live in the country's expansive forest region who have lost access to the natural resources. In all of the different land reforms possible, substantial changes take place in relation to the legal, social and political status of the land. The land becomes a territory under state management. The land reform settlers become public agents in a sense, as their land use and social organization are submitted to public policies and they start to deal with a large group of governmental and non-governmental agencies.

Social movements play a key role in the implementation of land reform settlements in

¹¹ In the period leading up to the military coup of 1964, the debate on the agrarian reform concentrated on the question of whether the country's land tenure structure represented an obstacle to agricultural or industrial development in Brazil.

¹² It is important also to mention the relation MST and the church as Robles stated: "From the beginning the MST has been consistently supported by the catholic church and the workers party (PT). This has enabled the movement to expand its national and international social networks, thus facilitating its political operations. The fallout of globalization has also fueled the MST's political engine. The movement has enlisted displaced rural workers, shantytown dwellers and unemployed blue-collar workers" (ROBLES 2000, p. 678).

two ways. First, in identifying unproductive land that is¹³ eligible for expropriation according to the Brazilian Constitution)¹⁴ and, second, they contribute to the creation of ‘land reformed areas’ where a concentration of land reform settlements has produced economies of scale in the provision of commercial and social services (LEITE *et al.*, 2004, p. 63-8).

This concentration of settlement areas can be seen in the sugarcane region (LEITE *et al.* 2004, p. 63-4). Of 216 settlements introduced through 1999 in the state of Pernambuco, 105 are in the Zona da Mata, totaling 81.456,00 hectares and representing 47,3 percent of the settlement areas in the state. These 105 settlements are home to 8.552 families, which corresponds to 56,9 percent of all the families settled in the state (see Table I).

Table I - Land reform settlements in the Zona da Mata, state of Pernambuco

Number of settlements	Area (ha)	Number of families
105	81.456,0	8.552
216	172.326,0	15.025
48,6	47,3	56,9

Source: SIPRA-INCRA-PE; Governo de Pernambuco, Secretaria de Produção Rural e Reforma Agrária.

In the sugarcane region of Paraíba, 81 settlement projects were created before 1999, representing 51.9 percent of the total number of land reform settlements and 49.0 percent of the land area in settlements in the state. These 81 settlements include 5.895 families who represent 55.5 percent of the total number of families settled in the state (see Table II).

Table II - Land reform settlements in the Zona da Mata, state of Paraíba

Number of settlements	Area (ha)	Number of families
81	67.819,3	5.895
156	138.358,88	10.626

¹³ Unproductive land is constitutionally defined as that which violates either the “degree of utilization: or the “degree of efficiency” established by the federal government. The “degree of land utilization” required for an area to be considered productive was set at 80% of the total arable land. The “degree of efficiency and exploitation” has been determined for all individual products and varies according to region (WOLFORD, 2001, p. 305)

¹⁴ For the legal system Wolford (2001, p. 305) shows how important the MST’s actions are for dealing with the contradictions of the Brazilian legal system: “The contradictory nature of the Brazilian legal system complicates the process by which property claims are disputed and defended. While the two main legal instruments in the country – the Federal Constitution and the Civil Code – both uphold the sanctity of private property, the former stipulates that private ownership will only be recognized if the property in question is fulfilling its ‘social function’ (STROZAKE, 1998) (...) MST’s method of occupying unproductive land – land that is not fulfilling its social function – has highlighted these difficulties existing within the legal system. Because individual judges are responsible for choosing which legal body will be utilized in any particular court case, landowner and landless alike have recourse to a certain legitimacy, creating a stalemate that is often resolved only by a *fait accompli* or force. Even in situations where the Federal Constitution is applied, the considerable ambiguity regarding the definition of ‘social responsibility’ attenuates the law’s effectiveness (PALMEIRA and LEITE, 1998).

