

LAND REFORM, REGIONAL PLANNING AND
SOCIOECONOMIC DEVELOPMENT IN BRAZIL



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This dissertation is submitted for
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To my wife and kids

DECLARATION

I hereby declare that this dissertation is the result of my own work* and contains nothing that is the outcome of work done in collaboration except as declared in the preface and specified in the text. Furthermore, this dissertation is not substantially the same as any that I have submitted or will be submitting for a degree, diploma, or other qualification at this or any other University. The word and figure limit prescribed by the Land Economy Degree Committee has not been exceeded.

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ABSTRACT

In this dissertation, we examine the socioeconomic impact of land reform schemes and discuss the policy implications of combining aspects of both state-led and market-based approaches to land reallocation through regional planning. We focus on land reform settlements in Northeast Brazil, where both approaches operated over the same time frame (1997-2002). Empirically, we identify the effects of various indicators on the socioeconomic growth of a sample of rural territories and localities, giving emphasis to the influence of the market-based Land Bill Programme (PCT) and the traditional state-led scheme (INCRA) on that growth through panel data analysis, cross-section regressions and field-based analysis.

It has been concluded that: i) The scope for plan-led strategies towards sustainable development in the countryside has been given less than sufficient emphasis in the land reform literature; ii) There is not clear evidence that the market-based approach leads to higher socioeconomic growth regionally than does the state-led approach, or vice versa; iii) Although the market-based scheme contributed to improved access to title, the PCT settlements failed to impact positively settlers' welfare in the majority of sites; iv) Securing both higher access to land rights and better living conditions through land reform requires an approach that combines both state-led and market-based elements; v) Securing measurable positive impacts on the regional economy requires a land reform strategy that has a regional scope. As a policy implication, the work suggests the adoption of a plan-led land reform strategy that is coordinated at all government levels and between the public and private sectors, and one that involves establishing strategic portfolios of potentially sustainable areas, defining spending priorities for those areas along with funding possibilities through regional planning.

Differently from the commonsense literature on land reform in developing countries, this work demonstrates that regional planning has an essential part to play in land reform through proposing a plan-led strategy that combines elements of both market-based and state-led approaches to the benefit of the regional economy.

Keywords: Land reform, socioeconomic development, regional planning, developing countries, Brazil.

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ABBREVIATIONS

CONTAG	National Confederation of Agricultural Workers
FUNDEB	Basic Education Fund
HDI	Human Development Index
IBGE	Brazilian Institute of Geography and Statistics
INCRA	National Institute for Colonisation and Agrarian Reform
INRA	National Agrarian Reform Service Act
IPEADATA	Institute of Applied Economics Research
MDA	Ministry of for Agrarian Development
MST	Landless Workers Movement
NEAD	National Centre for Agrarian Studies
PAC	National Programme to Accelerate Growth
PCT	Land Bill Programme
PIN	National Integration Programme
PNAD	National Household Sample Survey
PNDE	Plan for the Sustainable Development of the Northeast
PNRA	National Plan of Agrarian Reform
PPP	Public-private partnership
PROCERA	Special Credit Programme for Agrarian Reform
PRONAF	National Programme of Assistance to Family Farms
PRONERA	National Programme of Education for the Agrarian Reform
PROTERRA	Programme for Land Redistribution and Stimulus to Agro-Industry
RDP	Rural Development Programme
SIC	Community Investment Subproject
SAF	Family Farming Secretariat
SAS	Statistical Analysis System
SAT	Land Acquisition Subproject
STU	State Technical Unit
SUS	Unified Health Care System

CHAPTER I

The terms of the debate

1.1 Introduction, objectives and justification

Are the so-called market-based and state-led approaches to land reform mutually exclusive approaches? What policy mechanisms could be applied to reconcile both approaches towards promoting sustained development at a regional scale? These two questions form a basis for our investigation towards understanding the reality of land reform in Brazil as well as the challenges involving applying regional planning to land reform policy in a broader regional context. The thesis is intended to put forward a discussion that goes beyond the comparison of the effects of two different policy strategies, as emphasis is put on key issues highlighted in the regional planning literature as particularly relevant for the contribution of land reform policy to regional, socioeconomic growth. As such, it is an attempt to intervene in mainstream debate on land reform in developing countries.

Historically, state-controlled land reform schemes, most of which have been carried out through expropriation or compulsory acquisition of privately owned land, have been viewed as instrumental for land redistribution and poverty alleviation purposes in the developing world (Navarro, 1998; Borras, 2003). However, as these traditional mechanisms are generally built around rules and regulations, some believe they are bound to constrain the free operation of land markets (Deininger et al, 2003; Neto, 2004), in addition to encouraging unlawful occupations of lands (Alston et al, 2000; Caldeira, 2008). Alternatively, a less-interventionist, market-based approach has been adopted by an increasing number of developing countries (e.g., Brazil, Colombia, Ecuador, South Africa and the Philippines) built upon the provision of land acquisition funds or loans to landless or near landless poor as a means to stimulate land transactions directly between loan

beneficiaries and property-owners, with periodic reimbursement of loaned values. Yet the approach's effectiveness for obtaining sustainable socioeconomic development has been disputed in the literature (Deininger, 1999; Fajardo, 2002; Justiniano, 2002, Deininger et al, 2004; Borras, 2005; Pereira, 2007), and it remains to be answered whether the market-oriented approach has been a more efficient tool than the traditional schemes to impact the regional economy positively and lastingly.

In Brazil, the rural sector has undergone momentous transformations over the last decades as positive trends towards sustainability of agricultural and livestock production have been ascribed to technological modernisation and agribusiness expansion (NEAD, 2000). Notwithstanding, the country's highly unequal pattern of land ownership has not been pushed toward greater equality, so that rural poverty is a striking problem as yet. As a 2003 National Household Sample Survey (PNAD) reported, about 12 million rural households (44.8% of rural population) remain in low-income poverty, of whom about half live in the Northeast region of the country. Several other studies have characterised Brazil as a place of high landlessness, with a land distribution amongst the most unequal in the entire world (Domingos, 2002; Fernandes, 2004; Pereira, 2007). This combination of high deprivation and landlessness has led to social tensions involving displaced rural landless and major landowners throughout the Brazilian countryside (Alston et al, 2000; Hoefle, 2006; Caldeira, 2008), and the numbers who are potential beneficiaries of land are estimated at 2.5 million (Deininger et al, 2003).

The literature on Brazil is also ripe with various, and sometimes contradictory, descriptions of the problems hindering the success of land reform initiatives or the socioeconomic sustainability of redistributed lands. To name but a few: political and bureaucratic inertia (Alston et al, 2000), influence of neoliberal concepts (Domingos, 2002) manipulation of land funds by local elites (Borras, 2003), or simply neglect of the problem by successive governments (Caldeira, 2008). At the same time, land redistribution initiatives and regional planning seem to be poorly interrelated in the country, and this has placed land reform policy at odds with broader rural development strategies. As Heredia et al (2006) elaborates, mainstream land reform schemes put in place to foster poverty alleviation in the poorest of the regions have been implemented at random and disjointed. Accordingly, broader land reallocation strategies (namely the 1985 and also the 2003

National Plans of Agrarian Reform) have been carried out through unplanned, unsystematic “expropriation packages” established *ex post* in areas chiefly following unpredictable land occupations by grass-roots peasant groups. The end result of these processes is that little change in the development path of the areas has been noticed in connection with the creation of rural settlements. Buainain et al (2000) calls attention to the insulated character of land reallocation in the country, stressing that, instead of being part of an overall rural development strategy, land reform has been mostly a “crisis intervention” policy. Similarly, Sabourin (2008) notes that the Brazilian government has failed to implement major plans of land reform, resulting that the lands have been redistributed mostly in precarious conditions of settlement and support to production.

These brief and preliminary statements from the literature seem to demonstrate that absence of institutional mechanisms coordinating the allocation of lands and productive resources has been detrimental to pro-growth efforts in the big picture. If, on the one hand, a lack of such mechanisms has frustrated the federal government’s intent of effectively changing the landholding structure in a less conflictive, less expensive manner, it truly expresses, on the other, that there is an increasing need of a plan-led approach to land reform policy-making and implementation to the benefit of settlements and beyond. However, how to efficiently redistribute land and improve the family-farm system in order to increment the regional economy is a challenge. One wonders if can regional planning satisfactorily minimise coordination gaps in land reform initiatives or will it replicate the outcomes of state-led or market-based programmes implemented so far?

We seek answers to this question through a study of the impacts of two different land reform schemes in the Northeast region of Brazil. Empirically, we assess whether the schemes have been able to guarantee the steady improvement of the situation of beneficiary families whilst positively affecting the growth of the rural sector. Moreover, an argument is put forward for designing appropriate strategies taking into account region-specific factors and the proper balance between state intervention and market forces, in order to develop propositions for a top-down/bottom-up structure of governance for land reform policy-making and implementation, including mechanisms of intergovernmental/intersectoral coordination. Yet a detailed examination of determinants of socioeconomic growth in the

areas hosting land reform settlements is necessary before yielding generalisations for hypothesis testing, and some research objectives needed be pursued.

This thesis is hence guided with the following hypothesis:

Hypothesis: Regional planning can significantly improve the results of land reform policy at a regional scale.

Based on the foregoing hypothesis, two prime research objectives underpin this work:

- 1) Examining the regional impact of state-led and market-based approaches to land reform in the Brazilian Northeast;
- 2) Exploring forms of combining both approaches (i.e. a mixed state-market approach) into a more comprehensive land reform strategy;

The above objectives are rooted in the theoretical presuppositions that (i) land markets may be useful mechanisms for transferring land rights in an economically efficient manner and (ii) the state is in a better position to prompt sustained economic development in a socially inclusive way. In other words, whilst land markets may serve as the engine of land allocation, the government can act as a strategist, establishing the proper incentive framework necessary to support growth at sustainable rates not only in areas primarily benefiting from the schemes but also in the regional economy. Consequently, neither the traditional state-controlled mode of intervention nor the free-market mechanism should be regarded *per se* as sufficient pro-growth tools. Instead, the main assumption of our work is that market-driven and state-led approaches to land reform can be mutually reinforcing mechanisms to attain: *i)* easier and less conflictive access to productive land; *ii)* higher standards of living for settled families; and *iii)* sustained development that may arise for the benefit of areas beyond the negotiated plots.

It is thence our contention that a combination of state intervention and market-oriented instruments in reallocation of lands is a more favourable factor leading to broader social and economic growth in the medium to long term. As a step in that direction, our study evaluates the extent to which plan-led concerted actions can facilitate the association of such elements in a strategy of regional magnitude. Towards contributing to an evolving

knowledge on mixed pro-growth strategies, new governance structures are explored. Influencing elements, constraints and possibilities, including those of public-private collaborations are examined. A range of policy instruments are considered, including land targeting, *ex ante* appraisal of sites, design of intervention, intersectoral coordination and *ex post* sustainability assessment. Stakeholder input gathering methods are visited as well, referring to mechanisms through which different actors interested in or affected by the reform are involved in planning, implementation, and monitoring of programme and projects that could influence socioeconomic growth regionally. All these themes are connected with the regional planning literature and are consequently expected to influence the regional distribution of land reform settings in a more efficient manner.

To summarise, this thesis intends to address how regional planning might best tackle the problem of slow socioeconomic growth in deprived rural areas, specifically in the context of land reform. By underlying the need for long-term thinking towards optimising varied policy mechanisms, it contributes to understanding the interconnections between state intervention and market forces in developmental strategies. At the same time, whilst throwing more light on the regional planning and land reform interaction, this study represents a shift from the enduring market-based versus state-led debate in the land reform literature and into a more plan-led view on the matter.

This thesis is organised as follows. In the remaining of Chapter 1 we review empirical evidence involving state-led and market-based land reform in the developing world as a basis for our subsequent analysis of the land reform experience in the Northeast of Brazil, as well as detail the methodology used thereafter. A broader survey of the literature is performed in Chapter 2, which addresses historical, socioeconomic, legal and institutional elements associated with land reform, as a means to establish the theoretical framework of our analysis. In Chapter 3, we empirically examine the impact of INCRA and PCT schemes on the economy of the region. Cross-section analysis and panel data analysis are performed in order to identify correlations between policy variables and selected social and economic indicators. Chapter 4 describes our case study in the Brazilian Northeast and investigates whether the schemes have been able to trigger development socially and economically in a sample of settlements. Chapter 5 takes into account the regional planning literature and the empirical results presented in Chapters 3 and 4 to discuss the policy

implications of combining major components of different approaches to land reform into a broader regional strategy. The last part of the thesis brings a summary of our main conclusions and gives final remarks.

1.2 Land reform for socioeconomic development: brief international overview

In the modern world, a number of developed countries of Europe and North America have long expressed concern with guaranteeing land rights and welfare gains for rural communities. Although land reform processes in these countries have taken place in the aftermath of the Industrial Revolution in late 1800's and early 1900's, land related issues have not been completely suppressed from the policy agenda in more industrialised economies. In the United Kingdom, for example, despite a tradition of open access to rural land, land related legislation has been passed to avoid potential damage or negative interference with farming activities, specifying the rights and responsibilities of land managers and countryside users in general. Particularly in Scotland, a unique approach to rural land has been followed, since the Scottish Executive proposed a stewardship model in 2001 to provide legally constituted community groups with public funding to help them meet the purchase price of land available in formal land markets, as a step to terminate the Scotland's historic legacy of feudal-like law and reduce one of the highest concentration of land ownership in the western developed world (Bryden and Hart, 2000; MacMillan et al, 2002). However, most equity objectives have been jeopardised and sustainable rural development modestly enhanced by absence of incentives to negotiation of large single properties and bringing down unrealistic land prices.

In contrast, the Netherlands have seen positive results from their rural development efforts after multi-sectoral policies were put in place entailing the 1984 Land Use Act, which strongly encourages state and provincial land use and development planning strategies (Van Lier, 1998; Aarts et al, 2007). As much as this legislation has led to improved access to land with a totally free land market, yet about 30 percent of farmers and rural smallholders in the Netherlands remain working on a tenancy basis. Land rents are regulated in a Tenancy Standards Decree setting out ceilings for rent values in every region.

Moreover, part of the tenanted agricultural land in the country is owned by the government, which also contributes with funding for ecological schemes and public objectives. Not only in the Netherlands but also to a significant extent in many developed economies, land policy focus on land rental markets that allow for long-term contracts, largely because renting land is less expensive than purchasing property.

Land reform has also occurred in the developing world as an important step in achieving economic development since the post-World War II period. According to De Soto (2000), programmes to provide the poor with land have been in place in almost all developing and former communist countries because “most developing nations today recognise the principle of universal access to property rights as a political necessity as well as an implicit ingredient of their macroeconomic and market reform programmes”. Moreover, recognition of the fact that enhanced socioeconomic outcomes are associated with higher land de-concentration has prompted many national governments to launch land reform schemes to stimulate the countryside economy and put growth at a sustained pace.

Yet approaches vary in terms of the degree to which governments intervene. Although in some countries of Eastern Europe collective structures of production barely contributed to rural socioeconomic development, mainland China stands as a good example of a transitional economy that succeeded as far as overall economic growth is concerned, without allowing private sales of rural land in their processes of land reform (Ho and Spoor, 2006). An intermediary approach was adopted by Ukraine when the country’s common land tenure structure was changed into a lease system to give peasants the right to work small parcels of land. Poverty decreased as the system provided rural workers with a stable income for the term of the lease (Valletta, 2002). At the opposite end of the spectrum, Belarus was one of the former Soviet nations openly committed to privatise rural land in the 1990s. The country saw deep declines in agricultural output and farm labour productivity leading to a scanty performance of the rural sector after an intense privatisation process of rural areas (Swinnen, 2003). Thus, by looking at the transition experience, the question might be raised whether state-free negotiation of land is a prerequisite for growth at a sustainable rate, all other factors equal.

In non-transitional economies as well, purchase and sale of properties do not tell much about the success of land reform driven by market rules. This has been a matter of

concern in parts of Africa and Asia, where extremely unequal land ownerships have obstructed the setting up of more inclusive models of growth. Despite high cross-country variation in land market policies, most African countries have failed to formalise land transactions. For instance, formal land markets in the 1980s in Kenya could not meet the landless' massive demand for land, causing the development of informal settlements and noncompliance with the legislation concerning the registration of properties (Musyoka, 2006). Additionally, land restitution and redistribution programmes in Africa were not followed by significant support services from governmental agencies and a decrease in poverty was limited to resettlements where good quality land was obtained, securing substantial crop revenues for the beneficiaries (Hoogeveen and Kinsey, 2001). Analysts believe, therefore, that more infrastructure investments by the state would have facilitated the setting-up process of those family farms while expediting the combat of poverty.

Yet another interesting case from Africa involves the 1995 Rural Development Programme (RDP), put in place in South Africa to mitigate extreme poverty and land concentration resulting from the apartheid regime. The RDP market-led approach was, for the most part, influenced by the World Bank's interests in fostering growth through private investments in rural economies of the developing world. The basic strategy was to offer loans at subsidised interest rates for the landless to buy land on the market. Brink et al (2005) examined changes in basic socioeconomic indicators in the areas reached by the RDP to find a slight increase in the household expenditure level, but also an increase in severe poverty and inequality indexes. Further, the land-buyers in the countryside did not count on an integrated network of support services, due to coordination inefficiencies between governmental agencies. As a by-product, the rural areas benefited less than urban areas from the RDP land tenure system.

In Asia, most countries have imposed legal restrictions to land rentals whilst formal land markets have developed only recently. In the Philippines, however, the very first prototype of land reform of a free-market nature was implemented in 1988 under the Comprehensive Agrarian Reform Programme (CARP). The programme took the form of voluntary land transfer schemes through lease contracts. To become eligible for the lease and gain access to land, rural families were asked to present farm plans before engaging in land transactions with landlords. Conceptually, the whole scheme should result in sustained

farm and beneficiary development. Whilst it might be true that the programme achieved reasonable land redistribution, agricultural development in CARP areas has been slow and rural poverty still abound because the most economically productive land remains in the hands of powerful landowners (Borras, 2003). The gradual suppression of restrictions to free land transactions has been seen in other Asian countries like China and Vietnam but empirical evidence on their socioeconomic impacts is scant as yet, and land reform in these countries has, in the main, relied on administrative allocation.

Similarly, state-led redistributions of land abound in Latin America yet public investments have been concentrated in large-scale farms, at the expense of smaller family-based units. Another common feature among Latin American countries is that a need to fight poverty so much in urban as in rural settings has affected policy formulation in multiple fronts, whereas administrative capacity has been limited and budget constraints have made resources for land reform usually scarce. Accordingly, free land market projects have increasingly been designed with a view to replace direct government intervention through land expropriation. However, unintended consequences have derived from insufficient public investments as a complement to market-led land distribution schemes. For example, the rural housing deficit has increased in most of Latin America and low-income families have endured inadequate sanitary conditions.

An analysis of a 1998 World Bank-funded land regularisation project in Guatemala gives an example of how the expected benefits of land market allocations have been severely constrained by socioeconomic factors alongside a lack of robust government strategies (Gould, 2006). More specifically, land-attached investments in the agricultural frontier region of Petén were not sufficient to overcome the absence of strong markets in the region that could absorb most of the crops produced in the settlements. Consequently, land titles failed to generate enhanced material well being for Petén's peasantry. Also, land titling projects based on negotiation of land were introduced in the Caribbean island nation of St. Lucia in the mid-1980s. A recent study demonstrates that the island's formal land market alone was not able to replace its informal system of unregistered inheritances (Barnes and Griffith-Charles, 2007). Factors other than tenure security did impact the prospect of land transactions far the most, in that case the government's decision to remove subsidies from the sugar industry. Not less importantly, the analysis indicates that location

is a significant factor influencing the survival of formal land markets, since property formalisation projects motivated by market objectives in St. Lucia have proven more effective on urban or periurban settings where more public funding was available rather than in rural areas.

Colombia has also made an option for land reform giving preferential attention to subsidised transactions of land, as regulated by Law 160 of 1994. In accordance with the standards of the World Bank's model, the government was responsible solely to provide financing and a range of basic post-land purchase support services. Yet the marginal status of acquired properties required way more resources than anticipated and high interest rates led to defaults in loan paybacks. The situation was aggravated by discontinuity of state administrations pursuing extremely varied investment priorities. However, contrasting views can be found about the success of the scheme in Colombia. For instance, whereas Deininger et al (2004) understand that the land market is more effective in transferring land to the under-privileged than is administrative land reform, Fajardo (2002) and Borras (2005) agree that the pace of rural development has been slow and uncertain as substantial increments in agricultural output and rural employment are still to be seen.

By the same token, Bolivia launched the National Agrarian Reform Service Act in 1996, establishing public auctions for surplus land. Access to land was made preferential for indigenous groups and landless peasants. The Act counted on a taxation system over land use to provide local governments with funds to support production in the settlements. The government failed to fully enforce the tax legislation, however, and the pattern of access to land was not significantly altered. Furthermore, the granting of loans for unsupervised land clearing contributed to spread deforestation to areas unsuitable for agriculture (Justiniano, 2002). The purpose of the World Bank in contributing capital for land purchases also led Ecuador (under the PROTIERRAS programme) and Peru (during the economic liberalisation process known as "Fujishock") to design land redistribution according to market forces, but socioeconomic results in both countries have not been disparate from prevalent ones in their Latin American counterparts. In Costa Rica, the Agrarian Development Institute purchased and redistributed land for the creation of mini-holdings in addition to offering a range of infrastructure services to help family farms succeed in the agricultural market. The amount of public investments, however, was not

homogeneously allocated, and rural income inequality remained a matter of concern in the country.

Mixed results with respect to rural equity can also be found in diverse South Asian countries, as World Bank reports have pointed out, where the scope of government intervention has varied considerably. Finally, a series of publications and research inquiries released by the Brazilian Centre for Agrarian and Development Studies, the Inter-American Development Bank, the Food and Agriculture Organisation of the United Nations, the Fondo Ecuatoriano Populorum Progressio, the International Land Coalition, amongst others, have reported cases of land funds put in place in developing countries to assist multiply deprived people in acquiring land. Table 1.1 ahead summarizes the approach to land reform and its impacts in a selected group of countries.¹

To sum up so far: the pendulum seems to swing between more and less state intervention in countries that have introduced poverty alleviation schemes relying on land reallocation mechanisms. Nonetheless, the above summary of different land reform approaches presents a bleak picture of what factors should be taken into account in guiding reform outcomes. Also, despite unveiling some of the results associated to specific strategies, the reviewed studies do not tell much regarding the role of regional planning as a means to improve the regional impact of the schemes. This is a clear indication that the programmes have been detached from comprehensive strategies involving an economically efficient distribution of settlements as well as the resources benefiting those settlements at a regional scale. This has been the case in Brazil as well, where market-driven schemes have been introduced in the Northeast region of the country in parallel with expropriative mechanisms of land reallocation under the responsibility of the state.

¹Also, a comparison of the % of rural population with access to sanitation facilities in those countries gives an idea of their socioeconomic situation. Belarus: 97.0; Costa Rica: 95.0; Ukraine: 83.0; Guatemala: 79.0; Philippines: 72.0; Ecuador: 72.0; China: 59.0; Colombia: 58.0; South Africa: 49.0; Kenya: 48.0; Brazil: 37.0; Peru: 36.0; Bolivia: 22.0. Source: The World Bank.

Table 1. 1: Land negotiation and state intervention in selected countries

	<i>Market-based land negotiation</i>	<i>Scope of government intervention</i>	<i>Effect to rural economy</i>
Belarus	▫Yes (formal land market)	▫Regulation of land privatisation	▫Low rates of rural economic growth
Bolivia	▫Mixed (public auctions of surplus land)	▫Taxation system to support settlements	▫Limited rural poverty decrease
China	▫None (common tenure structure)	▫Regulation, basic support and overview	▫Increased overall economic growth
Colombia	▫Yes (subsidized land transactions)	▫Loans and basic support services	▫Slow rural development
Costa Rica	▫Mixed (land acquisition and redistribution)	▫Infrastructure services limited to some areas	▫Small-scale redistribution of wealth
Ecuador	▫Mixed (land acquisition fund)	▫Registration and basic support services	▫Unsustained poverty alleviation
Guatemala	▫Yes (land market allocations)	▫Loans and regularisation of land	▫Limited rural poverty decrease
Kenya	▫Mixed (restitution and redistribution)	▫Limited support services	▫Limited rural poverty decrease
Netherlands	▫Yes (land rental and sale)	▫Regulation and public investments	▫Large-scale rural development
Peru	▫Yes (free negotiation of land)	▫Limited government investments	▫Increased social inequality
Philippines	▫Yes (voluntary land lease contracts)	▫Loan regulation and limited support services	▫Slow rural development
Scotland	▫Mixed (community purchasing of land)	▫Complementary public funding	▫Modest equity outcomes
South Africa	▫Yes (free negotiation of land)	▫Loans and limited support services	▫Household income increase mostly urban
St. Lucia	▫Yes (formal land market)	▫Property formalisation	▫Benefits yet mostly urban
Ukraine	▫Mixed (land lease system)	▫Regulation and overview of land use	▫Moderate rural poverty decrease

1.3 Research focus: the case of Brazil

Land reform programmes have constantly been part of the public policy agenda in Brazil on the basis of a need for fighting rural poverty as a *sine qua non* for obtaining economic growth and social inclusion simultaneously. Circa the late 1950s, the government's development-prone efforts positioned themselves in line with the premise that agrarian reform could be an engine for speedy growth. Over the course of the 1960s, the National Institute for Colonisation and Agrarian Reform (INCRA) was created to become responsible nationwide for state-led land reform, with a focus on the expropriation of large, mostly under-utilised rural properties to organise settlements, thus securing land as a sustainable source of income for settlers and their family. Yet INCRA efforts in isolation could not be able to eliminate the country's development gaps, nor to significantly improve rural households' income and livelihood prospects.

In view of that, Brazil launched during the 1970s a series of specific regional development programmes as complementary to land reform policy, most notably the National Integration Programme (PIN) and the Programme for Land Redistribution and Stimuli to Agro-industry in the North and Northeast (PROTERRA). However, subsequent evaluation studies (Baer et al, 1978; Bakx, 1986; Hall, 1987) found that the programmes wound up too expensive to implement, served far fewer families than expected and rendered a negligible influence on the regions' development. As *prima facie* evidence of a lack of substantial land reform results, disputes over landownership escalated in the 1980s due to action by rural workers' unions, remarkably the National Confederation of Agricultural Workers (CONTAG) and the Rural Landless Workers Movement (MST), who have "developed a strategy for identifying a farm, invading it, and, most importantly, transforming the invasion into an expropriation by INCRA" (Alston et al, 2000: 168).

In 1985, the government proposed a comprehensive National Agrarian Reform Plan (*Plano Nacional de Reforma Agrária - PNRA*), aiming at resettling 1.4 million landless peasant families over a 5-year period. Yet the plan was blocked by political pressure from large landowning interest groups and could not be made concrete as originally intended (Hall, 1987). Later in the decade, provisions in the 1988 Federal

Constitution were included that confirmed the legal possibility of expropriation by INCRA of large rural estates that are neither serving a social function nor currently being productive. In addition, a number of specific support programmes have been put forward over the years to promote the economic viability of the sites, such as the Special Credit Programme for Agrarian Reform (PROCERA), the Emancipation Project (*Projeto Emancipar*), the National Programme of Education for Agrarian Reform (PRONERA), and many others. Nevertheless, socioeconomic conditions on land reform sites in Brazil remain near the lowest in the developing world. Why?

In search for the factors plaguing expropriative land reform in Brazil, many studies placed focus on the Northeast region, where a great number of rural settlements are concentrated (42% of total in Brazil, according to the Ministry of Agrarian Development). It is worth pointing out amongst the findings that “INCRA has been expropriating unfertile land” (Buainain et al, 2000: 9); “these areas do not have basic infrastructure and are rather far from dynamic markets” (Sabourin, 2008: 6); rather than promoting growth, land expropriations have been “generating corruption, tenure insecurity, and red tape” (Deininger et al, 1999: 263) as well as “escalating social conflict and undermining agricultural development” (Neto, 2004: 53); and, despite micro-level improvements here and there, “the implementation of the settlements has not altered the scenario of land distribution on a large scale” (Heredia et al, 2006: 285).

Previous findings by Heredia et al (2002) on INCRA settings support this view. Their study was based on a survey conducted in the period 1985-1997 in different regions of the country, including the Northeastern states of Alagoas, Bahia, Ceara, Paraiba and Pernambuco. Some progress was reported in that well-cited research regarding income and living conditions: 62% of settlers confirmed to have increased access to food and basic consumption goods. Should their previous status of deprivation be recognised, however, a change in life quality would be expected in any event, and the reported advancements might not tell much. Moreover, the study’s results for on-site infrastructure were particularly dismaying: water supply was problematic in 46% of sites; only 27% of sites enjoyed full electricity supply; road access used to be precarious (generally unpaved roads in terrible conditions); most sites had primary schools, yet of an inferior quality; and only 21% of settlers counted on health care facilities. The results have thus brought forward that

the nature and extent of state interventions in land reform were devoid of capacity to lift reform beneficiaries out of poverty.

In contrast to that nationally-established yet dispersed pattern of land reallocation characterising the traditional agenda of reforms, a market-oriented policy was introduced in Brazil in 1997, known as Land Bill Programme (PCT). Whilst co-existing with ongoing INCRA expropriations, the pilot scheme focused predominantly on the provision of land loans as a means to stimulate the voluntary purchase of properties by eligible families with specific exclusion difficulties in five Northeastern states. A preliminary evaluation of the projects was undertaken by request of the Ministry of Agrarian Development in 2000, and some positive results were reported particularly with respect to access to title and living conditions, even though the report straightforwardly stated that the programme was “still too recent to allow for an evaluation of its socioeconomic impacts on both beneficiaries and local communities” (NEAD, 2000: 83).

A number of studies turned then their focus to the various aspects of the programme, most of which ideological in nature. Some observers, including Domingos (2002), Borras (2003) and Pereira (2007), criticised the PCT initiative on the grounds that it had been conceived following the steps of “neoliberal” models streaming from the Washington Consensus.² According to this view, the Brazilian government welcomed land loans as a convenient justification for a retreat from complementarily spending in the expropriated plots, resulting that the method would never accomplish socially inclusive goals. Critiques along these alines abounded, as in Pereira (2007), who rejected the idea of employing market mechanisms as a frustrated attempt by international organisations to subordinate the Brazilian peasantry to powerful agribusiness companies. For Borras, the willing-seller-willing-buyer nature of the schemes denied the peasants effective access to productive land, and because of that the reform was limited in coverage and sustainability. The author resorted to preliminary MDA results to conclude that “the marginal character of the purchased lands, their distance from local markets, and the general absence of road

² The term Washington Consensus has been used to describe a set of economic policy recommendations set up by major financial institutions, such as the International Monetary Fund and the World Bank, to economically misfortunate countries. The expression has largely been associated with an increasing role of the market versus the role of the state in the economy and society, which has also been designated as neoliberalism.

access, electrical and irrigation facilities have made the task of farm production quite difficult if not impossible” (2003: 380). Domingos (2002) also jumped to the conclusion that the situation of rural poverty in Brazil would never be overcome by market mechanisms that rely on land funds, given that many peasant borrowers were reported to vacate the plots due to failing to amortise outstanding land-related debts. In short, analysts in this side of the table simply disagreed with the propositions of the market-friendly approach, and wrote instead in favour of unmonitored land occupations and subsequent expropriation and improvement of the sites by the state.

Buainain et al (2000) contested this view by arguing that the transaction costs embedded in the processes of land expropriation can negatively affect the land market by, for example, inflating land prices above the market average. Other distortions were mentioned in the study in connection with the state-controlled approach: bureaucratic slowness, long and expensive judicial disputes, political interference and high compensatory costs. More importantly, it was concluded that a state intervention of this kind cannot ensure that the expropriated land will be suitable for productive cultivation due to deficient local infrastructure, in addition to restricted access to dynamic markets. Deininger (1999) described early results and future challenges associated with the market-based programmes in Brazil. He argued in the first place that further government intervention might represent retrogression in the development of land markets. The author concluded that negotiated land reform could provide a solution to the problem of land inequality, conditional, however, to attracting private sector investment. One way or the other, the great majority of studies in favour or against land reform oriented to the market have outlined important issues that underpin current analysis of the conditions in settled rural areas. The empirical findings, nevertheless, have shown scarce evidence in particular to sustainable regional development as a result of the programmes.

On the other hand, they converge to the idea that the various land de-concentration attempts by the Brazilian government have never completely eliminated the structural blockages to long-term economic performances of the most deprived countryside areas, a socially inclusive advancement that either market forces alone or isolated government intervention have had limited capacity to foment. Even the technological advancements occurring in the Brazilian countryside beginning in the 90's were mostly limited to large

agricultural businesses, far out of reach for ordinary family-based farms, as noted by Domingos (2002). Additionally, observers have pointed out that achievements so far have been meagre with respect to infrastructure improvements in rural areas benefiting from loan-based programmes. Persistent post-purchase difficulties have been reported in the literature, namely general absence of road access, electrical and irrigation facilities, as well as a lack of schools, basic sanitation and health facilities (Buainain et al, 2000). Such problems have undermined farm production and negatively affected beneficiaries' living conditions as well as their ability to repay their loans (Borras, 2003).

In summary, the studies mentioned above provides a case to argue that a series of flaws in both approaches to land reform have prevented the resettled areas from experiencing higher rates of socioeconomic growth. They also stressed an inability of the schemes to attract well-located, adequately serviced lands, so that the families have been reallocated without the efficient provision of on-site improvements and government extension services. The literature, however, has not proposed mechanisms to reflect the positive aspects of each approach in a more comprehensive scheme. A holistic method of land redistribution in Brazil would therefore be welcome at this stage, inasmuch as market forces working in tandem with carefully planned state action are more than likely to have beneficial socioeconomic implications for land reform policy-making and implementation in the rural countryside.

The Brazilian Northeast presents a unique and interesting case study in the developing world as both state-led and market-based approaches were held in the late 1990s over the same period of time, which allows for a comparison of socioeconomic development under variegated policy frameworks whilst controlling for about the same set of region-specific and time-specific factors. A justification is thus in place for the study of regional planning in the Northeast of Brazil as a two-pronged instrument to interconnect the mentioned approaches to land reform and simultaneously achieve social and economic upgrade at a regional scale.

1.4 General methodology

Our work starts with an international overview of experiences with land reform policy in developing countries as an initial tool for the analysis of the schemes in Brazil, and a basis for subsequent discussion of their impact on our case study area. A survey of mainstreams studies on land reform and regional planning is hence performed in Chapter 2 aiming to provide a theoretical framework for comparing the impact of different policy approaches, as well as the potential role of regional planning as a strategic governance tool in land reform. Our empirical investigation in Chapters 3 and 4 can be broadly defined as consisting of quantitative and qualitative modes of inquiry to measure the effects of the PCT and INCRA schemes in the economy of the Northeast. The analyses in these chapters pave the way for a final data-led discussion on the policy implications of adopting a planned strategy to ensure that the beneficial impacts of land reform are magnified.

The statistical data analysis of Chapter 3 is aimed primarily at verifying whether the reform has produced measurable impacts on rural areas in receipt of the schemes and on more comprehensive sub-regional areas as well. Our samples are composed of 49 rural territories and 416 rural localities within the three main agro-climatic zones in the Northeast (semi-arid, rainforest and the transitional zones). The zones include areas reached by INCRA schemes and simultaneously where the Land Bill Programme was introduced. The sampled cases (rural localities and territories) were defined for analysis based on their location in relation to the zones as well as on logistical purposes and data availability. The study relied on official data released yearly per locality and territory by two leading data sources: the Brazilian Institute of Geography and Statistics (IBGE) and the Institute of Applied Economics Research (IPEADATA). The explanatory variables were conceived *a priori* based on the surveyed literature. A similar criterion was applied to the selection of our dependent variables, which were restricted to the following:

- a) Growth in farming output in the municipalities hosting land reform projects;
- b) Growth in the regional GDP that could reflect changes in the economic activity in the examined territories;
- c) Growth ratio of rural income in sampled localities;
- d) Growth ratio of the Human Development Index (HDI) for same rural localities.

The analyses began with an exploratory inspection of the data and a summary of key statistics and distribution shapes (histograms and Box-Whisker plots) generated using the SAS statistical package, to make sure that the variables, both independent and dependent, exhibit the normal or near-normal distribution, which is a key assumption in linear regressions. After missing information cut-off, we performed multivariate panel data regressions of the selected socioeconomic indicators from our sampled territories over a period of 11 years (1995-2005). The purpose with this procedure was to determine whether region-specific characteristics of the observations had an impact on growth for each indicator. We introduced in addition policy variables (dummies) into the models that differentiated situations of market-based schemes (PCT) from state-led (INCRA). The analyses were then supplemented with estimations that used aggregate census data with observations at the local level, which allowed for the modelling of the impact of policy variables across a sample of rural localities.

A first analysis of the residuals for the resultant models led us to conclude that data transformation would be essential to bring the distributions closer to normality. Simple log transformations of the variables were thus performed (i.e. $t\text{variable} = \log(\text{variable})$). Several of the variables achieved a normal distribution after this transformation, and all of the variables were more nearly normal than they had been. Based upon a second residual analysis, these models were better fitting but still not perfectly fitting models. Consequently, to get the best models possible, each variable that exhibited significant deviation from normality was individually transformed to achieve as normal of a distribution as possible. To accomplish this, a Box-Cox analysis was performed for each variable. The output from the above mentioned procedure was the optimum lambda value for transforming the variable to a normal distribution. The transformed variables from this process were as close to normally distributed as we could get without excluding data. The procedures were repeated for the cross-sectional analyses resulting that we had found satisfactory models. However, although the residuals of the models were normally distributed, there were still some significant outliers. The conclusion was that we found acceptable models that still showed a tendency to break down when unusually high predicted values resulted. Consequently, some tests were performed in each regression to

check the reliability of the occurrences. For instance, the Durbin-Watson test was used to detect the presence of collinearity between variables.

In most cases, the local-level analyses generally confirmed the empirical analyses based on rural territories with a reasonable degree of certainty (10% confidence intervals). The regression results were shown in the form of tabulations allowing the identification of whether or not the dummy variables were likely to be genuine predictors of the indicators in the selected areas. The findings were then used to recommend courses of action for designing the survey of Chapter 4, where the analyses were more objective and descriptive in nature. The goal was to specify, as much as possible, the observed effects of the reform on the living conditions of beneficiaries. Primary sources of data were needed so that the method involved fieldwork, which also signifies that a smaller number of cases were dealt with and the data analysis was hence non-statistical. However, our sample was representative of the population of interest in a number of relevant aspects, particularly in terms of agro-climatic, socioeconomic and geographic features, and direct comparisons between settlements were possible so that the information which emerged thereafter was generally richer than the data obtained from the pure statistical analyses.

The fieldwork techniques involved administering questionnaires (30-40 questions) with a wide range of response options (2-10) to a sample of randomly selected respondents (the sample was made up of 260 rural residents who received PCT loans in the period 1997-2002). Sampling was arranged by randomly picking out households from the surveyed sites. The research team then requested one adult per household to respond to questions. The questionnaires focused on settled families' own assessment of the sites in terms of physical structure such as plot location, plot size, type of housing, availability and use of key services, infrastructure for farming, physical access to neighbouring towns and markets, means of transportation, and levels of education, health, and rural income. The survey also aimed to assess beneficiaries' views of the policy, so that households were presented with a complementary set of open-ended questions regarding improvements and/or difficulties resulting from activities on the settlement. We did this amongst various groups of settlers, such as settlers living and working on their plot or working on nearby farms or adjacent towns.

Since official census data and data from our fieldwork were not entirely comparable, a second type of questionnaire was administered to a sub-group of settlers consisting of settlement leaders, also known as project headmen, who presumably better apprehended the objectives of the reform and the overall situation on the sites. The purpose of this questionnaire (two respondents per site, totalling 26 respondents) was to obtain a comprehensive understanding of: (i) the infrastructure available on and around the sites; (ii) how the settlers organised economic activities, farm and non-farm; (iii) the impact that such activities were having on their standard of living; and (iv) the relationships between those activities and the local and regional economy. The questionnaires used in the course of the field work are detailed in Annexes A-1 and A-2. The usable responses from those questionnaires were quantified in frequencies, so that the resultant information offered an accurate picture of how the analysed components of the programme affected the universe of respondents, besides providing ground for an evaluation of the reform's achievements in the rural economy of the visited localities.

The quantitative analysis of Chapter 4 was followed by qualitative research with a view to 1) exploring the quantitative findings further, 2) understanding the processes and framework within which the schemes operated, 3) uncovering the living conditions of settlers and their family, 4) gaining an understanding of viability of the reform from a stakeholders' point of view, and 5) confronting their insights with results from the quantitative research. Our qualitative research techniques included unstructured/ semi-structured in-depth interviews with settlement leaders, landlords and land agency officers, as well as open-ended questions enclosed in the quantitative questionnaires. The interviews lasted between 45 and 60 minutes in average, and there were no "right or wrong" questions. We assured the interviewees that the information would remain confidential and there would be no "reprisal" from their responses whatsoever, so they were asked to be as frank as possible in replying to questions. For these cases, we used discourse analysis to infer information about the many particulars of life in the PCT settings, and also to uncover the underlying reasons motivating the families to stay in their land or otherwise abandon the plots. Part of this information is presented in the form of descriptive texts by citing interviewee's own words.

An important advantage in using multiple methods of enquiry was the cross-checking of findings, resulting that some patterns eventually came forth from the collected data. The findings were in this manner largely conclusive regarding our research objective 1 by providing a thorough understanding of the issues involving the implementation of the schemes in the Northeast countryside scenario. Similarly, a sound base was obtained for building the arguments entailing our research objective 2, namely to assess the extent to which regional planning principles and practise, if systematically used, can employ different outlooks on land reform as an effective strategy to simultaneously enhance rural livelihoods and generate positive externalities for other areas in the region. This constitutes the bulk of Chapter 5, where the scope for a plan-led regional strategy is assessed in the particular framework of land reform in the Brazilian Northeast.

Findings from our analytical exercises guide the policy-oriented discussion of Chapter 5, which concludes the thesis with a series of observations on and implications for new policy responses for addressing the issue of scanty economic growth as a result of land reform. As such, the chapter is informed by three major theoretical premises derived from the reviewed literature.

- 1) Mixed state-market approach: Land reform theory provides the unified framework in which the chapter's main issues are addressed. According to one view, the willing-seller-willing-buyer nature of market-based schemes is socially exclusive as it imposes transaction costs that poor land-buyers are unable to bear. An opposing view emerges by stressing the negative consequences of land expropriation methods on land markets, which ultimately leads to unlawful occupations of private property. Positive aspects of each approach, however, inspire a set of steps we take towards a data-led policy proposal. The challenge is how to introduce state-market mechanisms that help avoid budget constraints, particularly in less advantaged localities. Based on the planning literature, diverse possibilities of collaboration across the interface between the public and private sectors to acquire plots and deliver services and infrastructure are explored. Hybrid solutions to problems that obstruct the areas' sustained growth are thus considered.

- 2) Integrated top-down and bottom-up approach: The incorporation of conceptual relationships between the governance structure of land reform and the expected regional impact of the schemes is made through addressing the potential of said structure for intergovernmental coordination, particularly regarding the location of sites and provision of large-scale infrastructure. In one word, how could the degree of involvement of different government tiers affect land reform results? It is assumed that answering this question would involve taking note of the relationship between different government tiers in the pursuit of a combined top-down and bottom-up approach to land reform. Further elaboration is made on the participation of states and municipalities on policy design as a way of securing that nationally defined strategies are reflected on the ground. A blended top-down and bottom-up approach is hence expected to provide deeper insights concerning proposing a regional strategy that advances the developmental goals of the federal government and, at the same time, addresses issues of subnational interest.
- 3) Regional planning perspective: One of the basic points in the policy-oriented discussion is to identify plan-led mechanisms influencing the sites' socioeconomic performance at a regional scale, especially in reference to coordinating regionally prominent policy priorities to direct growth to strategically selected areas. Based upon conceptual as well as statistical considerations, an argument is developed around two main axes. The first axe is based on the need to establish a portfolio of areas that are potentially sustainable for land reallocation prior to the proper intervention. The second axe involves the establishment of a portfolio of investment priorities for those areas at the time of the intervention. The regional planning realm of expertise is then evoked to find common grounds for both axes in combination with the previously mentioned premises, namely the top-down/bottom-up and the state-market approaches.

