"Agricultural Extension and Farmer Participation in Southern Brazil"

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ABSTRACT

The thesis discusses the government and non-government agricultural extension services, concerning the diffusionist and participatory approaches and the participation of producers. It looks into two land settlement projects, the Vitória da União project, which was assisted by EMATER-Pr, Paraná's official agricultural extension service, and the Nhundiaquara project, which was assisted by ASSESOR, a local non-governmental organization. They are situated in Brazil, in the State of Paraná, and were part of the National Agrarian Reform Plan (PNRA), created in 1985. Three dimensions of participation are considered: objectives (project efficiency, cost-sharing, project effectiveness, capacity-building and empowerment), intensities (information-sharing, consultation, decision-making and action), and instruments (extensionists and producer groups).

The modernization of agriculture after World War II strengthened the latifundio, rooted in colonial Brazil and intensified the marginalization of small farmers. The governmental agricultural extension service was a tool to diffuse modern technology, based on industrial inputs. Its administration, extension methods, producer groups and organizations, and extensionists were designed to facilitate the adoption of modern technology and achieve national economic goals. The non-governmental agricultural extension organizations, which were sponsored mainly by the Church, opposed the modernization policies and the authoritarian regime. These organizations were concerned with the situation of the poor farmers and focused on social development. Their
administration was highly informal and extensionists were militants of social movements. The findings suggest that these characteristics promoted different types of producer participation which generated rather different project results such as in terms of the distribution of benefits and income, self-sufficiency and empowerment. Alternative extension policies are suggested in view of the latest trends on democratization, agrarian reform and economic adjustment. They focus on promoting government and non-government collaboration, alternative means to generate and diffuse appropriate technology and the participation of small farmers in official policies.
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This thesis was inspired by the possibility of agricultural extension services helping the rural poor to remove historical barriers that have deprived them of dignity and citizenship. The years I spent working with small farmers in the 1970s and 1980s, in the government agricultural extension services, provided me with an intense hope of improving the livelihood of the worse off living in the countryside. It was often suppressed by dismay and doubt related to the efficacy of our work as extensionists. It became evident to me that abundant cheap money and technological paraphernalia was insufficient to free them from poverty and isolation. On the contrary, I saw the better off becoming richer. The arrival of the democratization process and the protest of the disfranchised encouraged me to question my role as an extensionist. I am very grateful to those farmers who patiently taught me about their situation. It gave me the strength to review my beliefs. It guided me through the secluded task of writing this thesis. It would have been hardly possible without the dedicated supervision, understanding and encouragement of Dr. Anthony Hall, to whom I am very grateful. To the members of both Nhundiaquara and Vitória projects my thanks for their cooperation. I hope this thesis will contribute to their cause: agrarian reform. I want to express my gratitude to my friends, especially those from SINDASPP, who stood for me as if it was their own undertaking. They were fundamental for allowing me to reconcile making a living and writing the thesis. My thanks to CNPq for their financial support. I am greatful to those in England who made us feel at
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CHAPTER I
THE MODERNIZATION OF AGRICULTURE AFTER WORLD WAR II

This chapter discusses the modernization of agriculture in Brazil and in the state of Paraná, during the 1960s and 1980s. The change from traditional to modern agriculture, trends in rural credit, patterns of crop production and landownership distribution, and the growth of agro-industry are examined. Farmers' uprisings and the struggle for agrarian reform, and the latest trends in agrarian reform and agricultural extension services are considered. Finally, the research methodology and some preliminary notes are presented.

I.1 - TRADITIONAL AGRICULTURE

Emergence of Large Estates and Small farms

The initial development of Brazil depended on short-lived cycles of extractive activities and agricultural exports from large estates. The first settlements were formed around the sugar-cane plantations along the coastal belt, and the extensive cattle ranches, situated in the interior of Northeast and South (see Map I.a). In the eighteenth century, territorial occupation expanded when the coffee plantations developed in the most fertile lands of the Southeast and South, and cotton farms were established in the Southeast. Two rapid economic cycles, the gold rush in the mid-1800s and the rubber boom in the early 1900s, stimulated some development in the Amazon region and in Minas Gerais respectively (Prado, 1976; Furtado, 1968, 1971).
Until the first half of the eighteenth century those large estates relied on the labour of the slaves shipped from Africa. After that period, European immigrants constituted the bulk of the labour, especially on the coffee plantations. Small farms were largely inhibited by a series of laws, such as the hereditary captaincies and Lei de Terras. As a result, only sharecroppers and squatters proliferated either within or outside the large estates. The exception was the small subsistence plots in the colonies of immigrants in the South. Consequently at the end of the eighteenth century, the agrarian sector comprised the latifundio, vast and unproductive estates producing for exports, and the minifundios, subsistence farms which supplied a relatively small internal market that promoted little industrial development (Guimarães, 1964; Furtado, 1968, 1971; Prado, 1976; Muller, 1985; Soskin, 1988).