51,9	49,0	55,5
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Source: SIPRA-INCRA -PB; INTERPA-PB

These numbers demonstrate how important the land settlements have been in the sugarcane regions in comparison to the other two geographic regions – Agreste and Sertão – in the States of Pernambuco and Paraíba. Due to the concentration of land reform settlements, the sugar cane region has been characterized as having a concentration of land reform settlements in the terms defined by Leite *et al.* (2004, p. 63). The question to investigate is, therefore, what impacts have this concentration had on the traditional agrarian structure of the sugarcane region in Paraíba and Pernambuco. In this article, we will analyze the multiple impacts of the settlements on land tenure in the region on two distinct scales - the sugarcane region as whole and municipalities. We will also evaluate the impacts of the settlements on the diversification of production. Ultimately, we argue that although sugarcane is still the dominant crop in the region, the land reform settlements do have an immediate impact on food production and employment in the sugarcane region.

In order to address these two points outlined above, the article draws on four main data sources: a) secondary data from the Brazilian Institute of Geography and Statistics (IBGE) and monthly production statistics from the National Institute for Colonization and Agrarian Reform (INCRA); b) primary data from a survey conducted between March 2000 and April 2001 in 25 settlements spread throughout 11 municipalities¹⁵ in the sugarcane region of Paraíba, Pernambuco and Alagoas¹⁶; c) 10 open-ended interviews with rural activists and rural workers and; d) 10 interviews with rural workers from the land reform settlements and occupation sites in July 2001.

We will argue in the article that caution is necessary assessing the impact of settlements in the sugar cane region because most of the settlements were established only very recently, between 1995 and 1997. They have just begun on the initial phases of an agrarian reform process and it may be several years more before their impact can truly be assessed.

¹⁵ The selected municipalities are representative of the region because they are characterized by the historical forms of production and labor organization based on sugar cane plantation. They also had land conflicts which resulted in the creation of land reform settlements.

¹⁶ This fieldwork was conducted as part of the research project entitled “The regional Impacts of Land Reform Settlements: a study according to the selected areas”, a joint study carried out by the Graduate Program in Development, Agriculture, and Society of the Rural Federal University in Rio de Janeiro and also by the Political Anthropology Center of the Social Anthropology Graduate Program of Rio de Janeiro Federal University, through a formal agreement with NEAD (Development and Agrarian Studies Center) which belongs to the Agrarian Development Ministry. The national research was conducted by Beatriz Heredida, Leonilde Medeiros, Moacir Palmeira, Sérgio Leite and Rosângela Cintrão. In the Northeast, the research was conducted by Emilia Moreira, Marilda Aparecida de Menezes, Ivan Targino and Edgard Malagodi.

The Impact of Land Reform Settlements on Land Tenure

In order to illustrate a broad perspective of land reform settlements in the sugarcane region and their impact on land tenure, Table III outlines the ratio of settlement area to total farming area. In the sugarcane region as a whole, land reform settlements represent 12.7 percent of the total farming land.

Table III – Area expropriated by government in relation to the total farming area

Sub-Zone / Municipality	Total farming area 1995/96 (in ha) (a)	Expropriated area 1986 - 1997 (in ha) (b)	b / a
Zona da Mata Paraibana			
Pedras de Fogo	27.577	4.363,5	15,8
Cruz do Espírito Santo	11.577	4.819,0	41,6
Pitimbu	5.472	3.120,3	57,0
Sapé	22.241	2.498,3	11,2
Zona da Mata Pernambucana			
Abreu Lima	2.843	956,0	33,6
Igarassu	23.469	460,0	1,9
Goiana	38.160	1.510,0	3,9
Água Preta	38.296	5.801,2	15,1
Rio Formoso	37.943	1.527,0	4,0
Maragogi	23.430	4.285,2	18,3
Subtotal	164.141	14.539,0	8,8
Sugarcane Zone Total	231.008	29.340,5	12,7

Source: IBGE. Agriculture Census, 1995-6; INCRA: List of expropriated land between 1965 e 2000

Given variations within municipalities, we group them into three categories according to the ratio of settlement land area to the total farming area. The first category includes the municipalities of Goiana, Igarassu and Rio Formoso in the state of Pernambuco, in which the settlements represent very little of the total farming area (3.9%, 1.9% and 4.0%, respectively, in 1997).¹⁷ In all of these municipalities, the index of inequality in land ownership, or the Gini, fell very little.¹⁸ In the case of Goiana, the Gini declined by only three percent and only one percent in Igarassu. Part of the explanation for the insignificant change in these municipalities is the presence of important sugarcane factories. In Goiana there are two important sugar cane factories: Santa Tereza and Maravilhas. In Igarassu, there is at least one large sugarcane factory, the São José Sugarcane Factory. In Rio Formoso, the Central Barreiros Sugar Cane Factory was the most powerful sugar cane mill in the state of Pernambuco in the 70s and was only

¹⁷ In the case of Rio Formoso, 2.026,0 hectares were expropriated after 1998, increasing the land reform area to 9.4 of the total farming area.