Table 1. 2 : Summary of methods of inquiry in the thesis

	Quantitative	Qualitative
Purposes	<ul style="list-style-type: none"> ▪ Correlating variables in a large sample of sites ▪ Focusing on the impact of policy variables ▪ Generalising results for the Northeast region ▪ Providing parameters for qualitative analyses 	<ul style="list-style-type: none"> ▪ Contextualising quantitative results in sampled sites ▪ Understanding stakeholders' perspectives on the reform ▪ Searching for socioeconomic patterns in selected sites ▪ Finding causal explanations for those patterns
Assumptions	<ul style="list-style-type: none"> ▪ Land reforms are likely to have impacts at both local and regional levels ▪ Impacts can be measured in terms of social and economic indicators 	<ul style="list-style-type: none"> ▪ Reforms' impacts are complex and interwoven at the micro-level ▪ It is necessary to pay attention to structures of governance and implementation strategies
Techniques	<ul style="list-style-type: none"> ▪ Variables defined based on mainstream studies ▪ Use of census and survey data ▪ Cross-section and time series regressions ▪ Correlations identified between variables 	<ul style="list-style-type: none"> ▪ Individual and group interviews ▪ Open-ended questions and survey questionnaires ▪ Discourse analysis ▪ Analyses of official documents and papers

CHAPTER II

Regional planning in the land reform literature: a gap to be bridged

2.1 Introduction

There seems to be doubts from the international comparisons in the previous chapter that the separate conceptions of market-based and state-led land reform are confirmed, in practise, as sufficiently qualified instruments of speedy growth. Moreover, despite extensive bodies of research in developing countries have intended to shed light on land reform issues and their impacts on regional activity, the scope for plan-led government intervention towards sustainable rural development has been given less than sufficient emphasis in most such studies. Against this background, it is recognised hereafter that regional planning can play a pivotal role in designing land reform strategies that are at the same time economically efficient and socially inclusive. The overall aim of this chapter is thus twofold: 1) providing a theoretical framework for analysing regionwide impacts of different approaches to land reform; 2) drawing lessons from the mainstream literature regarding the potential role of regional planning as a strategic governance tool, more specifically to identify possibilities of maximising the social and economic benefits of different approaches to land reform.

First of all, what is land reform? There may certainly be a number of definitions attached to the idea of land reform depending so much on empirical as on theoretical backgrounds as well as on the nature of issues addressed. For instance, Warriner (1969) defines land reform as simply being redistribution of land rights for the benefit of the landless, tenants and farm labourers. Adams (1995: 2) goes further by including a political dimension to the issue: “land reform pertains to the remodelling of tenure rights and the

redistribution of land, in directions consistent with the political imperatives underlying the reform.” An even more detailed definition is provided by Tai (1974: 11-12):

“Land reform refers to public programs that seek to restructure equitably and rationally a defective land-tenure system by compulsory, drastic, and rapid means. The objectives of reform are to attain just relationships among the agricultural population and to improve the utilization of land. The means by which these objectives are attained are government sponsored tenurial changes. These changes encompass both redistributive programs (land redistribution and tenancy reform) and developmental programs (cooperative farming and publicly instituted land settlement).”

According to the definitions above, land reform implies a mode of land policy that seeks to achieve a change in the landholding structure through direct or indirect intervention by the state. Even so, approaches have varied regarding the extent to which governments should intervene in the land market. For the body of literature that focuses on developing countries, this has meant two basic methods of land reallocation: state-led and market-based. According to the former, land reform has traditionally been viewed as redistribution of assets from landholders to landless peasants through discretionary government action, in this case expropriation of traditional estates with or without compensation (Navarro, 1998; Domingos, 2002; Borras, 2003). According to the latter, the role of land markets has been emphasised in at least three different ways: (1) privatisation of public lands (Swinen, 2003), (2) creation or furtherance of land rental markets (Kung, 2002), and (3) inducement of land sales (Buainain et al 2000; Deininger et al, 2004; Neto, 2004; Tonello et al, 2005). This work places focus on the effects of reforms concerning sales of private lands in comparison to the expropriatory approach.

Secondly, what’s regional planning? In a seminal study that has proved enduringly influential, Friedmann (1963: 171) defines regional planning as “the process of formulating

and clarifying social objectives in the ordering of activities in supra-urban space”. For the author, regional planning involves decision-making concerning project development for investments in a regional economy, such as designing and placing infrastructure and other pro-growth activities in a regional outreach; by strengthening the relationships between social purposes and spatial arrangements, it also involves the efficient employment of a range of poverty-reducing resources across areas significantly larger than individual cities, hence being closely related with socioeconomic development initiatives of a regional scope. In brief, regional planning provides “the most suitable frame of reference for a balanced integration of development projects of national significance and those based on local initiative.” (p. 168).

Undoubtedly, grounded evidence from developed countries has demonstrated that regional planning strategies are suited to address economic and social issues that call for a regional focus. Interesting examples are found in the Netherlands, where three rural planning systems exist jointly: spatial planning, environmental planning and water management planning (Van Lier, 1998; Aarts et al, 2007); in Wales (Marsden et al, 2004), where a rural development policy network expanded into a multilevel governance structure; or in France (Buller, 2004), which have adopted a multifunctional planning strategy covering the non-metropolitan space to ensure that sub-regional cohesion is promoted through links between farming and non-farming activities. Regional planning for farmland development and preservation is also embedded in substantial state-level legislation in the United States of America, with provisions that involve a range of planning techniques such as agricultural districting, agricultural zoning, and easement through purchasing development rights by the state (Lapping and Szedlmayer, 1991).

Yet another far-reaching definition of regional planning and its functions is found in Benfer (1996: 618), which we accept as the starting point for the examination of the land reform literature in the following sections:

Regional planning is to be understood as the supra-local and comprehensive state-wide planning in the spatial context of a region by which the natural and

*economic bases and conditions for human existence
should be secured and developed.*

A vital element in the regional planning process is thus a capability to lay down strategies to achieve inter-generational development in the context of a region (see also Hall, 2002), whereby a need emerges to integrate planning theory and practise and land reform policy in regions of greater need. Moreover, looking at factors influencing land reform policy-making and implementation, as well as their implications with respect to social inclusion, productivity and growth, is a prerequisite for establishing the potential of regional planning to improve living conditions in particular settings, on the one hand, and socioeconomic indicators in areas beyond the reformed lands, on the other.

This survey of the state of the art is divided into seven sections covering the themes that emerged in the process of review. In this introductory section, we have presented the review objectives and outline definitions for the main terms used hereafter. The second section traces the literature on the historical antecedents of land reform programmes in developing countries. In the third section, prevalent works on the socioeconomic circumstances influencing the access to rural land in these countries are covered. The fourth section and fifth scrutinise respectively the bodies of literature on governmental intervention and the role of planning in land policy. In the sixth section, we comment contemporary scholarly research focusing on the Brazilian case. The last section gives the concluding remarks and summarises the review.

2.2 Historical background: tracking back the roots of land reform

A retrospective analysis of land reform initiatives in the literature is necessary to understand the current landownership structure in developing countries. A number of studies have provided a clear picture of the underlying historical circumstances affecting land policy approaches. Also, the historical factors driving different stages of countryside development within those countries have come to the fore. For instance, prior to discussing the conflicting political powers shaping rural reform in Colombia, Fajardo (2002) gives an

account of key historical events taking place in the first half of the twentieth century to set up the background for the current tensions endangering sub-regional development in the Colombian countryside. Along remarkably similar lines, Ho and Spoor (2006) explain how the collapse of the former Soviet Union in 1991 had far-reaching consequences for the socioeconomic status of non-urban citizens in transitional economies and why these events influenced the shaping of land titling arrangements in order that land concentration could be avoided. Chauveau (2002) contextualises land tenure in Cote d'Ivoire within the historical path of agriculture activities with the purpose of estimating the effects of the 1998 legal provisions on rural land ownership. Finan (2007) draws attention to the fact that recent increases of agriculture output in Peru have been chiefly ascribed to the 1969 agrarian reform, when vast rural properties were expropriated by the Peruvian government, and the resultant plots were redistributed to groups of former farm workers.

Gould (2006) and Musyoka (2006) argue in an analogous fashion that a systematic interpretation of the challenges facing people attempting to obtain land regularisation in specific rural settlements requires examining the historical facts and events leading to the creation of those settlements. In the cases of Guatemala and Kenya, respectively, continuous processes of displacement of indigenous people from high-quality lands as a means to implement agrarian policies were frequent courses of action during colonial times. It is reported that the resulting highly inequitable land allocation has become a source of conflicts involving rural landless and landowners. In order to appease the contenders, governments have attempted to develop more appropriate policies and legislation, such as land restitution and redistribution schemes. Likewise, De Bremond's (2007) account of the trajectory of El Salvador's rural landownership explains how a peace agreement between guerrilla groups and the Salvadoran government influenced later time land reform programmes in the country. Current state-market hybrid land transfer schemes in El Salvador have thus been a product of political negotiations following nearly 12 years of civil war. Hence, by analysing diverse characteristics of the countries' rural history, the above studies seek to bring about a context for the subsequent exposition of particular features of contemporary land policies.

Analyses of previous experiences with land reform are also found in contributions by Deininger (1999) and Deininger and colleagues (2004), as a means to assess the

potential for putting successful schemes into place. In their view, governments' approaches to land issues tend to shift substantially over time, dependant upon political as well as economic motivations. Amongst some given examples are the cases of Peru, Nicaragua, Honduras, and Cuba, where large pieces of land were redistributed exclusively to local farm workers in the decades following the end of the Second World War, but agricultural outputs in the reformed farms were far less than expected principally owing to a lack of complementary infrastructure and pervasive labour problems. Learning from such experiences has led governments in diverse countries of the tropical South to suppress, or at least significantly narrow down, their agrarian reform interventions, putting in place instead land registration and titling schemes or market-led redistribution programmes.

An opposing point is made by Borras (2005), for whom the failure of past government interventions in the countryside should not be judged only by the level of production settled rural areas, but also by the fact that the programmes did not aim at eliminating the persistent land monopoly as an underlying cause of rural poverty and unrest throughout the twentieth century. In a similar vein, Petras and Veltmeyer (2007) set forth that a long record of violence by the state against the peasantry fighting for arable land inspired the land reform programmes of the 1960s and 1970s in Latin America. Still on the same grounds, Assies (2006) recalls that the 1953 land reform was less of an impact in Bolivia to exemplify how biased legal provisions for land redistribution have been contested over time and, not less importantly, how the 1996 neoliberal land reform was deemed to meet the same fate for favouring the traditionally dominant groups, as had done previous arrangements.

The evolution of the state's role in non-urban issues has also been the subject of much academic debate. Wegren (2007) gives an overview of Russian's intervention in agriculture during both the Soviet and post-Soviet periods, showing that rural policies in Russia have seen state withdrawal in some respects, while in other policy realms the state has become even more interventionist. A correspondent study was made by Das (2007) about the history of government intervention in India. The author finds that some of the reasons that made capitalism the dominant mode of production in rural areas of India in the past remain playing a part in the modern state, hindering a successful government approach to the agrarian question through land reform. Also in Mexico, Van Der Haar (2005) asserts

that land reform processes stemming from the Zapatista uprising in the early 1910s had far-reaching political and social consequences that were vital to understanding the role of the Mexican state over the twentieth century.

Indeed, a number of authors of different schools in the land reform literature have placed the status of land ownership into a broader historical perspective. Land tenure systems are believed to have been evolved over time resulting from a host of factors including labour migration to and from non-metropolitan settings (Li and Yao, 2002), violent dispossession (Brink et al, 2005; Ijagbemi, 2007), recognition of indigenous ownership (Justiniano, 2002; Assies, 2006), anthropological determinants of land possession including tradition and patrimonial relations (Diop, 2002), state-sponsored collective use of land (Valletta, 2002; Wegren, 2007), customary authority and colonial legacy (Chimhowu and Woodhouse, 2006), scarcity and competition for land (Bassett and Crummey, 1993), or even failures in preceding land reform experiences (Van Der Haar, 2005). Accordingly, for a range of studies in the academy, government approaches to land policy have been shaped one way or the other by historical factors, although commentators do not necessarily share the same outlook on the extent to which such events continue to determine current land reform policy in less developed economies.

2.3 Seeking the socioeconomic determinants of land allocation

The concept of regional socioeconomic development is well established in the literature as being a sustainable growth rate increase that improves the overall well being in different regions within a country. The socioeconomic status of people living in the countryside is found in the literature to have connections with a number of factors, such as the degree of land concentration (Domingos, 2002; Brink et al, 2005), the level of household income (Valletta, 2002; Hoogeveen and Kinsey, 2001), employment opportunities (Ferreira, 2001; Rigg, 2006), instances of violence and conflicts (Hoefle, 2006; Petras and Veltmeyer, 2007), access to the credit markets (Sahu et al, 2004), agricultural output and productivity (Fajardo, 2002; Finan, 2007; Spoor and Visser, 2004)

and access to services and basic infrastructure (Sparovek, 2003; Spencer, 2007; Harttera and Boston, 2007).

Contributions from the academy abound that identify close links between the status of rural tenure systems and the well-being of rural dwellers. In some cases, the situation in the countryside is believed to depend on the socioeconomic condition in urban centres and the overall state of the economy. Also, a number of studies suggest the other way around, and there is a variety of perspectives on the matter. A brief review of evidence across developing countries illustrates that the relevance of such perception for land policy formulation should not be neglected for a variety of country-specific reasons. Different stages of rural development in regions within countries have also been taken into great account to estimate the overall success of land redistribution efforts in improving the welfare of people living in the countryside. The role of land policy to achieve broader socioeconomic development is, nonetheless, an issue that requires a long-term approach. Notwithstanding, some patterns have emerged in the literature.

The relevance of land-based activities to ameliorate the economic status of the peasantry has long been recognized by observers such as Haggblade et al (1989). By analysing a profuse supply of data and earlier research on the size, nature, spatial distribution, and growth prospects of non-urban enterprises in Africa, those authors compared the share of both farm and non-farm sectors in the development path of the sub-Saharan countries. They found strong linkages between ownership of productive rural properties and poverty alleviation, and inferred that stimulating agricultural activity through a socially inclusive network of production and consumption can generate goodly income and employment opportunities, even in the rural non-farm economy. However, more recent research findings from Africa demonstrate that rural poverty remains strongly associated with insufficient access to land and livestock, in addition to a persistent incapacity of multiply deprived peasants to find non-farm alternatives to decreasing opportunities in the farm sector (Ellis and Bahiigwa, 2003). Empirical evidence from Asia and Latin America has also indicated that land policies aimed to strengthen the association between landownership and rural welfare are likely to contribute to the overall economic growth in those countries (see, amongst others, Murray, 2001; Barnes, 2003; Rigg, 2006; Deininger et al, 2007).

Undoubtedly, much investigation has been conducted on the social and economic effects of land policy on the countryside. In Benin (Dijoux, 2002), rural poverty has been found to be inextricably linked to inappropriate land allocations conducive to smallholdings of restricted economic sustainability. Finan (2007) looks at implications of the economic conditions of Peruvian small farmers for the socioeconomic sustainability of the export agriculture in coastal regions of Peru. In a highly quantitative approach, Li and Yao (2002) use sophisticated econometric methods to estimate the effect of the Chinese landholding system on rural wealth. It is found that more egalitarian land distribution structures have yielded better socioeconomic prospects, as land represents a source of productive input that supplements rural workers' labour earnings. The size of the redistributed plots is also believed to make a difference, as seen in Ravallion and Chen (2004). For the authors, sustained rates of poverty reduction in rural China were a clear response to changes in the landholding structure beginning in 1979, from collective large sized farms to smaller family-based units. Many other observers in this school, namely Hoozevee and Kinsey (2001), Ellis and Bahigwa (2003) and Barrett et al (2005), provide further compelling evidence from a wide range of countries that the effects of poverty declines can be the reverse of higher equity in land allocation.

A second group of studies focuses on the effects of socioeconomic conditions on the success of land redistribution strategies. Fajardo (2002), for example, makes an appraisal of the land tenure system and associated social problems in Colombia, presenting data on the economic situation in settled rural areas that could direct later time land reform policy. Ho and Spoor (2006: 580) also assert that "by proceeding with land titling under conditions of low socioeconomic development, the state risks creating what is here termed as an empty institution rather than a credible institution". Gould (2006) uses a case study approach to assess the impacts of land regularisation programmes in Guatemala. The results show that the predicted benefits of the reforms were strongly constrained by socioeconomic elements, specifically in rural communities located in frontier regions. Also in the Philippines, where roughly half of the country's workers were employed in the agricultural sector, some features of the rural economy caused a remarkable impact on the Filipino political institutions (Borras, 2005). However, since most of rural workers' needs were overlooked by the 1988 market-driven land reform, rural poverty remained widespread.

Comparing land scarcity across African countries, Brink et al (2005) conclude that whenever population expansion makes arable land less abundant, property rights to land become more institutionalised and unlikely to change.

The role of social movements in land issues permeates a considerable parcel of the literature, mostly Marxist in orientation. Approaches of the kind have been taken by scholars including Petras and Veltmeyer (2007), who believe that class struggle over state power in Latin America is one fundamental avenue to social change in the non-metropolitan ambience, and Das (2007), for whom land policies in India have been influenced by class struggles between the dominant capitalist class and lower classes. Yet a more nuanced, non-Marxist viewpoint of the matter is appreciated by Desmarais (2008). The author explores the tensions that exist between the expansion of peasant movements³ and their stated commitment to represent land-related interests of non-urban communities in the policy-making process. Whatever the case, scholars with both Marxist and non-Marxist views expect direct peasant involvement in land reallocation to play a part in turning sustainable development over to exurban areas.

The impacts of globalisation on rural socioeconomic development have also been subject to much concern amongst academics and development specialists. Soderbaum and Taylor (2003), for instance, rely on a collection of contributions built upon local experience in the Southern Africa region to provide a useful study of the changes in rural dynamics that could be ascribed to the countries' engagement with the global economy. According to their findings, a series of economic, political and social implications have given rise to the creation of institutions capable of integrating the non-metropolitan sector into cross-border agricultural activities. Likewise, Murray (2001) analyses the unfolding of a so-called second wave of globalisation in two Pacific island nations by means of original research-oriented case studies, with particular consideration to the rural-agricultural sector. He discusses the main local socioeconomic implications of globalisation in a broad and carefully contextualised analytical attempt to identify the mechanisms behind the region's gradual insertion in the global agricultural market, and eventually proposes institutional strategies of resisting its negative implications. Various evaluation studies have already

³ Specifically in this case the *Via Campesina* movement, a coalition of peasant organisations which coordinates actions advocating access to land in various developing countries.

given detailed accounts of the economic circumstances associated with the unequal landownership structure in Brazil, including the displacement of family farmers due to globalisation or the economic and social crises that affected non-urban sectors over many years (Fabrini, 2002; Teófilo and Garcia, 2002; Fernandes, 2004).

In short, a large body of research demonstrates that changes in land tenure systems can have an impact on the socioeconomic status of people in the countryside. De Soto (2000), for example, points to the importance of land reforms as a way of improving the attraction of capital, and such evidence has in itself made land reform a highly debatable issue in academic circles. On the flip side, various country case studies seem to confirm the reverse assumption that land reform initiatives might be shaped by intense socioeconomic pressure, owing mainly to high levels of deprivation and social exclusion. Furthermore, a robustly negative relationship between unequal landownership and socioeconomic development is reported to endure in developing countries, adding to the plethora of causal factors, internal to the countries or from outside, that have contributed to failure of many land redistribution schemes implemented to date. The main message in this literature review seems to point out to the fact that governments have a clear role to play in lending strength to the mechanisms of high-quality land reallocation as a tool for sustainable growth in the countryside. This role necessarily includes designing legislation leading to an equitable transfer of property rights.

2.4 The legal framework and scope for government intervention

In general, a large legislative tradition can be found in developing countries as regards land reform that in some cases dates back to colonial eras. Correspondingly, the legal perspective on land issues has been widely examined by scholars in the developing world. For one thing, the form and content of legislative provisions define the range of governmental involvement in the dynamics of the rural sector as a catalyst for social and economic advancement. That is a major reason why the core of the literature highlights that granting landless families a plot of land is an issue of national policy (Barnes, 2003; Van Der Haar, 2005; Assies, 2006; Wegren, 2007). Nevertheless, some have stressed that local

government interventions are quintessential to supplement central level rural development initiatives (Douglas, 2005). Consequently, multi-level analyses are commonly reported. In addition, Ho and Spoor (2006) indicates that numerous contributions in the field of land reform give primary attention to vastly contested institutional arrangements dealing with land titling and registration. Extensive and often critical assessments of land reform attempts by the Brazilian government have also been made (Domingos, 2002; Ramalho, 2002; Silva et al, 2006; Pereira, 2007). Approaches to the matter vary across academic writings in terms of methodology and coverage, depending largely on data availability and country-specific circumstances.

In broad lines, study contents comprise but are not limited to the background or initial experiences involving statutory regulation of land issues, as well as the measurable impacts of the proposed legislation to rural development and future challenges to state regulation. Valletta (2002), for instance, reflects on the shortcomings in the laws regulating collective land use in Ukraine, where a land lease share system was established in order to become the chief legal mechanism determining the relationship between farm enterprises and the peasantry. While investigating the factors restricting the expected outcomes of the laws, the author implies that further improvements in the legislative framework could effectively provide non-urban workers with better living conditions. In turn, Chauveau (2002) contextualises the legal bases for rural policy in Côte d'Ivoire by looking at key features of land tenure and their impacts on the behaviour of various actors in the state and society to predict the real benefits the 1998 rural land law was expected to deliver to non-metropolitan communities. A shift in approach is seen in Chimhowu and Woodhouse (2006), whose standpoint on equitable allocation does not discard non-state alternatives to landholding. Their article draws on the example of some African countries that have reaffirmed customary rights other than legal arrangements as a more legitimate form of securing access to land by the under-privileged. Additionally, Barrett and others (2005) explicit that the type of rules a country adopts to tackle rural poverty matters less than the effective enforcement and monitoring of those rules.

As approaches to land issues in developing countries change over time, commentators also vacillate between liberal interpretations of property rights and more interventionist visions of land use regulation. Accordingly, much academic debate

concerning the legal framework of land allocation has usually embraced the role of the state in the rural economy, yet opinions have sharply diverged on the desirable stretch of governmental intervention. In comparing instances of success or failure by the state, civil society and international organisations to tackle the problems of marginality and social exclusion in Latin America, Kay (2006) asserts that governments still have an active role to play. Li and Yao (2002) observe that China's current land tenure system could be characterised as a rules-based response to the market's unsuccessful attempts to provide egalitarian land distribution. As in Ho and Spoor (2006), this could lead to some instance of state control of market forces to impede emerging land markets from inciting further concentration of land in favour of a powerful minority. Borras (2003) renders a pro-state critique of recent market-oriented incursions into land policy, since previous experiences to merchandise rural land have fallen short of expectations. In a similar fashion, Gould (2006) and Fraser (2007) warn of the problems of adhering to neoliberal rural policies. Justiniano (2002) and Assies (2006) view current market-driven legislation with ample limitations on its application and conclude that caution must be taken before departing from classic state-controlled approaches to land reform.

On the opposite side of the debate, Deininger et al (2004) argues that much of the inequality observed in land ownership distribution has derived from former non-market interventions. Their argument is rooted in a comprehensive survey conducted in Colombia to compare the performance of land markets and state-led land reform. Interventionist land reform, they so concluded, was by far less effective than were land markets in conveying rural land to the landless, although they admit there might have been some exceptions. The socioeconomic unintended results of increased government intervention in Russia's agricultural sector are examined in detail by Wegren (2007). A crisis of legitimacy is anticipated by Das (2007), on account of persisting failures on the part of state to guarantee development embracing the interests of the peasantry in rural India. Dysfunctions of state administrations have also been cited amongst the causes of governments' failure to tackle the difficulties facing peasants (Xiande, 2003). Back in the 1980s, an interesting study by Shrestha and Apedaile (1983) had already found that only in exceptional cases was the state apparatus amenable to rural development requirements in Nepal. A wide step away from state control over land markets, nevertheless, is advocated by Neto (2004). Judging for the

preliminary results of the market-friendly schemes still under implementation in South Africa at the time, the author salutes the programme as a useful alternative to more conventional forms of state intervention in the non-urban sector. The results and the very nature of the land reform schemes in South Africa remains a highly debatable subject in literature, however. Fraser (2007), for example, takes a hybrid position in arguing that the distinctive geo-historical context in that country has in some cases led the government to combine market-led approaches with direct forms of intervention laying down regulations for land use.

A great divide in the literature is thus observed that casts either the national governments or the market itself as culpable for landownership imperfections. However, mainstream scholarship concurs to the perception that neither the markets nor the government alone are likely to be able to overcome the detrimental effects of land concentration in the rural sector. For example, the seminal work of Deininger (1999) claims that building and institutional capacity propitious to equitable land allocation would require interaction between local and central authorities, in addition to the involvement of the private sector and NGOs. By and large, associated arguments in the literature (Bahiigwa et al, 2005; Sonn, 2007; De Bremond, 2007) have been constructed on the grounds that, if completely insulated from society, heads of state will miss political support to make their plans concrete, assuming, as theory poses, that rural development is a multidimensional phenomenon (Douglas, 2005). Accordingly, extensive coordination with different sectors would be a *sine qua non* condition for the pursuit of integrated projects and thus close the development gap between urban and non-urban areas (Banya, 1989). Some conditions for participation and state-society interaction, as well as their benefits for the landless poor, have been identified by Nuijten (2004) and Das (2005), which presupposes that a range of joint strategies can provide the basis for a more effective role of the state in overcoming deep-rooted socioeconomic problems in the rural world.

2.5 Land reform for socioeconomic development: a gap

The problem of slow rural development has persisted in so-called Third World economies despite numerous reform initiatives counting on different degrees of government interposition in land-related issues. Brink et al (2005) have identified some progress regarding poverty reduction in the South-East Asian countries of Indonesia, Malaysia and Thailand, adding, however, that these countries have also made substantial investments in rural infrastructure to assist land reform beneficiaries. On the other hand, Deininger et al (2007) report serious obstacles to the expansion of the informal non-farm sector in Sri Lanka. Their study concludes that infrastructure constraints impose high barriers to entry for poor peasants, but yet it does not present regional planning as a strategic governance tool for the creation of effective collaborative networks intent on obtaining growth at a speedy pace.

The use of land reform as a mechanism to spell the end of poverty has generated a lot of interest within Brazilian academic circles as well, and much research has been carried out to analyse the impacts of various aspects of land redistribution programmes targeting people who do not have the means, material or otherwise, to obtain land. A variety of issues have been dealt with over the years. The spread of deforestation as a consequence of the prevailing land-tenure system in the Amazon region has been examined by Fearnside (2001). A survey conducted by Silva and Del Grossi (2001) in the Southeast and Centre-West regions of Brazil reports that families who depend solely on farm activities earn lower income on average than households that conduct multiple dealings, i.e., activities so much in the agricultural as in non-agricultural sectors, and than non-farm rural workers. In the frontier context, Ludewigs (2007) finds that access to urban centres and use of agricultural credit are amongst the variables strongly affecting settlers' life conditions. Additionally, nationwide studies by Sparovek (2003) and Heredia et al (2006) are amongst the most recently cited references in this field. Whereas the former measures the achievements of settled families' agricultural production on regional development, the latter places focus on beneficiaries' quality of life in rural settlements. A lack of systematic data on the real

situation of peasants in many redistributed plots has, nevertheless, precluded more comprehensive inferences regarding the overall impact of the schemes.

Additionally, it stands to reason that an absence of concerted actions has contributed to failure of both market and non-market attempts to draw the cycle of poverty and deprivation to a close, a key element underlying sustained socioeconomic enhancement in the Brazilian rural sector. As a matter of fact, there is very limited evidence in developing countries of the use of comprehensive regional planning as a key vehicle to ensure the wider socioeconomic impacts originally intended by land reform programmes. However, a number of cross-country comparative studies have tried to recognise the elements contributing to inveterate poverty in less developed economies.

In Herrera and Roubaud (2005) variables associated with the provision of public goods and services, education, health and employment, amongst others, have been pondered. The possibility of entering the job market, as well as infrastructure features in the location, have been rendered as relevant factors leading to exit from chronic deprivation. In general, such contributions have focused on access to basic services and proper infrastructure as a valuable step forward. However, the great majority of studies in developing countries cover urban or peri-urban areas where infrastructure efforts by the state have been concentrated upon. A panel data analysis in that regard is performed by Arimah (2003) on the provision of primary infrastructure in African countries from a cross-city perspective. The author's investigation imparts that public sector expenditure is a significant variable explaining intercity differences in the provision of basic infrastructure, in this case water, sewerage, sanitation, electricity and telecommunication services. A similar analysis is made for Israel by Portnov (2002), who looks at intra-urban variations in income levels. He finds the distribution of income across population groups to be a function of housing and commuting expenses, amongst other determinants, and then proposes a series of development strategies that include public housing construction for low-incomers and ameliorating peripheries' physical infrastructure.

Some academic discussions seem to be adamant that the ideological dimension affects planning systems, particularly in developing countries. For instance, whilst approaching the elaboration process of the new Spatial Planning Act in Indonesia, Hudalah and Woltjer (2007) pay attention to the relationships between peculiar institutional-cultural

patterns and the global neoliberalism. The authors acknowledge that, as much as neoliberal ideas do not have the faculty to profoundly modify the nature of the planning system, those ideas could conflict with the cultural forces shaping the existing planning policy and practise. Notwithstanding, it is also admitted in the Hudalah and Woltjer's study that some principles promoted by the neoliberalism, namely decentralisation and the rule of law, should be adopted on behalf of a more efficient planning system. A more general and even more straightforward criticism of neoliberal conceptions of planning is set down by Ellis (2002: 263):

“Free market enthusiasts reject meaningful urban and regional planning. Their arguments are characterized by an endemic short-term economic logic, a historical analysis of urban problems, blindness to the distortions caused by concentrations of private power, and excessive faith in the virtues of markets without a corresponding sense of their limits”.

For the segment of the literature dealing with the rural space, the integration of exurban areas into economic growth processes requires governments to move away from a sectoral approach in direction to creating sub-regional policy networks in the economy and society (Marsden et al, 2004). By working in many fronts with different actors, the state would not only expedite land access by land-poor families, but also implement more effective growth-oriented measures overall. Dale (2000) has already sustained that regional development programmes could be more effective should developing countries opt for more flexible instruments such as decentralised planning processes, coupled with monitoring systems and coordination, so as to encourage initiatives from below. On the other hand, Sonn (2007) points out that it is recommendable in some cases that national authorities take precautions during the planning-making process not to allow local governments to channel resources into their own backyards. Corruption and rent-seeking behaviour, he recalls, were amongst the main causes leading central governments in

underdeveloped countries to remain so insulated from lower tiers while implementing developmental policies (also Banya, 1989). Smith (2006) corroborates with the idea that for strategic planning to be well executed and of any consequence where bottom-up approaches predominate, there must be a will to reconcile local and regional interests.

A study by Spencer (2007), taken as a sound example, explores possibilities of central-local partnerships to provide clean water and sanitation for the poor in Vietnam and thus help the country meet the challenges of the United Nations' Millennium Development Goals,⁴ while making a rapid transition to a market economy. Another absorbing question featuring a series of papers emphasising pro-growth networks is how to bring about an institutional capacity to conciliate renewable natural resources conservation with the appealing goal of mitigating rural poverty (Alston et al, 2000; Barrett et al, 2005). Conclusions converge towards the need of a suited space for planned conjunct actions to map out the actual situation and specify the goals and means required for achieving environment-friendly rural development. Rist et al (2007) illustrate these ideas with case studies from rural communities in Bolivia, India and Mali.

Opening space for comprehensive planning initiatives has been a common recommendation arising from the literature examining diverse aspects of public policy in the developing world. The goal of providing affordable housing following processes of land delivery in Nigeria has been examined by Ikejiofor (2005) against the need to develop an institutional capacity to meet the government's rural policy commitments. Whilst assessing the role of municipalities in fighting poverty, Parnell (2004) realises the increasing importance of creating better organisational interfaces between political and administrative functions to answer the critical question of how to foster distributive justice. Mather (2004) discusses the benefits of designing more effective ways than simply imposing codes of conduct to restructure the agricultural labour market in South Africa, in order to improve the conditions of farm workers. As slum relocation has become an enormous challenge facing crowded cities in Thailand, Viratkapan et al (2004) acknowledge the requirement of specialised activities at the formulation and consolidation stages of the projects.

⁴ The Millennium Development Goals is a United Nations-promoted project that consists of eight goals that 189 member states have agreed to attempt to achieve by the year 2015, amidst which are eradicating extreme poverty and hunger and developing a global partnership for development.

Although the above accounts are few and space has permitted only the briefest considerations, it is inferable that recent planning literature on developing countries has put emphasis on urban contexts as opposed to rural settings. Most importantly, mainstream academic findings seem to fall short of the idea that regional planning can perform a paramount role in integrating market and non-market channels towards undertaking one of the greatest long-term challenges facing land reform policy-making and implementation in developing countries, namely eradicating rural poverty along with improving tenure security and increases in activity at a regional scale. A snapshot of the up-to-date literature in developing countries has thus stood a testimony that land reform initiatives remain scarce that adopt comprehensive regional planning strategies, although either state-led or market-based approaches have been reported to harness punctual deficiencies in the rural sector. Thus, plan-led efforts are needed to bridge this perceived gap in the cutting edge of policy-making associated with land reform.

2.6 Regional planning in land reform: a bridge

The literature reviewed in the previous sections has unveiled a shortage of planning on a scale that is larger than the redistributed plots. Regional planning involves the efficient employment of pro-growth resources across areas significantly larger than individual cities (Van Lier, 1998; Hall, 2002; Smith, 2006). The idea behind regional planning in the developing world is more associated with the systematic design of state capabilities for intervention in specific regions of the countries for developmental purposes. In these cases, planning processes have mainly been used to remove obstacles to the expansion of the rural economy, by establishing pro-poor cooperative partnerships (Barrett et al, 2005), coupling non-farm alternatives with agricultural activities (Ellis and Bahiigwa, 2003), and others. Notwithstanding, although justifications for the use of regional planning in land reform policy-making may be plentiful at this point, the extent to which planning strategies can be employed in land reallocation in an efficient yet equitable manner depends on a range of factors, such as how to eliminate uncertainty and indecision in the regional planning process (Silva, 2002).

Plan-led endeavours in land reform policy, more specifically the redistribution of land in plans, should be about the allocation of an increasingly scarce resource (lands that are amenable to cultivation) to a more efficient use through giving guidance to assessing the economic potential of sites when redistributing land. This is especially apt to be the case if it is considered that the creation of market economies will be at the basis of economically fruitful land reform policies, and proximity to existent markets might be a plus in such dynamics, areas close to those markets might be targeted as some of the most suitable places to enable a land reform capable of sustaining these deprived populations through time. Methods for targeting areas for policy implementation abound in the regional planning literature. For instance, Correia and Madden (1985) use programming techniques to identify and earmark extensive pockets of land. Ottaviano and Thisse (2005) resort to microeconomic analyses of profit maximisation to examine the influence of geo-economic factors on location of firms, whereas Huby et al (2009) recommend a combination of conceptual and statistical considerations, with a focus on the availability of natural resources in a region. By so doing, the state could induce changes in the economy of a region over the longer term (Mason, 1985).

A consideration of particular relevance to assessing land reforms in developing countries has been whether infrastructure services have been provided to increase the prospects for success of the programmes. Attention has been given to the need for housing and access to basic services, such as piped water, sewage and electricity by settled families. The role of large-scale infrastructure projects in promoting structural changes in the rural sector is well established in the regional planning literature. Fan et al (2007), for instance, consider improving the quality of rural roads to be essential for increasing agricultural output and reducing poverty, whereas Roberts (2003) maintains that rural activity is contingent upon the provision of public services to rural communities. Similarly, Densham and Rushton (1996) understand that public services could even be reallocated to areas where they meet the needs of those communities. Chan and Clark (1994) argue that the main objective should be creating an adequate business milieu favouring disadvantaged rural populations, which could be achieved by channelling productive investment into critical sectors. Likewise, Baxter et al (2007) have found that government provision of critical infrastructure strongly influence businesses' decisions to locate in an area.

The role of planning in land reform is not only to facilitate land redistribution, to make it more equitable, but also to give it spatial configuration. Accordingly, a polycentric pattern of growth has been advocated by authors such as Parr (2008) and Hansen (1975), who analyse the implications of adopting a growth-centre approach to regional development. Failure of land markets to provide homogeneity in the spatial distribution of land reform sites means that if no planning is involved, the outcome can be increasingly segregated sites. Relying on market mechanisms for an alternative to administrative land reform will not overcome the interrelated issues of migration and overcrowding. It is argued hereafter that any governmental initiatives towards promoting self-sufficiency in the settlements require a sustainable appraisal of selected areas prior to engage in land redistribution, as a *sine qua non* to realising a perfect accord between state intervention, community participation and market forces. Ultimately, comprehensive regional planning should constitute an essential tool linking land reform outcomes to steady regional development in resettled areas. Absence of planning is a risk for the sustained development of resettled areas without adequate account taken of social, economic and environmental impacts.

The focus of regional planning is on principles instead of striving to control development decisions at the lowest possible level. Articulation and coordination through multi-tier governance structures are thus widely recommended (Landis et al, 1991; Clark, 1994; Berke et al, 1999; Lobao et al, 2009). This body of the literature stresses the importance of establishing cooperative arrangements between government tiers to obtain efficiency in the implementation of joint projects, with essential implications in particular to growth in regional activity. For example, coordination can guide the distribution of assets (especially land) in a way that is necessary for the rural economy to develop with actions that include open land protection, land use controls, projecting the availability of workforce and the reduction of stock in low-demand areas. For Edelenbos and Teisman (2008), these forms of cooperation involve sharing resources and expertise toward improving both the quality and effectiveness of public policies on the ground. The role planning can play in coordination and collaboration at different scales is also highlighted by Allmendinger (2006).

Regardless the kind of land reform that is disseminated, the programmes could be attached to mixed strategies in a holistic approach to regional spatial planning (Pearce and Ayres, 2006). Evans and Ilbery (1993), for instance, notes that farming diversification could be an effective strategy to increase profitability of rural settlements. Other methods would include influencing industrial location, improving the population's labour skills, encouraging tertiary industries as well as specialisation of activities in settled areas, and others. For Gwosdz et al (2008), all of these would require creating an adequate structure of incentives to establish the conditions for cooperation amongst all involved parties, and thus help the state to overcome the sternest challenges to ameliorate the deprived circumstances of those living in the countryside. This also requests the ability of combining views of different stakeholders into contributing to the nature and degree of regional development policies, what has been called "participatory strategic planning" (Loukopoulos and Scholz, 2004). For Silva (2002: 336), a perception that government and planners can work together with heterogeneous land use actors could help eliminate "indecision factors such as availability of funding, instability of political systems, lack of institutional coordination, and time lags between consecutive decision-making processes".

It has been made clear that planning at the regional level has an essential part to play in introducing plan-led strategies in a variety of resourceful ways, such as designing more inclusive land distribution mechanisms that facilitate access to quality land, or helping identify the proper incentives to bring public and private investments into strategically chosen areas to ultimately expedite major infrastructure improvements in the rural sector. In this particular aspect, the literature above seems to suggest that regional planning can (i) give a better basis for the location of land reform sites in areas of greater potential for growth within the region, and (ii) help avoid inefficient allocation of resources through recognising optimal funding solutions to the problem of inadequate infrastructure in the wider regional context. On the other hand, whilst neither the nature of state intervention through land reform nor market mechanisms of land transfer have been able to guarantee a more equitable redistribution of wealth in developing countries, it is vital to accept that market and non-market forces are not necessarily mutually exclusive vehicles to development.

Finally, once we do not intend to indulge in ideological conjectures, our policy discussion ahead in this work will not be limited to which model of land reform is best, or which theory of planning would best fit a country's prevailing ideological trends,⁵ but rather what strategies governments can adopt as a gradual move to more efficient allocation of resources in order that a variety of developmental goals associated with the reforms is achieved. As far as that is concerned, we argue that land reform policy has to adjust to an environment where the planning logic of land distribution is central to the economy and society. Drawing from the experience of several countries with state-led or market-based land reform, and from the literature on regional planning, we will seek to demonstrate that integrating market forces with government intervention through a plan-led strategy is a goal worth pursuing as it is a positive step in the right direction.

2.7 The literature at a glance

Undoubtedly, much research has been undertaken in developing countries where land policy either state-led or oriented to the market has been implemented, and most of these studies are quite inconclusive about the achievements of the schemes regarding solving the question of land access. It has also been implied from the literature that the programmes have been rather detached from comprehensive regional planning strategies. Whilst it may be true that prudence needs to be employed in comparisons of land use policy between countries due to striking dissimilarities with respect to socioeconomic factors, characteristics of legal system, and a range of other country-specific elements, the possibility of applying regional planning principles and practise to land reform must not be discarded if the goals of economic efficiency and socially inclusive regional development are to be achieved.

Whilst we would not wish to foreclose the debates about the optimal extent of state intervention in the land markets or the efficiency of those markets in redistributing land, this survey of the literature, summarised ahead in Table 2.1, has provided a short

⁵ Allmendinger (2009) offers a wide-ranging overview of planning theories, including rational theories of planning, Marxist planning, and the new right planning.

compendium of existing research efforts in the areas of land reform and regional planning in less developed economies, with a view to identifying alternative courses of action that could be capable to magnify the chances of changing the pattern of poverty associated with landlessness. Whatever analytical methods, theoretical presuppositions or ideological orientations, the underlying message is that a plan-led strategy involving multiple actors should be seriously considered as a means to augment the probability of success of land redistribution schemes, whether via expropriation or market-oriented or both, as regards redirecting regional growth in a more positive direction.