Changing Traditional Agriculture

During the 1920s the traditional agriculture based on the latifundio and minifundio, for the first time, was forced to modernize. Expansion of the agricultural frontier was no longer sufficient to meet the demand for food staples. Industry began to develop, especially the manufacture of agricultural machinery and equipment, and the processing of coffee and cotton in São Paulo, and wheat and corn in Rio Grande do Sul. Food prices increased and workers mobilized for better wages. The declining prices of coffee in the international market forced the large landowners of São Paulo to increase productivity and reduce labour costs (Prado, 1976, 1979; Muller, undated).
Agriculture was further stimulated to modernize after 1930 when an import substitution policy was introduced (Furtado, 1968, 1971; Prado, 1976). The government intervened more decisively in the economy by stimulating industrial development and keeping food prices low, which aggravated the crisis of agriculture. Rural exodus and immigration from Europe intensified and the urban population increased (Soskin, 1980; Baer, 1989). Railways, highways and hydroelectric dams were built, the institutes of coffee, sugar and rubber were created to provide technical assistance and regulate agricultural policies, and colonization was stimulated (Baer, 1989; Muller, undated). Only the Northeast remained at the margins of these developments (Muller, 1985).

1.2 - THE MODERNIZATION OF BRAZILIAN AGRICULTURE

The Changing Role of Agriculture

During the early 1950s, the modernization of agriculture was definitely on the economic and political agenda. Fluctuations in international prices, difficulties with the supply of food and consumer goods and increasing food prices confirmed the need to develop industry and introduce a new agricultural policy (Carrière, 1991). The government subsidised industrial crops, sugar-cane, coffee, cotton, wheat and cocoa, taxed exports, and submitted staple crops to price controls. However, these measures largely failed to promote agricultural production, which caused social unrest and put at risk political stability (Muller, 1985; Ianni, 1970). During the early 1960s, São Paulo led the debate about new economic policies. There, industrialists and entrepreneurs advocated
increasing and diversifying agricultural production and reducing food prices. Coffee and cotton producers demanded credit subsidies to purchase fertilizers and machinery, and price guarantees. Representatives of the small farmers defended the redistribution of land as the means to promote agricultural production. The government decided to introduce a more effective agricultural policy and gradual agrarian reform (Muller, 1985; Carrière, 1991).

After the military coup of 1964, the government embraced the interests of the industrialists and large landowners by choosing both to increase productivity and colonize the Amazon region as the means to promote agriculture production, rather than changing the pattern of landownership (Muller, undated; Carrière, 1991). In addition, it defined a new role for the primary sector, which in broad terms consisted of promoting industrial development. Thus, the primary sector should help increase exports and reduce imports, supply low cost food crops, strengthen the balance of payments, provide raw materials and labour for industry and consume industrial products (Barros, 1977; World Bank, 1982; Carrière, 1991).

Expansion of the Agro-Industrial Complex

Until the 1940s, industrial development was relatively modest and consisted of textiles and the processing of wheat, sugar, wood and leather. In the 1940s and 1950s, the manufacturing of tractors and machinery began and developed some capacity to process fruits and dairy byproducts, mainly around the large cities. In the 1960s, industrial development took off and especially the agro-industries. The military governments, largely driven by the idea of national security
and industrialization, emphasised the construction of infrastructure, such as electricity generating plants, highways and agro-industries. The agro-industrial complex emerged in Brazil during a single decade by expanding the manufacturing of chemical fertilizers and pesticides, the processing of agricultural produce, and the infrastructure of distribution, storage and transportation (Muller, undated; Baer, 1989).