¹⁸ The Gini coefficient measures inequality within a range between one (absolute inequality) and zero (total equality). In 1985 the Gini coefficient for the distribution of farm establishments in the northeast was 0.865, compared to 0.854 for the country as a whole, and 0.795 for the north, 0.744 for the southeast and south, and 0.836 for the center-west” (PEREIRA, 1999, p.16).

closed in the 1990s (SIGAUD 2004, p. 149; ANDRADE 2001, p. 150).¹⁹ In Rio Formoso, there are still two important sugarcane factories - Cucau, which is the fifth largest in the state and Trapiche. Trapiche passed through a restructuring process and has subsequently become the most important factory in terms of alcohol and sugar production in the state of Pernambuco. What happened in this case is referred to by some scholars as 'the process of concentration of sugar cane factories, in which financially-stable factories buy up those that are in financial crisis.

The second category of municipalities includes Pedras de Fogo and Sapé in the state of Paraíba and Água Preta in the state of Pernambuco. In this group, land reform settlements represent 15.8%, 11.2% and 15.1%, respectively, of the total farming area. As already outlined, the land expropriated and converted into land reform settlements in these municipalities belonged to sugarcane distilleries and traditional sugarcane mills that collapsed during the crisis of the 1990s. In this case, land reform settlements have had a significant impact on land tenure but have not promoted deep transformations on the land structure. The third category of municipalities consists of Cruz do Espírito Santo and Pitimbu in the state of Paraíba, in which the land reform settlements represent 41.6% and 57.0% of the total farming area respectively, and Abreu Lima in the state of Pernambuco, in which land reform settlements represent 33.6% of the total farming area. In these municipalities, there is without a doubt a dramatic change in the land tenure structure; such is the case of Cruz do Espírito Santo (PB) in which the Gini index fell from 0.857 to 0.412 from 1995 to 1999. In Pitimbu, the Gini index fell from 0.498 to 0.328. In these municipalities, there was a deep transformation of the rural landscape and of land tenure. Here, sugarcane plantations were replaced by family farms growing food crops. This was confirmed by studies based on aerial photographs done by Moreira and published in the *Atlas of Agrarian Geography of State of Paraíba* (1997). One example is the case of the municipality of Cruz do Espírito Santo, in which a family oligarchy owned the vast majority of the rural territory as well as five sugarcane mills in the Zona da Mata in the state of Paraíba. In 1992, the registration of rural properties done by INCRA (National Institute of Agrarian Reform and Colonization) already showed that the area owned by the family had been reduced significantly. Research done by Moreira (1997) on the history and territorial dynamics of the land reform settlements in the municipality also demonstrated that the land reform settlements there originally belonged to the same oligarchic family. All of this suggests that the presence of land reform settlements in the municipality of Cruz do Espírito Santo has transformed the local land structure.

Although important sections of the sugarcane region have been transformed from plantations to family farms, the creation of land reform settlements has not drastically modified the overall land tenure pattern and it is still far from breaking the monopoly of

¹⁹ According to data provided by Andrade (2001: p. 149/150), the 7 biggest sugar cane factories in the State of Pernambuco were: 1st: Trapiche in the municipality of Sirinhaem; 2nd: Central Olho D'Água in the municipality of Itambé; Pumati in the municipality of Joaquim Nabuco; 4th: São José in Igarassu; 5th: Cucau in the municipality of Rio Formoso; 6th: Petribu in Itaenga; 7th Santa Tereza in the municipality of Goiana.