Table 2.1: Highlights of the literature: land policy and planning

<i>Issues</i>	<i>Developing countries in general</i>	<i>Brazil</i>
<i>Historical underpinnings</i>	<p>Historical circumstances explain the evolution of rural land systems</p> <p>Former approaches failed to focus on eliminating persistent land monopolies</p> <p>Failure of past government interventions as underlying cause of rural poverty and unrest</p> <p>Past experiences affected government approaches to rural land issues</p> <p>The shaping of rural policy seeks to reverse historical tendencies to land concentration</p>	<p>Past social and economic crises aggravated the living conditions of the peasantry</p> <p>Displacement of family farmers amongst the main causes of inequities in rural land structures</p> <p>Earlier land reform attempts subject to extensive and often critical assessments</p> <p>Negative impacts of land concentration overlooked by former government approaches</p> <p>Rural poverty historically perceived as an obstacle to developmental efforts</p>
<i>Socioeconomic determinants</i>	<p>Access to arable land positively associated with decreased poverty rates</p> <p>Socioeconomic pressure, e.g. rural deprivation and conflict, influences land reform initiatives</p> <p>Organised peasant movements play a part in land reallocation</p> <p>Scant rural development undermines the success of schemes</p> <p>Equitable land redistribution likely to improve the status of rural populations</p>	<p>Poverty, unemployment and migration as consequences of land concentration</p> <p>Farm and non-farm activities have measurable effects on rural poverty</p> <p>Settlers' agricultural production has little impact on regional development</p> <p>Conflicts involving the peasantry and landowners as a result of failed reform processes</p> <p>The role of grass-roots movements in forcing land de-concentration</p>
<i>Legal framework</i>	<p>Legislative provisions define the range of governmental involvement in rural economy</p> <p>Access to land mainly an issue of national policy</p> <p>Little evidence of rural development as a result of isolated action</p> <p>Improvements in rural legislation believed to foster better living conditions</p> <p>Both negative and positive implications observed in market-driven land reform legislation</p>	<p>Contradictions within legal framework lead to various types of violence in the countryside</p> <p>Property rights not secured to targeted groups by land reform regulation</p> <p>Bureaucracy and corruption as causes of inefficient state intervention</p> <p>Slowness of the judiciary contributes to increasing costs of land expropriation</p> <p>Current legislation oriented to expropriation</p>

Table 2.1: (Cont'd)

<i>Issues</i>	<i>Developing countries in general</i>	<i>Brazil</i>
<i>Degree of state intervention</i>	<p>Opposing views on proper extent of government intervention in the rural sphere</p> <p>Inequality in landownership as deriving from former non-market interventions</p> <p>Effectiveness of interventionist land reform in comparison with land markets</p> <p>Markets forces or state intervention alone are not sufficient to eliminate rural poverty</p> <p>Joint strategies with multiple actors believed to be efficient developmental tool</p>	<p>Deployment of market mechanisms to stimulate land access seen as neoliberal</p> <p>Distortions within state apparatuses weaken effectiveness of land reform</p> <p>State intervention does not guarantee quality of expropriated land</p> <p>Loan-based land programmes as a substitute for spending in redistributed land</p> <p>Market forces or state intervention alone with limited capacity to foment social inclusion</p>
<i>Land policy</i>	<p>Land policy formulation dependant upon country-specific factors</p> <p>Government approaches shift over time</p> <p>Land regularisation and restitution, also expropriation</p> <p>Examples of rural properties for collective use</p> <p>State-market hybrid land transfer schemes</p> <p>Market-based approaches to land redistribution</p>	<p>Traditional programmes are mostly state-led</p> <p>Market-based scheme introduced to stimulate purchase of rural land</p> <p>National plans of agrarian reform not thoroughly implemented</p> <p>Programmes paying little attention to intergovernmental/inter-sector coordination</p>
<i>Regional planning</i>	<p>Recent planning literature limited mostly to urban areas as opposed to rural</p> <p>Countryside development believed to have links with infrastructure investments and basic services</p> <p>Absence of comprehensive actions, but instances of pro-poor cooperative partnerships</p> <p>Decentralisation, coordination and participation as essential to diminish rural deprivation</p> <p>Sustained rural development unlikely without sub-regional policy networks</p>	<p>Limited evidence of the use of regional planning instruments</p> <p>Land redistribution implemented without adequate on-site improvements</p> <p>Deficient local infrastructure in addition to long distances to dynamic markets</p> <p>Technological advancements not benefiting family-based units</p> <p>Persistent post-purchase difficulties and lack of comprehensive regional planning</p>

CHAPTER III

The socioeconomic impacts of land reform: an empirical exercise for the Brazilian Northeast

3.1 Introduction

Market-based land reform has been introduced in the developing world as an alternative to age-old state-led mechanisms of land reallocation. Yet opinions diverge in the literature on the degree to which governments should intervene. Deininger et al (2003), Neto (2004) and Tonello et al (2005), for instance, maintain that land markets are more effective in transferring land and fighting poverty than state-controlled instruments, whereas market-free schemes lead to informal transactions of land (Chimhowu and Woodhouse, 2006; Barnes and Griffith-Charles, 2007), or land occupation and expropriation which engenders violence over property rights (Alston et al, 2000; Hoefle, 2006). On the other side of the debate, Ho and Spoor (2006) argue that the rural economy can well succeed without allowing private sales of rural land. Likewise, whilst Borras (2003) believes that market-driven reforms cannot prevent productive lands from remaining in the hands of powerful landholders, it has been asserted as well that demands by grass-roots movements or organised peasant groups will always turn out excluded from reforms that are short of effective state intervention (Caldeira, 2008; Desmarais, 2008).

Whatever the type of reform, however, the socioeconomic status of land reform beneficiaries is found to have connections with a number of factors, including the degree of land concentration (Domingos, 2002), levels of household income (Valletta, 2002), education (Banya, 1989), employment opportunities (Haggblade et al, 1989; Ferreira, 2001; Silva and Del Grossi, 2001), access to the credit markets (Sahu et al, 2004), agricultural output and productivity (Finan, 2007) and access to services and basic infrastructure (Arimah, 2003; Harttera and Boston, 2007). For Brazil, a series of studies have focused on assessing living conditions in selected land reform sites (Buainain et al, 2000; Medeiros, 2007) or the effects of the reforms on land de-

concentration or poverty alleviation (Heredia et al, 2006; Sabourin, 2008), without nonetheless comparing the regional impacts of approaches of different types. The following empirical exercise is an attempt to identify and compare the measurable outcomes of reforms of the land tenure system in Brazil.

We examine the socioeconomic effects at local and sub-regional levels of two different methods of land reallocation in the Northeast region of the country: the traditional expropriation-distributing INCRA schemes and the Land Bill Programme (PCT), a market-based approach introduced in 1997. We focus on the repercussions of the schemes across a significant sample of 416 rural localities and within 49 rural territories⁶ adopting one of the schemes or both from 1997 to 2002. Our dependent variables are growth rates of farming GDP, rural income and human development index, and the selection of independent (explanatory) variables is in line with the mainstream rural development literature revised in Chapter 2. Growth rates are used in order to eliminate locality-specific biases from the analysis, whilst lagged (log) independent variables are also considered to determine the policies' effects across time. We also include a number of time-invariant predictors, namely measures of the rainfall incidence and distance from a locality to the nearest capital city, as a proxy of remoteness.

The data analyses focus on socioeconomic indicators to evaluate the extent to which the reforms have been successful in providing social inclusion and economic growth. The estimations are carried out using multivariate methods to test different levels of influence of PCT and INCRA schemes on the dependent variables in combination with each set of predictors. Panel data regressions of sub-regional-level indicators are thus performed that distinguish between fixed effects and random effects, whereas our local-level specification is a cross-section (although with various time-series information enclosed). The regressions results, as will be seen, largely confirm the influence of conventional determinants of growth. However, the expected outcomes following the adoption of either approach are not confirmed, as an indication that reallocation of lands may not necessarily produce growth at sustainable rates if the proper state-market incentives are not present to induce that growth.

⁶ Our definition of rural territory (*territorio rural*) corresponds to a typology created by the Brazilian Ministry for Agrarian Development (MDA) for areas with specific identities determined by particular resources and environmental, political-institutional, economic and socio-cultural dimensions. As such, rural territories are subdivisions of the main regions for the purpose of land reform policy-making and implementation, constituting large countryside areas that absorb multiple rural localities.

This chapter is made up of six sections. After this introductory section, Section 3.2 takes stock of characteristics of the case study area that are particularly relevant for understanding the socioeconomic issues we discuss in the sequel. Section 3.3 discusses how Brazil has addressed the issue of poverty in the Northeast in connection to traditional state-led schemes and outlines the process of land redistribution under the Land Bill Programme. Section 3.4 examines key factors affecting the growth of the regional economy in the Brazilian Northeast and tests the influence of PCT and INCRA schemes on that growth through panel data analyses. In Section 3.5, cross-sectional analyses are performed to distinguish the effects of both PCT and INCRA on social and economic indicators at the level of the localities. Section 3.6 summarises the chapter's conclusions and presents final considerations.

3.2 The socioeconomic gap in the Brazilian Northeast

This section examines multiple interactions amongst key factors that, according to theory, can affect the performance of the regional economy. The analysis is contextualised in a case study of the Brazilian Northeast and gives insights on why land reform efforts have been concentrated in that region over the last decades. This initial contextualisation is necessary in order to make assumptions before elaborating on possible implications of adopting a plan-led strategy ahead in this work. Figure 3.1 shows the Northeast region plus the State of Minas Gerais highlighted.

The Northeast region of Brazil covers 1.6 million km², about the size of France, Spain and Germany combined, yet its most important cities are predominantly located along the Atlantic coast. With a population calculated at 53.5 million people dispersed over nine states, the region's indices for human development are well below the national average (for instance, longevity 0.61 and income 0.66, as compared to 0.73 and 0.72 respectively for the rest of Brazil).⁷ Poverty, however, is much more pervasive in the countryside. There has been, as a consequence, extensive rural out-migration to the neighbourhoods of major urban centres and, as a by-product, the surge of *favelas* (slums). About all capital cities evince extensive slums of improvised huts built of cardboard in the periphery, where violence, diseases and hunger abound.

⁷ Source: IPEADATA (Brazilian Institute for Applied Economic Research — www.ipeadata.gov.br).

Figure 3.1: Brazilian regions



The most deprived areas in all respects are concentrated in the semi-arid and transitional zones. These are areas marked with semi-desert weather/ characteristics that plague roughly 81% of the region overall. The average annual temperature in these zones ranges from 24C to 28C, rainfall is extremely erratic from year to year, and droughts occur everywhere yet in varying scales of intensity. The annual rain precipitation averages 350 mm (the average in coastal and rainforest zones is 1,700 mm) and there is close to no rain throughout the driest months (June to September).⁸ There is during drought times a further reduction in fresh water flow from the rivers feeding the area. Crops are submitted to this dearth of water and intense exposure to the sun, so that agricultural yields dramatically drop. The severe shortage of rainfall brings in devastating implications for land reform sites as well: key productive dealings in the sites are disrupted and crops are almost completely lost. Livestock activities are also severely hit. The opposite extreme occurs in rainy seasons, when the region is affected

⁸ Source: Brazilian Ministry for the Environment and Water Resources.

by inundations, particularly in key river basins such as Parnaíba, São Francisco, Una, along with their tributaries.

The soil is generally hard to cultivate (soil composition is mostly chalky and the surface is degraded by continuous utilisation), and the vegetative cover is characterised by flat grassland. Still there are places where soil fertility is found to be relatively high, such as areas in Sertões do Caninde and Sertão do Pajeú. Agriculture and livestock are nevertheless key economic sources for rural communities, although only 7% the Northeast's GDP comes from the farming sector. The reason is that small producers including producers on land reform settlements practise simple forms of subsistence farming. High landlessness (about 40% of the rural population) is an additional constraint. The region's harsh agro-climatic features impose limitations on the availability of arable land for land redistribution schemes. Reflecting the broad picture in the Northeast, the majority of family-farms in the semi-arid and transitional zones are of small size (<100 ha), although the PCT projects in these areas have significantly smaller farms (less than 20 hectares per settled family). Both family-run farms and plantations of great scope strive on a highly unequal distribution of natural resources, albeit large single commercial farms are as a rule located on higher-potential cultivable properties.

The Northeast countryside is also characterised by high rates of unemployment (only 35% of its population are employed or self-employed). Furthermore, almost 70% of rural households are poor, with a monthly per capita income below US\$20.⁹ Benefit dependency in these circumstances is very high: all sorts of cash transfer programmes, foodstuff baskets and a range of aid schemes so much from government agencies as from NGOs have become valuable means of the families' sustenance. In 2007, 5.5 million Northeast families were beneficiaries of the *Bolsa Família* (a family voucher scheme), representing slightly more than half of the country's beneficiaries. Nevertheless, many rural localities remain underdeveloped and poorly serviced. Tap water systems are precarious in locations where the flow of indoor water cannot be guaranteed. Additionally, an environmental problem affects the cities due to untreated sewage being released into the rivers flowing across the city and into the countryside, causing the proliferation of coliform bacteria in the water used for irrigation and human consumption, which has become a source of water-borne diseases. For instance, a very

⁹ Source: Economic Commission for Latin America and the Caribbean (CEPAL).

considerable number of riverside communities suffer with dysentery and native bilharzias (an indigenous infestation with a resulting infection caused by parasites) and are still subject to acute viral diseases transmitted by the bite of mosquitoes.¹⁰

Coupled with the fact that demand for infrastructure and public services is high and public investments in short supply, these are major determinants of rural-to-urban migrations and the resulting unregulated peri-urbanisation of large cities. In fact, it is common that whole families migrate to main urban centres in search of jobs and better living conditions. On the other hand, given that most capital cities are already overcrowded, labour-intensive industries at par with large-scale plantations of sugarcane that similarly require ample amount of human labour benefit from an endless supply of cheap workforce. Also, as the large farmers (*latifundiarios*) in the region occupy extensive tracts of land, grassroots peasant movements struggle to bring about changes in the institutions of property and labour relationships. Between 1993-2002, about 2.3 million hectares of land on which crops could be grown or in areas situated at the vicinity of public-use facilities were expropriated from major farmers as a result of land occupations by movement activists.¹¹

Briefly, a range of environmental and structural features in the Northeast, combined with inefficient land redistribution schemes, have produced a severe scenario of multiple deprivation, and land invasions have largely been linked to this scenario (Domingos, 2002; Fernandes, 2004; Medeiros, 2007; Caldeira, 2008). Moreover, a below average incidence of growth in rural areas has been seen despite a long history of government efforts to supply an increasing demand for arable land associated with high rates of poverty. As will be seen in the following sections, it thus becomes relevant to question to what extent land reform schemes have effectively and sustainably achieved social and economic objectives in a heterogeneous environment. By having a look at different approaches to land reform – from the rationale of the schemes, to the implementation phase of the settlements, to the impact on the local and regional economy – the analysis evaluates the land reform's contribution to the Northeast's development path.

¹⁰ Source: Brazilian Ministry of Health.

¹¹ Sources for the above information: NEAD (2000) and Brazilian Ministry of Agrarian Development.

3.3 The twofold sequence of the government response: state-led and market-based

The case for direct state interventions to the landholding structure in Brazil has followed on the principle that partitioning large properties amongst family-based producers would be a decisive factor influencing the expansion of the family-farm system, thence reducing rural poverty. This principle is embedded in the 1964 Land Law (*Estatuto da Terra*), which introduced the possibility of expropriation of rural estates with financial compensation as an attempt to “influence the decisions of private landowners in the direction of greater economic efficiency as well as toward greater social justice” (Senior, 1970). The implicit penchant of the Land Law for interventionism lies at the heart of the National Institute for Colonisation and Agrarian Reform (INCRA), the official land reform agency created in the late 1960s to encourage the organisation of rural settlements through expropriating idle lands and redistributing these lands to peasant families whose condition of poverty precludes them from purchasing land. Currently a branch of the Ministry of Agrarian Development (MDA), INCRA has overall control of resettlement policy formulation and implementation, inclusive through laying down directives concerning the expropriation process, payment of compensations, as well as infrastructure improvements to the lands.

The 1988 Brazilian Constitution reinforced the interventionist authority of INCRA by confirming the possibility of expropriation of rural estates with relevance for the social interest (Article 9). Expropriation has commonly been referred to as mandatory land acquisition of land holdings above a certain threshold (15 fiscal modules) that either do not fulfil a social function or are underused for agricultural purpose (Buainain et al, 2000). Moreover, according to the new constitution’s expropriation provisions, a property qualifies for expropriation if it is occupied by squatters either through organised invasion or after one year of undisputed occupation, and if improvements are made on it favouring agricultural production. INCRA submits a proposal of expropriation to a federal court of justice to obtain authorisation for title transfer to the agency for subsequent distribution to squatters (Alston et al, 2000). The occupants are given a provisory title whilst awaiting the definitive deeds to be processed. When the final decree of expropriation is issued by the central INCRA office, the title is irrevocably transferred to the occupants and, according to Federal Law 8629, of 1993, the former owner becomes entitled to a financial compensation in the form of Agrarian Debt Bonds (TDA).

In spite of all that, land reforms via expropriation have been advocated for in terms of an urgent need to eliminate deprivation that could be ascribed to insufficient landholding (Law 8629, Article 19, VI). A justification to favour the expropriations over more costly schemes, e.g. straightforward purchasing of land with budget funds, has been given on the grounds that expropriations are a relatively less expensive choice. As a matter of fact, the payment of financial compensations can be postponed until the final decision of the court and then made with public bonds that are usually indexed below the inflation rate. As a result, “land owners historically have received less than the market value of their land in an expropriation” (Alston et al, 2000) and the measure has become highly controversial. Also, the likelihood of expropriation without fair compensation has instigated property owners to negotiate beforehand with squatters to secure better prices for the occupied plot, other than having to resort to the Judiciary to claim higher values of compensation. A 2000 evaluation study conducted by the Ministry of Agrarian Development ¹² found that the prices paid for INCRA expropriations are inflated in the course of the whole process that involves land occupation, expropriation and subsequent litigation, which altogether can raise land prices to about three times their market value.

Additionally, the MDA study uncovered that most households receiving title from INCRA turned out to be squatters who occupied rural properties, but not necessarily peasant families who would eventually make productive use of the formally redistributed plots. Ultimately, the problem of creating unsustainable sites can be related to a strategy of *ex post* state action:

“Occupation of a farm by landless rural workers is not oriented by an assessment of its production potential. Therefore, these criteria do not ensure that expropriated land is appropriate and suitable for agrarian reform settlements.” (NEAD, 2000: 9).

The evaluation study also found that much of the expropriated lands have remained unproductive due to factors as diverse as unfavourable economic conditions, inadequate land fertility and topography, deficient local infrastructure, or inaccessibility

¹² NEAD (2000) Community-based land reform implementation in Brazil: A new way of reaching out the marginalized? Centre for Agrarian and Development Studies, MDA. Brasilia.

to consumer markets. The real aftermath, according to the mentioned findings, is that only about 60% of expropriation beneficiaries actually till their plot, as reported by Deininger (1999), and living conditions in INCRA settlements have generally been precarious. It follows that the socioeconomic achievements of land reform cannot be measured only by taking into account indicators of land de-concentration.

It is also noteworthy that the state-controlled model of resettlement was always expected to be complemented with basic infrastructure, including health care facilities, roads and housing. Yet creating an INCRA settlement can be a very slow process, as administrative procedures in the agency are generally “lengthy and complicated” owing to an oversized bureaucracy that entangles a central office and many subnational-level operating branches (Buainain et al, 2000). The costs of administrative land reallocation have hence been substantial considering at least three basic components: 1) financial compensations, which include the costs of judicial disputes following an expropriation; 2) provision of productive infrastructure and a range of on-site services aiming to establish the family-farm system; and 3) the costs of maintaining the agency’s own bureaucratic structure. Most significantly, INCRA has lacked a comprehensive strategy involving an economically efficient use of resources at a regional scale, in particular to money and capital.

In a quite different domain, the issue of land reform in Brazil can be placed on a political spectrum from right to left. At one end of the spectrum, a majority of the right-wing politicians have not agreed with land occupations by peasant groups. Rather, they believe that the economic success of land reform rests on market mechanisms. President Cardoso’s administration and his PSDB’s political allies were strongly influenced by this view. At the other end, the left-wing parties, such as Lula da Silva’s PT, pursue ideological, socioeconomic and electoral interests in the process of land occupation and expropriation by the state. This group is also supported by grass-roots movements, rural workers organisations and the Catholic Church. The political debate in Brazil during the 1990s was circumscribed by this dispute and the federal government’s approach to the matter reflected to a large extent the right-wing view of conferring land tenure by means of the market.

The prevailing position within government was, therefore, that administrative land reform was doing little to mitigate the burden of poverty on the rural poor. Instead, the reform main goals should be “the allocation of new resources to land reform, and the elimination of bureaucratic inertia, common in the expropriation and redistribution

processes” (Domingos, 2002). Moreover, Cardoso’s administration maintained that the reform’s guiding principles should be the refusal of “paternalistic actions by the state” and the integration of poor rural groups as “social actors of the process” of land reallocation (2002: 5).

These ideological and political stances on the matter and also the scanty results of the state-controlled programmes eventually led the Brazilian government to reorient land reform away from a lone focus on expropriation of private properties to adopting a market-based model of land reform. In 1997, the Ministry of Agrarian Development launched the Land Bill Programme (*Projeto Cedula da Terra – PCT*), on account of a loan agreement signed with the World Bank.¹³ In compliance with the agreement, the programme should target economically disadvantaged, landless individuals, or people with land insufficient for a livelihood in deprived portions of the Northeast region prior to advancing to large-scale implementation. The policy was then piloted in areas showing high levels of deprivation in the states of Bahia, Ceara, Maranhao, Pernambuco and Northern Minas Gerais, but not necessarily in areas where past INCRA initiatives had been recognised unsuccessful.

An essential purpose of the new scheme was to create a framework for bargaining according to forces of demand and supply, whereby registered families should be able to apply for loans to purchase land through voluntary negotiation, i.e. from landholders willing to sell. Above and beyond all other consideration, the programme was designed not only to ensure the redistribution of good, arable land, but also to supply a range of support services to bring newly acquired lands into production and thence raise participants’ income and standard of living overall. In brief, the policy consisted of two dimensions. The first dimension involved a credit line that stimulated the transfer of land rights on a willing seller – willing buyer basis. The second dimension was concerned with financing small infrastructure improvements that demanded project-specific loans. These credit lines were complemented with the National Programme of Assistance to Family Farms (PRONAF), a parallel loans-based system launched to encourage ameliorations in small producers’ agriculture productivity.

The reform operated under a collective rationale according to which interested families should organise associations of small farmers to be able to make a loan request.

¹³ World Bank’s Land Reform and Poverty Alleviation Pilot Project 4147-BR.

The main objective of a formalised association was to obtain lands capable of producing food to sustain a group of settlers and their families. Since it was recognised that rural residents might have limited knowledge about the workings of the scheme, it was the association's responsibility to find a suitable property for acquisition directly from the owner, whereas the state would act as an intermediary in ensuring that the properties would be transacted at market prices. Once a property was selected and a price agreed upon, the association was required to present to a designated state-based agency (state technical unit) a statement from the seller confirming their willingness to sell said property at the declared price. The agency would then make an inquiry into whether legal issues or encumbrances existed that could impede the transaction and whether the price was within acceptable boundaries as informed by local estate brokers.

With approval from a state technical unit, the association was eligible for immediate credit from a special fund operated by the *Banco do Nordeste do Brasil* (Bank of Northeast of Brazil). The bank granted qualified associations a combined credit package that would potentially cover the land purchase (SAT loans) together with on-farm improvements (SIC loans).¹⁴ An allocation formula defined the amount able to afford both project components by pondering the size of landholding plus an infrastructure budget submitted by the association. A preestablished credit ceiling, however, should be observed for the package at an equivalent of US\$11,200 per beneficiary family, in addition to a start-up subsidy of approximately US\$440 for settling expenses. The presumptions behind the ceiling were that (1) the associations were able to collectively negotiate and share the price of large estates and (2) the infrastructure for a single plot would demand a small capital outlay. Putting it differently, the ceiling was regarded sufficient to purchase a piece of land the size of a typical family farm, with the remaining funds able to meet productive investments, such as civil works, goods and agricultural equipments

The use of land as collateral was not compulsory as some legal prerequisites normally required for land loan approval were relaxed. From another side, the loans were to be repaid in annual installments, under the penalty of losing the plot (NEAD, 2000). Once the plots were allotted by agreement amongst participating families, association members should also decide upon payment responsibilities regarding each individual allotment. By the same token, the formal deeds to property were at first held

¹⁴ SAT stands for *Subprojeto de Aquisicao de Terras* (Land Acquisition Subproject); SIC stands for *Subprojeto de Investimento Comunitario* (Community Investment Subproject).

collectively in the name of the association, as the title would remain as collateral in case of defaulted debt payments or until the whole debt was redeemed.

Also, since creating the infrastructure necessary for the sustainable operation of various family-farm units was acknowledgedly a process that demanded time and money, a series of complementary rural credit schemes were put in place, most notably the PRONAF. More credit was seen as paramount for small farmers to successfully face competition in the agribusiness whilst at the same time increasing family income not only to cover living expenses but also generate a surplus for loan repayment. PRONAF was introduced contemporary with PCT to provide cash advance loans earmarked for family farms, particularly for use in pasture enriching or cultivating permanent crops. The loans were also used for contracting technical assistance following the view that specialised knowledge on farming helps minimise the risk of crop failure. Whilst the pilot scheme was not at first projected to establish large-scale agricultural enterprises, it indeed allowed for start-up capitals and improvements on acquired plots. Access to the loans was arranged collectively through cooperatives, even if production was individually organised by family-based units. Moreover, eligible families were required to be in farming long enough to understand the workings of the business and thus boost the potential earnings from the scheme.

Due to this associative rationale, PCT associations managed to collectively raise land funds at more favourable interest rates and so carry out land transactions more quickly. This major component of the programme was undoubtedly an upturn in providing easier access to land rights to poor landless families given that these families had historically been excluded from land markets owing to: 1) insufficiency of resources, financial or otherwise; 2) rural credit banks charging high interest rates; and 3) downright refusal of credit because of lack of land as collateral. Notwithstanding, a flaw became apparent that involved the mentioned credit ceiling for land purchase. In practise, interested families turned out discouraged to buy expensive, however high-quality properties, insofar as purchasing lower-priced plots would enable higher savings for post-purchase investments. Landholders in turn, were generally not interested in negotiating high-value properties at a price the associations were able to pay. As a counterpart, land-poor households who were disposed to purchase better-quality properties ended up compensating the landowner with an undeclared complementary value, resulting that the prices reported to the technical units were not necessarily the actual prices paid for the plots.

More importantly, as will be discussed ahead in this work, the selection of properties for acquisition occurred at random across the region and not connected to plan-led strategies, what precluded the distribution of settlements in a more balanced and viable way. The net result of said limitations was that the programme's impact in the five participating states was modest: according to MDA estimations, 551 properties were negotiated under the market-based mechanism, what amounted to 370,000 hectares of land, and resulted in the settlement of an estimated 14,000 families. In February 2003 the scheme was terminated and replaced with the II National Plan for Agrarian Reform (PNRA), with a view to redistributing more land titles nationwide through the cadastre of rural estates and validation of property deeds to squatters. Notwithstanding, as with the traditional INCRA schemes, the new plan has been carried out along the lines of unprogrammed expropriations of lands.

Table 3.1 compares the economic performance of the rural sector across the Northeastern states particularly with respect to selected farming indicators as well as the scope of land reform. Yet given the scale of the figures, no patterns whatsoever can be discerned between states on the role of the reforms. In the next sections we will thus examine more closely the extent to which the state-led (INCRA) and market-based (PCT) approaches to land reform have contributed to the growth of the regional economy. With panel data and cross-section SAS models, we will investigate the determinants of social and economic long-term performances in areas of the Brazilian Northeast where the approaches were adopted over the same time period, both at sub-regional and local levels.

Table 3.1: Key indicators average growth rates (1995-2005) – Northeastern states

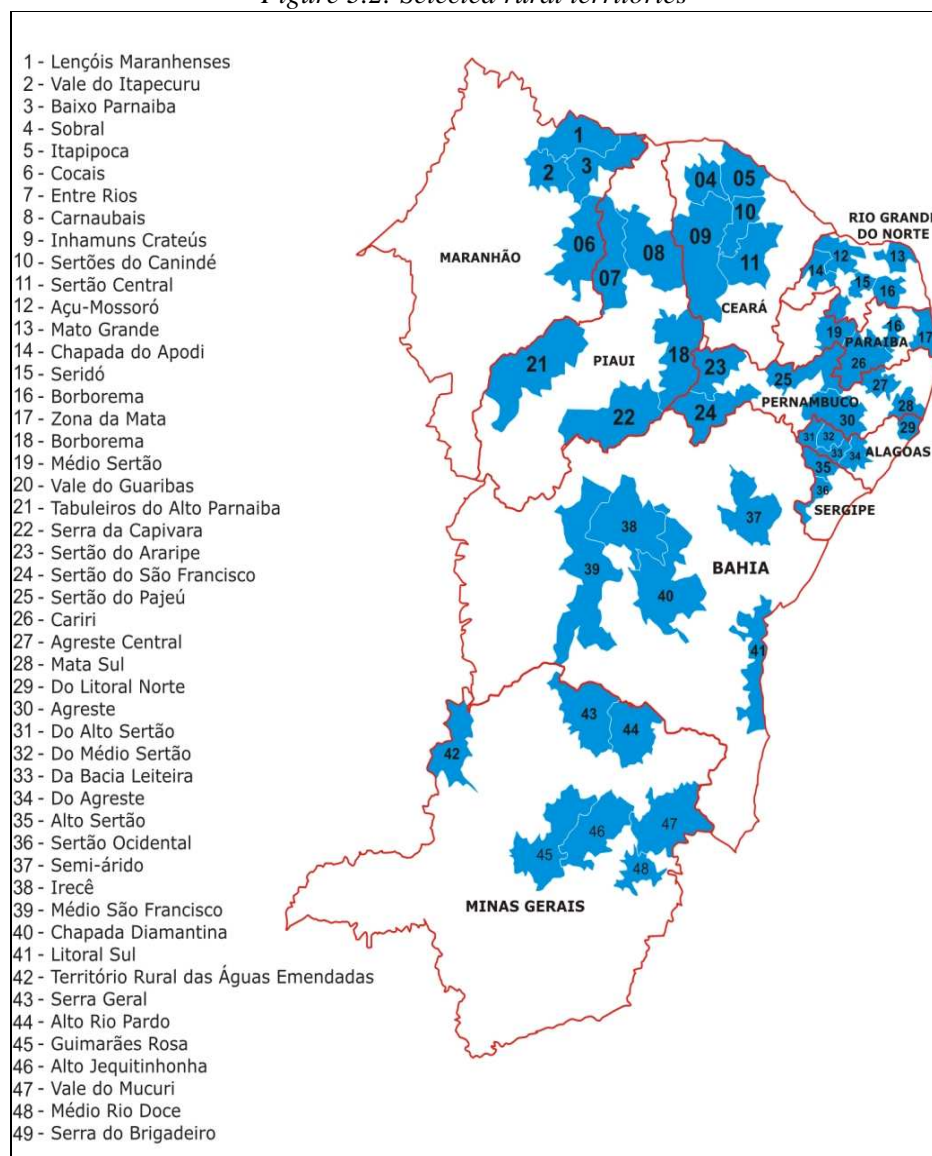
<i>State</i>	<i>PCT</i>	<i>INCRA expropriation (% total area)</i>	<i>Selected crop output</i>				<i>Cropped area (% total area)</i>	<i>Farming GDP per capita</i>
			<i>Coffee</i>	<i>Beans</i>	<i>Cassava</i>	<i>Corn</i>		
Alagoas	no	1.04	0.01	1.27	1.01	0.97	1.79	1.26
Bahia	yes	1.52	0.33	2.67	1.20	2.43	1.44	1.26
Ceara	yes	2.87	0.14	1.79	1.43	3.32	1.18	1.04
Maranhao	yes	1.08	0.03	0.85	0.81	0.80	0.86	0.70
Paraiba	no	1.41	0.04	1.68	0.50	1.82	1.76	0.82
Pernambuco	yes	1.96	0.18	1.54	1.05	1.59	1.93	0.95
Piaui	no	1.21	0.01	0.89	0.90	1.29	0.83	0.70
Rio Grande do Norte	no	1.19	0	1.60	0.54	0.78	1.24	2.57
Sergipe	no	1.50	0	1.26	1.20	1.27	1.27	1.02
Minas Gerais	yes	1.33	0.83	1.19	0.96	1.08	1.16	0.95
<i>Northeast</i>		<i>1.51</i>	<i>0.16</i>	<i>1.48</i>	<i>0.96</i>	<i>1.53</i>	<i>1.34</i>	<i>1.13</i>

Source: IPEADATA

3.4 Capturing the socioeconomic impacts at the sub-regional level

In this section, we identify the effects of different indicators on the growth of the rural economy between 1995 and 2005 and then proceed to test the influence of PCT and INCRA schemes on that growth through panel data regressions. The analyses have been made for 49 rural territories in the Northeast, as seen in Figure 3.2, of whom 22 have introduced the market-based approach.

Figure 3.2: Selected rural territories



We performed multivariable linear regressions admitting 10 percent confidence bands. As apparently there was a strategy of introducing the PCT in some areas before others, and for subsequently extending it to other areas within the region, the non-random implementation timing is a basic assumption in the model with fixed effects. However, the chronological sequence in which both approaches took place across the study case area was in practise random. In other words, different geographical areas were reached by the reforms at different moments in time. Simply allowing for territorial-level fixed effects would not be capable of capturing the existing interaction amongst such differences. As a consequence, the possibility of overriding differences amongst rural territories regarding the creation of settlements, something that appears to be the case in the Brazilian Northeast, offers a more reasonable interpretation of the outcomes of the reforms. This problem is resolved in the model including random effects in the regression estimates.

To compare the effects on farming output of market-driven as compared to state-led policy, we specified a dummy variable for areas reached by the PCT over the 6-year implementation period, taking the value of 1 for a territory or year of such type, and 0 otherwise. The extent of the state-led approach in the same time frame is represented by a variable that measures the proportion of areas expropriated by INCRA in each territory. This allows straightforward comparison between the sign and significance of land market transactions for the growth of farming GDP as compared to the expropriation-based mode. As we used estimations over time, the regression results were tested for heteroskedasticity and corrected for it as required.

The variables used in the statistical estimations (Table 3.2) are rooted in the mainstream rural development literature reviewed in Chapters 1 and 2, as well as on the theoretical assumption that rural development is a multidimensional occurrence (Douglas, 2005). For instance, Gardner (2003) finds that agricultural output growth is a measure that originates from a production function that takes note of factors such as population increase (resulting in a larger farm workforce), in addition to cleared areas for cropping and public investments.

Table 3.2: Panel data analyses variables

	Variable	Label
Dependent	FARMGDP	Farming GDP - 2000 R\$ (1,000)
Independent	CROPAREA	Cultivated area - % total area
	CATTLE	Herd of cattle - head
	AGRISPEND	Local spending in agriculture - 2000 R\$ (1,000)
	NATSPEND	Local spending in energy and natural resources - 2000 R\$ (1,000)
	INVLOANS	Rural credit for farming investments - 2000 R\$ (1,000)
	COMLOANS	Rural credit for commercialisation of production - 2000 R\$ (1,000)
	RURPOP	Rural population - inhabitant
	PCT	Dummy for year/area reached by PCT (0=no; 1=yes)
	INCRA	Area expropriated by INCRA - % total area

Sources: IPEADATA, MDA/NEAD.

Before discussing our findings concerning land reform determinants of growth, some aspects of farming GDP in the Northeast are addressed in passing that advocates for its use as dependent variable. At the sub-regional level, the rural countryside is characterised by varying degrees of access to adequate farming infrastructure and natural resources, resulting that some territories have higher prospects for socioeconomic upgrade than others. Also, due to different socioeconomic configurations, geographic features and agro-climatic conditions, different territories are expected to react in distinct ways to land reform policy.

The average farming GDP growth in the Northeast was 13% in the PCT period (1997-2002), whereas the sampled territories showed a 9% *decrease*. The descriptive statistics highlight large variations between territories, with Medio Rio Doce being by far the worst regarding output growth. We also note a 0.77 deviation of activity growth ratio from the mean, ranging between -0.95 and 1.72. Such a wide range points towards goodly scope for advancements in crop and livestock output through a series of factors such as public spending, rural credit and farm-related investments. Table 3.3 summarises the regressions results.

Table 3.3: Determinants of farming GDP growth – rural territories

	(1) Fixed effects		(2) Random effects	
	<i>Estimate</i>	<i>t Value</i>	<i>Estimate</i>	<i>t Value</i>
Intercept	29.799** (9.506)	3.13	-4.149 (3.929)	-1.06
CROPAREA	0.954*** (0.208)	4.59	0.505** (0.159)	3.17
CATTLE	-0.401 (0.339)	-1.18	0.930*** (0.227)	4.10
COMMLOANS	-0.035* (0.020)	-1.73	-0.067** (0.021)	-3.22
INVLOANS	0.047*** (0.014)	3.43	0.058*** (0.012)	4.67
NATSPEND	-0.035** (0.013)	-2.66	-0.025* (0.013)	-1.92
AGRISPEND	0.015 (0.019)	0.79	0.002 (0.016)	0.13
RURPOP	-0.043 (0.688)	-0.06	1.192*** (0.309)	3.85
INCRA	-0.002 (0.002)	-0.91	-0.007** (0.002)	-3.15
PCT	0.220 (0.215)	1.02	0.216 (0.175)	1.24
N	539		539	
MSE	1.190		1.465	
R-Square	0.832		0.178	

Standard error in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

As seen in Chapter 2, the economic status of the rural sector is found to have direct connections to farming output and productivity (Fajardo, 2002; Finan, 2007; Spoor and Visser, 2004). As observed in the Table, coefficients of main variables are consistent with expectations. The economic effect of the cattle variable, for instance, seems rather uncertain in model 1, although it renders the expected positive results for the random-effects model. This result is sympathetic to the fact that the importance of livestock grazing for the regional economy is not only unequal across the sampled territories, but is intensively impacted by the extent to which resources have been dedicated to such activity over time. Large-scale, long-term investments such as for ranching are usually out of reach for land reform beneficiaries.

Factors directly associated to cropping are strongly significant for output changes. The logic is quite simple: cropping in the Northeast is more likely to obtain higher yields in the short term than ranching. The variable is more significant in the fixed-effect equation, suggesting that the size of cultivated land varies more substantially from area to area than with time, whereby the coefficient slightly declines in the random effects model. However, according to key conceptual distinctions between types of effects, cropping should not be treated as a fixed effect because we might not have included all possible levels of this variable in our experimental setting. Still the average growth of total cultivated area in the territories introducing the PCT was also relatively low in the period (9.7%). By comparison, the proportion of cropped area grew by more than 30% in the rest of the region, indicating that levels of farming activity did not improve appreciably with the market-based reform. One way or the other, we are inclined to conclude from results in the models that an effective utilisation of lands for farming activities can play a part in the growth of GDP.

Also as expected, the size of rural population plays a more influential role in the second model because in this case we have selected groups of rural populations from a larger regional population, and we would more naturally treat the variable “population” as a random effect. There are three assumptions attached to this variable: 1) the rural workforce (and the number of consumers alike) increases over the years; 2) this increase is a function of the size of population in previous years; and 3) population growth is estimated to positively influence the value of rural GDP in return for an expanded farming activity.

The growth of the rural sector is also related to access to credit markets (Sahu et al, 2004) and availability of basic services and infrastructure (Sparovek, 2003; Spencer, 2007; Harttera and Boston, 2007). In fact, rural credit for land acquisition, on-farm infrastructure and production were more accessible to the rural poor over the PCT period. Yet notice that, as a consequence of inadequate physical access to the sites and thus remoteness, settlers’ produces were generally for own subsistence or, to a lesser extent, for consumers in close rural communities. Additionally, as rural sector growth rates are inclined to respond more quickly to trading of high-profit crops, and activity in settled areas relied mostly on subsistence crops, the variable for commercialisation loans

apparently goes in the opposite direction than the growth of rural GDP. Nevertheless, as much as the negative sign of the coefficient could be interpreted as production decreasing with the likelihood of trading commodities, rural credit was most probably directed to areas where farming output was increasing at a slower pace.

In like manner, a correlation is noted between output growth and lower rates of local spending in natural resources and energy. To the extent that, particularly for semi-arid areas of the Northeast, improved access to water resources (piped water and irrigation, for instance) has been a critical element of government strategies, a negative coefficient may have resulted from one of the following two causes or a combination thereof: 1) the expenditures were intended to areas of lower incidence of economic growth; 2) a spending cut off occurred in this item owing to fiscal austerity measures in the period, whereas the GDP evolved positively due to other factors.

Similarly, the share of public investments allocated to the agricultural sector – although positively – is not significantly associated with a rise in output. Whilst this does not necessarily imply that the amounts were too small, it might be interpreted as the funds not reaching the most productive areas. By comparison, we notice that the projected outcomes of both expenditure items followed opposite directions, once the coefficient for “agrispend” proved positive (although not significantly), as opposed to “natspend”. Moreover, being measured over the 1995-2005 time span, the variables were unable to capture the effect of past investments by the state in the rural sector. A time lag would have to be considered in this respect between public spending and its impact on farming output, which is also likely to vary from area to area. It is worthy of attention as well that, by using aggregate measures of output alone, a correlation between the settlements’ production and public spending cannot be accurately estimated at the level of the territories.

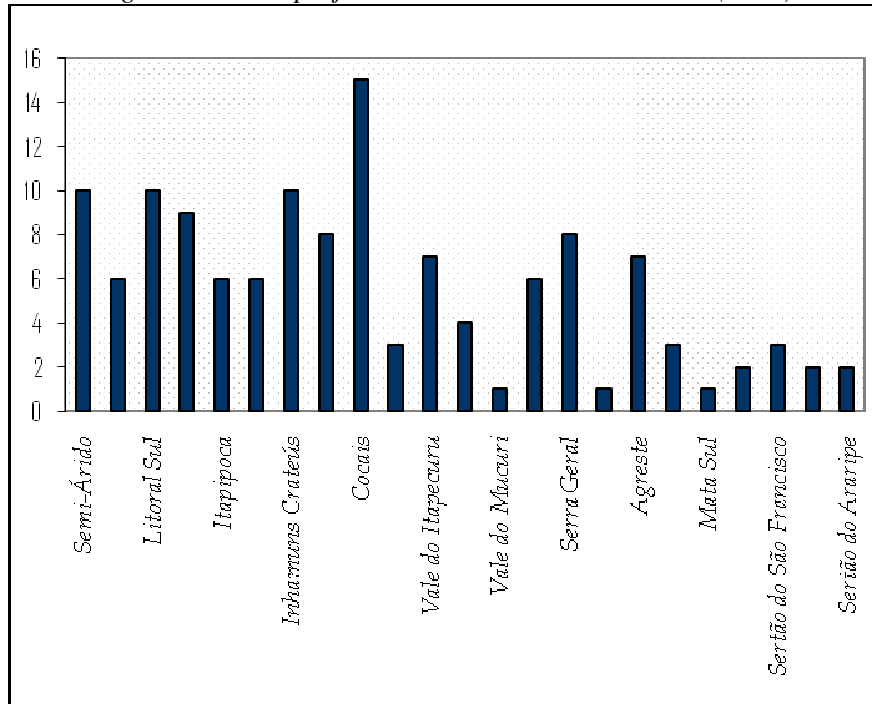
On the flip side, there is strong evidence that movements in farming outputs are likely to be associated with movements in investment loans. That is, rural producers who afforded investing more obtained higher yields. Compared to the effect of public spending in agriculture – which is insignificant by any standard – the availability of rural credit is much more likely to produce symmetric effects on GDP growth. As for commercialisation loans, a negative coefficient may be due to this type of credit being

more frequently used in areas of lower economic development, resulting that the correlation, although highly significant, is not positive. To illustrate the magnitude of the estimated coefficients, the fact that increasing the area used for cropping as well as grazing cattle is very likely to affect GDP growth (as deduced from the variables “croparea” and “cattle”) implies that providing credit for productive infrastructure play a more prominent part in improving output than loans for trading commodities, irrespective of the performance aspect.

In view of the above evidence, it is apparent that the elements that could be admitted as determinants of the region’s rural growth include, but may not be limited to farming activities, rural workforce and a combination of public spending and rural credit. Although it cannot be assured that all territories have followed this pattern very clearly, there seems to be ground to admit that where public spending in the rural sector is higher, a greater GDP from farming can be expected. By the same reasoning, a chronic lack of investments needed to reduce risk of crop failure due to drought probably has an adverse effect on the level of production in the semi-arid. These inferences, however trivial are relevant to understanding why land reform has achieved limited success in many parts of the region where the schemes have been short of public investments and credit in support of an efficiency- and equity-enhancing redistribution of land.

Indeed, as our tests indicate, results from different equations provide essentially identical results for PCT, in that this variable should not be regarded a good predictor of economic growth. However, the fact that the PCT variable is a higher level dummy precludes accurate inferences on the reform’s impact on production associated with the creation of a given settlement. Moreover, an insight of the geographical distribution of sites signals that the programme’s coverage was uneven, as illustrated by Figure 3.3. For instance, whilst according to a preliminary MDA study (NEAD, 2000) the existing projects in Cocais numbered around 15, Vale do Mucuri and Mata Sul were found not to exceed a single project each.

Figure 3.3: PCT projects in selected rural territories (2000)



Source: Brazilian Ministry of Agrarian Development (MDA)

It is worth noticing that territories counting on higher tracts of cultivated land were characterised by a bigger GDP, but not necessarily as a result of the PCT. Also, the per capita surplus derived from the farming sector did not perceptively rise with the programme, something that is endorsed empirically through the finding that the dummy's coefficient is not significantly different from zero in any of the models. If one considers nevertheless that PCT pilots were far from self-sufficient, more investments and credit would have enabled them to perform better in terms of economic outputs and thence welfare.

Similar conclusions could be derived for the expropriative approach. The coefficient on INCRA is always negative and poorly correlated to the growth of farming output, although significant at 10% in the fixed effects equation. This does not necessarily indicate that land expropriations were a factor running counter to economic growth, but rather that the growth was concentrated in areas other than INCRA sites. In other words, provided the ratio of expropriations is controlled for, the negative sign of the variable reflects that it might have been in areas outside the expropriated lands that economic outputs grew at a faster pace.

Conclusively, an increase in regional output that is associated with higher probability of land transactions is quantitatively small; compared to the ratio of land expropriations, the estimates on PCT are much more modest. Land reform policy is therefore unlikely to provide convincing explanations for the status of socioeconomic development in the region. On the other hand, we note from the analyses that the operation of other elements in the observed areas, especially a lack of investments in infrastructure and hence the capacity of settlers to engage in large-scale farming, have ultimately prevented sites from positively contributing to productivity and growth. The legacy of such elements is that 1) family farms resulting from land reallocation have not found themselves in a position to compete with leading commercial farms in the agricultural market and 2) the socially desirable conditions remain obstructed that could put low-income communities into a self-sustaining development path.

Factors that might systematically increase households' expectation of experiencing a rise or a decline in standards of living through land reform are, to the extent that they affect rural income, arguably more evident from a local perspective. Results from regressions with municipal-level observations are presented ahead.

3.5 Fine focusing the lens: land reform in the rural localities

Since it is more difficult to disaggregate the impact of land reform in the economy of rural territories, in this section we identify potential determinants of growth at the level of rural localities. The aim is to empirically investigate whether the analysed reforms promoted measurable changes in economic and social patterns of those areas. Some generalisations are derived from cross-section regressions. Table 3.4 shows that, as in the panel data regressions of the precedent section, social and economic variables are considered together with land reform predictors for a large sample of municipalities in the Northeast.

Table 3.4: Cross-section analyses variables

	Variable	Label
Dependent	FARMGDP	Farming GDP growth ratio 1995/2000
	RURINCOME	Rural income per capita growth ratio 1991/2000
	HDI	Index of human development growth ratio 1991/2000
Independent	COFFEE	Coffee production growth ratio 1995/2000
	BEANS	Beans production growth ratio 1995/2000
	CASSAVA	Cassava production growth ratio 1995/2000
	CORN	Corn production growth ratio 1995/2000
	CROPAREA	Cultivated area - % total area growth ratio 1995/2000
	AGRISPEND	Public spending in agriculture growth ratio 1995/2000
	PRONAF	PRONAF loans per capita growth ratio 1995/2000
	DISTANCE	Distance to nearest capital city - km
	RAINFALL	Rainfall incidence (mm/month): summer (Dec-Feb)
	RURPOP	Rural population growth ratio 1995/2000
	EMPLOY	Rural employment growth ratio 1991/2000
	TRANSCASH	Government aid - % total income growth ratio 1991/2000
	AGRISPENPC	Public spending in agriculture per capita growth ratio 1991/2000
	LITERACY	Years of study - average - adults growth ratio 1991/2000
	PRONAF	PRONAF loans per capita growth ratio 1995/2000
	PCT	Dummy for area reached by PCT (0=no; 1=yes)
	INCRA	Area expropriated by INCRA 1997-2000 - % total area
	INCRA	Area expropriated by INCRA 1997-2000 - % total area

Sources: IPEADATA, MDA/SAF, MDA/NEAD.

The main assumption in the cross-section models is that the impact of land reform on the growth of the indicators is likely to vary to the extent that different rural countryside areas differ from each other. One limitation of the analysis is that, where the reform affects some rural parishes but not others creates a variation in the data that is random, or at least unconnected to unobservable factors that might influence the outcome (Mitchell, 2005), which signifies that the explanatory power of the models is expected to be lower than for panel data analyses. An additional problem is that a lack of time series on some of the indicators per locality poses a particular difficulty in establishing empirical evidence related to the effect of land reform over time.

Having said that, it is also worth saying that, since the state-led land and the market-driven policies occurred over the same time interval, it is possible to distinguish

performances of one policy from the other by regressing the dependent variables on variables that reflect features of different rural areas within a given time span. Consequently, we concentrate on the estimation of changes in available cross-sectional data resulting from decennial censuses on households conducted by the Brazilian Institute for Geography and Statistics (IBGE) in 1990 and 2000, with information on standard characteristics routinely considered in household surveys. Some missing value problems were addressed by determining that, at least with regard to crop data, a missing value generally meant that the actual value was near zero (for instance, most Northeast municipalities do not produce coffee at a large scale), hence bringing the total number of missing values down to an acceptable level. Obviously, due to data limitation together with methodological constraints on cross-sectional analyses, the following tests provide a partial view of the reform outcomes.

On the other hand, the role of the selected variables in the degree of economic growth and major welfare gains has been frequently highlighted in the literature, most prominently agricultural activity, education, employment, rural credit and public spending (Banya, 1989; Silva and Del Grossi, 2001; Fan et al, 2004; Ezcurra et al, 2007; Holloway et al, 2008). Table 3.5 provides the statistics for those variables. Results are reported for changes in economic (model 1) and social patterns (models 2 and 3) in an expanded set of cases.

Table 3.5: Social and economic determinants of growth – rural localities

	(1) Farming GDP		(2) Rural income	(3) HDI
Intercept	- 0.915 (0.289)	Intercept	-0.217 (0.307)	0.907*** (0.027)
COFFEE	0.027* (0.014)	EMPLOY	0.398*** (0.113)	0.001 (0.010)
BEANS	0.382*** (0.039)	TRANSCASH	0.024 (0.066)	0.016** (0.006)
CASSAVA	0.007 (0.036)	AGRISPENPC	0.001 (0.018)	-0.001 (0.001)
CORN	0.090*** (0.024)	LITERACY	-0.275* (0.139)	0.131*** (0.012)
CROPAREA	0.068* (0.032)	PRONAF	0.010 (0.009)	-0.001 (0.001)
AGRISPEND	-0.008 (0.025)	INCRA	1.659** (0.143)	0.025* (0.013)
DISTANCE	0.0004 (0.0003)	PCT	0.041 (0.060)	-0.010* (0.005)
RAINFALL	0.002* (0.001)	-	-	-
RURPOP	0.437 (0.425)	-	-	-
PRONAF	-0.010 (0.014)	-	-	-
INCRA	0.145 (0.388)	-	-	-
PCT	-0.088 (0.090)	-	-	-
N read	416	N read	416	416
N used	338	N used	340	340
Coeff. variation	-235.28	Coeff. variation	33.60	3.65
Root MSE	0.750	Root MSE	0.505	0.044
R-Square	0.356	R-Square	0.327	0.433

Standard error in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

As expected from evidence in the literature that rural sector activity is strongly affected by the size of cropped lands, it is shown in model 1 that farming GDP grew in response to increases in the proportion of areas effectively cultivated. Also, despite the fact that a high variety of crops can be found all over the region, the cultivation of coffee, beans, cassava and corn are amongst the most usual cropping activities in land reform sites (Heredia et al, 2006; Silveira, 2008). In the model, beans, coffee and corn turned out significant, even though the relationship between coffee and GDP is not as strong. For cassava, the effect did not reach the level of statistical significance probably because a

substantial part of this crop is mostly used for own subsistence, not for profit. These regressions seem to confirm, on the one hand, that coffee, despite being a high-value crop, has not been produced on a large scale, particularly in semi-arid areas of the Northeast where rainfall incidence is substandard. Lower-value crops like corn and beans are, in turn, typical of such places.

Accordingly, the indicator for rainfall incidence is somewhat significant and of the expected sign, in the sense that rural output is highly sensitive to positive or negative changes in the amount of rain precipitation. This is in accord with the degree of probability that family farming is highly affected by agro-climatic characteristics. On the other hand, proximity to a capital city is not estimated to be a driving element behind output growth. However, given that it is widely recognised in the literature that distance increases transport costs (for instance, Renkow et al, 2004; Holloway et al, 2008), the positive coefficient on GDP owned in the first equation provides a case to argue that, over time, the agricultural sector could perform best in benefiting the family-farm system of production by reducing distance to main consumer markets.

In addition, farming GDP barely grew in response to government spending. Regarding magnitudes, whilst 60% of localities raised expenditures in agriculture, only 33% showed an incremental expansion in GDP, as an indication that local governments might have spent either inefficiently or less than sufficiently in the rural sector. Likewise, the fact that the variable “PRONAF” – used as a measure of on-farm investments – are not significant in any of the models suggests that the observed increments to credit in the PCT period have not enabled the family-farm system to improve regional indicators by a measurable rate. It is worth mentioning, however, that a great variation in the path of reforms has been observed across the sampled areas which could have brought forth dissimilar economic effects, as when increases in the value of PRONAF per capita varied so much from one locality to another that production might have grown slowly in one area whilst at the same time rose much more quickly in another. Still and all, as we will see in more detail ahead in this work, land reform settlers could barely and rarely afford large infrastructure improvements through PRONAF and productive activities were financed mostly out of participants’ reserves.

It is also worth noting that, contrary to our findings for the sub-regional level where the state-led approach correlated negatively with output, the regressions for the local level suggest that the economic effects of land expropriations have been negligible in the Northeast countryside, as implied by a positive yet insignificant coefficient on INCRA. In a similar fashion, the market-based approach, represented by the PCT dummy, is not significant for growth in the model. It can be concluded that any redistributions of assets conforming to the market-free or the market-based approaches have not affected the growth of the rural sector perceptibly. Notwithstanding since the data do not provide information on crop output or cultivated area at the plot-level, it has not been possible to estimate a production function to compute activity on PCT pilots and directly compare it with activity performed on INCRA sites.

By the same token, considering that a study that merely compares GDP growth in localities reached by the schemes with those that have not been reached does not necessarily bring forth convincing evidence of the effect of the schemes on the well-being of settlers, it is necessary to assess the impact of land reform through other channels, namely by looking at factors affecting social patterns such as income and human development indicators. Firstly, it has been observed from the descriptive statistics that differences across sampled localities are pronounced for income growth, hereby used as a proxy for changes in socioeconomic status. For example, per capita incomes grew by an impressive 4.94 in Unai whereas decreased (0.20) in Manga, and an average 20% rise in the index of income inequality further exacerbates the disparities. We hence turn to the examination of elements that are likely to produce changes in the level of rural income.

Model 2 provides correlations between income growth and likely predictors. Only three predictors are significant, amidst which one (literacy) is significant at the 10% level. In fact, this predictor goes in a direction opposite from what one would expect from an indicator that was supposed to increase income. The negative sign implies that having less years of study increases the probability of a household to earn income from rural occupations whilst higher educated individuals would preferably engage in urban labour. An inference from this fact is that, although illiteracy cannot be said to be a cause of

growth, a cheap – and mostly illiterate – workforce is a factor increasing farming output in the Northeast.

As for employment, 32% of rural dwellers in the region were employed early in the decade, whereas 35% were so in 2000, although with appreciable inter-municipal variation (from 9% in Bento Fernandes to 61% in Riachao). This ratio of growth, however not very substantial, is an important factor explaining why employment is amidst the strongest correlates with income increase. Conversely, having less income is a factor of higher cash transfers from the state (e.g. the *Bolsa Familia*¹⁵) rather than the other way around. Moreover, as important as government aid might be to increment income given the harsh conditions of unemployment and poverty, judging by the statistical estimates alone it is not possible to determine whether that aid has been able to do away with settlers' dependency on income from employment or self-employment in the non-farm sector. Everything considered, the model's goodness of fit (an approximate 0.33 R square) unveils a high probability of having an omitted variable bias, which suggests by indirection that rural families supplemented their income with receipts other than on-farm jobs or income support from the state.

It is also noteworthy that the ratio of agricultural spending per capita and PRONAF are statistically insignificant for income growth. In so far as more government spending and credit are expected to add to producers' capacity to bring forth goods and services on account of the multiplier effect, if little attention is devoted to securing that those funds reach areas most in need, an increase in levels per capita of public expenditures will not ensue in reduced poverty, nor will the effect on income of rural credit become evident, even when loans earmarked for family farms are taken into consideration. Notwithstanding that the supply of loans augmented as settlers signed PRONAF contracts, the added incentives to agricultural productivity do not seem to have enabled costly improvements on the land and thence the expansion of family-farm production to match demand at a regional scale.

On the other hand, bivariate correlations show that PRONAF strongly correlates with PCT and the area cultivated with corn (Pearson correlation significant at the 0.01

¹⁵ The *Bolsa Familia*, previously known as *Bolsa Escola*, is a conditional income transfer fund introduced and administered by the federal government. The scheme comprises food-stuff baskets or a monthly cash allowance as an incentive for low-income parents to send their kids to school.

level). This is evidence that borrowers used the money to produce a less profitable crop than coffee. It was thus found that the production of subsistence crops – but not for-profit crops – evolved favourably with the growth of PRONAF financing (as long as the expected yields from crops could be collected in the short to medium term, which is not always possible to predict due to risk of drought and crop failure), but there is little evidence that such advancements contributed to increased living conditions.

Regarding the policy variables, INCRA is highly significant for income growth, which is in accordance with the theory on property rights in that the provision of land title can lead to socioeconomic improvements (e.g. Miceli and Kieyah, 2003; Ho and Spoor, 2006). To the extent that the prospect of obtaining title through expropriation may lead squatters to invest in the occupied property, one would clearly expect output evolving positively as a result of land expropriations. Enhancing investments in productive assets could then, by augmenting the scope for trading production, result in an income rise. This apparently supports the notion that poverty alleviation is highly sensitive to state-led land reform, but the question is whether the squatters will afford investing. As for the influence of PCT on growth of income, it is found that the variable is statistically insignificant, whereby rendering land markets ineffective as a mainstay of settlers' income.

The regressions seem to bring forward, therefore, that higher incomes are more likely to surface as a result of INCRA than PCT. This pattern could be ascribed to the fact that the net income of INCRA settlers is presumably slightly higher than of PCT settlers, since in practice the former did not have to service the cost of repayments to loans, as opposed to the latter. It is also worthy of notice, however, that the random character of these two policies, as seen in the previous section, hinders a more accurate comparison between the two, and also because the parallel expropriatory method has been running much longer in the region than the market-based model. Further, as an indirect indicator of well-being, per capita incomes may not be capable of capturing sweeping dissimilarities between policy impacts on basic human conditions,¹⁶ from where results the problem of isolating the returns to settlers in the form of benefits that cannot be

¹⁶ According to the UN World Summit on Social Development held in Copenhagen in 1995, the condition of poverty depends not only on income but also on access to food, safe drinking water, sanitation facilities, health, housing, education and information.

measured in economic terms, such as increases in standards of living concerning education, health and life expectancy.

These patterns should be confirmed in the model testing for variations in the human development index (HDI). With an average of 1.21 in our sample, the descriptive statistics show that changes in the index pose virtually the same ratio as the rest of the region (the Northeast's increase is 1.22). However, the indicator ranges between 1.43 in Santo Antonio do Retiro (territory of Alto Rio Pardo) and 1.07 in Santo Amaro do Maranhao (Lençois Maranhenses), implying in broad sub-regional discrepancies. As a consequence, the elements predicting rural population's standard of living may vary from locality to locality.

Although HDI increases are not necessarily in line with a rise in income, government aid is a strong predictor of wellbeing, indicating that conditional cash transfers did figure high as a pro-growth policy even before 2000. This possibility seems absolutely plausible because, given the need for social protection in the region, land-poor households have always been dependent on the state for income. In addition, elements related to education are as expected. The coefficient on literacy (years of study), which is negative for income, is positive for HDI, i.e., there is some likelihood that, within any given rural locality it is indeed households with higher education – but not necessarily land reformsettlers – who are expected to obtain higher standards of living. Comparing this evidence to determinants of income (model 2) shows that, since changes in human development were difficult to measure with the data within reach of this study, as discussed earlier, it is not possible to specify whether the HDI has increased more in the decade than income. The coefficients of variation for the models express, however, that factors contributing to a higher HDI arguably increased in a steadier manner than increment in rural income.

In yet another comparison, models 2 and 3 present a quite similar behaviour with relation to the impact of the policy variables. That is to say, lack of satisfying results for PCT but quite reasonable results for INCRA as a predictor of HDI. This might owe to the fact that the traditional INCRA settlements are more widespread than PCT. In addition, Pearson correlations have revealed that INCRA interacts more with HDI indicators than PCT. Nevertheless, the often precarious and inchoate situation in land reform sites signal

that settlements of one type are not more likely to improve education and health indices than settlements of another type. Due to clear limitations of both mechanisms, particularly a lack of plan-led strategies characterising the absolute majority of land transactions and expropriations, PCT failed to bear fruit in ways that were significantly superior to what was accomplished by INCRA, and vice versa. In fact, all estimates on INCRA indicate that land reform via expropriation had little more than a marginal impact on households' welfare, and again perhaps because considerably more rural parishes were reached by INCRA than PCT.

In summary, the above empirical exercises unveil the limited influence of the reforms on the socioeconomic growth of the sampled areas. The expected welfare outcomes of a reform modelled on the theories of the market have not been confirmed, illustrating that security of land rights through land transactions are not necessarily a synonym for superior standards of living. On the other hand, the expropriation-distributing approach appears not to promote the level of on-site production capable of substantially reducing poverty and spurring growth outside the redistributed sites. As will be elaborated more closely later on, coordinated plan-led efforts towards cutting down constraints to social and economic upgrade are, therefore, needed to set forth a scenario of economic escalation in production, thence improving the well-being of those concerned across the region.

3.6 Conclusions

This chapter covered some of the determinants of socioeconomic growth in the Brazilian Northeast, and the impacts on that growth of two heterogeneous approaches to land reform policy. This was primarily an empirical study which sought to test whether various schemes of allocating holdings to those who are landless have resulted in socioeconomic growth of a region, as many analyses in the literature are rooted in the assumption that increased security of tenure leads almost invariably to development. The study was contingent on what data were available and these covered a considerable range of factors. It was found that both the market-based land transactions as well as the state-

led expropriations rendered results that not only were barely significant statistically but also in line with our predictions. That is, none of the schemes seemed to have yielded higher levels of farm output through increased access to title as predicted by the land titling theory, nor was there indication of settlers' progressing from subsistence farming to for-profit dealings that could be measured at the regional level.

On the other hand, it is suggested that the benefits of economic growth associated with promising welfare indicators are likely to be observed in localities where a given degree of per household income is obtained, so that possessing land is not the principal safety net. However, farming GDP itself does not seem to play a significant role because it is not economic growth as such that causes the HDI index to move up or down but the social status of the individuals taking advantage of productivity and the conditions of their plots which foster it. Accordingly, it becomes apparent that economic growth per offers no guarantee that the standard of living of settled families will progress, especially because serious blockages in the rural economy of the Northeast have been observed which not only preclude the benefits of land reform to the under-privileged but actually result in greater misery for many countryside communities.

By comparison, INCRA seems to have to some extent impacted the lives of rural dwellers but not the GDP, whereas the free-market approach does not appear to have clear pro-growth advantages. The fact that the variable for INCRA is significantly and positively correlated with income growth possibly owes to INCRA settlers not having to amortise land loans, as opposed to under PCT arrangements. Yet this is not to say that, rather than land market activity, it is the traditional administrative approach that drives the beneficial results in the region. In fact, there is very little likelihood an expropriation of land through INCRA or a PCT-induced transaction of land significantly improved the rural economy in the analysed timeframe. Where a relative increase in welfare indicators was possible, factors associated with government aid to low-income individuals, such as foodstuff baskets and cash transfer schemes, with the resulting amelioration of the situation of beneficiaries, played a greater part.

We found, however, a pronounced positive effect whereby areas with more rural credit assistance produced a higher GDP from the farming sector and vice versa (remarkably the coefficients are significant at the 1% level throughout). This clearly

indicates that land reform – whether market-driven or state-controlled – without sufficient capital investments attached to it cannot have a significant impact on the path of inclusive rural development. To the extent that the economic feasibility of settlements is assessed based on such assumption, a lack of proper investment, public or private, is likely to lead to sub-optimal outcomes regionwide. This could also have negative consequences for poverty alleviation purposes, a factor of critical importance for low-income families living and working in the rural world. The study thus points that factors limiting the performance of land reforms are insufficient farm-specific investments and lack of plan-led mechanisms to allocate public resources toward achieving higher and socially inclusive growth.

To summarise, comparing the performance of INCRA with that of PCT was of particular interest as to the extent to which the state should intervene in the land markets, permitting to implicitly investigate whether market-based land reform is consistently more pro-growth than state-led land reform. We found that, contrary to highly optimistic presuppositions about the effects of land title (Miceli et al, 2000; Miceli and Kieyah, 2003) land markets *do not* necessarily produce better socioeconomic outcomes than traditional instruments of land redistribution. Taking these results together indicates that, without losing sight of a clear need for improvements, abandoning the scope for state-led interventions could have losses so much on social as on economic fronts as greater benefits associated with the market-based approach are still to be seen, as easier access to land rights is a necessary but not sufficient condition for the rural poor to prosper socially and economically. Conversely, a land reform allowing the landless to take full advantage of subsidised funds could actually contribute to improving access to land rights on a larger scale.

Some questions may thus be asked: what kind of approach to land reform is more beneficial to poverty reduction and regional growth? What factors would contribute to the success (or failure) of such approach? Given our empirical results, we argue that answers to these questions imply that factors leading to implementing an efficient strategy at the regional level have to be identified. In the context of the Brazilian Northeast, we categorise these factors in two different levels: 1) factors related to the traditional expropriative mechanisms of land reallocation, which include the

identification of areas for land reallocation and public investments; and 2) factors associated with the market-assisted approach, which include attracting private capital in favour of the schemes. Once these factors are given full consideration, a greater number of settlers will see the prospect of having tenure security and higher income along with the possibility of effectively contributing to achieve regional prosperity.

Thus, urgent efforts are needed to bridge a perceived gap concerning the roles of regional planning in land reform. Possible routes may include policy engineering that addresses: 1. land redistribution – geographic assignment of available pockets of land that constitute economies of scale; 2. socioeconomic evaluation of the profile of the landless population and the segmentation of funds according to geographic location, markets and worker skills; 3. institutional reorganisation that requires regional and local dynamics; 4. financial and legal agreements; 5. new structure of deeds; 6. financial incentives for landowners as well as higher involvement of stakeholders in implementing land reforms. At the outset, plan-led policy efforts will be required that take in a different point of view and combine positive aspects of both market-based and state-led approaches towards eliminating long-standing hurdles to broader socioeconomic upgrades as the action result of land reform.

The evidence provided in this study contributes to the mainstream land reform literature, whilst bringing implications to the implementation of land reform policy in different ways. Firstly, our analyses demonstrate empirically that land markets do not necessarily work better than state-controlled reallocation of land to foster socioeconomic growth, and vice versa. Secondly, it is implied that in order to bring about a measurable positive change in regional growth, it would be more appropriate to deal with land reallocation from a regional perspective, rather than choosing between models of land reform based exclusively on local-level considerations. As a policy implication, the study suggests that securing positive socio-economic impacts across the region requires a plan-led methodology that is coordinated at the regional level, for which the role of regional planning is central.

CHAPTER IV

The Land Bill Programme: a baseline study of PCT settings

4.1 Introduction

As outlined in the first chapter, market-based schemes have been used, both internationally and in Brazil, to tackle the issue of land reform, with varying degrees of success or failure. Lessons therefore abound. For instance, in Kenya in the 1980s, land funds were strongly associated with land restitution and redistribution programmes, although the use of the funds was not followed by necessary support services (Hoogeveen and Kinsey, 2001). Land-related loans were also made available to disadvantaged rural groups in South Africa from 1995 to mitigate poverty and land concentration stemming from the apartheid regime, but the schemes were plagued with coordination inefficiencies between governmental agencies (Brink et al, 2005). Colombia became in 1994 the first Latin American country to make an option for loans-based reforms placing focus on transactions of land. It was also the first country to realise that high interest rates could lead to defaults in loan paybacks (Fajardo, 2002; Borras, 2005).

At the same time, part of the literature recognises a need for governments to act in tune with regional planning for a more efficient placement of land, which would require not only providing funds for land reallocations, but also designing plan-led actions that would benefit an entire region. For example, Marsden and colleagues (2004) urge governments to move away from a sectoral approach to land reform in direction to creating sub-regional policy networks. Dale (2000) believes that land reform schemes could be more effective with the use of decentralised planning processes, coupled with monitoring systems and coordination between government agencies. For Spencer (2007), governments should explore possibilities of central-local partnerships to provide infrastructure. Parnell (2004) focuses on the importance of developing organisational

interfaces between political and administrative functions to fight poverty. Building institutional capacity to conciliate renewable natural resources with rural poverty mitigation is the penchant of scholars such as Alston et al (2000), Barrett et al (2005), and Ikejiofor (2005). In a few words, these and other studies support the creation of collaborative frameworks of policy and action intent on obtaining sustainable land reform results. This chapter brings to light some of the problems deriving from not systematically using regional planning as a strategic governance tool in land reform policy-making.

As seen in the previous chapter, a government initiative known as Land Bill Programme (PCT) was established in the mid-1990s to fight rural poverty associated with landlessness in the Brazilian Northeast. Like in many other countries, the programme was designed to set up a fund for land purchases with the sole object to lower the costs to poor landless households of obtaining productive land. The expected regional impact of the policy was a substantial decrease in poverty in areas where the family-farm system prevailed. As we have previously seen, in any case, it remains disputed whether the market-based approach can be an effective substitute for the traditional expropriation mechanisms as a trigger of sustained socioeconomic growth in the region. With concrete examples from selected areas in receipt of the loans, we argue that the factors explaining a meagre impact of the PCT programme are not restricted to the economic viability of each individual site, but include lack of a suited space for plan-led conjunct actions as a means to propel broader regional development.

The following sections report the study of the quality of live in a sample of 11 municipalities hosting 13 land reform settlements, with fieldwork carried out between December 2008 and May 2009. Baseline evidence from a survey involving settlers and settlement leaders has been drawn together to identify the socioeconomic characteristics of the PCT population, as well as similarities and distinctions between settlements with respect to production, infrastructure and accessibility to basic goods and services. The purpose of the survey has been therefore to understand the extent to what settled families were positively affected by the Land Bill Programme and how this relates to the regional economy. The fieldwork was undertaken using both quantitative and qualitative research methods, as explained in detail in Chapter 1.

The methods involved surveying a representative sample of 260 rural households who received PCT loans in the period 1997-2002. Basically, the respondents were asked whether participating in the PCT programme resulted in a beneficial influence on their livelihood, specifically in terms of access to: (i) good quality land; (ii) basic services such as education and health facilities; (iii) adequate housing; (iv) enhanced ability to conduct profitable dealings; (v) higher household income. Insofar as the study's main goal was to unpack critical elements that could explain the socioeconomic performance of the sites, some interviews were made with settlement leaders focusing more tightly on the settlements' potential to carry out production (a) for the families' subsistence, (b) for sale in the market, and (c) to generate a surplus for productive investments. The availability of hard and soft infrastructure was also addressed in the interviews in connection with its role in the overall performance of the sites. These interviews as well the questionnaires resulted in a series of relevant qualitative and quantitative findings,¹⁷ which are discussed in the subsequent sections.

The qualitative analysis in this chapter looks exclusively at PCT settlements for several reasons: 1) Many studies have been made for INCRA already (e.g., Senior, 1970; Buainain et al, 2000; Neto, 2004; Heredia et al, 2002 and 2006; Sabourin, 2008), so that pursuing another similar study would most probably replicate past findings; 2) Since the state-led schemes have been in operation for much longer than the PCT (from circa the late 1960s), there are plenty of data of public domain on the impact of INCRA from official sources (mainly IBGE and IPEADATA), both quantitative and qualitative; 3) Those data and related information cover different regions of the country, including the Northeastern states where the PCT was introduced; 4) Just about every trait of the scheme has been addressed in the literature on INCRA, including the quality of expropriated lands, the range of infrastructure on the sites, settlers' standard of life and settlements' economic performance, which allow for a comparison between approaches without resorting to primary data on INCRA; 5) On the other hand, the literature available to date on the impact of PCT is scarce, the results preliminary, and the analyses mostly

¹⁷ The results were supplemented with data from an expanded census conducted by the Brazilian Institute for Geography and Statistics (IBGE).

ideological in nature (Domingos, 2002; Borras, 2003; Pereira, 2007), which calls for further examination of the scheme.

The remainder of this chapter is organised as follows. Section 4.2 delineates a profile of the PCT population as well as the redistributed plots. Sections 4.3 and 4.4 then use the results from the surveys to identify both the status of economic activities on PCT settlements and the living standard of settled families. Section 4.5 provides a synthetic comparison of the results from the surveyed sites with broader regional indicators. Finally, section 4.6 presents our concluding remarks.

4.2 Access to land under the Land Bill Programme

For most of the rural communities in the Brazilian Northeast, land is the foremost means for securing a livelihood, as owning a plot of land could make rural residents less dependant upon wage labour, thereby reducing their susceptibility to unemployment. Moreover, rural poverty and inequality in distribution of arable land have been closely linked in the region. In view of these facts, we hereafter examine the impacts of the Land Bill Programme on settlers' livelihood through a baseline study of selected areas of the Northeast, as presented in Table 4.1 ahead. These are areas that represent the multiple dimensions of the socioeconomic potential of the Brazilian Northeast. The settlements could be compared in several respects allowing for a unique perspective on the socioeconomic status of borrowers. For instance, all surveyed sites were created between 1997-99 so that they had existed for at least 10 years. Likewise, the location of the chosen settings in relation to roads, distance from them to market centres along with the availability of natural resources closely reflects the situation of PCT sites in the Northeast region as a whole.

Table 4.1: Sample of PCT settlements

State / PCT sites	Municipality	Territory	Agro-climatic zone	Area (ha)	Settled families
Maranhao					
Vila Castro Gomes	<i>Arame</i>	<i>Cocais</i>	<i>Transitional</i>	<i>1,851</i>	<i>48</i>
Vale do Barbosa	<i>Grajau</i>	<i>Cocais</i>	<i>Transitional</i>	<i>1,700</i>	<i>42</i>
Ceara					
Barra Bom Tempo	<i>Crateus</i>	<i>Inhamuns Crateus</i>	<i>Semi-arid</i>	<i>640</i>	<i>12</i>
Lagoa	<i>Crateus</i>	<i>Inhamuns Crateus</i>	<i>Semi-arid</i>	<i>1,000</i>	<i>10</i>
Santo Amaro	<i>Crateus</i>	<i>Inhamuns Crateus</i>	<i>Semi-arid</i>	<i>1,669</i>	<i>27</i>
Pernambuco					
Nossa Sra de Fátima	<i>Bezerros</i>	<i>Agreste Central</i>	<i>Transitional</i>	<i>762</i>	<i>6</i>
Engenho Coepe	<i>São Lourenco</i>	<i>Zona da Mata</i>	<i>Rainforest</i>	<i>504</i>	<i>24</i>
Engenho Cana Verde	<i>Barra Guabiraba</i>	<i>Agreste</i>	<i>Transitional</i>	<i>987</i>	<i>47</i>
Fazenda Dois Braços	<i>Bonito</i>	<i>Mata Sul</i>	<i>Rainforest</i>	<i>680</i>	<i>9</i>
Bahia					
Novo Horizonte	<i>Guaratinga</i>	<i>Litoral Sul</i>	<i>Rainforest</i>	<i>1,181</i>	<i>49</i>
Fazenda Sao Geraldo	<i>Itanhem</i>	<i>Litoral Sul</i>	<i>Transitional</i>	<i>1,187</i>	<i>69</i>
Minas Gerais					
Amaralina	<i>Joaima</i>	<i>Jequitinhonha</i>	<i>Semi-arid</i>	<i>557</i>	<i>33</i>
Duas Barras	<i>Padre Paraíso</i>	<i>Jequitinhonha</i>	<i>Semi-arid</i>	<i>466</i>	<i>25</i>

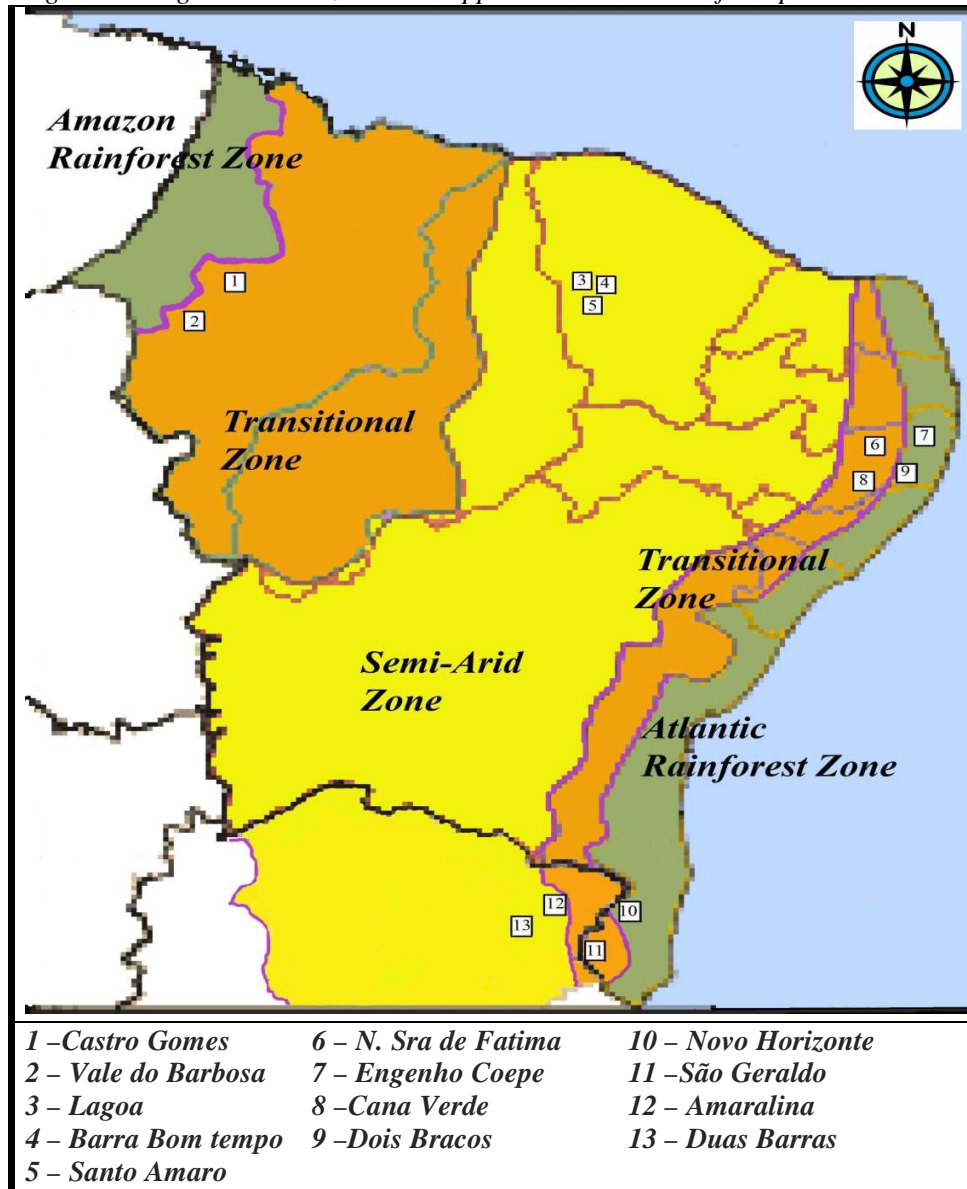
Source: 2008/2009 author's on-site field work

Moreover, in selecting the sites it was taken into account that the Land Bill Programme was designed to be able to operate in similar manners in a diversity of geographic contexts. Consequently, our sample of sites comprised:

- Geographical areas with climate, soil types and vegetation representative of the majority of family-farm sites in the Northeast;
- A range of natural resources that include major rivers such as the Jequitinhonha River (in the semi-arid), the Barbosa River (transitional zone) and Una River (rainforest zone), with strong influence on cropping;
- A range of agricultural activities (for subsistence or profit) as well as livestock production that were also found in most areas of the region;

- Differences in access to infrastructure and services, as well as in distance to urban areas and key markets.

Figure 4.1: Agro-climatic zones and approximate location of sampled settlements



As depicted in Figure 4.1 above, our sample covers three main agro-climatic zones representative of the broader Northeast region. The *semi-arid* comprehends dry areas in the interior of the Northeast (known as the *Sertao Nordestino*), where natural resources are generally very scarce; the rainforest zone (*Zona da Mata*) comprises areas

within the Atlantic rainforest along the east coast where main capital cities are located and with in general better soil and rainfall conditions; and the transitional zones (*Agreste* and *Mata de Cocais*) between the rainforest zones and the semi-arid, where drought risk is moderate and native vegetation is less abundant. Besides, the Figure reflects a general tendency of PCT sites to be concentrated on (or close to) transitional or rainforest zones. In due course, the mix in the sample serves the purpose of inquiring the extent to which the characteristics of a given area can be a component of consequence in a plan-led distribution of rural settlements under land reform schemes.

The Land Bill Programme was designed to be complementary to conventional INCRA instruments of land redistribution. As such, rural estates larger than 15 fiscal modules¹⁸ are subject to expropriation in compliance with Brazilian law and could not be negotiated according to the PCT framework. Actually, in the majority of instances the quotas distributed under the pilot scheme wound up of a modest size, averaging approximately 26 hectares per family (the distribution is centralised at the median value of 24). The total average area in our sampled settlements' was 1,014 hectares, whereas the mean value for a plot was 34.4 hectares. However, there were 290 plots out of 452 in which the size stood below the minimum value of 30 hectares as recommended by the National Institute of Colonisation and Agrarian Reform for the Northeast region (the smallest plot has 14 hectares). Still, there were 162 plots with a surface area above the minimum value. These were settlements mainly located in the rural territories of Cocais, Mata Sul and Inhamuns Crateus. In sum, 64% of the plots in our sample had less than 30 hectares, which was below traditional INCRA standards for land redistribution in terms of sub-regional extent, showing that the mean size of a typical PCT plot is smaller than the surface area of an average family farm in the Northeast. In addition to that, just under 80% of the land could be put in agricultural use whereas the remaining unfarmed part should be left covered by native vegetation in compliance with an applicable Federal law requiring that legal reserves must be set aside for permanent preservation of native plant species and animals.

¹⁸ A fiscal module is the minimum size of a landholding deemed necessary to support a family. The size of a fiscal module is established by the federal government in hectares, and may vary across municipalities and regions due to varying agro-climatic conditions. In the Northeast a fiscal module ranges from 30 to 90 hectares.

Notwithstanding plot size had little implication with regard to economic performance and the standard of living of settlers. Duas Barras, for example, was the smallest of the surveyed sites but, as we will see ahead, one of the most prosperous in many aspects. Other elements such as the quality of the plots, location and infrastructure should, therefore, be taken into account. Overall, the below average quality of properties acquired under the programme could be explained by the following factors: 1) scarcity of arable land due to agro-climatic conditions, which constrained farm expansion; 2) the relatively small amount of money put into the transactions; 3) the fact that extensive tracts of land were already controlled by large commercial farmers not willing to sell their properties; 4) inability of institutional structures (land reform agencies and PCT associations alike) to attract high-quality land to the programme; 5) lack of plan-led coordination between the federal government and regional and local units involving the selection of areas for implementation of the policy.

With respect to number of households per site, we noticed that most settlements fall into two categories: those between 6 and 27 households and those with the total number of households ranging from 33 to 69 families. In average, PCT settlements in our sample accommodated 39 families, although the number ranges from 6 (Nossa Senhora de Fatima) to 69 (Fazenda Sao Geraldo). One of the problems entailing settlement extent, as mentioned above, was that small properties limited the number of families participating per site. In practise, the total number of families in a project bounded the size of the SAT/SIC package granted for land purchase and communal on-farm investments, thus restraining the scope of the programme itself. We saw indications, however, that some PCT associations recruited a greater number of families as a means to become entitled to proportionately bigger funds. Since the maximum loans package per family, as mentioned earlier, was U\$11,200 (plus U\$440 for settling expenses), a higher value would have allowed for acquisition of greater areas, depending naturally upon the land's price, or the amount necessary for farm-related investments. Table 4.2 provides insight into how the interviewed settlers assessed their allotment in terms of price and a range of other aspects.

Table 4.2: Settlers' own assessment of purchased plots

	<i>Frequency</i>		<i>Frequency</i>
Plot's location		Plot's price	
<i>Good</i>	30%	<i>Cheap</i>	18%
<i>Average</i>	41%	<i>Fair</i>	52%
<i>Bad</i>	29%	<i>Expensive</i>	28%
Plot's size		Plot's overall quality	
<i>Large/enough</i>	2%	<i>Good</i>	67%
<i>Medium/just fair</i>	62%	<i>Average</i>	28%
<i>Small/ not enough</i>	36%	<i>Bad</i>	2%
Plot's adequacy for farming		Overall assessment of PCT	
<i>Good</i>	64%	<i>Very good</i>	27%
<i>Average</i>	32%	<i>Good</i>	67%
<i>Bad</i>	10%	<i>Bad</i>	4%
		<i>Very bad</i>	1%

Source: 2008/2009 author's on-site fieldwork

In terms of price paid for the plots, their location and size, the overall assessment was satisfactory, yet the most popular complaint was that the settlement was not adequate for farming, particularly in the sense that the land transfers were not attached to the means necessary to create surpluses that enabled households to upgrade their standard of life. A word must be said however on the way the plots were allocated, as some association headmen took advantage of the peasantry's complete lack of bargaining experience to entice them into accepting low-price plots. This fact could be connected to some episodes of corruption and mismanagement of PCT funds involving transactions of land under the programme. We estimate that 73% of the PCT beneficiaries we interviewed, which is equivalent to approximately 170 households, had very little or no participation in the land purchasing process, whilst only 19% played some part in the selection of the land. The reasons leading to this situation are complex yet mostly endogenous to the structure of governance of PCT, which left the task of negotiating directly with landowners almost entirely to the associations. The fact is that, by agreeing to pay lower prices for the land, the settlers were expecting higher economic returns (i.e. higher agricultural profits). In many cases, nevertheless, the plots purchased under such

circumstances were actually unproductive property, whilst reasonably good lands turned out concentrated in the hands of leaders. This was always conducive to lower levels of activity, due to an inequitable distribution of resources.

In some visited areas in the rainforest zones, a number of properties were brought to the land market for speculative purposes. That is, landholders produced an artificial scarcity of land whilst the demand for land due to the programme was high, what contributed to inflate lands' price. Rural properties in the semi-arid and transitional zones, on their turn, have been evaluated considering the availability of water under the surface soil or the property's suitability to install irrigation systems. Particularly in the semi-arid, extensive tracts of unproductive land were put on sale at lower prices by landowners who were interested in getting some money out of the government's Programme. Further, the possibility of land occupancy by members of the Landless Workers Movement (MST) – and the resulting expropriation by the state – actually reduced the attractiveness of many properties for investments in productive activities. An expansion in the supply of land was in fact observed in conflict-driven areas thus reducing its price. Nevertheless, according to a key informant at the Ministry of Agrarian Development (MDA), recent evaluations by local real estate experts in all five states showed that whilst it may be true that PCT transactions exerted some pressure on land prices in adjacent countryside areas, those transactions have not affected land markets at a regional scale, denoting that the programme was limited in scope compared to the amount of lands expropriated in those states.

The programme targeted rural workers, or at least people with some experience in farming. Additionally, the PCT leaned towards a category of heads of households who were unable to find a job in the agricultural sector, or because they did not have land of their own to cultivate and feed their family and migration to urban settings became a natural consequence. In order to verify whether settlers in our sample matches the government's target population, we have traced a basic profile of the participants' occupation prior to enrolling in the programme, as well as their profile after enrolment, with results presented in Table 4.3. Knowledge of these aspects is essential to understand, in the analyses ahead, why some settlers expressed a positive view of their income status, in spite of poverty and slow socioeconomic growth on the sites.