sugarcane plantations in the region, which continues to be dominated by the reproduction of agro-industrial capital. This finding is confirmed by cases of land reform settlements in other regions in Brazil, as stated by Leite (2004). At the same time, it is a pattern similar to that which happened in other countries of Latin America, as Thiensenhausen states “Although agrarian reform agitated the system and gave clear signals to landlords that their properties – or parts of them – would be expropriated if they did not use land wisely, land ownership in much of the region today remains polarized and unequal.” Moreover, the creation of land reform settlements have not brought deep changes to the national land tenure system nor have they enabled the widespread provision of technical assistance or allowed settlers to effectively gain access to markets. These facts have led Sergio Leite (2004) to conclude that “land reform settlements are far from resolving the question of land redistribution in Brazil. The land concentration continues to be high, causing its associated social problems”.

Although the sugarcane region is characterized by a concentration of land reform settlements, it is unlikely that the on-going land reform process will promote a significant redistribution of land in the region. However, we can discern an important expansion of the peasantry amidst the dominance of the sugar cane plantations that seems to replicate a colonial pattern in which “peasant and slave production, or more exactly, provisioning and export agriculture, were intimately related in a complex, multidimensional, and historically changing relationship” (SCHWARTZ, 1992, p.66). The contemporary situation does not, obviously, include the slave; neither is sugar cane an important export crop. However, the complex, multidimensional and historically changing relationship between the sugarcane plantation and food production that Schwartz identifies seems to be a persistent spatial pattern in the Zona da Mata of Pernambuco and Paraiba. It seems also to recreate a traditional form of social reproduction of the peasantry based on the combination of family farming and wage work, not only in Zona da Mata but also in other regions of Northeast Brazil.²⁰ Among 397 families interviewed, our data indicates that 76% of the family members older than fourteen years old work only on the land, 8% have another job, and 2% work only at other jobs (14% did not give any answer). We would note, however, that there is reason to suspect that respondents may have under-declared jobs outside of the family farm because such work is frowned on by INCRA (Agrarian Reform and Colonization National Institute) and by the mediators and social movements such as the MST, rural trade unions and Church organizations. These figures make it clear that acknowledging the importance of wage work to settlers’ social reproduction does not deny the importance of land reform, but rather challenges us to consider how wage labor operates as one among many livelihood strategies²¹.

²⁰ For this point see Menezes (1985; 2002).

²¹ The point that rural households combine multiple survival strategies is made by de Janvry, 2001 p. 6: “Access to land serves as a component in an income strategy based on a portfolio of activities that include wage labor, self-employment in micro-enterprises, and migration. (...) When active labor markets and other sources of off-farm income exist, access to sub-family farms may be both socially efficient and effective to reduce rural poverty, and may be landless households’ preferred options over full-scale family farms” and also by Bernstein (2002, p. 454). “An alternative view is that access to land is hardly a

Impacts of the Settlements on the Diversification of Production

To begin, it is important to consider the problems involved in evaluating the impacts of newly-created land reform settlements. Of the 25 settlements investigated, 23 (92 percent) were created between 1995 and 1997, and only 2 (8 percent) were created earlier – both between 1987 and 1989. Therefore, the vast majority of settlements have only been constituted for three to five years. This is a very short time period on which to rely for an accurate assessment of their social, economic and political impact.²² In addition, the field research for this paper was conducted in 2000 and 2001, when the settlements were in the very first phases of implementation. Some settlements had only received their initial government funding to purchase food; others had just received the money to build their houses; and very few had received their credit for livestock investment or equipment purchases. Thus, it may take several years before the impact of these settlements can be properly assessed.

In relation to agricultural production on the settlements, it is worth recalling that the expropriated land was historically associated with sugarcane plantations. The dominance of sugarcane production, however, has never historically been total or homogeneous. Even with sugarcane production, it was possible to find other farming systems based on extensive livestock production together with diversified farming. The introduction of PROALCOOL in 1975 was significant in part because it allowed sugarcane to gain more control over the spaces of production in the region: in the Zona da Mata, the advance of sugarcane production was only limited in areas characterized by strong peasant resistance.