Table 4.3: Settlers' basic profile

Former local of residence	<i>Frequency</i>	Past occupations	<i>Frequency</i>
<i>Same land</i>	9%	<i>Urban wage labour</i>	9%
<i>Same locality/town</i>	29%	<i>Rural wage labour</i>	38%
<i>Nearby locality/town</i>	42%	<i>Temporary urban labour</i>	1%
<i>Locality off by more than 100km</i>	16%	<i>Temporary rural labour</i>	18%
<i>Different state</i>	4%	<i>Domestic duties (servant maid)</i>	2%
		<i>Agriculture/livestock grazing</i>	29%
Reason to join PCT		<i>Student</i>	2%
<i>Own initiative</i>	34%	<i>Small business owner</i>	1%
<i>Initiative by relative or friend</i>	43%	<i>Unemployed</i>	1%
<i>Initiative by social movement</i>	21%	<i>Other</i>	1%
<i>Other</i>	2%		
		Current occupations	
A social movement activist?		<i>Urban wage labour</i>	2%
<i>Yes</i>	17%	<i>Rural wage labour</i>	4%
<i>No</i>	82%	<i>Temporary urban labour</i>	1%
		<i>Temporary rural labour</i>	2%
Schooling level		<i>Domestic duties (servant/ maid)</i>	1%
<i>Illiterate</i>	53%	<i>Agriculture/livestock grazing</i>	92%
<i>Semiliterate</i>	7%	<i>Small business owner</i>	1%
<i>Attended elementary school</i>	21%	<i>Student</i>	1%
<i>Attended fundamental school</i>	12%	<i>Other</i>	1%
<i>Attended high school</i>	4%		
<i>Attended technical school</i>	0%	Kids attend school?	
<i>Attended university</i>	1%	<i>Yes</i>	71%
		<i>No</i>	29%

Source: 2008/2009 author's on-site fieldwork

The results in the Table demonstrate that programme beneficiaries within our surveyed area involved groups from different neighbouring and distant municipalities, from various walks of life and different levels of farming experience. However, a typical settler in our sample was one that had previously been a rural labourer working on a salary basis in some nearby location. As a matter of fact, most associations were created under the programme with the expectation that the properties would be purchased in areas situated in proximity to beneficiaries' home or at least in the same rural locality. This was a logical claim for the aspiring beneficiaries because remaining in their place of origin would help preserve the social structure involving the rural populations, whilst

preventing the relocation of families to remote areas. As much as these respondents expressed a preference for settings close to where they lived, it is worthwhile remarking that the prospect of receiving title probably played a more significant role in the decision to join the programme than distance from their previous residence.

Our evaluation of the sites showed that prior to joining the programme a relatively small minority of beneficiary families already lived on the land. These were members of organised groups who had occupied the property and subsequently decided to join the programme to receive title. Others previously lived in close countryside areas, whereas the larger group came from a neighbouring town. Another small category was constituted of former residents of more distant municipalities or even a different state. It was clear for that matter that some of the participants were willing to move over large distances for the sake of title. On the other hand, 34% said that joining the programme was their own initiative, 43% said to have followed the advice of some relative or friend (their acquaintances were rural workers on the same location or close farms) and 21% said it was the wrap-up of their engagement in a social movement. By and large, there were two main reasons leading these people to apply for PCT funds: either because they became aware that there were almost no alternative options following the scarcity of work in nearby commercial farms, or otherwise because they believed the government would eventually expropriate the property and grant them the land title anyway without them having to pay off the loans.

Occupational status was another important factor analysed in our area based study. The vast majority of plots were distributed amongst individuals with a certain amount of experience in rural activities. Very few respondents were acquainted with any sort of collective landownership (whether rural or urban). Some of them had quit farming due to age, health problems, debts owing to previous land credit programmes, or because of losses due to droughts and crop failures. We also found that almost 85% of the participating families had already worked on rural areas, 10% in urban areas and the remaining 5% were students, unemployed or had other occupations. These percentages refer to the last activity before entering the PCT, so we are not assuming that those who declared to perform urban activities had no qualification for agriculture. In summary, the majority of beneficiaries previously worked on rural areas, but a relevant part had more

connections with close urban centres than with the rural ambiance. Moreover, as other studies have demonstrated (Silva and Del Grossi, 2001; Bergamasco and Norder, 2003; Leite et al, 2004), the population involved in land reform (market-led or not) has been heterogeneous and do not always fit in the category of poor rural population. In fact, some rural residents acquired plots as a means to complement their income from work on other farms or in adjacent towns.

Whatever the case, these former urban workers or farmhands had become small producers on own land, growing field crops, and/or raising livestock or poultry, although most of them turned out practicing meagre subsistence farming. Indeed, the vast majority (92%) of those we interviewed indicated to carry out agriculture or livestock-related activities. For analytical purposes, we divided these individuals in two large groups: small farm-owners and non-owners workers. The first group (86%) was composed of full time self-employed rural producers that work on a family-farm basis – along with spouse and children – on their parcels of the distributed land, awaiting the final transfer of title. Individuals in the other group (6%) were rural labourers performing secondary tasks on someone else's land on a salary basis. A few occupations were nevertheless identified amidst sitting families other than just farming or ranching. These activities were generally referred to as *bico* (casual work or odd jobs) inside and outside the settlements. Moreover, our sample evidenced a small record (7%) of sitting beneficiaries who admitted performing some kind of urban activity, and some of these were students.

In general, respondents declared not being engaged in one of those peasant movements that can be traced to the numerous land invasions occurring in various parts of the Northeast throughout the last decades which involved landless workers, big farmers, and elements of the Landless Workers Movement (MST). Less than one-fifth of the settlers we interviewed admitted active involvement in these movements. They claimed instead that their demands are focused on better infrastructure for agricultural production, better schools and sanitary conditions for their family, and increasing personal income. This is a somewhat surprising result, as the region has a history of fierce opposition to the market-based approach from grass-roots movements backing traditional reform agendas in the area of land redistribution. However, many participants expressing their concerns about the programme believed that becoming an MST activist

could be a more effective tool to come into possession of good land.

It is worth mentioning that although quite a few of the respondents admitted openly to having a will to vacate the site in the future, that was more due to legal prohibitions against transferring the plots (and loan obligations attached to them) to someone else than their contentment with life in the project. Nevertheless, many PCT settings were found practically deserted by the time the field-based research took place.¹⁹ Almost half of settlers on Engenho Coepe, for instance, spent most of their time in an adjacent town named Sao Lourenco da Mata, where they had much easier access to public services, education and leisure. A quite similar story was told by one anonymous settler on Engenho Cana Verde,²⁰ who disclosed that the president of the PCT association happened to own a house in town and would come to look over their plots during the weekends. Despite the government's intent of settling people on land, the living patterns of beneficiaries in these areas remained commensurate with those of Zona da Mata's rural workers who constantly commuted between old sugar mills and suburban areas of adjacent towns where they lived (Garcia, 2002).

Also on PCT Santo Amaro, families were less than optimistic that the Land Bill Programme would generate a lasting positive impact on their lives, and started a movement back to their original towns.

*“We understand that the government wanted to help us, and provide the means to make this land a place of profit, but we don't have an option. We wish we could stay and work the land and sell our produce, because we are poor and have nothing”, said a settler in Santo Amaro.*²¹

¹⁹ Examples of completely abandoned settlements include Garrafao, Nova Terra and Lagoa do Gato, in the state of Maranhao, Canavieiras, in the state of Bahia, and Vale Verde, Tamboril da Esperanca and Maravilha, in the state of Minas Gerais. In other cases, contact with the settlers was difficult because plots were scattered and households were used to spending a big part of their time performing off-farm duties.

²⁰ Interview carried out in PCT Engenho Cana Verde, municipality of Barra de Guabiraba in December, 2008.

²¹ Interview carried out in PCT Santo Amaro, municipality of Crateus, in November, 2008.

Landowners were unenthusiastic about the programme as well, and some turned nervous in interviews when the issue of impending land invasions was discussed. They were straightforward uttering about the poor security of their properties and were apparently worried about it. This came as no surprise inasmuch as organised groups of squatters were invading large farms in surrounding areas with, in many cases, the support of left-wing political parties. An important fact to be noted is that not all the invaded properties fully met the legal criteria for land expropriation, i.e. large pockets of land at least 80% of which are in unproductive use. Notwithstanding, as aforementioned, these properties were not negotiated under the scheme since the owners saw little incentive to sell them. One landowner suggested that the programme would be particularly useful if it led to the development of a greater area than just the immediate site area, because “in the future that would increase the value of my properties as well. If I only knew that would be the case I’d be happy to sell part of the property.” Another landowner perspective was that the impact of the programme could be greater than just increasing lands’ value, having also a positive impact on the security of their property. “If the policy worked, we wouldn’t need to be afraid of land invasions anymore.”²²

During the survey settlers were inquired about how essential possessing land is for them. Land rights were all-important not only for settlers’ prospects for wealth creation but also for serving as a means of recognition as members of the rural society. The proportion of these families who have a provisional title was predominant, representing 43% of the interviewed population. 21% declared having the definitive title already, whereas 34% of the survey respondents just did not know. Yet even the respondents who have title did not regard themselves as having a higher degree of tenure security than families that received land through expropriation mechanisms. Those who answered the questionnaires were also asked about the role of PCT in improving their situation. The dominant response (by 68% of those surveyed) was that just possessing a piece of land was not enough to make their lives better (only four percent answered that their lives became much better) with perhaps as many pointing out that they found themselves forced to look for jobs in nearby towns due to inadequate infrastructure and sometimes scarcity of natural resources in the settlements.

²² Interviews carried out in two farms located in the countryside area of Crateus, in November, 2008.

By the same token, beneficiary failure to upgrade their condition (and ultimate desertion) could indeed be associated to a lack of financial sustainability in many settlements, that is, insufficient resources to invest in infrastructure and productive dealings. In the next section we will address the relationship between level of production and quality of life in PCT sites.

4.3 Agriculture and livestock production on PCT settlements

According to the PCT framework, settlers' associations that successfully completed a land transaction with SAT funds would become qualified to apply for complementary SIC start-up loans, in order to establish the settlement and initiate production. Whilst SIC funding was not enough to take forward an autonomous agricultural undertaking, PRONAF financing was an additional credit line accessible to households that worked on a family farm regime.²³ Prospect SIC and PRONAF borrowers should draw up proposals for productive investments on the purchased plots (basic services, infrastructure and inputs) and submit them to a state land agency, including an outline of their demands for technical assistance and specialised training tailored according to the settlement's productive activities.

These second-round funds should primarily be committed to preparing the land and amplifying the fields for cultivation of perennial crops, as well as for improvements in livestock production. In addition, up to eight percent of the SIC loans could have been utilised for technical assistance. Part of the funds could also be used to build basic infrastructure and agro-processing facilities, as well as for the purchase of farm vehicles for communal use. The status of production activities on the surveyed sites, however, did not go well about reflecting the programme's goals, as indicated in Table 4.4.

²³ Past studies undertaken on the Northeast of Brazil (Buainain et al, 2000; Ferreira, 2001; Domingos, 2002) have demonstrated that the family-farm system is more productive than large landowner farms, thus evidencing that the unequal land distribution restrains productivity and employment.

Table 4.4: Composition of PCT settlers' farming activities

	Frequency	Notes
Effective use of the plot		
<i>Extensively used</i>	20%	for crop fields, pastures, and/or dwelling
<i>Partially used</i>	60%	
<i>Idle</i>	20%	
Main farming activities		
<i>Temporary cropping</i>	78%	beans 85%; corn and cassava 69%; coffee 15%
<i>Permanent cropping</i>	25%	
<i>Livestock</i>	65%	average herd size = 7 head
Secondary farming activities		
<i>Agro-processing</i>	28%	mostly to produce flour
<i>Horticulture</i>	12%	mostly pumpkin and okra
<i>Silviculture/forestry</i>	4%	timber or firewood extraction
Type of farming		
<i>Collective</i>	24%	basically through cooperatives
<i>Individual/family operated</i>	76%	
Main techniques		
<i>Use of own seeds</i>	53%	except seeds provided by the cooperative
<i>Use of pesticides</i>	17%	
<i>Use of fertilisers</i>	19 %	mostly inorganic
<i>Use of herd vaccines</i>	46%	for bovine herd only
Technical assistance from government		
<i>Enough</i>	0%	visits by agents not frequent
<i>Some, not enough</i>	46%	
<i>Lacking</i>	54%	
Farm machinery/ implements		
<i>Farm tractors</i>	32%	mostly borrowed or rented
<i>Irrigation schemes</i>	15%	mostly through piped networks
Access to rural credit		
<i>PRONAF</i>	50%	mostly small amounts
<i>Other</i>	1%	not specified

Sources: Ministry of Agrarian Development and 2008/2009 author's on-site fieldwork

A prominent aspect to be stressed in our study, however, is that the bulk of acquired plots (about 60%) were only partly cultivated. Not more than 20% were cultivated in an intensive manner, and almost 20% of the plots were not in use. Little mechanisation of vegetable crops was observed and, except for a few agricultural items, on-site cropping did not imply economies of scale. The prevailing activity was restricted

to cultivating crops on which settlers depended for livelihood including tropical fruits and vegetables. With an eye toward what the settlers' family would need during the coming few months, commercial farming occupied a small part of their activities. In general, agricultural production was carried out in tandem with raising animals (chicken, pigs, cattle and goats) for food and, exceptionally, profit. This evidence is consistent with the intense risk of draught in the areas. That is, granting that there would be enough forage for the animals, the activity presented lower risk than planting vegetable crops. However, grazing and ranching were also for the families' subsistence, counting on small herds of cattle, goats, donkeys or mules.

Also, the SIC/SAT package could not afford capital infrastructure improvements due to an upper limit of US\$11,200 per beneficiary. Start-up expenses were to be "capped" at that ceiling value as well, and just covered expenses incurred in preparatory arrangements, such as clearing livestock fields or building fences plus an initial set of supplies for production. Since they were operating with little to no surplus to accommodate economies of scale without the risk of losing the land, there was less than sufficient investment by households from their own income and (according to the table above) about half of the families applied for PRONAF. However, PRONAF funding was also limited due to the families' low capacity to make room for extra loan obligations in the budget. The end result is the funds being focused on the purchase of basic items of infrastructure and a certain amount of hands-on technical assistance in order to overcome, to a certain degree, the limitations of the programme's loan package.

In reality, settlers in our sample blamed the insufficiency of technical assistance coordinated by state land agencies for what they called "unsurmountable difficulties" they were going through, and many found that some sort of training would have been a decisive factor, particularly because in the stunning majority of instances they had never been land reform settlers. The service was undoubtedly rare (46%) or wholly absent (54%), yet their inability to cope with large-scale farming was also connected to the fact of them not being farmers at the time of joining the programme, albeit being part of a rural population that had undertaken services in a farm. It should be noted that very few PCT associations used the funds to establish agriculture cooperatives of small producers that might have enabled collective undertakings involving production and opportunities

to sell their produces (as seen from the Table, less than one-fourth of settlers were able to produce collectively).

This was the case in Duas Barras, Fazenda Dois Bracos and Fazenda Sao Geraldo, where establishing cooperatives benefited agricultural activities on the sites in a number of ways. A headman interviewed in Duas Barras, for instance, argued that family farms were too small (17 hectares in average) to justify the acquisition of a tractor or any other type of heavy farm machinery for use on a single plot. According to him, amounts of land larger than a 17ha plot were required for paths and roads since the settlement's physical access was in critical condition adding to the time needed to get to markets. He added that individual settlers on the site did not possess the means of transportation indispensable for delivering their produce even into Padre Paraíso (the nearest town) and their plots were insufficiently mechanised. "The cooperative provided cheap solutions to our problems here on the settlement", said the interviewee.²⁴

The supply of inputs which agricultural activity require in the form of vegetable seeds or seedlings was within reach in different amounts across the visited settings, although the majority of settlers used part of their start-up funds to buy seeds. Fertilisers, pesticides and other agricultural chemicals, as well as farming apparatuses and machinery, were being used without technical support. Mechanised self-cultivation was nearly absent, providing further indication of the unfeasibility of the settlements for large-scale agriculture. Similarly, the minority (32%) of settlements had tractors or other motor vehicles suitable for farming applications, so they deployed workable animals as mules and oxen to do the hard tasks. Irrigation supplies were also precarious or completely neglected in the majority of settlements. Agribusiness in the visited sites was thus distinguished by slow technological advancements.

Features such as road accessibility and proximity to a marketplace were seen as preconditions for the commercialisation of produces. Notwithstanding physical access was, as a rule, so precarious in many sites that row crop tractors would sometimes be used to transport harvested crops to town markets in the rainy season. Table 4.5 allows insights into the quality of main roads serving the sites in our sample. The table includes only roads with some accessibility by settlers established in the area. As suggested from

²⁴ Interview carried out in PCT Duas Barras, municipality of Padre Paraíso, in January, 2009.

the table, the dubious condition of these roads imposed constraints to growth in the settlements due to costs of transport that were heavy to bear.

Table 4.5: Quality of main roads in the sampled areas

<i>State</i>	<i>Road name</i>	<i>Road type</i>	<i>Municipalities served</i>	<i>2009 situation</i>
Maranhao	BR-226	Interstate highway	Grajau	Average
	BR-222	Interstate highway	Arame	Average
	MA-006	State road	Arame; Grajau	Very bad
	MA-379	State road	Arame	Very bad
Ceara	BR-226	Interstate highway	Crateus	Bad
	BR-403	Federal road	Crateus	Average
	BR-404	Interstate highway	Crateus	Bad
	CE-187	State road	Crateus	Bad
Pernambuco	BR-232	Federal road	Bezerros; Bonito; Barra de Guabiraba	Good
	BR-408	Interstate highway	Sao Lourenco da Mata	Average
	BR-104	Interstate highway	Bonito	Average
	PE-097	State road	Bezerros	Very bad
	PE-103	State road	Bonito; Barra de Guabiraba	Average
	PE-085	State road	Barra de Guabiraba	Bad
	PE-040	State road	Sao Lourenco da Mata	Very bad
Bahia	BR-101	Interstate highway	Itanhem; Guaratinga	Average
	BR-418	Interstate highway	Itanhem	Average
	BA-290	State road	Itanhem	Bad
	BA-283	State road	Guaratinga	Bad
Minas Gerais	BR-116	Interstate highway	Padre Paraíso	Good
	BR-367	Interstate highway	Padre Paraíso; Joima	Average
	MG-105	State road	Joima	Very bad
	MG-342	State road	Padre Paraíso	Very bad

Source: Brazilian Transports Confederation (CNT).

Distance was also seen as a physical exclusion barrier for the overriding majority of families we interviewed. All sites in the sample were rural, with perhaps the sole exception of Engenho Cana Verde, whose short distance from Barra de Guabiraba's city centre (less than 5km) may assign it the category of peri-urban. According to Table 4.6 ahead, only about one-third of the settlements were simultaneously situated within a short distance of marketplaces and counting on roads of acceptable quality (up to an hour ride

on paved or partially paved roads). PCT Engenho Coepe, despite being situated in the rich Atlantic Rainforest zone, was by far the worst-case scenario. An interviewee in that settlement reported that transportation costs absorbed an astounding 80 percent of the settlers' revenue from agriculture.²⁵ Undoubtedly, the commercialisation of PCT produces faced serious impediments as a result of the difficulties highlighted above, with the few exceptions of settlements cultivating higher-value crops, such as coffee in Duas Barras and Fazenda Sao Geraldo. At least in these two cases, the perceived strategy was to use the agricultural profits to expand and consolidate production activities according to the characteristics of their allotments.

To summarise, with quite a few exceptions, the PCT settlements we visited had the following aspects in common: the associations had not managed to establish a strategy: (i) to increase on-farm production beyond the subsistence level; (ii) to generate enough surpluses to secure productive investments;²⁶ and (iii) to consolidate the family farm system as a successful mechanism for poverty alleviation. The following table provides a synopsis of the productive activities in our sample of sites. Taking a rather cautious approach to avoid underestimating the potentialities of the market-driven scheme, it can be argued that further economic activity needed be generated within rural settlements that could result in adequacy of income, thus adding to the socioeconomic status of sitting families, as assessed in the next section.

²⁵ Interview carried out in PCT Engenho Coepe, municipality of Sao Lourenco da Mata, in November, 2008.

²⁶ There are reports from the literature supporting the notion of property rights as an incentive to invest. For instance, De Soto (2000) noted that in Latin American countries investment in land grows considerably when occupants obtain accredited title to the land.

Table 4.6: Characteristics of settlement production in the sample

	Barra Bom Tempo	Lagoa	Santo Amaro	Fazenda Dois Braços	Engenho Cana Verde	Engenho Coepe	Nossa Sra de Fátima
Main crops	<i>beans/ corn/ palm cactus</i>	<i>corn/ beans/ cassava</i>	<i>cassava/ corn/ palm cactus</i>	<i>cassava/ beans/ corn/ banana</i>	<i>cassava/ corn/ banana</i>	<i>cassava/ potato/ beans</i>	<i>corn/ beans/ palm cactus</i>
Other activities	<i>animal rearing</i>	<i>livestock grazing</i>	<i>not informed</i>	<i>livestock grazing</i>	<i>animal rearing</i>	<i>animal rearing</i>	<i>animal rearing</i>
Share of outputs sold within settlement	<i>about half</i>	<i>little</i>	<i>little</i>	<i>little</i>	<i>little</i>	<i>little</i>	<i>little</i>
Share of outputs sold in next town	<i>about half</i>	<i>all/ almost all</i>	<i>none/ close to none</i>	<i>about half</i>	<i>about half</i>	<i>little</i>	<i>all/almost all</i>
Share of outputs sold in distant localities	<i>little</i>	<i>none/ close to none</i>	<i>little</i>	<i>about half</i>	<i>little</i>	<i>little</i>	<i>none/ close to none</i>
Share of outputs sold through a cooperative	<i>none/ close to none</i>	<i>none/ close to none</i>	<i>none/ close to none</i>	<i>all/ almost all</i>	<i>none/ close to none</i>	<i>none/ close to none</i>	<i>none/ close to none</i>
Share of outputs sold to major industries or shop chains	<i>little</i>	<i>little</i>	<i>none/ close to none</i>	<i>about half</i>	<i>none/ close to none</i>	<i>none/ close to none</i>	<i>little</i>
Road access to markets	<i>unpaved road</i>	<i>partially paved road</i>	<i>unpaved road</i>	<i>partially paved road</i>	<i>paved road</i>	<i>unpaved road</i>	<i>unpaved road</i>
Time to nearest marketplace	<i>up to one hour</i>	<i>less than ½ hour</i>	<i>over one hour</i>	<i>up to one hour</i>	<i>less than ½ hour</i>	<i>over one hour</i>	<i>less than ½ hour</i>
Carrying capacity	<i>truck</i>	<i>pick-up vehicle</i>	<i>pick-up vehicle</i>	<i>truck/ farm tractor</i>	<i>car/ draft animals</i>	<i>farm tractor</i>	<i>truck/ farm tractor</i>

Table 4.6: Cont'd

	Vila Castro Gomes	Vale do Barbosa	Fazenda Sao Geraldo	Novo Horizonte	Duas Barras	Amaralina
Main crops	<i>corn/ rice/ banana</i>	<i>corn/ beans/ rice</i>	<i>coffee/ beans/ cassava/ fruits</i>	<i>beans/ cassava/ coconut/ corn</i>	<i>coffee/ cassava/ beans/ banana</i>	<i>cassava/ corn/ beans</i>
Other activities	<i>livestock grazing/ timber extraction</i>	<i>firewood extraction/ animal rearing</i>	<i>flour milling/ animal rearing / fish raising</i>	<i>animal rearing / fish raising</i>	<i>flour milling/ animal rearing</i>	<i>flour milling/ livestock grazing</i>
Share of outputs sold within settlement	<i>about half</i>	<i>little</i>	<i>little</i>	<i>little</i>	<i>little</i>	<i>little</i>
Share of outputs sold in next town	<i>about half</i>	<i>little</i>	<i>about half</i>	<i>little</i>	<i>about half</i>	<i>none/ close to none</i>
Share of outputs sold in distant localities	<i>none/ close to none</i>	<i>none/ close to none</i>	<i>about half</i>	<i>none/ close to none</i>	<i>about half</i>	<i>none/ close to none</i>
Share of outputs sold through cooperatives	<i>none/ close to none</i>	<i>none/ close to none</i>	<i>all/ almost all</i>	<i>none/ close to none</i>	<i>all/ almost all</i>	<i>none/ close to none</i>
Share of outputs sold to major industries or shop chains	<i>little</i>	<i>little</i>	<i>none/ close to none</i>	<i>none/ close to none</i>	<i>all/ almost all</i>	<i>little</i>
Road access to markets	<i>partially paved road</i>	<i>unpaved road</i>	<i>partially paved road</i>	<i>unpaved road</i>	<i>paved road</i>	<i>unpaved road</i>
Time to nearest marketplace	<i>less than ½ hour</i>	<i>up to one hour</i>	<i>up to one hour</i>	<i>up to one hour</i>	<i>up to one hour</i>	<i>less than ½ hour</i>
Carrying capacity	<i>pick-up vehicle/ truck</i>	<i>pick-up vehicle/ draft animals</i>	<i>truck/ tractor/ draft animals</i>	<i>car/ draft animals</i>	<i>truck/ car/ bus</i>	<i>car/ motorcycle</i>

Source: 2008/2009 author's on-site fieldwork

4.4 The standard of living of PCT beneficiaries

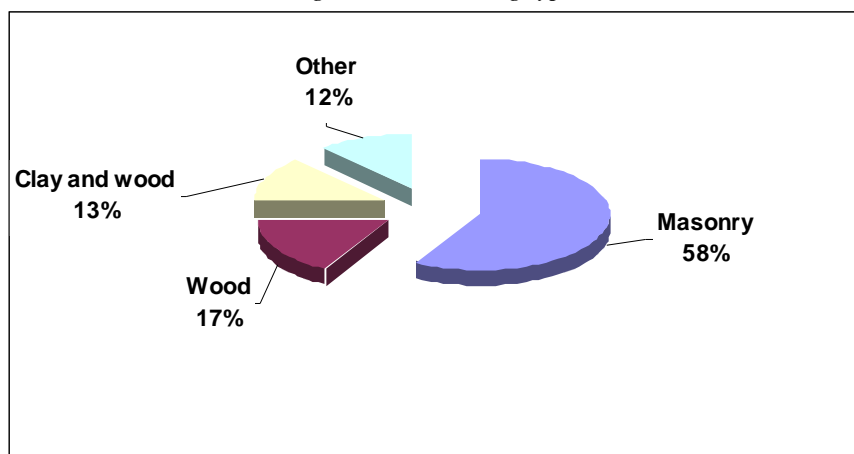
The Land Bill Programme sought to bring down the very high incidence of rural poverty in the Northeast mainly by raising the incomes of nearly 15,000 disadvantaged families who were formerly deprived of land or with insufficient land to secure a livelihood. Upon completion of the land purchase process and as a condition of eligibility for post-purchase funds, PCT associations had to draw up small infrastructure sub-projects within a broad range of civil services such as housing, electricity, water supply installation, schools and health posts, or repair services in secondary roads and bridges, once these items were regarded indispensable for settlers to become profitable producers as well as their wellbeing. However, as discussed in the precedent sections, limited access to natural resources, infrastructure and productive investments, coupled with the virtual absence of a plan-led strategy were central factors contributing to slow socioeconomic growth on PCT sites.

Our study of the selected sites revealed outstanding deficiencies associated to inadequate infrastructure and inferior service provision. For instance, the survey captured information concerning the supply of water. Particularly for families settled in the semi-arid, agro-climatic conditions were not favourable to agriculture, as renewable resources were scanty and the areas were highly vulnerable to drought. Obtaining potable water was, consequently, an overarching challenge. The majority of families had no tap water in their dwellings and took water from water carriers (trucks) or a public well. Without doubt, in settlements located closest to the town there was water supply through house connections. Yet sometimes this water was only made available for a few hours during the day or just a couple of days per week. Settled families were not able to permanently reach treated water as a matter of course, thus resorting to unreliable sources to fetch water. It should be stressed that only a minority of families in our sample received treated water on an uninterrupted basis, nonetheless, and there was over the interviews an insistence that the government should improve access to water for agriculture and residential consumption.

We also inquired settlers regarding the quality of sanitation facilities and waste disposal. Not all PCT beneficiaries had flush toilets facilities inside dwelling and many

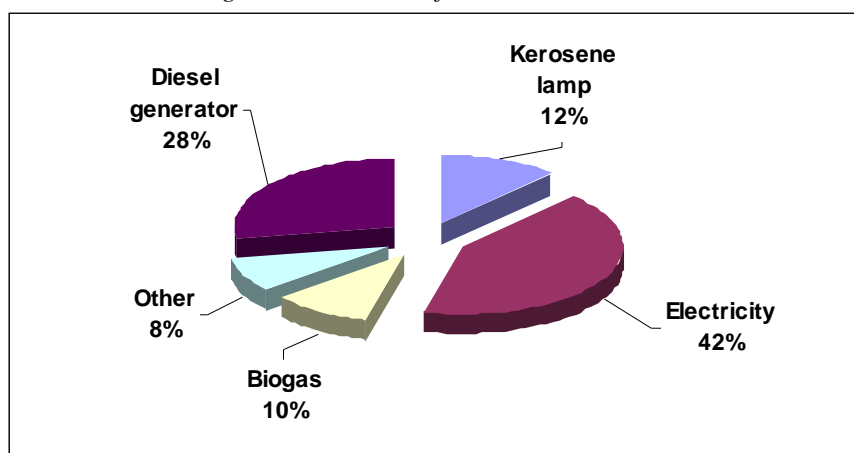
used pit latrines or outside toilets. There were communal refuse dumps in some sites, yet even in these few cases the existing rubbish removal service was of very low quality (rubbish was collected by local authority less than once a week). The quality of on-site health premises was equally unacceptable or inexistent. Figures 4.2 to 4.4 give the proportions of additional basic services as well as household items that reflect the condition of the PCT families. It must be emphasised that the items presented in the Graphs are not exhaustive; some have been omitted because they were not indispensable to our evaluation of the sites.

Figure 4.2: Housing types



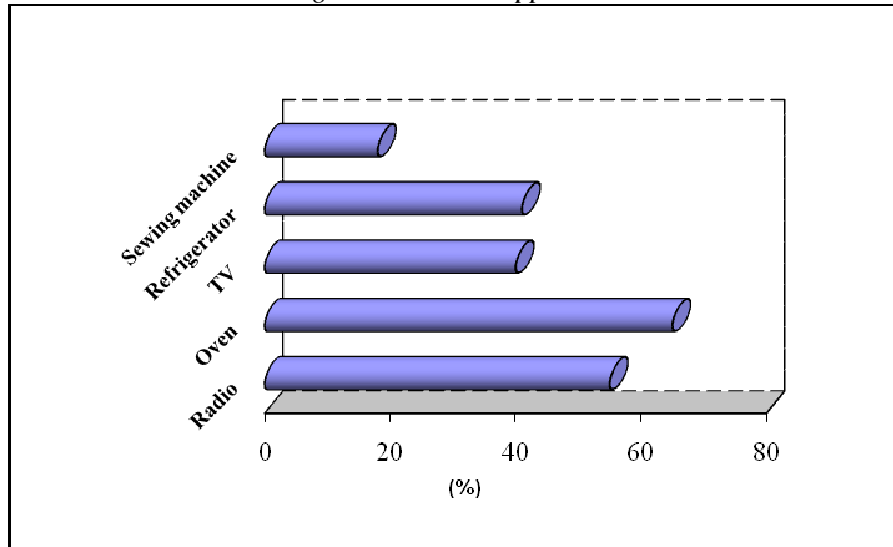
Source: 2008/2009 author's on-site fieldwork

Figure 4.3: Source of indoor illumination



Source: 2008/2009 author's on-site fieldwork

Figure 4.4: Home appliances



Source: 2008/2009 author's on-site fieldwork

As for access to schooling, having become a PCT beneficiary does not seem to make a difference. Difficulties were observed involving sending kids to school not only in terms of distance and mode of transport (which were a challenge for families on low incomes) but also the expenses incurred (school fees, uniforms, books and the like). The result was that the level of education in our sample of beneficiaries was strikingly low. Amidst the adults, the outright majority of respondents remained illiterate or semi-literate. The number of respondents who were downright illiterate was 110 out of 233, representing approximately 53% of the respondents. If we added households who could only read and write (14 respondents, which represents 7%) we would have a contingent of 124 respondents, representing 60% of the total. A less numerous group (21%) attended elementary school (1st to 4th grade). The third category of respondents was composed of those who attended either fundamental or high school (16%). Only one respondent had higher education.

From another viewpoint, family income was in our statistical analysis the main parameter for evaluating the well-being of land reform beneficiaries. One survey per sampled household was conducted to collect background information on their financial situation (see Table 4.7), and we observed little variation in average household income for our population of 260 PCT beneficiaries.

Table 4.7: Settlers' income and economic situation

Main source of family income	Frequency	Own a motor vehicle?	Frequency
<i>Farming</i>	41%	<i>Yes</i>	6%
<i>Other on-site activities</i>	7 %	<i>No</i>	94%
<i>Off-farm activities</i>	52 %		
Income from on-site activities		Own a house?	
<i>Enough</i>	39%	<i>Yes</i>	86%
<i>Not enough</i>	60%	<i>No</i>	14%
Income from welfare programmes		Status of income after PCT	
<i>Bolsa Família (family voucher)</i>	62%	<i>Higher</i>	22%
<i>Bolsa Escola (family voucher)</i>	2%	<i>Much higher</i>	19%
<i>Fome Zero (foodstuff baskets)</i>	1%	<i>Same</i>	55%
<i>Auxílio Gás (gas voucher)</i>	1%	<i>Lower</i>	4%
<i>None</i>	33%	<i>Much lower</i>	0%
		Able to pay off loans?	
		<i>Yes</i>	22%
		<i>No</i>	78%

Source: 2008/2009 author's on-site fieldwork

For the sites surveyed, the break-down of settlers' income was exceedingly difficult to estimate, in any case, since the families did not have a record specifying all sorts of income earned by family members. In addition, an increasing number of household heads were engaging in more than one activity. Some were working part-time on someone else's farm regularly, or were hired only for seasonal work, e.g. for harvesting in the end of the growing season. Others were subject to long hours of underpaid labour on the emergency fronts (a drought-relief programme that involves digging water reservoirs). Whilst working on their own allotment, settlers devoted more time and effort to agriculture production than to livestock production. Even so they were not entirely independent from off-site occupations.

Notwithstanding settlers were quick to attribute a small proportion of their low incomes to crop production.²⁷ By contrast, almost half (43% to 52%) of the amount of

²⁷ A PNAD (National Households Survey) census launched nationwide in to 2000 showed that the main income source amidst land reform settlers changed to some extent from off-farm jobs toward agricultural activities. The census covered other regions of the country, resulting that their sample was mostly composed of INCRA settlers.

families' income was originated from work outside the settlement. The per capita monetary income ranged from US\$60 per month in the driest territories to US\$130 in the potentially wealthier areas, like the Zona da Mata or the Sao Francisco river basin. Even if their total earnings were considered (that is, self-employment profits plus salaries from farm and off-farm occupations), the amount per capita had a mean value below the national minimum wage (about US\$175, as of December 2008). Net of loan payment, the total family income accruing from all these activities varied between 2.5 and 3 minimum wages, depending on the setting's location and number of paid family members.

One should also consider as a substantial part of sitting families' income the foodstuff baskets they received from the government's welfare programmes, or aid consisting of a monthly monetary payment. These are cash transfer schemes created to promote the basic well-being of families in need, particularly individuals living in areas characterised by longstanding deprivation associated to a highly skewed land ownership (Soares et al, 2006). In many cases, the provision of subsistence goods was combined with conditional government schemes, for instance, the *Bolsa Familia* (Family Voucher programme) for which eligible families had to fulfil a number of conditions including sending kids to school regularly, as well as taking medical examinations and vaccination. Families passing the criteria were given magnetic cards for cash withdrawal, with benefits of roughly US\$80 a month. The concentration of welfare programmes in the Northeast follows the region's low incomes, high poverty rate and scarcity of productive resources, especially because the region is susceptible to severe droughts. 67% of our surveyed families were identified as welfare programme beneficiaries.

When these factors are taken into consideration, it becomes easier to understand why almost 80% of the respondents faced real difficulties meeting their loan repayment obligations. At the time they contracted the loans, the terms for repayment were 20 years with up to three years' grace at a yearly interest rate of 6%. Loan recipients living in harsh agro-climatic areas were granted a 50% reduction on that rate in case of anticipation of payment. The burden on participants' budget caused by loan obligations was believed to diminish over time, as the expected farming outputs raised the settlers' earnings relative to the constant flow of required repayments. In other words, it was taken for granted that the loans would secure access to all factors of production for sitting

families and thence the economic feasibility of the family-farm system. Our study truly expresses, however, that PCT settlers had little ability to generate income to simultaneously service loan liabilities and secure their livelihoods, let alone save cash for production enhancements.

Whilst municipal governments were officially in charge of providing public education and health facilities on the settlements, they were focused on addressing basic needs of their rural communities generally speaking, resulting that some of those services were only accessible by sitting households that happened to live in proximity to urban centres. Some headmen argued that the settlement was being deliberately neglected by authorities simply because reform beneficiaries were seen as vulnerable minorities without a political voice in the area. Those who felt socially excluded were in great part the same groups who experienced exclusion from public services as a consequence of remoteness.

In any event, insufficiency of public resources with respect to large-scale infrastructure benefiting settlements is suggested to be part of the barrier to higher levels of production, together with higher family incomes and promising socioeconomic prospects for settlers living in deprived circumstances. In Table 4.8 we observe differences across our sampled sites in terms of on-site infrastructure and accessibility to basic goods and services.

Table 4.8: On-site infrastructure in selected PCT settlements

	Barra Bom Tempo	Lagoa	Santo Amaro	Fazenda Dois Braços	Engenho Cana Verde	Engenho Coepe	Nossa Sra de Fátima
Physical access	<i>average</i>	<i>good</i>	<i>bad</i>	<i>bad</i>	<i>average</i>	<i>bad</i>	<i>good</i>
Health facilities	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>
Leisure facilities/activities	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>
Housing	<i>average</i>	<i>average</i>	<i>bad</i>	<i>average</i>	<i>average</i>	<i>average</i>	<i>average</i>
Water supply/irrigation	<i>bad</i>	<i>good</i>	<i>bad</i>	<i>good</i>	<i>good</i>	<i>average</i>	<i>bad</i>
Sewage	<i>lacking</i>	<i>bad</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>
Rubbish collection	<i>lacking</i>	<i>bad</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>
Telephone/ internet	<i>lacking</i>	<i>bad</i>	<i>lacking</i>	<i>bad</i>	<i>bad</i>	<i>lacking</i>	<i>lacking</i>
Electricity	<i>bad</i>	<i>average</i>	<i>bad</i>	<i>good</i>	<i>average</i>	<i>average</i>	<i>average</i>
Public transportation	<i>bad</i>	<i>average</i>	<i>bad</i>	<i>average</i>	<i>average</i>	<i>lacking</i>	<i>average</i>
On-site school	<i>none</i>	<i>primary</i>	<i>none</i>	<i>none</i>	<i>none</i>	<i>primary</i>	<i>none</i>
On-site vegetable markets	<i>yes</i>	<i>yes</i>	<i>no</i>	<i>yes</i>	<i>none</i>	<i>none</i>	<i>none</i>
Shops for basic goods	<i>nearby towns</i>	<i>nearby towns</i>	<i>distant towns</i>	<i>nearby towns</i>	<i>nearby towns</i>	<i>distant towns</i>	<i>nearby towns</i>

Table 4.8: Cont'd

	<i>Vila Castro Gomes</i>	<i>Vale do Barbosa</i>	<i>Fazenda Sao Geraldo</i>	<i>Novo Horizonte</i>	<i>Duas Barras</i>	<i>Amaralina</i>
Physical access	<i>bad</i>	<i>average</i>	<i>average</i>	<i>bad</i>	<i>average</i>	<i>good</i>
Health facilities	<i>lacking</i>	<i>lacking</i>	<i>bad</i>	<i>bad</i>	<i>good</i>	<i>lacking</i>
Leisure facilities/activities	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>average</i>	<i>lacking</i>
Housing	<i>average</i>	<i>bad</i>	<i>good</i>	<i>good</i>	<i>good</i>	<i>average</i>
Water supply/irrigation	<i>average</i>	<i>bad</i>	<i>good</i>	<i>bad</i>	<i>good</i>	<i>average</i>
Sewage	<i>lacking</i>	<i>lacking</i>	<i>average</i>	<i>lacking</i>	<i>average</i>	<i>lacking</i>
Rubbish collection	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>lacking</i>	<i>bad</i>
Telephone/ internet	<i>lacking</i>	<i>bad</i>	<i>good</i>	<i>average</i>	<i>good</i>	<i>average</i>
Electricity	<i>average</i>	<i>bad</i>	<i>good</i>	<i>average</i>	<i>good</i>	<i>lacking</i>
Public transportation	<i>bad</i>	<i>bad</i>	<i>lacking</i>	<i>bad</i>	<i>average</i>	<i>good</i>
On-site schools	<i>primary</i>	<i>none</i>	<i>primary/ secondary</i>	<i>none</i>	<i>primary/ secondary</i>	<i>none</i>
On-site vegetable markets	<i>none</i>	<i>none</i>	<i>none</i>	<i>yes</i>	<i>yes</i>	<i>none</i>
Shops for basic goods	<i>on-site, nearby towns</i>	<i>nearby towns</i>	<i>on-site, nearby towns</i>	<i>nearby towns</i>	<i>on-site, nearby towns</i>	<i>nearby towns</i>

Source: 2008/2009 author's on-site fieldwork

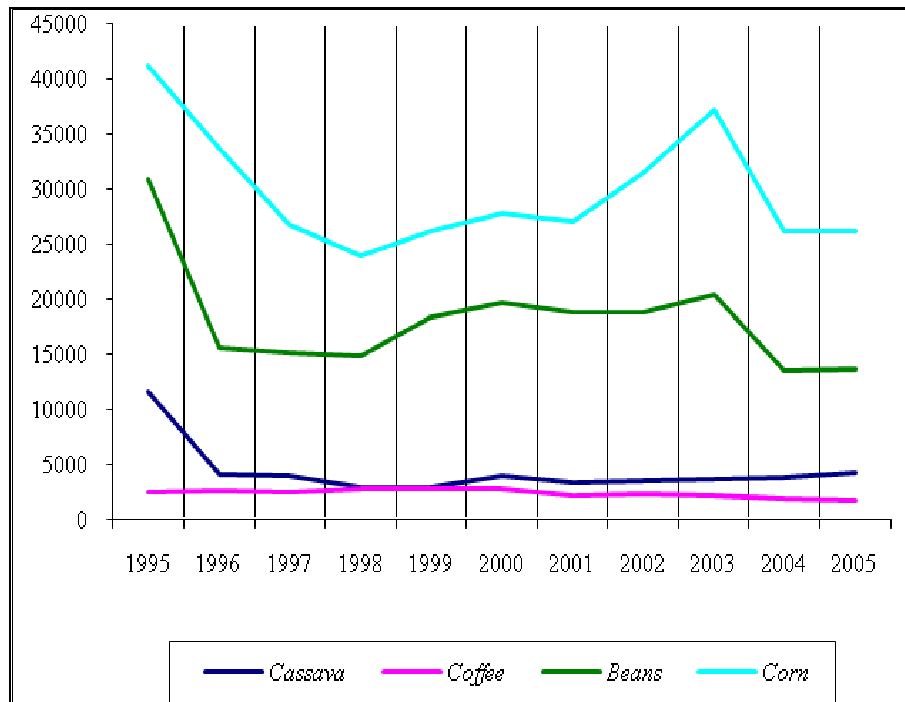
4.5 The surveyed sites vis-à-vis the regional economy

In this section, we compare socioeconomic indicators from our sampled areas with indicators at the sub-regional level and the Northeast. The comparison is aimed primarily at verifying whether the reform has signified an overall improved growth on areas where the schemes prevails than on more comprehensive geographical areas. Although official census data and data from our fieldwork were not entirely comparable, the sample is representative of the population of interest in a number of relevant aspects, particularly in terms of types of crops grown and quality of productive infrastructure, so that direct comparisons between levels are possible. Therefore, the analysis presupposes that variations in rural output between geographic levels follow variations in a range of similar factors such as public spending in agriculture and natural resources, rural credit and farm-related investments.