From 1986 on, however, with the deactivation of PROALCOOL and withdrawal of state subsidies for sugar production, the area of land cultivated with sugar and the amount of sugarcane harvested was reduced throughout the Northeast. Although the sugarcane crisis had become widespread, it varied between companies, even between those in the same municipalities: the withdrawal of official subsidies for sugar and alcohol and the variability of market demand have increased the gap between modern and "backward" sugarcane mills: "modern mills" have expanded while the backwards ones have collapsed (FONTE, 2004, p. 175). According to data collected in 1998, 26.8 percent of the 112 sugarcane mills in Pernambuco had high debt levels and low productivity and

sufficient condition of farming (agricultural petty commodity enterprise), and that in many circumstances the rural poor are just as likely to rent out that they possess as to rent in land to farm".

²² The concern as to how and when to evaluate the impacts of agrarian reforms is also stated by Kay (1998, p. 19): "Evaluations vary according to the criteria used, the weight given to each of these criteria and the period considered. A long-term evaluation can lead to a completely different assessment than one carried out sooner. As the agrarian reform process is itself protracted, a long-term evaluation can only be undertaken three or more decades from the start. While a longer-term perspective might be more appropriate, this also is not without difficulties as other factors intervene to influence the outcome to the agrarian reform, let alone to make any precise measurements of its impact. Thus any evaluation should be treated with caution."

were considered likely to go bankrupt; another 23.2 percent had high debt levels and low or medium productivity and would have to be restructured in order to survive. The remaining 50.0 percent of sugarcane mills had medium or low debt and high or medium productivity. These were the ones likely to go through a process of development (MEPF, 1998).²³

The decline in sugarcane production is evident in both Paraíba and Pernambuco. In the Zona da Mata of Paraíba, sugarcane production and the area cultivated in sugarcane declined by 50.5 and 30 percent respectively from 1990 to 1997 (see Table IV).²⁴

Table IV - Cultivated area and production of sugar cane, State of Paraíba 1990/1997

Municipality	Cultivated Area (in ha)	Cultivated Area (in ha)	Absolute Change (in ha)	Relative Change (%)	Production Quantity (in tons)	Production Quantity (in tons)	Absolute Change	Relative Change
	1990	1997			1990	1997		
Sapé	8.000	4.823	-3.177	- 39,7	320.000	221.858	- 98.142	- 30,7
Cruz do Espírito Santo	10.900	6.255	- 4.645	- 42,6	545.000	125.100	- 419.900	-77,0
Pedras de Fogo	30.000	24.500	- 5.500	- 18,3	1.950.000	1.102.500	-847.500	-76,9
Pitimbu	2.000	30	- 1.970	- 98,5	116.000	1.200	-114.800	- 99,0
Total	50.900	35.608	- 15.292	-30,0	2.931.000	1.450.658	- 1.480.342	- 50,5

Source: IBGE, Municipal Agriculture Production, 1990, 1997.

In the Zona da Mata in Pernambuco, production declined by 34.8 percent and the total area cultivated declined by 33.4 percent (see Table V).

Table V - Cultivated area and production of sugar cane, state of Pernambuco

	Production Quantity (ton)	Farming Area (ha)

²³ In April 17, 1995, one of the most widely-read newspapers in Brazil, the Folha de São Paulo, published a document which revealed the main national debtors to the Brazilian Bank until November 1994. Among the one hundred biggest debtors were four sugarcane mills in Paraíba - a AGICAN – which is the 12th in the debtors ranking, approximately US\$ 9 million; Usina Santa Maria – which was in 16th place, owing US\$ 8 million; A Cia. Industrial Santa Helena which was in 44th place, owing US\$ 3,5 million and Usina Santa Rita in 46th owing US\$ 3,3 million. The debt of Usina Santa Rita, which afterwards was converted into a land reform settlement, was, according to the document, impossible to recover. According to the Sugarcane Newspaper (Jornal da Cana), in the 1990s, 20% of the sugarcane industries were shut down, with a reduction of 45 percent of the total jobs, but there was a rise of 7% on the cane crushing, 25% on the sugar production and 20% on the alcohol production (see MELLO, 2002).