The indicators in the following graphs were selected based on mainstream rural development literature (Haggblade et al, 1989; Ferreira, 2001; Gardner, 2003; Sahu et al, 2004), as well as our own statistical estimations and fieldwork evidence. For instance, despite the use of mixed farming featuring livestock and agriculture, the emphasis within PCT settings is laid on crop planting. Factors directly associated to cropping are thus strongly significant for output changes, so that an effective utilisation of lands for farming activities is conducive to productivity and growth. Production in rural settlements is also highly sensitive to adequate infrastructure, particularly high-quality roads. Moreover, an intimate connection can be observed between growth and government spending in the form of expenditures for natural resources (piped water and irrigation, for instance) and energy. Finally, rural credit was made more widely available over the PCT period for trading family-farm produces.

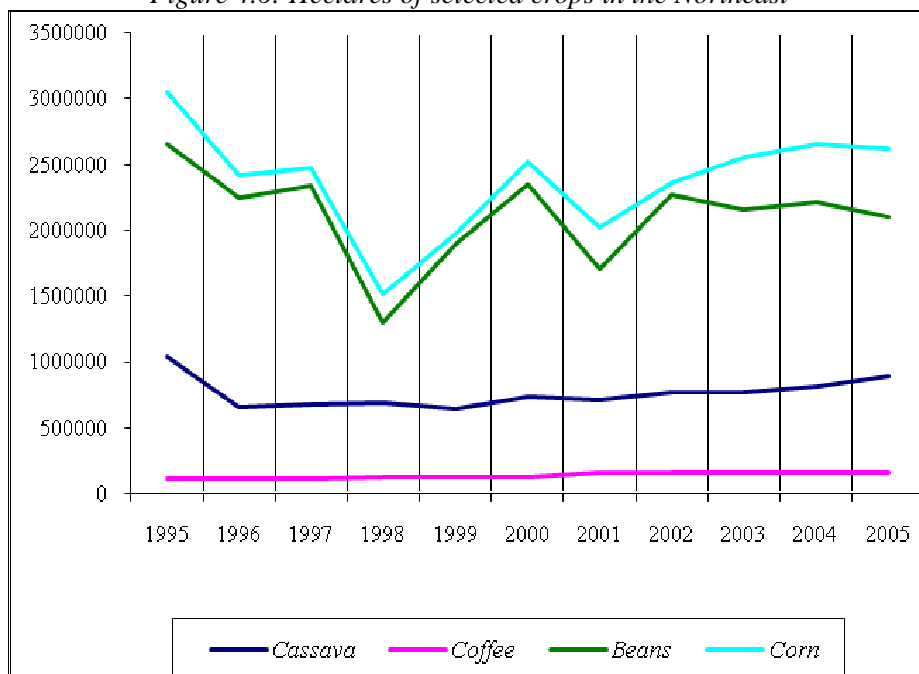
The graphs in Figures 4.5 and 4.6 show the extension of crop production in our surveyed area over an 11-year span, being 2000 a probable year when the local and regional economy may have started experiencing the effects of agricultural activity performed on the sites.

Figure 4.5: Hectares of selected crops in a sample of PCT municipalities



Source: IPEADATA

Figure 4.6: Hectares of selected crops in the Northeast



Source: IPEADATA

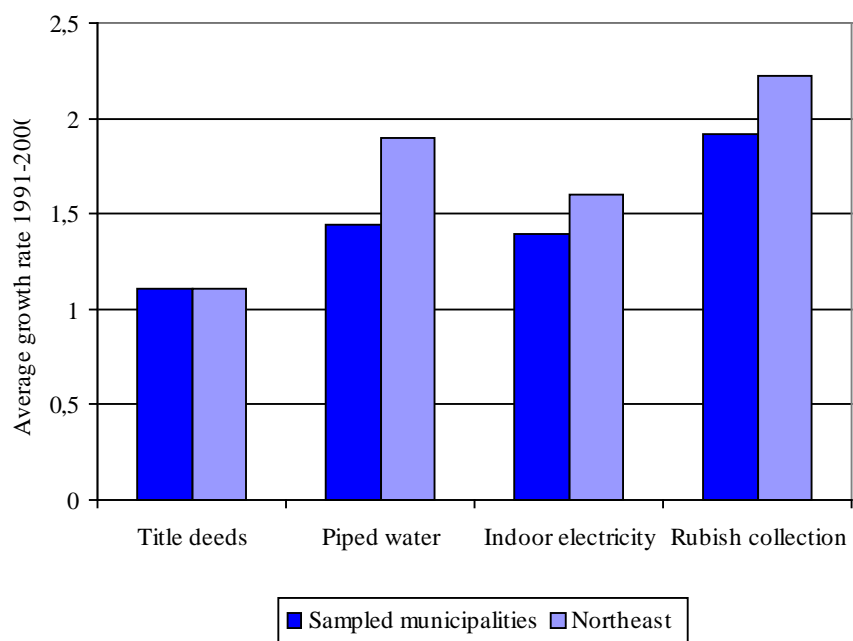
A fall is observed in most indicators for PCT municipalities, which somewhat coincides with years of severe droughts beginning in 1997 and continuing until approximately 2001. In spite of the fact that cassava is the main agricultural product amongst PCT settlements, the unchanged pattern of its curve after 1997 gives little indication of the sites' contribution to the growth of the local rural economy. Still, the graphs are compatible with the status of cassava cropping as a subsistence activity amongst settlers, as the total area devoted to it is in average no more than one third of that for other crop types suitable for the family farm system.

The continuous line in both Figures for coffee is indicative of the higher sustainability of this crop type in the rural economy. The cropping of coffee for commercialisation is a typical large-farm activity in the Northeast given the technologically advanced methods (and higher long-term investments) required to carry it out, so that small producers are in general devoted to cultivating other crops. Consequently, coffee fields comprise a smaller share of the total area including in the Northeast aggregates. In addition, the areas devoted to coffee in PCT municipalities are for the most part a result of agricultural activity in major commercial farms, resulting that coffee did not switch over to become an upward driving force in the rural economy as a consequence of the scheme.

Corn cropping, on the other hand, is a common activity amongst the myriad of small producers in the region, with total outputs exceeding all other crop categories. Yet corn did not register a full period of strong growth either. Undoubtedly, farm production in host municipalities improved only marginally in the years following the adoption of the programme, and in all relevant respects they performed worse in average than the rest of the Northeast. These results by and large fit the fact that the reforms have not evoked productive investments benefiting the redistributed areas through targeted policies concerned with designing and placing infrastructure or other pro-growth activities in the agricultural sector.

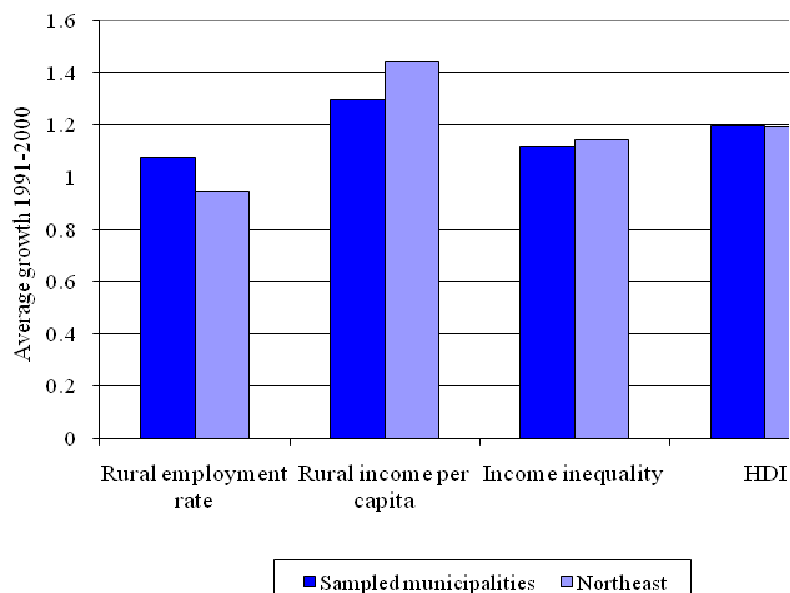
The quality of life of PCT borrowers in our sample also serves as the basis for the analysis of how the programme contributed to social inclusion and economic growth in the case study area. Figures 4.7 and 4.8 compare changes over time in living standards and other relevant social indicators.

Figure 4.7: Land ownership and access to public services



Source: IPEADATA

Figure 4.8: Employment, income and human development



Source: IPEADATA

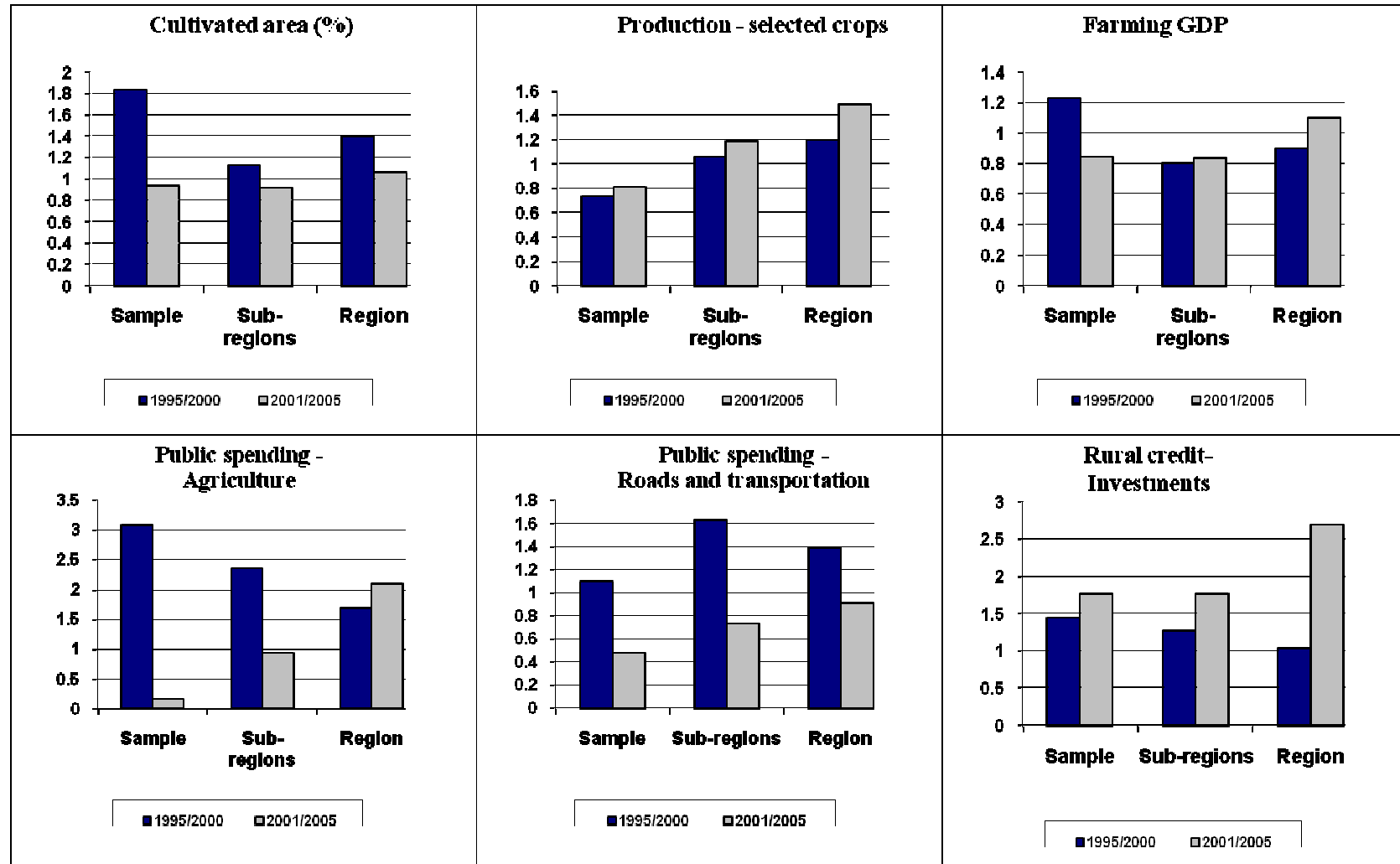
It is not yet clear whether the standard of living amongst the small PCT population had an impact in the overall indicators of their host municipalities. Even if there were a pattern by means of which one could determine that, as a result of the programme, the ratio of access to land's rights in the sampled municipalities matched the overall situation in the Northeast (as seen in Figure 4.7), one would have to admit, by the same token, that the sites clearly lagged behind the region's average as relative to improvements in the availability of basic goods and services. This is consonant with our claim that the redistribution of land was not followed by a plan-led strategy to provide supporting infrastructure. It is implied from Figure 4.8 that the expectation of the pilot scheme to reduce rural unemployment was apparently met through establishing small producers in the areas. However, the rural income rise in these areas does not correspond to the rise for the whole Northeast, signalling that income from farm activities on settlements did not increase more than in other parts of the region. On the other hand, the income that includes sources of income other than rural wage labour varied a lot across our study area and the region alike.

In spite of the preceding considerations, evidence is provided that the growth rate of standard of living in rural areas is associated with proximity to urban centres. For instance, although our sampled municipalities are still poor by national standards, they rank reasonably well on the Human Development Index (0.62 in average) as compared to the rest of the Northeast (0.52).²⁸ The education component of the Index (HDI-education) evolved at a higher rate in our sample than in the entirety of the region. The HDI-health is also higher in these municipalities due to the presence of health clinics and public as well as private hospitals (life expectancy is 67 years, according to the Ministry of Health SUS system), which gives a reasonable proportion of physicians and nurses per 1,000 people. As a consequence, regardless of disparities in income growth, improvements in the access to public services are quite the same at both levels of analysis.

Figure 4.9 ahead compares selected economic indicators considering two different periods: 1995-2000 (period 1), covering the years of implementation of the programme and the emergence of any measurable results on the rural economy, and 2001-2005 (period 2), with a longer lead time and the eventual consolidation of those results.

²⁸ Here we consider the average for the three main components of the index, namely education, health and income.

Figure 4.9: Selected economic indicators in the sample – Growth rates



Source: IPEADATA

At the level of the municipalities, the proportion of cultivated area increased significantly in the years coinciding with – and possibly owing to – the arrival of the market-based model. Nonetheless, this remarkable ratio of tilled area was followed by a much less promising growth rate of crop output, even when the lead-time element is taken into account (period 2001-2005). Moreover, production of the selected crops (cassava, beans, corn and coffee) grew less in our sample than in the broader regional context, which comprises production in areas not reached by the scheme.

As a matter of fact, combining investments in agriculture with supplying fundamental services and facilities for the community was outside the possibilities of settlers in our sample. Consequently, PRONAF post-purchase funds were not enough to increase family farm productivity – probably the most serious disadvantage peasant borrowers faced in the agricultural business. In quite few cases, rural cooperatives were organised with the support of PRONAF and an improvement was effectively seen in their production and commercialisation capacity, especially through mechanisation and organisation of joint farming activities. In the majority of cases however, a chronic lack of investments in areas devoted to cultivation of crops became more of a concern. Additionally, the local-level variation of GDP from farming actually decreases as farm activities in PCT settlements moves into the period of expected consolidation, as opposed to the steady rate of GDP growth for the region and territories. Such observations are consistent with the humble contribution of on-site subsistence farming to the economy of the region and can also help guide policy.

The 1995-2000 rise in government spending was likely to influence the GDP growth positively at all levels of analysis, mostly by creating benefits for the productive sectors of the regional economy. To the extent that this is true, the farming sector in the region should have derived utility from the rise in public expenditures, in particular to a higher demand or increased consumption of rural outputs. From Figure 4.9 alone, nevertheless, it is not possible to determine whether increases in public expenditures necessarily generated increases in economic activity. Although local spending in agriculture seems to have influenced the pre-2000 growth path for cultivated area and farming GDP, such expenditures do not look like having any relationship with improvements in crop output.

Likewise, the apparent increase in crops could hardly be attributed to roads and transport spending. As mentioned before, the precarious condition of most roads and highways serving the visited sites is a weighty impediment to income growth in the short term by not allowing settlers to sell their produces at large scale. Additionally, the majority of PCT settlements are separated by remarkable distance from important market centres, resulting that the difficulties involving the interchange of goods and services between sites and potential consumers markets across the region have not been easy to overcome. In spite of that, the bulk of public outlays focused instead on what wasn't sitting right with urban transportation systems, whereas the 2001-2005 figures demonstrate a fall in the proportion of local roads spending (construction and repair works).

Increments to all sorts of public spending were lower in period 1 than in period 2, with the sole exception of agriculture expenditures at the broader regional level. It is noteworthy that the step-down of expenditures was, in the main, a result of the stringent financial requirements imposed on states and municipalities' by the 2000 Fiscal Responsibility Law (Melo et al, 2010). Accordingly, in spite of the fact that rural outputs were higher in some sites as compared to others, including production in family farms and small rural producers, this was more a result of agricultural productivity evolving positively in return for availability of water resources, in conjunction with better infrastructure and closer proximity to marketplaces. At least one thing is for certain: changes levels of public outlays in the farming sector were not necessarily the cause of perceptible changes in the growth of crop yields.

Yet access to rural credit through PCT (including the PRONAF credit line) was expected to significantly enhance settlements' yields through family farm production, irrespective of further spending of public resources on the sites. However, as seen from the Figure, availability of rural credit was higher in period 2, implying that the introduction of the Land Bill Programme did not necessarily induce significant increases in on-site investments. Conversely, the effects of increased rural credit in period 2 seemed to have an influence of increases in crop production. Finally, although higher crop revenues were noticed in PCT sites where not only rural credit was promptly available, but also where location and economic conditions were more favourable, the predicted benefits of the programme could not be ascertained from a regional standpoint.

4.6 Conclusions

Traditional expropriation-distributing land reforms in Brazil have been intended for combating poverty by redistributing land through land expropriation irrespective of the economic viability of the sites. As opposed to the state-led model, the PCT market-oriented approach made an attempt to address those twin issues by stimulating land transactions through providing financing. As results from our case study demonstrated, the programme succeeded concerning providing easier, less conflictive access to property rights than has been the case with the expropriation-based model. Notwithstanding the schemes suffered from infrastructure flaws and a lack of plan-led efforts at the local and regional scales resulting that family-farm production was generally marginal and failed to impact significantly settlers' welfare and financial ability to repay.

By and large, the quantitative data of Chapter 3 were consistent with the data from our sample. The combination of on-site information and survey data showed the predominance of subsistence agriculture in the majority of sites, as a minuscule part of settlers' income was destined to improving production. Conversely, most settlers had to commit a substantial part of their income on subsistence items, in many cases putting pressure on local/state government to provide foodstuff baskets or other basic living supplies. Consequently, about 60% of the families we interviewed sustained that their income status remained the same as prior to joining the PCT, or even worse. Also, the majority of households in the remaining group (that is, those who considered themselves better off) were recipients of government-issued aid, so that a perceived rise in their income was not necessarily a result of dealings conducted on the site. These facts constitute indications that the quality of life did not improve for loans recipients in the way predicted by preliminary evaluations of settlements (e.g. NEAD, 2000). Instead, our survey evidence largely replicates the findings of Heredia et al (2002) from a broad sample of INCRA settlements created prior to 1997, as referred to in Chapter 1.

As a matter of fact, the unfavourable situation within PCT settlements was a function of a variety of complex factors, and the level of productive investments was just one of them. A shortage of natural resources was apparently imposing restrictions on agricultural production, and this fact caused a bottleneck to the social inclusion of sitting

families as well. On the other hand, production in some settlements was able to generate surpluses that were relevant to support households' decisions to stay and further invest in the land. The viability of these projects relied in great part on the combination of two main factors: the presence of natural resources and/or adequate infrastructure to overcome unfavourable agro-climatic circumstances and higher accessibility to the marketplace. Consequently, these groups of borrowers had added incentives or the financial capacity to invest and organise collectively to drive production towards commercialisation.

It became manifest in our study that the loans-based scheme, by itself, was not a sustainable solution to the issue of rural deprivation amongst the landless population for at least four main reasons: 1) the amount of loans at the beneficiaries' disposal was not sufficient to consolidate viable agriculture enterprises based on the family-farm system across areas of concentrated deprivation; 2) in average, settled families' income turned out below the minimum necessary to perform pro-growth investments in their land; 3) this was particularly true for settlers in areas requiring substantial investment to face insufficient natural resources and inadequate infrastructure; and, perhaps more significantly, 4) programme implementation lacked coordinated strategies to attract good land and, ultimately, promote the growth of the regional economy. As a result, official data do not point toward better socioeconomic indicators in these areas than in other areas of the Northeast during the PCT period. This is evidence that the programme has not managed to inhibit the growth of rural landlessness and poverty, problems that interact with each other in the region. Clearly, more effective solutions are needed.

The aforesaid elements made incurring loan obligations barely rewarding for the striking majority of families, resulting in negative implications on the extent to which the Land Bill Programme served its poverty alleviation intents. An aspect of uttermost relevance to demonstrate the feasibility of the programme is thus that the level of profits plus consumption of own produced goods were not sufficient to lift the vast majority of families out of the poverty line. Yet as mentioned before, this condition of poverty is not so much a matter affecting the PCT population but a characteristic featured in the rural territories of programme implementation. As a natural consequence of the scarcity of natural resources in the semi-arid, the majority of PCT projects turned out implemented in rainforest or transitional zones, and the pilot scheme did not manage to establish a more

homogenous spatial distribution of settlements benefiting all Northeast. Altogether, socioeconomic differences between PCT sites across agro-climatic zones were not clear cut. Such a confluence of PCT populations in poorly serviced exurban areas – a geographical distribution pattern resulting to a large extent from the SAT ceiling limiting the price of purchased lands – gave rise to an urgent need for roads, health facilities and all sorts of infrastructure under the responsibility of the state.

However, since the policy was not able to establish spending responsibilities for local governments, a series of coordination inefficiencies between state land agencies and the municipalities deprived settlers of an integrated network of support services. We saw in our review of the literature that the European experience sets a solid example in that sense (e.g., the Netherlands: Van Lier, 1998, Aarts et al, 2007; Scotland: Bryden and Hart, 2000; Slovakia: Smith, 2006), by presenting land-use planning as a strategic governance tool for the creation of effective, collaborative networks intent on obtaining self-sustaining rural systems. Decentralisation to combat poverty has also been emphasised in some developing countries, such as in Uganda, with their Plan for Modernisation of Agriculture. Bahiigwa et al (2005) have agreed that better socioeconomic outcomes could have been achieved if the reform had been handled in conjunction with other structural adjustment policies, however, to ensure that existing priorities, in that case health services or education, reached all settled households. This is clearly the case in Northeast Brazil as well, where the programme was introduced at odds with reforms of health and education systems.

The general consistency of the results so much for statistical tests as for survey data sets highlights that the limitation of financing, coupled with the low quality of natural endowments plus absence of adequate infrastructure, determined the stagnant economy of the sites. Direct federal/local action to tackle this situation would therefore have played a decisive part in conducting the settlements to higher ratios of output. The literature reviewed in Chapter 2 clearly emphasised that local government efforts are quintessential to supplement central level rural development strategies (Douglas, 2005). Smith (2006) corroborates with this idea adding that for strategic planning to become an effective tool where bottom-up approaches predominate, there must be a will to reconcile local and national interests. In our area based survey, a fall was noticed in local-level farming expenditures, however, which is indicative that hosting municipalities may not have

pursued the same policy priorities as the federal government's. Since policy coordination and monitoring systems were missing, the programme did little to "facilitate initiatives from below" (Dale, 2000).

Still taking the surveyed literature as a baseline for appraising the scheme's potential to mitigating poverty, a number of deficiencies might be identified involving putting the policy into place. For instance, specialised knowledge to assist under-privileged land-buyers over the negotiation with landlords was discouragingly limited (Viratkapan et al, 2004); better organisational interfaces were needed between land reform agencies and PCT associations (Parnell, 2004); there was a virtual absence of non-farm productive opportunities to supplement settlers' earnings from farming (Deininger et al, 2007); no socially inclusive networks of production and consumption were made available to stimulate the commercialisation of settlement output (Haggblade et al, 1989); the policy was detached from other poverty-reducing programmes such as the construction of affordable housing (Portnov, 2002); an institutional capacity was lacking to conciliate the need for natural resources on the settings with the goal of sustainable growth (Alston et al, 2000; Barrett et al, 2005); and others.

A justification might be there already for a degree of state intervention, combining public policy and private-sector efforts to attract higher pro-growth investments to land reform sites. If that is the case, an optimal structure of incentives needs be identified (and implemented) to the benefit of all stakeholders, namely landowners and the landless, as well as strategic players so much in the public as in the private sector. Consideration must thus be given to the role of regional planning in the policy-making process, bearing in mind the benefits (and possibly costs) of the policy not only to individual settlements, but also to the whole economy of the region. A need has thus been recognised of a suited space for bringing an element of plan-led coordination into land reform in order to map out the actual situation and specify goals and means required for achieving steady economic and welfare gains. Possible courses of action under the perspective of regional planning will be explored in the following chapter.

CHAPTER V

Planning land reform at the level of the region

5.1 Introduction: scope and purposes

In the precedent chapters, a study was undertaken of the land reform scene in rural territories compounding the Northeast countryside, identifying the quality of life of reform beneficiaries and the performance of settlements in relation to the regional economy. It was suggested at the close of the study that a central goal of land reform should be to deliver sustainable levels of socioeconomic upgrade to reformed sites, whilst contributing to increasing rates of growth at a larger scale. It was also seen that advocates to the market-based approach to land reform stick to the notion that state interventions in land markets fundamentally distort markets' functioning (Justiniano, 2002; Deininger et al, 2004; Pereira, 2007). The underlying assumption is that governments fail to efficiently reallocate land. On the other side of the table, state-led theorists highlight the importance of the state to reduce inequities caused by market forces in redistribution of land to the poor (Navarro, 1998; Borras, 2003; Caldeira, 2008). How to harmonise these seemingly opposite assumptions in the context of regional planning?

Chan and Clark (1994), whilst resisting the temptation to dichotomise "state versus market", assess the role of market mechanisms and government action in inciting development. Edelenbos and Teisman (2008), in turn, suggest that executing spatial undertakings does not always have to be in the hands of the public sector, although combining public and private sector strengths requests consonance between them. In essence, interdependence between government and the private sector should be stressed in developmental strategies with entrepreneurs in both sectors having an incentive to focus funding and action in conformity with the area's needs. The literature has already pointed to the constraints and opportunities rural producers face, as well as to a need for

proper identification of elements having a differential impact on success of pro-development policies (Anderson et al, 2005). An effective stakeholder input is seen in the literature as an important means to overcome successfully such constraints (Deininger, 1999; Buainain et al, 2000; Brink et al, 2005). The outgrowth of stakeholder involvement in policy-making and planning results from a new development model built upon pluralistic arrangements, political legitimacy and consensus (Sevaly, 2001).

Another key assumption in mainstream planning literatures maintains that, in modern Western states, “centralized planning and top-down state-driven development have given way to multiscalar forms of governance, allowing the state to operate simultaneously in specific places and at multiple scales” (Lobao et al, 2009: 6). At the same time, the literature admits that regional land-use planning and developmental strategies have to a significant extent occupied separate public policy domains (Baker et al, 1999). Coordinated approaches to policy-making are thus seen as an important component in effective governance of sustainable growth (Dale, 2000; Russel and Jordan, 2009). Moreover, it is recognised the role of economic geography models as adequate tools for investigating an optimal organisation of rural areas (Goffette-Nagot and Schmitt, 1999). For James et al (2004: 1903), “a critical spatial lens becomes essential for formulating more realistic and effective policies that work on the ground”. A fundamental aim is to guarantee high standards for investment projects, specifically for a strategy intended to incorporate plans into the public space (Edelenbos and Teisman, 2008) and pursue coordination through planning (Allmendinger, 2006). Accordingly, coordinating regionally prominent priorities to redirect growth to strategic areas could maximise benefits in land redistribution as a favoured route out of social exclusion.

Additionally, the literature on regional planning has utilised rural-urban dynamics templates to analyse regional economic growth. Karaska (1999), for instance, finds that strong urban-rural relationships in Kenya have generated vibrant markets capable of absorbing a growing production of crops. Beneficial economic interconnections between sites and market centres could, hence, contribute to sustained development rates in a whole region. In other words, land reform policy should allow reallocation strategies with increased degrees of state-market holism. For instance, pro-market researchers support alternative arrangements for market insertion (Lowe, 2009).

Likewise, strategic interventions towards a more efficient provision of goods and services could, according to the state-led concept, contribute to social and economic well being. Yet pursuit of holism requires beforehand that land reform agendas coincides with an increased focus on evidence-based, information-intensive approaches to resettling rural families, with governments regularly resorting to reliable indicators to inform, appraise and monitor a policy intervention. For James et al (2004: 1903), this concept of evidence-based policy is essential to modern government.

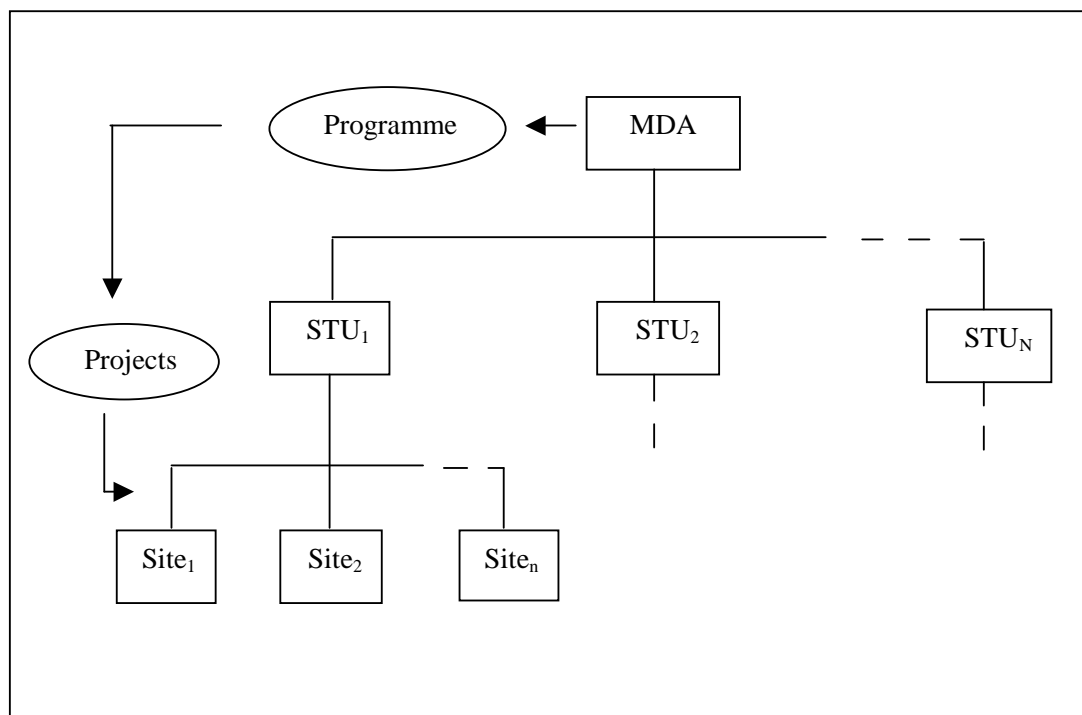
Based on our empirical evidence from the Brazilian Northeast, therefore, and through the lens of regional planning literatures, we argue in this chapter that: 1) a land reform strategy designed from a regional perspective can play a prominent role in fostering socially inclusive economic growth at the regional level; and 2) different views of land reform can be combined in ways in which transactions of land in land markets can go hand in hand with state-induced land reallocations. To sum up, the main aim in this chapter is to address land reform policy and regional planning through bringing together heterogeneous approaches to land reallocation into a holistic and plan-led regional strategy toward achieving increased long-term performances.

The remaining of the chapter is organised as follows. Section 2 analyses the governance structure of PCT whilst proposing mechanisms of policy coordination according to a broader planning framework. In Section 3, focus is placed on spatial components of land reform in order to establish parameters for targeting areas for acquisition and redistribution. Section 4 associates land reform to investment priorities in strategic sectors as a prerequisite to secure higher standards of life across planning units. In Section 5, attention is given to the role of stakeholders in planning and implementing the reform. Section 6 explores potential sources of funding, public and private, as means to circumvent budget constraints. Section 7 addresses evidence-based methods of appraisal, evaluation and monitoring of a policy intervention. Section 8 provides brief comments on previous experiences regarding plan-led schemes in Brazil and anticipate some of the challenges facing the state-market proposition. Section 9 summarises the role of regional planning in land reform and presents final considerations.

5.2 Linking national strategies and local action: top-down & bottom up

As established by the PCT loan agreement between Brazil and the World Bank, the Brazilian Ministry of Agrarian Reform (MDA) had principal oversight of Programme development, with its subsidiary Centre for Agrarian Studies (NEAD) as the National Technical Unit responsible for coordinating, monitoring, supervising, evaluating and reporting the agreement results in Brazil. Also, each participating state maintained during programme implementation a State Technical Unit (STU), generally reporting to State Planning Secretariats. The technical units were responsible for implementation of PCT projects (settlements) including approving association investment proposals, organising training and supervising implementation progress and quality. Figure 5.1 sketches the programme's structure of governance.

Figure 5.1: PCT governance structure



From a regional standpoint, however, the governance structure was designed at odds with a broadly planning framework, and the policy was unable to establish spending obligations binding upon government departments. For instance, states and municipalities could not effectively develop a common budget for land reform due to a lack of planning

and coordination at the regional level. Instead, a fall was in fact noticed in local-level expenditures that could be assigned to the family-farm sector. As seen in Figure 4.9 (Chapter 4), the yearly growth rate for agriculture spending in the sample was 0.16% in the period 2001/2005 as compared to 3.08 % for 1995/2000. This is indicative that most hosting municipalities did not pursue the same spending priorities as the federal government and states.

It is worthy of notice that, as a consequence of a federal system in Brazil, subnational units must comply with national-level regulations issued in line with developmental strategies. Yet Majone (1992) observes that a problem of concern facing regulatory federalism is that, whilst it may be true that subnational governments can adjust more easily to policy preferences of citizens, they are much less interested to engage in policy-making to benefit areas outside their jurisdictions. Additionally, Lin (2000) observes that, with decentralisation of decision-making subnational tiers may enjoy greater ability to politically boycott federal financial pursuits by rearranging activities to maximise their own interests, and this would constitute a satisfactory reason to inflict a top-down agenda on matters of national interest. Dietrichs (1989), in turn, understands that regions are to a considerable extent dependent on the central government with respect to legal framework, institutional capacity, and planning propositions, although local and intermediary tiers can also be well equipped to contribute effective solutions to regional difficulties. Similarly, Shen (1996) notices that carefully developed national-local systems are needed whenever critical growth problems are not properly addressed at the local level.

In another critical appraisal of federalism, Wiseman (1987) proposes a network of committees linking the various efforts to address issues of national and regional policy. Each such committee should specialise in areas such as budget coordination, regional equalisation and economic growth. Likewise, the role of the state is not one of simple governmental provision but also of constructing and articulating multi-tier governance systems (Lobao et al, 2009). For Clark (1994), in order to obtain more sustainable patterns of growth along with an equitable redistribution of wealth, a “regulatory nexus” between government tiers should be created aimed at facilitating satisfactory levels of investment. That is, even if a nationally defined strategy postulates a statutory top-down

dimension with which regional plans must be in broad conformity, the same strategy can, however providing the statutory minimum, lay out a clear-cut vision of policy implementation for all government levels over a specified time frame, giving an indication of the responsibilities of each government level in the whole process, unless strong region-specific considerations point to otherwise.

For coordination purposes, therefore, a joint land reform agenda in a federal system would work more efficiently if undertaken by virtue of a multi-tier coordination mechanism inasmuch as there is scope for bottom-up initiatives in areas where state and local action works more efficiently than relying exclusively on federally-designed arrangements. The aim would be to establish a common timeline for national, intermediate and local governing bodies to allocate funds, thus ensuring alignment of pro-growth investments in target areas as well as a more optimal allocation of resources in issues which calls for intergovernmental action. All tiers could specify, through such mechanism, short, medium and long-term measures indispensable to implement joint agendas in consistency with a regional strategy, being aware of implications for their budget position, in particular measures towards setting up areas and capital investments within their jurisdiction. In like manner, it would be necessary that government tiers set out an agreed spending agenda over a multiple-year time horizon and identify key sectors requiring attention from the budget. Additionally, subnational tiers could take the lead in generating investment options in line with specific features of the strategy, such as by developing infrastructure projects for that matter. Having a multi-tier public spending commitment, however, does not mean that investments from private sector sources should be dismissed from consideration.

Insomuch as designing a joint agenda for defining the land reform spending framework may take place simultaneously with decisions being made on investment programmes from the regular governmental agenda, it is essential that both agendas be interconnected so that the use of public resources is optimised, for coordination is essential whenever putting joint projects into place involves more than one public agency (Landis et al, 1991). According to Berke et al (1999), cooperative arrangements represent a step forward in intergovernmental relations as well as a shift from authoritative top-down schemes. Based on empirical results from New Zealand, the authors demonstrate

that clear legislative provisions and a strategy of some sort for implementation of those provisions by subnational units, coupled with greater organisational capacity at the subnational level, can have a beneficial impact on local and regional planning. These findings suggest that land reform policy should give more attention to improving state and local organisational capacity to comply with pro-growth provisions designed nationally.

In addition, the reform should derive benefits from implementing developmental programmes in the region, most notably regarding rural infrastructure enhancement and key development projects in areas of interest. For instance, as implied by Table 4.5 (Chapter 4), repairing of all federal highways in rural Northeast is a huge challenge, but it is necessary to provide lower-level tiers with indicative road investment allocations over the medium to long run. For instance, as the scenario for capital investment increase in Brazil has been assumed to boost the supply and maintenance of standard infrastructure items such as electrical energy, housing, roads and railroads,²⁹ broad developmental efforts such as these could guide budget decisions at all government tiers to ensure spending in strategic sectors as well as to stimulate investments in hard and soft infrastructure regionwide. As there might be important externalities following such large developmental undertakings, a need for coordination between different regions might be needed, with subnational governments working cooperatively on promoting positive improvements in areas beyond their boundaries as a strategy for economies of scale and new markets access. This possibility has already been successfully explored in developing countries like Mexico, for instance, within the context of manufacturing districts (Lowe, 2009). Moreover, according to Razin and Hazan (1995), voluntary modes of municipal cooperation can lead to a just distribution of regional wealth.

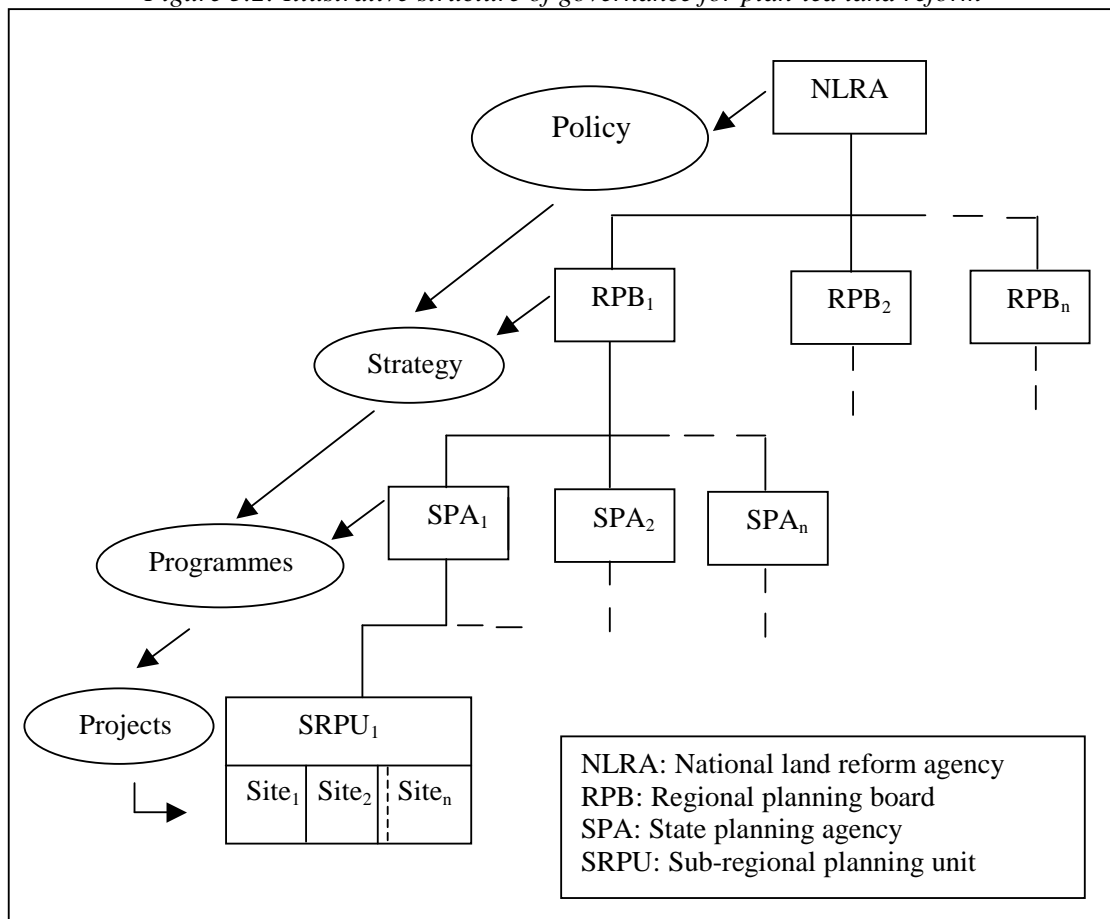
Presumptively, therefore, land reform strategies of far-ranging nature could endorse joining-up between neighbouring localities to invest resources into rural settlements in order to benefit multiple jurisdictions in the planning unit. It should be kept in mind as well that an optimal assignment of responsibilities ought not be restricted to existing rural localities or territories. For instance, whilst the federal level could provide

²⁹ At the time of writing, this infrastructure boom was expected to be a result of developmental plans such as the National Programme to Accelerate Growth (PAC), as well as the Plan for Sustainable Development of the Northeast (PNDE), which was under elaboration by the Ministry of National Integration.

broad policy guidelines, subnational governments, in turn, would identify priorities for specific programmes as well as economically fruitful areas for project implementation. Additionally, regional land reform boards would play an absolutely necessary part in dealing with cohesion and cooperation to concentrate resources in the most strategic locations along with consistent interpretation and implementation of the policies. As a possible outcome, a more effective central-local partnership can take place characterised by “cooperation and mutual adaptation” (Lin, 2000).

Figure 5.2 proposes a governance structure for land reform policy incorporating the regional planning principles discussed above.

Figure 5.2: Illustrative structure of governance for plan-led land reform



The regional planning boards (RPB) suggested in the Figure could play a valuable part in carrying out a broader plan-led strategy according to policy guidelines established at the national level. Since the Northeast is a large and diverse region, the boards' responsibilities might also include creating intergovernmental and inter-sectoral coordination mechanisms for implementation of region-specific programmes defined by decentralised state planning agencies (SPA). It is also suggests that, for the purposes of applying practises and principles of regional planning to the context of our case study area, the minimum geographical area considered as a unit for planning (SRPU) should correspond to a rural territory as defined by the Brazilian Ministry of Agrarian Development.

In order to separate what can be concluded directly from the analyses of data conducted in the previous chapters from what are more prospective suggestions for a regional planning system, Table 5.1 summarises our quantitative and qualitative findings resultant of the disassociation of the schemes and regional planning, whereas Table 5.2 gives a set of strategic premises for establishing inter-agency coordination mechanisms according to the discussion above.

Table 5.1: Summary of findings associated with analysed governance structures

<ul style="list-style-type: none"> ↵ Centralist top-down approach to land reform; ↵ Lack of a region-specific approach to planning ; ↵ Absence of holism in land reform policy-making and implementation; ↵ Lack of strategy that simultaneously improves status of families and addresses regional issues; ↵ Insufficient inter-governmental / inter-sectoral coordination; ↵ Schemes not able to establish spending responsibilities; ↵ Different government tiers not pursuing same spending priorities; ↵ Major infrastructure deficiencies which are shared by land reform sites not tackled; ↵ Weak socioeconomic results associated with schemes.

Table 5.2: Requirements for multi-tier coordination mechanism in the Northeast

Premises

- Articulated decision-making across government tiers;
 - Political commitment at federal, state and local levels;
 - Federal level to support and coordinate state and local action;
 - Agreed public spending agenda over a multiple-year time horizon;
 - Interconnection with regular spending agenda in each government tier;
 - Interconnection with key development programmes set up for the region.
-

Joint measures

- Selection of potentially sustainable areas within their jurisdiction;
 - Definition of investment priorities including soft and hard infrastructure improvements for those areas;
 - Provide funds for land reallocations through a diversity of public and private sources;
 - Provide funds for the portfolio of investment priorities.
-

5.3 Targeting the land: a portfolio of strategic areas

It was seen that whatever the method of land reallocation in Brazil, whether market-led or expropriation-based, it was generally the beneficiaries themselves who decided on land selection. An important consequence of this approach was that most settlements turned out in areas where a range of factors did not favour family farming. Likewise, as our analysis of the sites demonstrated, the occupation of rural estates that has been encouraged by the expropriation-driven method has not ensured the creation of suitable settlements, as evidenced in the land reform literature (Deininger, 1999; Heredia et al, 2002; Sabourin, 2008).

The planning literature recommends instead an appropriate targeting of areas for policy implementation. Huby et al (2009) argue that the targeting should be based upon statistical as well as conceptual considerations, such as the area's "spatial resolution". Further, the literature highlights the importance of location for rural activity, particularly regarding proximity to customers or suppliers, transport costs, and quality of communications (Anderson et al, 2005). By way of example, our field research detected the presence of positive spatial dependence in the economy of the settings, i.e., rural settlements located further away from consumer markets tended to register higher

transportation costs (in some cases about 80% of agricultural revenue). By the same token, remoteness was a factor curbing the sites' economic performance, indicating that the family-farm system of production could perform best if reduced distances to and from main consumer markets were secured. It has been suggested as well that, for the sites to function at peak capacity, the areas would have to become a focus for attracting public and private capital.

Ottaviano and Thisse (2005) closely examine the influence of geoeconomic factors on firm location through a microeconomic analysis of profit maximisation associated with the least transport cost. The same reasoning applies if a settlement is located in an area by minimising the distance to a marketplace where settlers purchase inputs and sell outputs. A strategy would thus need to be employed that focuses on places that have the highest qualifications to develop adequate transport linkages, or where shorter distances between a settlement and the nearest marketplace are likely to predominate. Areas of closer proximity to large or medium-sized market towns should be targeted in preference to more distant lands, except where other sustainability measures recommend otherwise (e.g. areas along major road corridors), or elsewhere if there is an adequate system of public transport with the targeted market town. These should be areas offering the best cost-benefit ratio for trading crops insomuch that the costs to transport those crops would be reduced.

It was reported as well that the settlements lagged behind the region's average as relative to economic activity. Notwithstanding, areas are likely to vary substantially within a planning unit regarding potential for farming, as rural socioeconomic growth depends to a considerable extent on the environmental resources at hand (Huby et al, 2009). Mason (1985) argues in this regard that, over the longer term, the state can induce changes in the economy of an entire region by making an area more conducive for the emergence of small producers than others, although precautionary measures might be needed in order to prevent that this do not become a source of uneven development. These insights from the literature seem to indicate that families should only be resettled where adequate resources exist, or where proper infrastructure could be provided, e.g. areas of higher potential for irrigation. Accordingly, a plan-led land reform should exhibit

a vigorous spatial component that focuses on where the sites would be better located in a wider geographical area.

On the other hand, as it was previously discussed, the prevalence of subsistence agriculture in PCT sites resulted in many households looking for other dealings as part of a survival strategy (although some settlers acquired plots only as an alternative strategy, as they pursued other activities elsewhere). A study by Getis (1989) provides grounded evidence that poverty levels in a given community can be affected by employment in neighbouring municipalities. Further perceptions drawn from the literature can be evoked to inquire into the extent to which households with at least one major type of farming diversification could be able to increase profitability on the sites, particularly by exploring relations between alternative farm and non-farm businesses (e.g. Evans and Ilbery, 1993; Ferreira, 2001; Rigg, 2006; Deininger et al, 2007; and others). In such cases, it would be expected that beneficiary families are settled in locations with different potentials for farm-centred and off-farm activities alike (about half the families' income in our study originated from urban labour owing to absence of non-farm productive opportunities on the sites to supplement earnings from farming).

A particular category of spatial problems regards location of facilities in relation to demand to use them (Densham and Rushton, 1996). Densham and Rushton understand that where public facilities do not meet the needs of a rural community, demand for public services may be reallocated to adjacent centres that could supply the demand. Additionally, for rural localities to prove strategic service centres in a region, they should ensure that local sources of merchandise and leisure are accessible or could be made accessible to rural households. Land reform beneficiaries should thus be resettled to take advantage of existing off-site infrastructure, or the area's latent capacity to arrange proper infrastructure back-up, or where it is shown that a range of public facilities can become available to settlers. In this context, the use of preexisting settlements should be reappraised, along with any disputed areas, whether they are in harmony with the prospect of growth in the whole planning unit.

A regional strategy is thus required that fosters a polycentric pattern of growth. According to Parr (2008), this pattern consists in "a territory containing a group of interacting centres in relatively close proximity but separated by tracts of rural or

nonurban land” (p. 3018). Similarly, Hansen (1975) analyses empirical and theoretical issues involving a growth-centre approach to regional development. The author finds such approach to be most appropriate in the context of induced growth. What is implied from these theories is that land reforms should contribute to the socioeconomic development of a matrix of smaller towns and villages, on account of positive spillover effects.³⁰ Furthermore, the distribution of prospective settlements should follow the standards for economic interdependence,³¹ with strategies seeking a balance of activities through identifying areas that are suited for a combination of industries and businesses that could be beneficial for the sites.

The location of settlements should consequently entail a strategy bearing in mind the various kinds of needs of each planning unit to set up a portfolio of economically sustainable areas to meet those needs. Since rural countryside areas in the Northeast have reacted in different ways to land reform policy due to different socioeconomic configurations, geographic features and agro-climatic conditions, some localities in our sample had greater prospects for socioeconomic development than others, which presupposes that crafting a land reform strategy along the lines of the above mentioned literature requires taking into account the specificities of the planning unit concerned. Accordingly, once lands are identified to compose a portfolio for eventual acquisition and redistribution, it must be described in detail why these areas are economically strategic locations, having regard to factors such as quality of soil for agricultural production, strength of economy within a rural territory as well as functional interconnections which may exist between proposed sites and adjoining municipalities.

This means that a clear indication needs be given that, on balance, the selected areas can yield the most effective response to the need for accommodating a sizable landless population. A range of identification methods have been developed to catalogue lands according to land use. For instance, Craglia et al (2003) uses a composite indicator by means of which areas are scored based on different variables, and the scores combined

³⁰ This has been discussed in detail by Verhoef and Nijkamp (2000) who develop a spatial equilibrium model for two regions to prove that interactions between regions can take place via spillovers as a result of externalities that arise from production.

³¹ For Amaral et al (2007), “a great or small level of interdependence means that the evolution of one sector depends more or less on the evolution of other sectors and, reciprocally, that the evolution of one sector influences the evolution of the others to a greater or lesser extent” (p. 1772).

into a single indicator that ranks areas according to those variables. The numerical character of this method makes it useful for policy appraisal and planning, since the composite aspect of indicator can cover spatial structures in the data and provide measures of statistical significance. The identification of lands by using a similar method needs to be supported by a robust set of socioeconomic and geographic indicators. For example, based on the results of our qualitative and quantitative analyses (e.g., the variables used in the regressions of Sections 3.4 and 3.5, and field work results reported in Sections 4.3 and 4.4), target areas with more urgent social needs or structural economic difficulties might be recognised as immediate planning units on the basis of a variety of factors such as:

- Level of farming GDP;
- Degree of dependence on subsistence agriculture;
- Ratio of rural employment, income per capita, human development index or other indicator of standard of living;
- Access to basic services such as health and education;
- Farming infrastructure and logistic platform;
- Proximity to dynamic markets.

Moreover, the precarious socioeconomic profile of PCT settlers traced in Chapter 4 provides a case to argue that identifying locations as potential candidates may require resorting to data on the situation of rural communities, vis-à-vis the status of the regional economy. Priority should be given to places where evidence demonstrates that the highest number of families could be favoured economically. However, the focus should primarily be on the selection of new lands but, in exceptional circumstances, on previously occupied properties, e.g. INCRA or PCT sites, provided these areas are proved essential to promote the development of a whole planning unit. Likewise, although unlawful occupations of land may not be accepted as a criterion for selection of areas, special attention might be given for resettling landless people where land-related conflicts can be attenuated as much as possible, for example, in areas absorbing higher numbers of encamped families awaiting resettlement.

Hence, a pragmatic analysis must be performed which considers not only the suitability of areas for large-scale inflowing investment but also any constraints to growth. A sequential approach to the location of settlements might follow built around the areas catalogued into a strategic portfolio of lands. The use of sequential planning in policy-making processes has been discussed in the literature. Coyne and Gero (1985), for instance, consider the design of a policy as being a search through space of situations where the new rules apply. That is, the proposed targeting process follows a sequence through which areas are primarily selected based on their conditions to accommodate land reform settlements in the most sustainable way, owing to their economic and geographical prominence within the planning unit. Consequently, an aspect that has particular relevance to the targeting process involves adopting a zoning approach, along the lines predicted by Allmendinger (2006).

In summary, strategic selection criteria should be established according to which sites would be ranked in terms of the factors specified in the previous sections. Table 5.3 summarises our empirical results associated with land acquisition modes. In turn, Table 5.4 gives a rundown of the points made in this discussion of area comprehensive land reform and brings a set of guidelines to set up a portfolio of priority target areas according to the principles discussed above.

Table 5.3: Summary of findings associated with land acquisition modes

<ul style="list-style-type: none"> ↵ Areas varied in terms of location and potential for farming; ↵ Different socioeconomic, geographic and agro-climatic configurations; ↵ Some rural localities with higher socioeconomic prospects than others; ↵ Rural countryside areas reacted in different ways to land reform policy; ↵ Positive spatial dependence in economic performance of settings; ↵ Remoteness as a factor curbing sites' economic performance; ↵ Settlements in areas not favouring family farming; ↵ Prevalence of subsistence agriculture resulting from plot quality; ↵ Absence of non-farm productive opportunities on the sites; ↵ Creation of suitable land reform settlements not ensured.

Table 5.4: Requirement for a portfolio of priority target areas

<i>Precondition</i>	<i>Criteria</i>
Land is adequate for sustainable farming production	<ul style="list-style-type: none"> a) Potential for farming and non-farm activities; b) Consistency with the family-farm system of production; c) Availability of water resources, or potential for irrigation; d) Existing infrastructure or adequacy for large-scale infrastructure; e) Accessibility to public services and facilities, retail, and leisure activities.
Area is economically strategic	<ul style="list-style-type: none"> ▪ Location related to potential consumer markets; ▪ Existing chains of demand-and-supply for settlement's production; ▪ Existing physical access or qualifications to develop adequate transport linkages; ▪ Interconnections with adjoining municipalities or urban centres; ▪ Suitability for a balance of different economic activities; ▪ Appeal to public and private investments.

5.4 Seeking optimal policy options: a portfolio of investment priorities

As found in our case study, market-based schemes in the Northeast were not attached to means that were sufficient to create surpluses and at the same time enable settlers to upgrade their standard of life. Despite the combined PCT credit package, little attention was devoted to the provision of large-scale infrastructure serving the settlements. Consequently, as confirmed by settlers we interviewed, just possessing a piece of land was not enough to make their lives better. Likewise, the strong significance of investments for farming GDP growth in our statistical analyses suggests that special attention be paid to this attribute of the reform, since productive investments are also a positive factor meeting basic human needs of the beneficiary population.

It was seen in Chapter 4 that a diversity of socioeconomic, geographic and agro-climatic characteristics of rural localities determined the greatest challenges facing land reform sites in our sample, implying that different investment needs must be met within the land reform regulatory framework. An examination of key challenges affecting the targeted areas is hence required for the governments involved to define investment

priorities covering social, economic and infrastructure requirements across the planning units. Reviewing such factors is thus a necessary step towards designing an area comprehensive land reform strategy. Moreover, a regional strategy needs to bring such factors into sharp focus from an early stage in the process of targeting areas and hence coordinate the timing of policy intervention.

Accessibility to public health services, for instance, was a factor found to be vital for improving the quality of life of settled families because of their poverty (sewage systems were lacking in 77% of sites, rubbish collection was inexistent in 85% of sites, and the quality of indoor water was reported to be inadequate by 61% of households). A recent study by Pearce et al (2008) demonstrated that much of the geographical inequalities in health noted between deprived and non-deprived areas results from a lack of clarity regarding the realisation of actions that would be useful to improving health indicators. In our area based study, location of health care facilities relative to the sites was perceived as crucial to the social inclusion of the settled families we interviewed (the service was below acceptable standards or altogether absent in 85% of sites). This illustrates the complex arrangements necessary to coordinate different expertise in providing health services in geographically separate locations (Ikeya, 2003) and is to a large extent a plausible explanation for the observed spatial differences in health between settlements in our sample. By the same token, access to education and training was either limited or downright deficient, barely contributing to enhance settlers' abilities to perform profitable activities. Hence the need for both health and educational facilities is worthy of consideration when decisions are made on spending priorities associated with land reform.

Our empirical study also suggested that the provision of appropriate housing to settled families was a necessary means to improve their perceived quality of life (only 58% of their dwellings were built using masonry). Yet poverty-reducing social housing programmes have not been articulated with land reform schemes in the Northeast. The literature in this regard has already identified the tendency of rural development policy-makers to ignore the links between settlement planning and housing authorities, which calls for determined efforts toward harmonising these interrelated functions (Phillips and Williams, 1983). It is thus recommendable that affordable dwelling units should be

designed, constructed and distributed, in light of the overall number of prospect settlers, whose planning, development and management might involve different government departments and quite possibly different tiers of government.

Another major finding from our fieldwork was that on-site cropping generally did not imply economies of scale (as demonstrated in Chapter 4, Table 4.3, about ¾ of farming activities on PCT sites were individually or family operated, and mostly restricted to subsistence crops, such as beans or cassava). This inability of settlers to engage in large-scale farming was a cardinal factor preventing settlements from positively contributing to the growth of the rural economy. As an inference from these facts, a key step in ameliorating settlers' socioeconomic situation would be an intervention designed to enhance competitiveness of on-site production. Undoubtedly, the state is expected to play a pivotal part in inciting competitiveness of small producers by promoting structural changes in the economy, such as creating an adequate business milieu, channelling productive investment into critical sectors, as well as financing infrastructure projects (Chan and Clark, 1994). Our findings in the Northeast are not consonant with this aspect of the literature in that land reforms have not been followed by an effective strategy that pursues developmental goals by providing a solid injection of infrastructure into land redistribution endeavours in order to ensure that trading of on-site production is stimulated to the fullest.

An important item of infrastructure to consider is water infrastructure, as access to water is a major issue in the Northeast, especially in arid or semi-arid zones. This involves demand for potable water and irrigation schemes with implications for minimisation of crop failure risk and productivity as well as the health of settlers. Nyong and Kanaroglou (1999) offer a methodological framework to assess the impacts of policies related to the provision of water before the implementation stage in the driest rural areas of developing countries. With data from Northeastern Nigeria, the authors demonstrate through regression models that sociocultural, demographic and economic factors are relevant in predicting domestic water demand. However, it was noted in our analysis that proper water infrastructure has not been provided in the majority of sites so as to take full, yet responsible advantage of the region's natural resources and existing water supply infrastructure.

Other features such as road accessibility and proximity to a marketplace were seen in our analysis as preconditions for commercialisation of produces. The dubious condition of roads has imposed constraints to growth in rural settlements due to high costs of transport. One of the main concepts in economic geography literature posits that transportation is derived from other activities, especially from activities performed by commuters and from freight transportation alike (Rodrigue, 2006). As a result, the supply of transportation services should be spatially differentiated as a function of demand. Rural roads are amidst the most relevant public spending items for increasing agricultural output and reducing poverty in developing countries (Fan et al, 2007). In particular, the sustainability of the rural sector seems to be impacted by the scale of transport and communication infrastructure on production costs (Anderson et al, 2005). The broad indication in the literature, therefore, is that enhancements to transport and communications systems in rural areas should positively affect the competitiveness of rural producers. As a consequence, a greater role of such infrastructure in trading of commodities is expected to increase competitiveness of settlements by linking land reform sites and market towns for their mutual benefit.

By the same token, it was seen in Chapter 4 that it is necessary to make sufficient provision for electricity supply for both indoor illumination and to enable large-scale production. New sub-stations and electricity transmission lines are also required to account for future inward investments benefiting the localities. In such cases, well-articulated coordination between sectors are, in like manner, required to make sure that any enhancements in electricity distribution to adjacent areas, including electricity generated from renewable sources such as wind and solar power are extended to land reform sites. A case study in this respect has been presented by Munda and Russi (2008). The study gives an illustration of the use of multiple criteria for the assessment of rural energy policy in Spain. Using such methodologies has provided reliable information on conditions that favour the planning and subsequent implementation of energy policies in rural areas more efficiently.

To sum up, the ostensibly poor quality of infrastructure that exists across the region and a lack of public utilities serving the targeted areas (roads, communication,

water supply, sanitation, waste disposal, health, education, and the like),³² as seen in the previous chapters, gives an indication of the massive investments that are required. As a response to these diverse socioeconomic needs, capital investments should be cross-sectoral, causing a profound impact on the range of weaknesses identified during the review of areas, including an acute insufficiency of on-site and off-site infrastructure and a range of basic services. Addressing those issues separately, on the other hand, has been a resource-consuming task demanding extensive outlays of public spending in the budget on different sectors to provide public goods and services to rural communities. Moreover, scarcity of budget resources, coupled with competition over these resources³³ indicates that a broad strategy for the region involving the definition of policy priorities is required and needs to be carefully planned.

In order to derive an optimal solution, i.e. the most desirable possible under the mentioned set of restrictions, a comparison of feasible options should be carried out taking into account a range of factors, such as the expected positive and negative impacts on the priority target areas, including potential risks as well as externalities. Optimisation models have been used for planning the regional supply of a range of public services, such as the model developed by Felderer (1975) for the provision of education. The author finds that an optimal allocation of resources to the educational sector depends not only on the balance between supply and demand for education but primarily on adopting a regional decision-making structure. For the farming sector, Roberts (2003) uses social accounting techniques to quantify the comparative relevance of elements affecting the rural economy. It is found that, in addition to on-farm infrastructure and input-output nexuses, rural economic growth is contingent upon demographic characteristics of the rural population and the extent of the government's provision of public services to that population.

Investment programmes meeting the optimal criterion would comprise a region-specific portfolio of investments, pointing out which options best fit which areas. Consistency with the portfolio of areas is, therefore, dependent upon whether land reform

³² Some of those services were only accessible by sitting households that happened to live in close proximity to urban centres.

³³ The politics of public spending is a recurring theme in the literature (e.g. Russel and Jordan, 2009; Melo et al, 2010).

expenditures are as much as possible location-specific, i.e. apportioned to municipalities or smaller communities within or adjacent the targeted areas. For instance, in localities with higher rates of illiteracy it is urgent to provide educational services that are accessible to all families settled in priority target areas. Once disperse infrastructural projects raise questions as to their cost-effectiveness, programmes covering areas beyond individual settlements should call for joined up actions which reckon not only the wider benefits but also costs that would be shared amongst multiple localities in the territory, e.g. roads spending. In such cases the programmes should be large-scale, avoiding inefficient and unplanned spending of resources. Consideration should also be given to whether region-specific actions are financially compatible with federal, state and local overall spending programmes. By implying numerous direct and indirect costs, feasible options may include attracting private investments as well, given that inward-investment strategies aim at tackling social problems besides paying dividends economically.

A comprehensive strategy should thence be able to sponsor i) the concentration of large-scale land reform spending in targeted areas identified as such according to the criteria explored previously; ii) the supply or enhancement of existing farming infrastructure across planning units in order to enhance competitiveness of production thus assisting settlers' to reach a position of taking full advantage of economic opportunities in the rural sector; and iii) the provision of public facilities as a means to expedite social inclusion in resettled areas. It has become clear as well that capital investments should be cross-sectoral and identified on a region-specific basis. Success of the strategy hinges, therefore, on the capacity of the state to guarantee the participation of different government sectors in a broader development framework that pays close attention to the issue of land reform.

A quick wrap-up of our findings related to the above issues is shown in Table 5.5. In the sequel, Table 5.6 goes beyond the direct results from the data analyses and brings a set of guidelines to set up a portfolio of investment priorities.

Table 5.5: Summary of findings associated with productive investments

<p>↵ Strong significance of investments for output growth;</p> <p>↵ Productive investments a positive factor meeting basic human needs;</p> <p>↵ Lack of large-scale farming preventing positive impacts regionally;</p> <p>↵ Health services, education and housing amongst factors influencing HDI;</p> <p>↵ Access to water and irrigation schemes a major issue;</p> <p>↵ Road accessibility a precondition for trading and competitiveness;</p> <p>↵ Low quality/insufficiency of public utilities serving the sites;</p> <p>↵ Schemes not attached to means to create production surpluses;</p> <p>↵ Rural credit not enough for large-scale infrastructure;</p> <p>↵ Investment needs not met within public spending framework.</p>
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Table 5.6: Requirement for a portfolio of investment and spending priorities

<i>Aims</i>
<ul style="list-style-type: none"> • Meet socioeconomic needs in targeted areas (education, health, housing, etc); • Improve settlers' quality of life (income increase, electricity and water supply, etc); • Enhance the competitiveness of on-site production (infrastructure, irrigation schemes, information and communication technologies, ground transports, etc).
<i>Steps</i>
<ul style="list-style-type: none"> • Review of socioeconomic, geographic and agro-climatic evidence in targeted areas to obtain a clear picture of major challenges; • Identification of infrastructure investment options needed to tackle those challenges; • Comparative estimate of these options to derive an optimal solution.
<i>Criteria for optimal investment options</i>
<ol style="list-style-type: none"> 1. Expected impacts on priority target areas, including potential benefits; 2. Expected costs and budget implications as well as possible financing sources; 3. Fit with federal/state/local investment priorities; 4. Fit with ongoing federal/state/local spending programmes; 5. Fit with the wider land reform strategy.

5.5 Stakeholder engagement: policy-making as a win-win game

The purpose of this section is to briefly address the role of stakeholders in regional planning, the rationale for promoting consultation activity and debate in land reform policy-making and to examine key issues that may affect the success of this activity. The involvement of stakeholders in land reform has been advocated in the literature (Deininger, 1999; Buainain et al, 2000; Brink et al, 2005) but in practise rarely applied, with the market-based scheme introduced in the Brazilian Northeast being no exception. We estimated in our analysis of the PCT scheme that over 70% of beneficiaries were in practice excluded from participating in the land purchasing process, as all transactions were conducted exclusively by leaders of an association of land-buyers. Moreover, specialised knowledge to assist the associations over the negotiation with landlords was very limited (whilst around 60% of the household heads we interviewed were illiterate or semiliterate, 46% of them believed the assistance they had from the state not to be enough, whereas the remaining 54% complained not having received any sort of technical assistance). These facts were eventually connected to episodes of corruption and mismanagement of PCT funds thus resulting in the scheme being closed in early 2003.

The literature on participatory strategic planning (Loukopoulos and Scholz, 2004; Gouldson et al, 2007; Edelenbos and Teisman, 2008) maintains that, in order to build a wide consensus around development projects, the interests of prospect participants, the state and society must be represented in the whole process. For Edelenbos and Teisman (2008), this requests the ability of combining views of heterogeneous stakeholders into a joint project. The aim of stakeholder involvement in land reform is, therefore, to establish a negotiating forum that helps achieve win-win solutions to the controversial issue of land redistribution. However, a more open and inclusive land reform strategy can be a costly and time-consuming endeavour, particularly in geographical areas with lower numeracy and literacy or where engagement of rural landless in the policy-making process is likely to demand extensive support in terms of information, technical assistance, and facilitation. In addition, deliberative approaches

“may lead to capture as the decision-making process comes to reflect only the views of the most powerful or vocal actors; to conflict as hostile stakeholders gain access to information and influence; and to compromised outcomes as decision-makers seek to balance the competing concerns of a diverse range of stakeholders” (Gouldson et al, 2007: 57). In such cases, arrangements need be made to secure that the reform is capable of interacting with all interested groups, ultimately building consensus and leading to equitable outcomes.

How interest groups from across affected areas actively engage with the planning process is therefore decisive to assure that the reform incorporates competing needs. As a consequence, besides from earning support from economic agents and society, indecision factors would likely be eliminated and the process of decision-making clarified, as Silva (2002) has observed in the Portuguese planning context. Similarly, the manner how the interests of key businesses in the rural sector are represented may exert influence on their decisions to invest in reformed areas, particularly if those businesses had significant roles in meeting the needs of settled families. Since a connection was lacking between PCT implementation and rural sector expansion, no socially inclusive networks of production and consumption were available to stimulate trading of settlement output, as our fieldwork-based analyses indicated. Moreover, as all involved government tiers agree on the best-fit intervention, political rejection of the strategy is expected to be reversed. An effective stakeholder input thus allows interested parties not only to have a say but also to make a contribution to the nature and degree of the policy intervention, through a collective approach to regional spatial planning (Pearce and Ayres, 2006), whilst helping develop a critical mass of citizens in support of the strategy.

In other words, a democratic mechanism for social inclusion into the regional planning process calls for public examinations of land reform interventions. This involves building an institutional capacity at the sub-regional level to provide for the assessment of beneficiary needs within each planning unit, in addition of detailing the portfolios negotiation method, selecting sustainable plots, providing for production logistics and integrating the settlements into major chains of production and consumption. Further, the reported inability of settlers’ associations to attract high-quality properties to the schemes (Chapter 4) indicates that effectively involving those associations in public consultation

activities also requires lending strength to their organisational capacity and skills. From another point of view, the focus for public examinations is upon issues relevant to how the proposed programmes and projects maximise socioeconomic benefits. Additionally, given the diversity of infrastructure needs observed in the surveyed sites, the examination should be cross-sectoral as well, i.e. covering all affected sectors (whether social, economic and environmental). Being a complex matter, this particular aspect entails multiple steps and depends upon availability of information on target areas as well as the adequacy of proposed intervention to those areas.

According to the literature on stakeholder involvement in rural policy-making, most notably Prager and Freese (2009), responsibility to involve affected groups lies at all policy-making levels. In accordance with the proposed structure of governance (Figure 5.2), however, the federal government gives general guidelines for integrating stakeholder contributions into both programming and implementing interventions and only mediate exceptionally where subnational bodies are proved not capable of securing democratic participation or in situations where the issues under examination are of interstate or inter-regional relevance. In practise, this would involve an SPA becoming formally responsible for organising the public consultation of specific programmes and projects designed for its area, including appeal possibilities at the sustainability appraisal stage. These agencies may also designate other public and private sector organisations to assist stakeholders in assessing an intervention. For instance, settlers associations may work together with academic institutions for specialised advice on the socioeconomic challenges facing their areas and how to better define the need for infrastructure investments. Other profit or non-profit organisations, environmental groups, volunteer associations and the like can have a notorious function concerning the review of an intervention, in conformity with their goals, abilities and resources.

In all cases, an appropriate mechanism for stakeholder selection at the disposal of state planning agencies is crucial. According to Loukopoulos and Scholz (2004), there are two basic approaches to participant selection: 1) inductive approach, consisting of inquiring stakeholders themselves about who should be key players or players most affected by the policy; and 2) deductive approach, by means of which stakeholders are selected according to a legal or sociological template that distinguishes the various

interests in question. The aim is always to obtain and incorporate the preferences of affected parties as much as possible. Albeit there are many ways in which information on these preferences can be elicited, it is found in the literature that descriptive procedures can be used in conjunction with surveys or interviews. Loukopoulos and Scholz recommend that stakeholders be confronted with the case study (e.g., future land reallocation scenarios and plans) by means of physical models, computer animations, or the like, and then a range of qualitative or quantitative techniques are used for estimating participants' interests and needs in a more realistic manner.

There is a variety of issues involving stakeholder participation in shaping the policy intervention. By way of example, the technicalities of allocating public resources to programmes and projects under public examination may require that the land reform budget-making process be sufficiently simplified to allow for substantive stakeholder review. Popular participation in public resource allocation in some Brazilian cities has been explored by Abbers (2007). The so-called *orçamento participativo* (participatory budgeting) involves creating thematic forums of public debate where local residents are able to define the municipal capital budget in areas such as urban planning, education, health, social assistance, economic development and tax reform. Once expanded to a dimension wherein thematic forums embrace land reform issues, the participatory budget experience provides a template for how to make land reform budgeting accessible to ordinary citizens, including at the different government tiers.

The rules governing transparency over public accounts may require adaptation where needed so that the steps taken for the allocation of resources to each planning unit be monitored on a regular basis. On the other hand, a critical element in establishing transparency in land reform budgeting is to commission an outside entity with no stake in the outcome for independent oversight over use of land reform resources. Moreover, as the proposed strategy requires that land reform budget-making be decentralised, the monitoring of activities has an element of decentralisation as well. In Brazil, the *Tribunais de Contas* (courts of accounts) are auditing institutions mandated to assure transparency in public accounts at the federal, state and local levels (Melo et al, 2010), hence constituting an inherent enforcement technology to secure that public resources are accurately allocated to programmes and projects.

Moreover, stakeholder involvement ought to be proportionate to the scale of interventions intended for the area. Consequently, public examinations should focus on local (or sub-regional) concerns, rather than regional matters that are part of a broader strategy for the region. On the other hand, stakeholders should be able to, in the particular interest of the communities they represent, tackle issues that have links to wider policy agendas, e.g. public health and education. As part of an overall effort to overcome landlessness and make the region more prosperous and equitable, specific issues should then be addressed that would be likely to affect rural communities, and optimal options agreed upon that would best serve the collective good, giving particular attention to the needs of:

- a. squatters and encamped families awaiting resettlement;
- b. rural households living below the poverty line;
- c. small farmers working at the subsistence level.

For stakeholder examination of schemes to be binding and of any consequence, it must have full regard to a broad regional strategy and add value to the socioeconomic growth of territories and localities. In this context, it is vital that planning agencies provide for a sufficient choice of target areas to meet demand for a variety of activities necessary for the growth of the regional economy, markedly activities identified as suitable for the family farm system. Alternatives are hence provided particularly with respect to site location or adequacy to produce and commercialise a particular crop type or livestock, in order that prospect beneficiary families have an additional incentive to resettle by joining the scheme. Stakeholders, working together with an SPA, should then be able to weigh options for delivering interventions in relation to preferred areas and nature of the investments. The sequential approach to settlement location, as explored in Section 5.3, should facilitate the identification of the first-best option by comparing the effects of an intervention in similar localities according to sustainability appraisal mechanisms. This is expected to offset the lack of experience and knowledge of poor peasants when taking part in the examination process.

By definition, stakeholders act collectively to ensure that their voice is heard in the policy-making process (Gouldson et al, 2007; Edelenbos and Teisman, 2008), with

the potential to elicit a range of beneficial outcomes. Rutland and Aylett (2008) offer an understanding of how efficiency emerges as different players seek their objectives by working collectively, and also suggest how policy priorities can change by means of policy networks. In view of all this, it is essential that interventions be planned in an inclusive way to involve all stakeholder groups and stakeholder representatives, thus leading to a climate of trust and legitimacy for the strategy. If successful, such interactions may result in an adjustment and adaptation of land reform policy-making in a way that settled families' needs are met as much as possible, with socioeconomic benefits maximised at a regional scale.

Table 5.7 shows some of our empirical results that can be connected to the schemes' degree of popular participation, which unveils the need to establish or strengthen institutions to provide individuals with a state in the reform with accurate knowledge on the strategy, as well as the ability to take collective action to protect their interests. Sequentially, Table 5.8 brings guidelines for stakeholder involvement at the definition stage of the reform as a means both to attract support from powerful groups and to empower the rural poor to opine on the terms of the intervention.

Table 5.7: Summary of findings associated with degree of beneficiary participation

<ul style="list-style-type: none"> ↵ Majority of beneficiaries excluded from participating in land purchasing; ↵ Transactions conducted exclusively by association leaders; ↵ Specialised knowledge to assist over the negotiations very limited; ↵ Most settlers not receiving any sort of technical assistance; ↵ Corruption and mismanagement of funds owing to lack of transparency; ↵ Inability of settlers' associations to attract high-quality properties; ↵ Associations not involved in policy-making; ↵ Support needed from economic agents, social movements and society; ↵ Connection lacked between reform and rural sector interests; ↵ Socially inclusive networks of production and consumption not available.

Table 5.8: Requirement for stakeholder engagement in land reform

<i>Aims</i>
<ul style="list-style-type: none"> e) Involve all affected social groups and government entities; f) Incorporate competing needs; g) Establish a negotiating forum to achieve win-win solutions; h) Avoid public rejection of land reform strategies; i) Earn political support; j) Build a wide consensus around the reform; k) Add value to the socioeconomic growth of planning units.
<i>Mechanism</i>
<ul style="list-style-type: none"> • Collegial body with all potential stakeholders represented; • Interaction with land reform agencies; • Interaction with public and private sector organisations; • Interaction with civil society groups; • Interaction with academic institutions.
<i>Scope</i>
<ul style="list-style-type: none"> • Public examination of interventions; • Public consultation of portfolios; • Focus on local (or sub-regional) concerns; • Issues with links to wider public policy agendas; • Full regard to the broad regional strategy.

5.6 Overcoming the budget constraint: a state-market enterprise

Our quantitative evidence in Chapter 3 suggested that higher investment loans are likely to be associated with greater farming outputs (for instance, regression results of Table 3.3 indicated that, other things equal, output was predicted to increase by 5-6% when the investments variable went up by 1%). At the same time, it was seen that the PCT set a limit in loans for productive activities on the sites. Since settlers were operating with little to no surplus to accommodate economies of scale, there was less than sufficient investment by households from their own income. It also became evident that the institutional structures of the programme (land reform agencies and PCT associations) were unable to attract high-quality land to the pilot scheme so that a common complaint amongst settlers was that their plot was not adequate for farming. Another factor found to be responsible for the settlements' poor economic performance included a combination of

inefficient or insufficient government spending and consequently inadequate farm and off-farm infrastructure.

Apportioning resources to public spending is one of the main responsibilities of the state and is thus essential to the achievement of policy goals (Russel and Jordan, 2009). However, the weak budgetary position of subnational governments in the Northeast have placed a limitation on their capacity to prioritise spending on the most pressing needs of rural landless communities. Uncertainty on funding has acted as a constraint on financing and delivering large-scale infrastructure projects in reformed areas, which have most of the times been replaced by small-scale, low-cost policy alternatives. Challenges thus include securing a reasonable level of public spending in face of increasing pressure to spend on a diversity of needs other than land reform as well as budget woes and fiscal constraints imposed on states and municipalities by the 2000 Fiscal Responsibility Law (Melo et al, 2010). On the other hand, a major challenge for land reform formulators has been how to settle landless families in prosperous areas without resorting to both conflictive and costly methods of land expropriation.

The premise above is that implementation of an intervention that seeks effective ways of bringing land within the reach of the rural poor whilst contributing to growth regionally would not fully take place before affordability restrictions are terminated. First and foremost, improved arrangements are needed for acquisition of key assets. From an examination of the pertinent literature in Chapter 2, it has been found that land acquisitions are essentially of two different types:

- 1) Market-based: by means of land funds or subsidised transactions of land;
- 2) State-led: through joint-ownership systems or land expropriations.

According to the market-based approach, the provision of land loans must be directed to transactions on the open land market in situations where beneficiaries – individually or through a rural association – find themselves in a position to purchase the properties in the portfolio directly from a landowner. This demand-and-supply approach was the cornerstone of the Land Bill Programme, except for the fact that the landholders saw little incentive in selling their properties below market prices, such as by making a profit from on-site production or through tax deductions. In fact, land loans per se can

play a part in improving the economic efficiency of land reform schemes since “the obligation of land payment creates incentives for production and reduces the cost of monitoring on the part of the financial institutions” (NEAD, 2000: 14). Alexander’s (2001) study about land-use planning and development strategies in Israel suggests a transactions-based model of land acquisition involving statutory planning and formal agreements. A general regulatory framework is presented within which a government assesses future requirements for public services within an area and then develop a strategy for land purchase in the limits of a fixed budget. Similarly, Correia and Madden (1985) use programming techniques to identify, earmark and purchase available plots of land in Portugal. A market solution to the land reallocation problem having been considered, the acquisition of lands is expected to be in general compatible with beneficiaries’ needs and market conditions.

It was seen in our study, however, that the inferior quality of properties acquired under the Land Bill Programme was in part explained by the limited amount of loans not countering relatively high transaction costs. If this remains the case, that is, where market-based transactions do not succeed in the attempt to acquire lands in targeted areas, other options can be explored as seen in the international overview of Chapter 1. For instance, a stewardship model where public funds are used to meet the purchase price of land (Scotland); a tenancy-based approach that allows for long-term rent of lands from government-established land banks (Netherlands); a joint-ownership system where households are allowed to work separate parcels of publicly-owned lands (Ukraine), and others, before resorting to controversial, if budget-consuming, expropriations. Erridge and Greer (2002), alternatively, focus on public procurement for acquisition of public sector assets. A comprehensive method is developed that centres on inter-departmental coordination and long-term partnership relations. Emphasis is put on the interaction between government agencies and the private sector. Public procurement of lands can thus be the preferred method of acquisition whenever it helps considerably reduce the

transaction costs for under-privileged land-buyers. Obstacles to public procurement of lands for reform purposes need, however, be identified and analysed.³⁴

Whatever the acquisition method, it is demanded that an intervention be concentrated where it can fulfil the broader socioeconomic purposes of the reform. The literature supports this idea of targeting specific areas to stir up regional development. According to Dietrichs (1989), this results from a shift to “region-specific planning.” For example, distinct economic zones were introduced in unemployment-ridden regions of Poland in 1994 as a pro-growth instrument. Schemes included full income-tax holidays for investors and exemption from real-estate taxation (Gwosdz et al, 2008). Likewise, specific tax arrangements appear sometimes embedded in the tax legislation to give a boost to agricultural production, such as sales tax deductions that favour registered dealers reselling land reform-labelled products. Fan et al (2007), for instance, find that government subsidies in credit had a beneficial effect on Indian agricultural growth, especially on small farmers’ activities. In the same way, governments have designed special tax schemes to attract a balanced mix of businesses, whether wholesale or retail, and hence expand consumption markets to rural areas. In more developed countries as well, the availability of targeted government assistance, such as grants and loan guarantees, has been a relevant factor influencing the location of companies in assisted areas (Baxter et al, 2007).

Yet improved arrangements are also needed for provision of infrastructure as neither approach to land reform has secured a sufficient level of capital investment to allow for major infrastructure. Particularly over the PCT period, the state’s involvement in the implementation phase of the programme was trivial and, as Figure 5.1 indicates, there was little cross-sectoral cooperation to achieve reform objectives within a joint planning framework. Differently, an approach to land reform through portfolios of earmarked investments requests that budget resources be allocated across investment programmes that work to the advantage of rural settlements located within the whole planning unit. However, the extent to which the budget-making process is adjusted to this distinguishing feature of the reform is a function of the “balance of powers” within

³⁴ Any strategies involving acquisition of lands and also of goods and services benefiting those lands through public sector procurement in the Northeast must be consistent with existing rules applying to the matter (e.g. Federal Law 8666, of 1993).

government and between government tiers (Marsden and May, 2006), as well as of funding levels afforded to different sectors.

The fact is that the PCT programme was introduced in the region at odds with other public sector reforms, such as the health and education sectors. The existing governance structures administering intergovernmental aid to education and health – respectively the Basic Education Fund (FUNDEB) and the Unified Health Care System (SUS) – for instance, have not met the specific needs of settled families. As a consequence, the issue of poor educational levels endures in rural areas,³⁵ and lack of health facilities in land reform sites remains symptomatic. A comprehensive strategy involving the provision of high-quality health and education services to land reform sites thus requires adapting the system of earmarked grants for these sectors.

It was also noted in our study of PCT sites that the main infrastructure projects, even those sponsored by states and municipalities, have not been designed in cooperation with federal projects for the Northeast. For Edelenbos and Teisman (2008), cooperation involves the sharing of resources and expertise toward improving both quality and effectiveness of the policy. Funding arrangements are thus crucial to intergovernmental coordination toward an effective plan-led strategy, for such agreements can deliver socioeconomic impacts not possible under the PCT governance structure. Whether aimed at giving policy responses to deep-seated social problems, or enhancing service provision to meet rural communities' needs, intergovernmental partnerships are recognised to be an effective response to a need for improved coordination in public administration (Mason, 2007). According to the proposed structure of governance (Figure 5.2), the coordinating bodies – i.e., regional planning boards, frame regional strategies in a way that rural sector spending of different government levels reinforces each other.

Public-private partnerships, from another viewpoint, could provide an alternative funding solution. Although the PCT loan agreement established that other institutions would be able to participate under public-private partnerships for specific purposes, such partnerships have not occurred on a permanent basis or as part of an integrated rural development project. As a result, public infrastructure ventures in our sample were extremely limited, and partnerships with private providers rarely encouraged. Much

³⁵ Source: Brazilian Institute of Geography and Statistics.

attention was given to improving existing infrastructure for water supply, but the schemes were not able to secure provision of valuable services such as telecommunications and electricity. Likewise, no market-state collaborative approach was considered for the supply of housing through partnership with builders, developers and other companies operating in the housing industry, or in connection with multi-lateral non-government agencies (Pereira, 2006). Serious consideration must thus be given to the extent to what complementary private investments are being needed to the achievement of better reform outcomes.

Osborne (2000: 14) defines a public-private partnership (PPP) as “a strategic partnership intended to realize the broader aims relating to the longer-term issues involved in project and programme development.” The underlying basis for adopting PPPs as funding sources for land reform is that they offer advantages to both the public and private sectors. Callejón and García-Quevedo (2005) assert that public subsidies to private-sector providers could translate into an increase in their innovation effort and efficiency, and not necessarily merely substituting private for public spending. For Boyce (1993), the role of the private sector in the provision of housing is primarily to alleviate the government’s burden in constructing and maintaining social houses. A concession model is considered by Savas (2000) through which the state could sell long-term exploitation rights concerning construction, infrastructural, and engineering works. Finally, Landis et al (1991) observes that private partners should have in mind that there are gains to joint development that go beyond obtaining a profit.

Accordingly, interventions should stimulate action and investment by the private sector, with profit-seeking enterprises working to achieve their own goals and at the same time helping provide a cure for deprivation in reformed sites. By the same token, whether an effective intervention reaches fruition is likely to be partly or wholly dependent on how the involved public and private sector organisations exercise their funding responsibilities. This pertains improving the institutional capacity of public sector agencies in the region,³⁶ as well as mobilising resources, public and private, available in

³⁶ Key public works providers in the region include the Superintendence for the Development of the Northeast, the National Secretariat of Housing, the National Council for the Integration of Transport Policy, the National Council of Sustainable Rural Development, amidst others, as well as their state and local counterparts.

the targeted areas for solving infrastructure problems not only in times of crisis, but as part of the long-term government agenda.

As a consequence of what has been discussed and based on our quantitative and qualitative evidence (as outlined in Table 5.9 ahead), it is asserted that defining spending priorities is an indispensable part of making the long-term public budget,³⁷ to ensure that the revenues necessary to acquire the selected lands and deliver public investments to target areas are available. It is also considered the extent to which private-sector partners are committed to investing capital in the venture in order to secure complementary resources for settlers to access related means and factors. Apart from the trade-off of market-based or state-led standpoints widely stressed in the land reform debate, therefore, Table 5.10 gives funding alternatives covering aspects of both approaches.

Table 5.9: Summary of findings associated with funding modes

<ul style="list-style-type: none"> ↵ Landholders with little incentive to sell properties; ↵ Expropriations of land highly expensive; ↵ Neither approach securing sufficient levels of capital investment; ↵ Little investment by households from own income; ↵ Inefficient/insufficient government spending; ↵ Budget woes as further constraints to financing; ↵ Little cross-sectoral cooperation to achieve reform objectives; ↵ Land reform introduced at odds with other public sector reforms; ↵ Public-private partnerships very limited; ↵ Schemes not securing high-quality properties, services and production; ↵ Uncertainty on funding as a constraint on financing infrastructure.