²⁴ The available data in Brazil for agriculture production at the level of the municipality are the PAM (Municipal Agriculture Production) collected by the IBGE (Brazilian Institute of Geography and Statistics). The data from the PAM show broad tendencies and were used in the work as indicators to compare with the data collected in the primary research.

Municipalities	1990	1997	Absolute Change	Relative Change (%)	1990	1997	Absolute Change	Relative Change (%)
Goiana	760.000	825.000	65.000		19.000	16.200	-2.800	-14,7
Abreu e Lima	20.000	2.500	-17.500	-87,5	400	50	-350	-87,5
Igarassu	930.000	495.040	-434.960	-46,8	15.000	8.966	-6.034	-40,2
Água Preta	1.209.600	850.000	-359.600	-29,7	25.500	17.500	-8.000	-31,4
Rio Formoso	960.000	410.736	-549.264	-57,2	20.000	9.357	-10.643	-53,2
Total	3.879.600	2.583.276	1.296.324	-33,4	79.900	52.073	-27.827	-34,8

Source: Municipal Agriculture Production 1990, 1997

Despite the reduction of sugarcane production and area cultivated, land reform did not break the centuries-old hold of sugarcane in the region. In fact, from 1990 to 1998 -- more than a decade after the crisis of PROALCOOL had begun and even taking into account the territory appropriated by the land reform settlements -- sugarcane remained the most important crop in the region. In the Zona da Mata Paraibana, sugarcane still accounted for 86.1 percent of the total area under cultivation in 1998, and in the Zona da Mata Pernambucana, it represented 80.0 percent of the total cultivated land (see Table VI).

Table VI - Sugar cane in the total cultivated area, states of Paraíba and Pernambuco

Municipalities/ Region	1990			1997			1998		
	Total Cultivated Area (a)	Sugar cane Area (b)	b/a	Total Cultivated Area (a)	Sugar cane Area (b)	b/a	Total Cultivated Area (a)	Sugar cane Area (b)	b/a
Rio Formoso	21229	20000	94,2	10256	9357	91,2	10256	9357	91,2
Água Preta	26205	25500	97,3	18233	17500	96,0	18233	17500	96,0
Igarassu	18535	15000	80,9	15037	8966	59,6	15022	8966	59,7
Maragogi	8121	6523	80,3	6157	5090	82,7	6581	5040	76,6
Abreu e Lima	1143	400	35,0	2106	50	2,4	2025	50	2,5
Goiana	22109	19000	85,9	20147	16200	80,4	19293	16200	84,0
ZM PE	97342	86423	88,8	71936	57163	79,5	71410	57113	80,0
Pitimbu	4559	2000	43,9	1174	30	2,6	3603	2300	63,8
Sapé	13049	8000	61,3	6496	4823	74,2	5938	5000	84,2
Pedras de Fogo	32852	30000	91,3	28955	24500	84,6	27465	24500	89,2
Cruz do Espírito Santo	11590	10900	94,0	8310	6255	75,3	9226	8000	86,7
ZM PB	62050	50900	82,0	44935	35608	79,2	46232	39800	86,1
ZONA CANAVIEIRA	159392	137322	86,1	116871	92771	79,3	117642	96913	82,0

Source: IBGE - Municipal Agriculture Production

The fact that sugarcane production has declined, even if only partially, can be attributed to the crisis of PROALCOOL as well as to the decreasing price of gasoline during the 1980s (gasoline being the greatest competition with ethanol for motor fuel), the restrictions on credit and subsidies imposed by the economic stabilization policy, and to international market restrictions on the exportation of alcohol and sugar *from Brazil*.

All of these factors, when added to the general level of indebtedness among sugarcane factories, led to declining rates of profit within the northeastern sugar-ethanol sector. This caused a drop both in the area cultivated and in the production of sugarcane throughout the entire sugarcane region in the Northeast of Brazil. This process deepened in the 1990s due to the failure of many sugarcane mills (MOREIRA and TARGINO, 1997).

In regards to the land reform settlements themselves, nine of the 25 settlements included in this research project (accounting for 36.0 percent of the families settled) still grow sugarcane. In the 1998/1999 harvest season, those nine settlements produced 2,491 tons of sugarcane on 78.2 hectares of land. This area represented 4.3% of the total cultivated area of the 25 settlements and 15.6% of the cultivated area in the settlements in which there is sugar cane.