³⁷ Multi-year budgetary plans (*Planos Plurianuais*) are planning instruments mandatory for all government tiers in Brazil, which cover four years and guide the preparation of the annual budget.

*Table 5.10: Potential sources of funding, public and private
State-led (direct allocation of budget resources)*

Land acquisitions	<ul style="list-style-type: none"> Joint-ownership systems with public lands; Rent contracts of lands from land banks; Public procurement; Expropriation with compensation.
Investment priorities	<ul style="list-style-type: none"> ▪ Provision/ improvement of public facilities in specific land reform sites; ▪ Regular federal/state/local infrastructure projects benefiting the areas; ▪ Broader pro-growth schemes in the region.
<i>Market-driven (land transactions; private investments)</i>	
Land acquisitions	<ul style="list-style-type: none"> • Stewardship model with land funds; • Subsidised land loans available to transactions in priority target areas; • Tax deductions/subsidies for landowners negotiating properties in the portfolio of lands.
Investments priorities	<ul style="list-style-type: none"> • Tax deductions/subsidies to attract private investments onto targeted areas; • Tax deductions/subsidies for service providers serving land reform sites.

5.7 Monitoring the results: the socioeconomic sustainability of the reform

It has been inferred from our fieldwork analysis of Chapter 4 that the sampled PCT projects differed perceptively in terms of adequacy to farming, access to dynamic markets, availability of natural resources, access to basic services, and subsequent economic performance and standards of living. Some facts should be considered in this regard. Firstly, implementation of PCT projects was not preceded by a plan-led appraisal of areas resulting that the technical units in charge of project oversight had little indication on the socioeconomic sustainability of the areas before acquisition. Secondly, apart from aggregate IBGE³⁸ data per municipality, up-to-date evidence base was not

³⁸ Brazilian Institute of Geography and Statistics.

readily available covering those mentioned elements. Finally, a lack of systematic evaluation of sites kept land reform agencies from estimating the socioeconomic effects of projects or the programmes' impact at a regional scale.

The discussion so far has suggested that targeting potentially sustainable areas can be an effective means to secure improved social and economic patterns. In practice, however, disparities occurred between the loan agreement objectives and its effective performance on PCT settlements, a situation that Maat and Louw (1999) would denominate a "policy-behaviour gap". More precisely, following the random character of project implementation, a timeline was not established for acquisition of properties. Capital investments were not prioritised, so that the respective public sector agencies could not be identified as responsible for those investments. As a consequence, resources were not made available for large-scale infrastructure across the region. These disparities for the most part originated as a result of inefficient monitoring of the policy during its implementation stage, i.e. when lands were acquired, investment proposals approved and settlements eventually created.

The governance structure of the PCT failed to allow for an intergovernmental mechanism through which the federal government would be able to share information with states and municipalities on the sites' economic performance. This process could have been characterised as mutual interaction for the exchange of information on relevant components of the scheme, such as information on geographic features and agro-climatic conditions of potential hosting localities. Rhind and Mounsey (1989) raise awareness of the role of geographical information systems and information technology in intergovernmental coordination and knowledge-sharing. However, important pieces of evidence were not available that might have informed on the breadth and depth of landlessness and poverty and how rural settlements could increase the resource holdings of the poor and help ameliorate the situation regionally, as well as on more subjective matters such as the degree of commitment of stakeholders and the public acceptability of the programme.

The preceding discussions of the PCT programme have also suggested that cross-sector interdependencies be recognised and taken account of in both determining policy priorities and assessing policy impacts. Notwithstanding, land reform agencies

have not monitored the overall impact of the programme against socioeconomic indicators, such as a regional indicator of health or education. Identification of priority areas in rural territories or localities was totally absent as it would require quantifiable assessments of multiple social and economic elements. This has been regarded a central attribute of evidence-based policy-making in a range of social programmes (Craglia et al, 2003). Simply put, apart from the fact that the PCT was far from reflecting a broad regional strategy, the scheme lacked critical assessment actions to demonstrate its feasibility.

For land reform schemes to comply with a strategy regionally, it is utterly essential that the overall intervention – along with its key implementation elements, namely acquiring lands, creating settlements, and providing infrastructure – be subject to systematic monitoring. The presence of a number of different variables affecting farming output, as seen in our empirical chapters (e.g. investment loans, cropped area, size of rural population, etc), points to the need of a systematic examination of social and economic indicators in areas located within each planning unit. The monitoring of relevant indicators hence form an integral part of a strategy's implementation by continuously reporting on the socioeconomic outcomes of the scheme. Also, as a tool of particular relevance to evaluating policy effectiveness on the ground, monitoring interventions involves the investigation of factors relevant to the sustainability of land reform settings. The use of settlement-level information permits the redistribution of land to be seen in comparison with other traits of the reform, whilst allowing for differentiation between the effects of settlements' activities on settlers' socioeconomic status and the regional economy.

In the big picture, therefore, the monitoring process has three main objectives: firstly, to evaluate the extent to which the policy intervention is being made concrete in line with the strategy; secondly, to identify the outcomes of the intervention in the region (this includes identifying elements that are external to the strategy); and finally to suggest how beneficial effects of the intervention should be enhanced (or, conversely, how to offset any negative effects). Moreover, the monitoring of a strategy needs to be undertaken on a regular basis in order to address each aspect of the intervention and assess whether it is being adequately implemented and bearing the expected effects and

whether it needs to be reviewed. It is hence fundamental that monitoring activities be consistent across the whole planning unit as well as take place in all stages of the strategy, i.e. from policy development to implementation. This necessarily involves policy appraisal and assessment of outcomes.

According to Bristow et al (2009), policy appraisal can be understood as a stage in the policy-making process where policy objectives are set up and policy options compared, as well as where costs and benefits associated with a wide choice of actions are taken into account. As such, appraisals of land reform programmes are conducted *ex-ante*, namely over the identification process of key areas and investments priorities. Accordingly, the productive outlook of the sites can be appraised at this stage based, for instance, on the potential demand of commodities by the surrounding population including private companies and the public sector alike (e.g. supply of goods to local government agencies). The scale of appraisal can also include GDP growth coupled with the extent to which rural poverty has been plaguing the areas. The literature stresses that the amounts of public spending apportioned to programmes and projects are also subject to *ex-ante* examination. Russel and Jordan (2009), for example, examine ways of integrating relevant external factors into mainstream policy-making through use of policy appraisal in strategic sectors of public spending.

On the other hand, Bristow and colleagues' definition of policy evaluation concerns an *ex-post* assessment of a policy in terms of level of success or failure. In order to avoid lapses in judgement, the assessment should, therefore, be made of the effects of an intervention as well. Accordingly, the socioeconomic performance of land reform can be assessed against broader developmental indicators such as rural employment, GDP growth, education and health. Such assessment also facilitates comparisons between policy interventions on priority target areas that only have a minor socioeconomic impact and interventions on those areas that have a much greater impact on regional economic growth, including allowing for identification of adverse impacts of land reform and indicating how to avoid or at least mitigate them.

According to Capron and Van Pottelsberghe's (1997) policy evaluation method, four types of economic impacts of a land reform policy could be distinguished: (1) impact on settlers' effort; (2) effect on settlements' economic performance; (3) spillover effect;

and (4) global effect, i.e. impact on the regional economy. Additionally, a range of other impact evaluation methods can be applied in assessing the effects of an intervention, for instance cost-benefit analyses (Flyvbjerg et al, 2002), benefit incidence analyses (Davoodi et al, 2003), counterfactual analyses (Baer and Fleming, 1976), or a mixed method (White, 2009). Bristow et al (2009) request “pluralism” in securing that a policy bears careful scrutiny, namely the combined use of a diversity of methodological approaches necessary to capture the various aspects of policy interventions and determine how it produces change in economic and social patterns in specific contextual circumstances. It is the overall policy context, however, that will determine which methods are most suitable for the sustainability assessment.

By and large, investment programmes (both public and private) have been usually assessed in terms of whether their benefits are being maximised or even optimised as compared to costs. However, empirical assessments of socioeconomic effects of public infrastructure ameliorations are far more challenging. For instance, the reviewed literature on land reform in Brazil lacks accurate estimations of changes in the economic status of settlers that could be ascribed to public investments in roads serving land reform sites; nor have been sufficient qualitative evaluations of the impact of the infrastructure capacity in the aggregate case study area (an estimation for the whole Northeast region). For Rovolis and Spence (2002), this difficulty could be partly overcome by introducing a monetary evaluation of public infrastructure (capital stock), and then comparing the result with other indicators. In a similar fashion, Crabtree (1997) undertakes a value for money assessment of public roads as a means of estimating social benefits from government spending in the countryside. Although it is found that spending schemes may produce variable value-for-money measures, there is also evidence of limited benefits to rural communities as a result of inefficient roads spending. An appropriate assessment of infrastructure investments associated with land reform should thus be undertaken to determine the extent to which various aspects of the strategy have produced changes in status of reform beneficiaries and the regional economy.

Finally, as a valuable mechanism for assessing the sustainability of the reform, permanent monitoring should involve critically reviewing the situation on settlements to examine whether further action is needed to allow for socioeconomic self-sufficiency as

well as to recognise areas where a reassessment should be undertaken to ensure that deficient traits of an intervention are minimised. Reassessment of reformed areas can hence be carried out based upon indicators such as the cumulative result of household resettlement, including the reform's benefits, costs, uncertainties and potential risks. Likewise, there should be partial reassessments of investment priorities where indispensable to reflect the regional strategy for socioeconomic growth, as well as of policy targets decided upon at the appraisal stage. This might comprehend any other relevant issues not anticipated in the strategy but that could help identify areas where the focus of further interventions should take place.

Tables 5.11 and 5.12 respectively present a summary of what can be absorbed from our results regarding evaluating land reform schemes in Brazil and give guidelines for continuously monitoring strategies in order to successfully overcome unknowns through highlighting the rigour of policy appraisal and assessment of outcomes. It becomes implicit that policy appraisal and evaluation are instruments of importance for designing, using and sustaining the benefits of the strategy.

Table 5.11: Summary of findings associated with evaluation of schemes

<ul style="list-style-type: none"> ↵ Determinants of output growth requiring examination of social and economic indicators; ↵ Little indication on socioeconomic sustainability of sites; ↵ Creation of settlements not preceded by broad appraisal; ↵ Socioeconomic effects of schemes not estimated at a regional scale; ↵ Governance structures not favouring sharing of information; ↵ Up-to-date evidence base not available, unsystematic evaluation of sites; ↵ Inefficient monitoring of policies during implementation stage; ↵ Schemes lacked critical assessment actions; ↵ Estimations of changes due to public investments and infrastructure capacity not available; ↵ Project implementation at random, identification of priority areas absent.

Table 5.12: Requirement for monitoring the land reform intervention

<i>Aims</i>	<i>Indicators</i>
Appraisal of the policy intervention vis-à-vis the regional strategy	<ul style="list-style-type: none"> • Geographical distribution of targeted areas; • Rural employment; • Rural poverty; • Rural GDP growth. • Pattern of socioeconomic development.
Identification of socioeconomic outcomes of land reallocation and on-site investment	<ul style="list-style-type: none"> • Number and location of settlements created; • Family farm production; • Family income; • Education; • Health and sanitation.
<i>Policy assessment methods</i>	
<ul style="list-style-type: none"> ▪ Cost-benefit analyses; ▪ Benefit incidence analyses; ▪ Counterfactual analyses; ▪ Mixed methods. 	

Conclusively, Table 5.13 associates the policy's larger objectives, proposed actions and possible indicators for policy appraisal and assessment.

Table 5.13: Overview of the land reform strategy and monitoring process

Socioeconomic objectives	Policy interventions	Coordinated actions	Outcome indicators
Reduction in rural landlessness	<i>Acquisition of lands in strategic rural areas</i>	<i>Transactions in the lands market, public procurement or expropriation with compensation</i>	<i>Proportion of settled families</i>
Provision of onsite affordable housing	<i>Supply of social dwellings to the sites</i>	<i>Public financing or public/private partnerships</i>	<i>Number of units provided</i>
Sustainable growth in settlements' production	<i>Investments on farming infrastructure</i>		<i>Area of agricultural use</i>
Decrease in the illiteracy rate amongst settlers	<i>Provision of education facilities on the sites and supporting towns.</i>	<i>Funding and investments</i>	<i>Average years of study</i>
Settlers access to improved health services	<i>Provision of health facilities on the sites and supporting towns.</i>	<i>Funding and investments</i>	<i>Life expectancy; Infant mortality</i>
Reduction in transportation costs to settlers	<i>Construction and improvements in roads and highways networks</i>	<i>Investment programmes by transportation operators.</i>	<i>High-quality roads and transport systems serving the sites</i>
Higher energy supply to the sites	<i>Investment in the expansion of electricity networks</i>	<i>Public financing or public/private partnerships</i>	<i>Proportion of households with indoor illumination</i>
Better access to water resources	<i>Investment in piped water and irrigation infrastructure</i>	<i>Public financing or public/private partnerships</i>	<i>Water consumption per household.</i>
Higher rural employment rates	<i>Expansion of businesses in supporting towns and surrounding rural areas.</i>		<i>Proportion of employed settlers</i>
Decrease in rural poverty	<i>Expansion of higher-income activities on the sites</i>	<i>Investments in farm and non-farm profitable activities</i>	<i>Rural incomes per capita</i>
Growth of the regional economy	<i>Encouraging of large-scale commercialisation of settlements' production</i>	<i>Multi-tier pro-growth agenda</i>	<i>Rural GDP per capita</i>

5.8 Experiences of the past and challenges ahead

The regional planning system advocated in this thesis seeks to empower the governance structures of land reform to promote a joint state-market intervention through identifying and solving socioeconomic vulnerabilities regionally. In this way, the regions can overcome the challenges facing them and express their own viable strategies. As a matter of fact, some aspects of the integration between land reform and other relevant policies advocated in this thesis have been attempted in Brazil. For instance, the 1964 Land Law made provisions for designation of areas with the object of resettling rural families, but a comprehensive plan was not established and resultant settlements occurred in remote frontier regions. This fact, coupled with a lack of proper incentives to attract the families to the areas eventually led to the strategy being dropped.

In 1985, following unrest in rural areas and increasing pressure from social activists, a National Plan of Agrarian Reform (PNRA) was designed as an attempt to establish priority areas for land redistribution. Yet this important dimension of the reform was compromised due to a political deadlock reached during the transition from military to civilian regime, which involved opposing parties and interests in Congress, and the plan was redirected back to encourage land expropriation. Even so, owing to substantial opposition by rural elites to expropriations of private estates, frontier colonisation emanated again as the result of the strategy (Oliveira, 2001; Delgado, 2005; Sabourin, 2008).

In 2004, the PCT was replaced with the II National Plan for Agrarian Reform (PNRA), with a view to redistributing more land titles nationwide through the cadastre of rural estates and validation of property deeds to squatters. The government bolstered PRONAF funding for the support of on-site agriculture and increased INCRA's budget to accommodate more expropriatory costs. Complementary policies were also adopted to provide for rural electrification and roads, besides increasing cash transfer stipends to rural families. Notwithstanding, due to political deadlocks and administrative limitations, a mechanism was lacking in the plan that could foster a mixed state-market regional intervention, and the plan was eventually carried out along the lines of aleatory expropriations, as with the traditional schemes.

In practice, these plans have never taken place to the fullest extent for several reasons. Firstly, according to the 1988 Brazilian Constitution, land reform policy is a preserve of the federal government. This centralist solution has long been under discussion in the literature (e.g. Blomley, 1986; Dietrichs, 1989) on the grounds that many economic difficulties facing regions and sub-regions alike have required decentralising reforms, although the inertia of the state apparatus, as well as the long-term lock-in stance that governments can produce, have been decisive factors foreclosing legislative change and, thus, reform.

In the second place, the barriers to a plan-led strategy have a financial dimension to it. Project budgets are tight, resources limited and difficult to mobilise amidst a myriad of needs. Moreover, given the fact that Brazil is a decentralised federal country, each government level retains financial autonomy, which prevents the national government from prescribing how much states and municipalities should spend on land reform issues. Also, the absence of formal institutional structures governing the Brazilian regions has been an additional constraint to implement a regional strategy which has been based mostly on unprogrammed expropriations regionwide. Ergo, the various interplays between tiers and multiple government agencies competing over the public budget have all resulted that the allocation of resources to land reform is a highly conflictive matter.

Thirdly, and perhaps most persuasively, some of the impediments to a broader plan-led strategy in Brazil are political and, to an equivalent extent ideological, as far as the issue of land reform can be placed on a political spectrum from right to left. At one end of the spectrum, a majority of the right-wing politicians have not agreed with land occupations by peasant groups. Rather, they believe that the economic success of land reform rests on market mechanisms. President Cardoso's administration and his social-democratic allies were strongly influenced by this view. At the other end, the left-wing parties, such as Lula's Workers' Party, find ideological, socioeconomic and electoral interests in the process of land occupation and expropriation by the state. This group is also supported by grass-roots movements, rural workers organisations and the Catholic Church. The policy debate about land reform over the years has been circumscribed by this dispute and the federal government's approach to the matter reflected either left or right-wing views of conferring land tenure by means of direct intervention or the market. The absence of a mixed state-

market reform, therefore, can be explained by the fact that the governments until now have not succeeded to reconcile extreme groups on the political spectrum who uphold opposing views regarding the issue of land reform.

To have any chances of being implemented and function at its best, a regional planning structure developed along the lines advocated in this work would thus request a political commitment at all government tiers to produce a regulatory nexus between those tiers to secure an efficient policy delivery. Also, the national government should allow regions with increased degrees of discretion over planning policies. With the involvement of key government players at all levels of policy formulation and implementation, political rejection is expected to be reversed. A favourable structure of incentives would also have to be made clear to all directly affected groups. As discussed in the previous sections, stakeholder involvement in land reform policy-making is expected to lead to socially inclusive land redistribution strategies, as well as improve regional outcomes. Less opposition from interest groups is also expected, as well as the development of local capacities and commitment. For instance, once grass-roots movement activists are allowed to proactively participate in the selection of areas, this can be shown to lead to higher standards of living for sitting families without recourse to conflictive occupations of land. Landowners in targeted areas, in their turn, will only find themselves stimulated to negotiate properties if the intervention serves their interests as well.

In summary, a consensus around the intervention could be built as soon as it would be shown to be mutually beneficial in different ways and to be capable of spreading the rewards of land reform to strategic players in and outside government as well as to disadvantaged groups in and society. Finally, this work has demonstrated that there are possibilities at the regional and sub-regional levels to promote such an approach, even when the public budget is lacking in this critical area.

5.9 Conclusions

Land reform settlements in the Brazilian Northeast have faced deep-seated social and economic problems particularly accentuated by poor infrastructure and their

segregation from main consumer markets. This follows a historical trend for the emergence of pockets of rural deprivation in the region, characterised by a subsistence economy that inhibits growth. The situation has demanded a coordinated strategy at a regional scale to obtain higher socioeconomic outcomes for the good of the most severely socially excluded rural groups.

Following the steps of the regional planning literature reviewed across this work, this chapter identified relevant aspects of planning that can guide the design of a plan-led land reform strategy of a regional scope. In addition, the chapter attempted to connect seemingly opposing views from the land reform literature by proposing that both state-controlled land acquisitions and subsidised transactions in the land markets can be encouraged, provided that either approach yields the most with respect to equity and efficiency in land reallocation. An important outcome of such mixed state-market strategies can be to replace existing or past attempts to redistribute land relying exclusively on state-led expropriation or market forces alone.

Emphasis has also been put on region-specific interventions, taking account of the distinguishing features of rural territories and localities, such as existing interconnections between rural settlements and potential marketplaces, in order to set out key policy issues in the context of the whole planning unit. The main issues involve identifying viable areas for resettling landless families, with the ultimate socioeconomic driver being a combination of state-led and market based investment efforts. Moreover, according to the polycentric pattern of growth advocated in the regional planning realm of expertise, the pattern of distribution of land reform sites in a heterogeneous environment is the baseline for directing the bulk of capital investments, implying that the reform should seek an interdependent pattern of socioeconomic development by strengthening relationships between land reform sites and potential consumer markets. This includes regard of other social-economic issues not captured by conventional land reform schemes, such as demand-and-supply networks and rural-urban relationship patterns.

Another important component of a broad plan-led strategy is a coordinated system in which central, state and local authorities have the faculty for interacting more efficiently on the issue of using public spending for land reform purposes. Furthermore, a plausible strategy requires that public and private sectors join in a cooperative effort to obtain lands,

create settlements and improve them. Accordingly, public spending is to be considered in partnership with private sector investment so much for creation as for expansion of existing infrastructure serving the targeted areas.

Revolving around the discussion above, a plan-led strategy for the region should define principles of greater socioeconomic significance for land reform policy-making and implementation as summarised in Table 5.14.

Table 5.14: Scope of plan-led land reform strategy

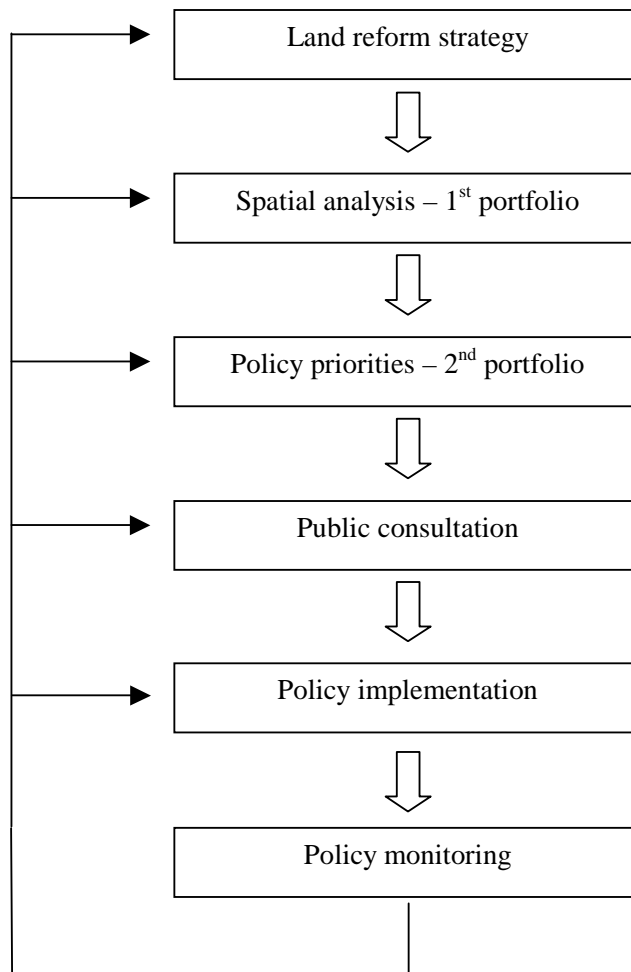
<i>Mechanism</i>	<i>Principles</i>
Regional planning	1. Strategic location of settlements in throughout the region; 2. Polycentric pattern of socioeconomic development.
Strategic intervention	1. Portfolio of priority target areas; 2. Portfolio of investment priorities.
Joint agenda	1. Cross-sector coordination; 2. Intergovernmental policy-making; 3. Public examination.
Mixed state-market approach	1. Market-driven transactions and state-controlled acquisitions; 2. Connecting on-site production and market consumption; 3. Incentives for public-private partnerships.

These requirements demand a strong federal-state-local vision in place alongside the appropriate intervention for specific rural localities and territories, otherwise land reform resources risk not being directed to more sustainable areas, as observed to a considerable extent throughout our case study. Along these lines, planning land reform at a regional scale should involve spatial analysis of potentially sustainable areas in the region and the subsequent definition of policy priorities for those areas, which would include acquiring lands and providing proper infrastructure, as well as being subject to public examination by all affected parties. This should be followed by a feasible implementation scheme, and also by a sustainability appraisal of sites and assessment of results. Figure 5.3 ahead offers a picture of the proposed land reform planning cycle.

In consummation, whilst recognising the different roles of the state and the market in providing a countervailing force against upward trends in poverty and deprivation, this work sits uneasily with mainstream land reform literature as it proposes a new way of

approaching the issue of rural landlessness that requires the government to work in tandem with economic agents (be them in the public, private or even the third sector) not only to promote a more efficient redistribution of rural assets but also to deliver determined policy interventions that would meet settlers' needs and at the same time contribute to economic growth regionally.

Figure 5.3: An illustrative diagram for the regional planning cycle



SUMMARY OF CONCLUSIONS AND FINAL REMARKS

In this work, we have examined the socioeconomic impact of land reform and discussed the policy implications of combining aspects of both traditional state-led and market-based policy-making into a broader regional land reform strategy. We focused on land reform settlements in Northeast Brazil, where both approaches to land reallocation coexisted over the same time frame (1997-2002). The study of the sites documented the standard of living of land reform beneficiaries in the areas of access to basic services and infrastructure, as well as regarding economic activities performed on settlements and their interaction with dynamic markets. Moreover, the work analysed the impact of the policy on the regional economy in comparison with the traditional expropriative approach. At the same time, we identified interrelated issues deriving from a lack of a plan-led strategy, more specifically with respect to identifying key assets and designing appropriate policy interventions at a regional scale. Accordingly, our work highlighted how the experience in the Brazilian Northeast provides a justification for the systematic use of regional planning as a two-pronged instrument to simultaneously reduce rural poverty, improve tenure security and maximise the regional benefits of land reform.

Chapter 1 described a number of experiences involving land reallocation in the developing world as an initial tool for the analysis of land reform schemes in Brazil and a basis for subsequent discussion of their impact on our case study area, in addition to permitting a comparison across countries. A review of the empirical evidence was carried out on the extent to which the state has intervened in land markets and on how the degree of such intervention can be explained by country-specific factors. Given the differences across countries, or across regions within countries, the brief international overview demonstrated that land reform issues are complex, region-specific and could yield a range of different socioeconomic outcomes. With this background, the literature review of Chapter 2 pointed to a need of carefully evaluating historical, socioeconomic, and institutional elements as well as the characteristics of a country's legal system, in order that the right balance is reached between various degrees of state intervention and land market transactions in the

country's efforts to redistribute land and fight rural poverty. This implies that identifying institutional mechanisms to integrate different approaches to land reform into a coordinated long-term strategy becomes essential. A theoretical framework is thus provided for analysing the impact of varied approaches to land reform as well as the potential role of regional planning as a strategic governance tool at a regional scale. The major conclusion from these initial chapters can be summarised as follows:

- 1) *The scope for plan-led strategies towards sustainable development in the countryside has been given less than sufficient emphasis in the land reform literature.*

In Chapter 3, we called for inquiry into the impact of land reform on the economy of the region. The premise was that the growth rate of indicators, in this case farming GDP, rural income and human development index (HDI), reflect socioeconomic gains in return for increased economic activity in the areas reached by the traditional state-led schemes (INCRA) and the Land Bill Programme (PCT). We found very little statistical indication that the regional economy was significantly affected by the presence of land reform settlements, although farming output in the rural localities and territories was shown to increase more quickly with availability of rural credit. Whether, in the presence of such credit, the rural economy will benefit from policies to redistribute land depends in part on the presence of large-scale investments and the government's ability to reduce infrastructure deficiencies that limit access to dynamic markets. On the other hand, there is a positive correlation between state-led land reform and social indicators in the sampled period, particularly concerning family income growth. Cognisance is also taken of any existing pressures within the region, such as ill-health, low educational attainment, unemployment and income inequality. Accordingly, apart from facilitating access to land rights, it is necessary that land reform cater for the availability of income-generating activities as well as improvements in the supply of basic services. These findings are consistent with the cross-country comparison of Chapter 1 about the relationship between land reallocation and socioeconomic growth in the developing world, as well as provide the basis for our argument to use regional planning as an instrument of regional growth. To

summarise, by comparing the performance of INCRA expropriations with land transactions through PCT, we have found that:

- 2) *Contrary to the assumption that land markets are more pro-growth than state-led land expropriation, we found no evidence that the market-based approach leads to higher socioeconomic growth at the regional level than does the state-led approach, or vice versa.*

Additionally, the theoretical framework outlined in Chapter 2 has been confronted with the baseline evidence drawn from our case study of Chapter 4. It has been deduced from our survey material that, however the land loans played a valuable role in expediting access to land, market-based land reform has failed to trigger noticeable economic gains throughout the Brazilian Northeast. In most cases the settlements were created in remote areas since landholders were not provided with an incentive to negotiate productive, well-located properties. Also, an overarching capacity on selecting and assigning land plots was lacking, coupled with the fact that implementation of the schemes was not backed up by adequate infrastructure to boost farming output and assist settled families. Consequently, transaction costs have not been reduced sufficiently to eliminate the barriers to self-sustaining growth, especially in less privileged areas; and to lead beneficiaries to break out of the cycle of multiple deprivation.

Even though disappointing, these results are relevant for the land reform literature since the general consistency of the survey data with the statistical results of Chapter 3 contradicts the theoretical assumptions stressing the potential of land markets to provide better results than administrative land reform in boosting the regional economy. The case study also showed that the government slow response to demands for on-farm infrastructure has been influenced by a variety of factors, including budget constraints, competing spending priorities and a lack of coordination amidst government agencies coupled with an inability to attract private investments to the reformed sites. It is thus implied that implementing an effective land reform strategy would require concerted efforts involving different sectors and ensuring that resources are efficiently used to the benefit of settled families and the regional economy. Finally, this piece of evidence renders insights into the role of regional planning in land reform policy-making and implementation in developing

countries, with important consequences for both the provision of land rights to the rural poor and the path of economic development at a regional scale. As a major conclusion of Chapter 4:

- 3) *Although the market-based scheme contributed to improved access to title, PCT settlements suffered from infrastructure flaws and a lack of planning at the local and regional scales, resulting that the scheme failed to impact positively settlers' welfare in the majority of sites.*

In Chapter 5, a case for using regional planning to improve the regional impact of land reform policy has been made, both socially and from an economic perspective. Based on the planning literature and the empirical results presented in Chapters 3 and 4 (increased access to title as a result of PCT and greater family income following the INCRA schemes), it has been proposed that different components of the traditional state-led approach (e.g. targeting areas, public procurement of lands and even expropriation) and the market-based approach (subsidised land transactions, incentives for private sector investments, and the like) be combined into a broader regional strategy. Such strategy involves targeting strategically located areas to subsequently define a portfolio of investment and spending priorities for those areas, and also consists, from the early stages of its formulation until final implementation, of varying degrees of both intergovernmental and intersectoral coordination. Additionally, through a combination of top-down and bottom-up approaches to land reform it has been recognised that policy-making at the national level coupled with programme and project design and implementation at the subnational level (regional, sub-regional and local) provides a more effective government response to rural poverty and landlessness.

It has been argued that an important step toward the financial feasibility of a strategy is to ensure that options for off-budget spending through public-private partnerships be exhausted. Moreover, implementation of specific land reform programmes in line with the strategy would depend on taking into account a range of socioeconomic, geographic and agro-climatic conditions prevailing in a given planning unit, thus requiring ex ante policy appraisals as well as ex post evaluation of the results. Finally, it has been suggested that the establishment of a regional planning framework to conduct the

sequencing of specific interventions in priority target areas can have multiple benefits in avoiding inefficient use of resources, prioritising investments, and (by ensuring stakeholder involvement in the design of these interventions) leading to consensus on such a controversial issue in the Northeast. Ultimately, that could start a process of socioeconomic development that is cumulative and would lead eventually to higher rates of growth in the region. In summary, it has been concluded that:

- 4) *Securing both higher access to land rights and better living conditions through land reform requires an approach that combines both state-led and market-based elements;*
- 5) *Securing measurable positive impacts on the regional economy requires a land reform strategy that has a regional scope.*

A coordinated intervention to facilitate the socially inclusive operation of land markets at lower transaction costs to landless poor has thenceforth been justified. However, before intervention is encouraged, it needs be demonstrated that such intervention can actually be economically viable for the given rural setting. Steps to reduce social exclusion through a more systematic participation of stakeholders in land reform policy-making would be critical to obviate the underlying causes of conflict over land rights throughout the region. Distortions that have been led to the acquisition of low-quality lands should be eliminated, and state-led mechanisms to secure the selection of areas that are latently sustainable need to be pursued, or at least addressed simultaneously with market-driven schemes. Failure to do so will replicate the inefficiencies in land reallocation that neither approach individually has been able to eliminate. A regional strategy that is aware of the opportunities as well as the limitations of both approaches is thence most likely to be appropriate. At the same time, it stands to reason that a regional strategy of such extent – rather than piecemeal addressing of particular problems – depends upon a number of factors for successful implementation, one of them being establishing the necessary governance structure to provide ways and means to ensure that the whole region benefits from this approach. This is likely to pose considerable challenges, especially in a decentralised system with financially constrained subnational governments, and constitutes an area where broad political support is imperative.

By confirming our main hypothesis that *regional planning can significantly improve the results of land reform policy at a regional scale*, as pre-specified in Chapter 1, this work has improved our understanding of the links between regional planning principles and possible channels for sustained social and economic development through plan-led land reform. However, the overall viability of a mixed state-market strategy remains to be demonstrated in the Northeast of Brazil, and careful evaluation of region-specific circumstances is highly recommendable before a similar intervention is initiated. Hence a systematic evaluation and quantification of the potential for a strategy of this magnitude to help hinder socially and economically undesirable outcomes is needed. Clearly, work in modelling and testing hypotheses concerning the proposed strategy will be needed to calibrate the most appropriate actions and planning tools needed to apply a mixed land reform approach to land reallocation.

All the above implies that adopting a strategy along the lines proposed in this work can only constitute a first step within more all-encompassing processes of institutional capacity-building to make regional planning an important and constant part of developmental strategies associated with land reform policy. Accordingly, more in-depth examination of the possible use of planning devices in land reform should be warranted, including, as already mentioned, the designation of land reform settlements based on strategic identification of areas in the countryside and the subsequent holistic planning of such areas that grant an efficient and sustained assignment of plots. Future research should focus on the factors precluding the use of some aspects of regional planning in land reform policy-making and implementation. Also, in view of the wide variation in geographical, socioeconomic and agro-climatic conditions across the Brazilian regions, deeper research will be required to adapt the principles identified in this thesis to specific regional contexts. Finally, more work will be needed to both identify and compare the relationships between land reform and regional planning in other developing countries with a similar context.

This thesis adds to the large body of literature in land reform analysis and brings implications to the implementation of land reform policy in a number of ways. Firstly, a gap has been identified between the land reform and the regional planning literatures. It has been demonstrated that regional planning has an essential part to play in land reform by

introducing plan-led strategies, with a view to magnify the pro-growth benefits of land reallocation, either market-based or state-led. Secondly, differently from the commonsense literature on land reform in developing countries, this work has departed from the existing market-based versus state-controlled debate by explicitly demonstrating that land markets do not necessarily work better than state-led reallocation of land to foster socioeconomic growth, and vice versa. Finally, we have extended our analysis to propose a plan-led strategy that brings elements of both approaches together in harmony with multiple developmental efforts to the benefit of the regional economy, for which the allotted role of regional planning is central.

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ANNEXES

Annex A-1: LAND BILL PROGRAMME - QUESTIONNAIRE 1

Target population: PCT settled families

Site details

PCT association:
Location/municipality:
State:

Interviewee's details (optional)

Name in full:
Gender:
Main occupation:
Contact details:
Signature:

Interview details

Date:
Starting time:
Finishing time:

1. Your former local of residence

- ☐ Same land
- ☐ Nearby farm
- ☐ Same locality/town
- ☐ Nearby locality/town
- ☐ Locality off by more than 100km
- ☐ A different state

2. Your past occupations

- ☐ Urban wage labour
- ☐ Rural wage labour
- ☐ Temporary urban labour
- ☐ Temporary rural labour
- ☐ Domestic duties (servant/ maid)
- ☐ Small farmer (agriculture/ livestock grazing)
- ☐ Small business owner
- ☐ Student
- ☐ Unemployed
- ☐ Other: _____

3. Your current occupation

- ☐ Urban wage labour
- ☐ Rural wage labour
- ☐ Temporary urban labour
- ☐ Temporary rural labour
- ☐ Domestic duties (servant/ maid)
- ☐ Small farmer (agriculture/ livestock grazing)
- ☐ Small business owner
- ☐ Student
- ☐ Unemployed
- ☐ Other: _____

4. Your schooling level

- ☐ Illiterate (unable to read but unable to write)
- ☐ Semiliterate (able to read but unable to write)
- ☐ Attended elementary school
- ☐ Attended fundamental school
- ☐ Attended high school
- ☐ Attended technical school
- ☐ Attended university

5. Have you been the beneficiary of a land reform programme before?

- ☐ Yes ☐ No

6. Have you lived/ worked on a settlement before?

- ☐ No
- ☐ Yes. Where? _____

7. If you answered “yes” to the previous question, please tell us why you left that settlement

- ☐ Bad location (far from town, bad roads, etc.)
- ☐ Land was not good for agriculture (little water, bad soil, etc.)
- ☐ Defaulted on loan payments

- ☐ Other: _____

8. Are you a social movement activist (MST, CONTAG, other)?

- ☐ Yes ☐ No

9. Have you participated in the selection/purchase of the property?

- ☐ Yes, I talked with the landowner
- ☐ No, the association did the job
- ☐ I just occupied/ invaded the land
- ☐ Other: _____

10. What’s your status regarding the property?

- ☐ I have the definitive title
- ☐ I have a provisional title
- ☐ I don’t have any title
- ☐ Don’t know

11. Your own assessment of plot’s size

- ☐ Large/ enough ☐ Medium/ just fair ☐ Shot/ not enough

12. Your own assessment of plot’s price

- ☐ Fair ☐ Expensive ☐ Cheap ☐ Don’t know

13. Your own assessment of plot’s location (close to town, etc)

- ☐ Good ☐ Average ☐ Bad

14. Do you think your plot is suitable for agriculture?

- ☐ Yes ☐ No. Why? _____

15. Your own assessment of plot’s overall quality

- ☐ Good ☐ Average ☐ Bad

16. Any past experiences in farming?

☐ Yes ☐ No

17. Have you received any kind of technical support?

☐ Yes ☐ No

18. Do you have your own farm machinery?

☐ Tractor

☐ Draft animals

☐ Irrigation equipments

☐ Other: _____

☐ No, but I borrow them from someone else

☐ No, I don't need them

19. Are you a PRONAF beneficiary?

☐ Yes ☐ No

20. Your own assessment of roads to the settlement

☐ Good ☐ Average ☐ Bad

21. Your own assessment of public transportation to the settlement

☐ Good ☐ Average ☐ Bad ☐ Lacking

22. Your own assessment of schools the settlement

☐ Good ☐ Average ☐ Bad ☐ Lacking

23. Do your kids attend school?

☐ No ☐ Yes. How many of them?: _____

24. If you answered "no" to the previous question, why?

☐ Kids are too young for school

☐ There is no school on the site/ school is too far away

☐ I don't want to send them to school

☐ They don't want to attend school

25. Do you have your own means of transportation (car, bike, etc.)?

☐ Yes ☐ No

26. Do you own a house?

☐ Yes ☐ No

27. Type of housing

☐ Masonry

☐ Wood

☐ Clay and wood

☐ Other: _____

28. Source of indoor illumination

☐ Electricity

☐ Biogas

☐ Diesel generator

☐ Other: _____

29. Appliances in your home

☐ TV set

☐ Refrigerator

☐ Radio

☐ Oven

☐ Other: _____

30. Your own assessment of health services on the settlement

☐ Good ☐ Average ☐ Bad ☐ Lacking

31. Your own assessment of leisure activities on the settlement

☐ Good ☐ Average ☐ Bad ☐ Lacking

32. Overall, how is your life quality since you joined the PCT?

- ☐ Better
☐ Much Better
☐ Quite the same
☐ Worse
☐ Much worse

33. Main reason to take trips to town

- ☐ Work
☐ Study
☐ Sale crops in the market
☐ Shopping
☐ Leisure
☐ Other: _____

34. Main source of family income

- ☐ On-site farming activities
☐ Other activities on the site
☐ Off-site farming activities
☐ Urban jobs
☐ Other: _____

35. Is your income from work in the settlement enough for the family's subsistence?

- ☐ Yes ☐ No

36. Are you the beneficiary of a cash transfer programme?

- ☐ Bolsa Família (Family voucher)
☐ Bolsa Escola (Scholarship programme)
☐ Fome Zero ("Zero Hunger" programme)
☐ Auxílio Gás (Gas voucher)
☐ Other: _____
☐ None

37. How is your income since you joined the PCT?

- ☐ Higher
☐ Much higher
☐ Quite the same
☐ Lower
☐ Much lower

38. Are you going to be able to payoff the loans?

- ☐ Yes ☐ No

39. What do you think of the Land Bill Programme?

- ☐ Good ☐ Very good ☐ Bad ☐ Indifferent

40. Are you making plans to leave the settlement?

- ☐ No
☐ Yes. Reasons: _____

Annex A-2: LAND BILL PROGRAMME - QUESTIONNAIRE 2

Target population: PCT association leaders

Site details

PCT association:
Location/municipality:
State:

Interviewee's details (optional)

Name in full:
Main occupation:
Position in the association:
Contact details:
Signature:

Interview details

Date:
Starting time:
Finishing time:

1. Settlement total area: _____

2. Number of plots: _____

3. Number of settled families: _____

4. Physical access to site

☐ Paved road ☐ Unpaved road ☐ Partially paved road

5. Your own assessment of water supply

☐ Enough ☐ Not enough ☐ Lacking

6. Your own assessment of sewage

☐ Enough ☐ Not enough ☐ Lacking

7. Your own assessment of public illumination

☐ Enough ☐ Not enough ☐ Lacking

8. Your own assessment of rubbish collection

☐ Enough ☐ Not enough ☐ Lacking

9. Your own assessment of telephone service

☐ Enough ☐ Not enough ☐ Lacking

10. Your own assessment of internet access

☐ Enough ☐ Not enough ☐ Lacking

11. Your own assessment of public transportation / school bus

☐ Enough ☐ Not enough ☐ Lacking

12. Your own assessment of on-site schools

☐ Enough ☐ Not enough ☐ Lacking

13. Your own assessment of health facilities

☐ Enough ☐ Not enough ☐ Lacking

14. Your own assessment of on-site shops

☐ Enough ☐ Not enough ☐ Lacking

15. Are there on-site vegetable/fruits markets?

☐ No

☐ Yes. Please give details (how often, etc):

16. Where families usually purchase basic goods and services

☐ From on-site shops

☐ Nearby towns

☐ Distant towns

17. Technical support from government agencies

☐ Enough ☐ Not enough ☐ Lacking

18. Main agricultural products on the site (ranked by order of importance):

a) _____

b) _____

c) _____

19. Other farming activities (livestock, fish farming, etc):

a) _____

b) _____

c) _____

20. For-profit non-farm activities on the site

☐ None

☐ Yes. Please give details (souvenir shops, ecotourism, etc):

21. Are on-site productive activities sufficient for the families' subsistence?

☐ Yes ☐ Only partially ☐ No

22. Share of production sold within settlement

☐ All/ almost all ☐ About half ☐ Little ☐ None/ close to none

23. Share of production sold in nearby towns

☐ All/ almost all ☐ About half ☐ Little ☐ None/ close to none

24. Share of production sold in distant towns

☐ All/ almost all ☐ About half ☐ Little ☐ None/ close to none

25. Share of production sold through a cooperative

☐ All/ almost all ☐ About half ☐ Little ☐ None/ close to none

26. Share of production sold to major businesses

☐ All/ almost all ☐ About half ☐ Little ☐ None/ close to none

27. Share of production sold to major shop chains
☐ All/ almost all ☐ About half ☐ Little ☐ None/ close to none

() All/ almost all () About half () Little () None/ close to none

28. Means to transport crops:

a) _____

b) _____

c) _____

29. Importance of loans (SIC/SAT package, PRONAF, etc.) to improve the settlers' livelihoods:

() Very important () Important () Not important () Don't know

30. Please describe any other improvements/difficulties in the lives of the families in the settlement.

[illegible]