Secondary data collected by the federal government, however, allows us to identify the expansion of traditional food production areas. In the 1998/1999 harvest, the area planted with basic food goods in the settlements represented 32% of the cultivated total area in the municipalities under investigation (see Table VII).

Table VII - Food crops in the land reform settlements in relation to the total food crops area

Regions	1998	Safra 1998/99	b/a
	Total cultivated area with food crops in the municipalities (hectares) (a)	Estimative cultivated area with food crops in the land reform settlements (hectares) (b)	
Zona da Mata State of Pernambuco	14.087,0	8.188,8	58,1
Zona da Mata State of Paraíba	6.432,0	5.923,5	92,0
Zona Canavieira	20.519,0	14.112,3	32,0

Source: IBGE- Municipal Agriculture Production, 1998; Primary data, 2000.

The most important crops raised in the settlements are still the traditional regional staples, namely: manioc (the main food crop, mostly used for flour production), beans and maize. In the 1998/1999 harvests, those three items constituted 52.0 percent of the total cultivated area in the 25 Settlement Projects.²⁵ In 14 of the settlements, over 70% of the total area cultivated was given over to these three crops.

Given that manioc, beans and maize are the most important crops in all of the regions where the research was done, this expansion of staple crops would imply that families

²⁵ These settlements include: the Pitanga Settlement Project in Goiana; Esperança Redenção and União in Areia; Massangana, Massanga II and Massangana III in Cruz do Espírito Santo; Pitanga II in Igarassu; Pau Amarelo in Maragogi; Nova Aurora in Pedras de Fogo; Apasa in Pitimbu; Amaragi in Rio Formoso and Boa Vista in Vida Nova in Sapé.

now have more secure access to food, especially in comparison to their previous situations. The case of manioc is particularly important because in addition to supplying family consumption needs, it is also an excellent crop for the market because it can be kept in the fields longer than beans and maize, allowing farmers more control in planning the best moment to sell it (LEITE, 2004, p. 149).

At the same time, land reform has had a significant impact in terms of food security for rural people.²⁶ As noted, the most important crops grown in the settlements are still the traditional regional staple products: manioc, beans and corn. This production pattern has been also followed in land reform settlements in other states of Brazil, as for example the case studied by Leite (2004) in Rio de Janeiro, in which production for self-consumption represented 37 percent of total production. This orientation towards staple products does not mean that those peasants are backwards, but rather suggest that their production is guided by the “subsistence ethic” defined by Scott (1976), a strategic calculus based on food security. This behavior is economically and politically defensible in a rural context where three million people live on less than US\$1.00 a day (LEITE, 2003).

In addition to the importance of production for self-consumption, the settlements generate employment for an average of 3.5 members of the family. As the number of jobs in sugarcane mills has decreased in the last ten years, the land settlements represent an important economic alternative for ex-wage workers, ex-squatters and urban workers who may have to migrate or fight for a living in the precarious and unstable informal and temporary employment sectors.

CONCLUSIONS

Considering the newness of the settlements, we would argue two main points. First, land reform settlements have contributed enormously to the numerical and political expansion of the peasantry in Brazil. In some municipalities in the sugarcane region, the rural landscape has been transformed and sugarcane plantations have been replaced by very active family farms.²⁷ In this sense, the expansion of land reform settlements has not only fulfilled an important economic role but also contributed to the empowerment of social actors (PALMEIRA and LEITE, 1998: 142-9). Access to land is a human right which can enable the settlers to gradually achieve other economic, social and political

²⁶ Pereira shows how land reform is important for rural development: “In summary, inequalities in political power in the Northeast perpetuate a model of development that gives little opportunity to the poor. For the latter, access to land is limited, land distribution is highly unequal, property rights to land are precarious, land markets are underdeveloped, and access to credit is dominated by large landowners who use their political influence to renege on their loan repayment and tax obligations. Given this scenario, land reform increasing the access of the rural poor to land for cultivation and enabling those who have land to use it more productively remains a powerful potential mechanism for solving problems of development in the region” (1999, p.5).

²⁷ We agree with Petras and Veltmeyer that the “peasantry is a highly modern social class and a dynamic force in an ongoing modernization process” (2001, p. 92).

rights.²⁸ The formation of a land reform settlement in a municipality, region or state allows the settlers to gain visibility in the public arena through claims to credit, education, health, and transport (PALMEIRA and LEITE, 1998, p. 148). As Leite states: “the land reform settlements have transformed the agrarian geography and, to some extent, the political geography due to the visibility of some social groups with their own voice and identity” (LEITE *et al.*, 2004, p. 66).²⁹ Some gains have been made, as is the case with the National Family Farming Program (PRONAF), a pioneer experience of public policy in agriculture, launched in 1996 and co-managed by government and trade unions through the creation of a Rural Development Committee. PRONAF consists of a rural credit policy for small and middle farmers, as well as investments in technology and infra-structure (ANDRADE, 2002, p. 62).

This demonstrates that agrarian history does not follow a linear trajectory from peasantry to wage workers, but depends on how people engage in politically defining their future. This contradicts predictions made by scholars such as Hobsbawm (1994, p. 289) about “the death of the peasantry” as “the most dramatic and far-reaching social change of the second half of this 20th century.”³⁰

The settlers and the social movements which support them have to keep organizing and constructing their claims in new social spaces managed by the state. (BERGAMASCO and FERRANTE, 1998, p. 203). The different ways of dealing with this tension will determine whether and how the peasants gain autonomy from the state or whether they will continue to be incorporated through relations of dependency. There are cases of submission to the state (L’Estoile cited in LEITE, 2004, p. 27; BRENNESSEIN, 2002) but also of resistance against the state, as is the case with popular mobilization around access to credit.

The debate among scholars and also within social movements involved in agrarian reform in Brazil has gone beyond the simple question of access to land and moved forward in terms of advocating other broad issues such access to water and other

²⁸ In relation to the access to land as a human right, Hammond (1999, p.485-6) states: “In rural Brazil today, security of person - the basic civil right - and democratic self-government - the basic political right – are closely tied to the ability to secure a livelihood, the basic economic right; those who wish to deprive others of the right to economic security in order to defend their own economic interests use means which threaten their physical security and corrupt the democratic process. No one of these deprivations of rights will be resolved without addressing the others. Rural violence has been one of the main topics of attention of the Brazilian and international human rights movement, along with police brutality, especially against prisoners and homeless children” (HAMMOND, 1999, p. 485-6).

²⁹ The land settlements also enlarge the political space with the expansion of agrarian reform from its restricted domain of landless, dispossessed people, residents to become a major issue in the political debate about the routes for the country development (LEITE, 2004 p. 9-20).

³⁰ Two scholars have also mentioned this quotation to show how Eric Hobsbawm’s predictions were wrong (PETRAS and VELTMEYER, 2001) and Bernstein (2001, p. 25): “In his Age of Extremes, Eric Hobsbawm (1994, p.288-9, 415 declared that ‘For 80 percent of humanity, the middle ages ended suddenly in the 1950s...’ He was referring to peasants: “the most dramatic change of the second half of this century, and the one which cuts us forever from the world of the past, is the death of the peasantry’ (‘which had formed the majority of the human race throughout recorded history’).

resources, as well as the search for alternatives to markets dominated by agribusiness and transnational corporations. For instance, Leonilde Medeiros, a professor at the Rural Federal University of Rio de Janeiro, has argued that “the agrarian question is not the same as in the 1960s; today it includes access to water, the environment, the control of nature.”³¹

The results presented in this paper deal with the impacts of land reform settlements on land tenure and the diversification of production in the sugarcane region need to be understood as preliminary. The short and long-term future trajectory of the settlements is not something that can be predicted only from the present economic and political picture. The future will depend on how social actors in diverse localities as well as in Brazil as a whole are able to construct forms of access to resources, production and market relations which could provide a better quality of life, social justice and democracy.

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³¹ Those quotations come from the transcription of interviews transmitted online in the home page of World Agrarian Reform Forum, from December 5-8, 2004.

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