Official policies played an important role in the growth of these industries, mainly because they subsidised the development of new plants, the modernization of existing industries, and the prices of fertilizers and pesticides. These policies were advocated by industrialists, mainly from São Paulo, and rural entrepreneurs, especially from the South and Southeast, and multinational companies. The trade unions and rural cooperatives that represented soybean and wheat planters also influenced the formulation of these policies (Muller, undated; Soskin, 1988).

Table I.1 - Increase of Agricultural Production, Crop Processing Capacity and Manufacturing of Agricultural Inputs, Percentages in 1960-70 and 1970-75

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>1960-70</th>
<th>1970-75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>7.7</td>
<td>21.8</td>
</tr>
<tr>
<td>Crop Processing Capacity</td>
<td>7.5</td>
<td>21.2</td>
</tr>
<tr>
<td>Manufacturing of Agricultural Inputs</td>
<td>35*</td>
<td>68</td>
</tr>
</tbody>
</table>

Source: IBGE various years in (Muller, undated)

( * ) Pharmaceutical and veterinary products were not included and only 10% went to agriculture.

The agro-industries grew faster than agriculture itself, especially the manufacturing of fertilizers and processing of soybean (see table I.1). In 1979, soybean crushing capacity was greater than total soybean production (15.2 million tons),
since 35% of this capacity was not utilized (Soskin, 1988). The soybean processing industry played an important role in producing oil and meal for internal consumption and exports. From 1960 to 1982, soybean meal production increased from 98,000 to 1.9 million tons, comprising 80% of total soybean exports and 11% of Brazil's total exports. During 1960-72, soybean meal accounted for 88% of the consumption of vegetable edible oil in the country, replacing peanuts and cotton oil. The use of this input in agriculture was second only to fertilizers, and played an important role in the growth of the poultry industry. From 1964 to 1984, poultry consumption per capita grew from 1.2 to 10.3 Kg (Soskin, 1988). Most of the new crushing capacity was set in Rio Grande do Sul and Paraná, and in 1983, these two states accounted for 77% of total capacity, whilst São Paulo, which was the traditional producer, had only 14% (Drefus, et Cie, 1984).

I.2.2 - AGRICULTURAL POLICY AND MODERNIZATION

Rural Credit Policy and Industrial Crops

Subsidised credit was the single most important instrument employed by the government to promote the modernization of agriculture. Rural credit was intended to facilitate medium and small farmers to access capital and purchase modern inputs, which were perceived as the main bottlenecks to agriculture production (Soskin, 1988). During the 1970s and early 1980s, rural credit, which comprised the bulk of the minimum price programme, increased by 24% per year and grew five-fold in real terms. Subsidies were high, with negative interest rates, and the peak was (-)37.7% in 1980. The
official credit system (SNCR), accounted for the allocation of 85% and the Banco do Brasil for over 60% of total rural credit (Goldin, et al, 1993).

Despite this remarkable growth, rural credit only reached a minority of large producers. Only 25% used credit and more than half of total credit was used by less than 5% of these producers throughout the 1970s (World Bank, 1989). Farms with more than 100 ha used nearly 50% of the total credit, whilst farms with less than 20 ha used less than 20%. In São Paulo, from 1974 to 1977, farms larger than 50 ha absorbed more than 70% of the rural credit, whilst those with less than 20 ha received under 10% (IEA, May 1979). Banks preferred dealing with fewer and larger loans, in order to minimise transaction costs, while in general small farmers were not equipped to deal with the banking system (Sousa, 1990). Credit was given only to landowners and a large proportion (46%) of small farmers enjoyed less permanent land use arrangements (IBGE, 1980).

A significant share of rural credit, up to 30%, was allocated to two crops, soybean and wheat, although their value was only 20% of total agricultural production (World Bank, 1989). Staple crops, black beans and cassava accounted for nearly 20% of the value of crop production and received only 4% of total credit (World bank, 1982). In Rio Grande do Sul, soybean (55%), wheat (24.5%), rice and corn (16%) used more credit than in other regions, with far less for black beans (0.29%) and potatoes (0.44%) (Quintana, 1982). Most subsidised credit went to the South and Southeast, which in 1978 absorbed 75% of the total (World Bank, 1982). São Paulo absorbed around four times more than the Northeast and twice the national average (World Bank, 1982). In addition, in the North and
Northeast, the bulk of rural credit (68%) was kept by millers and exporters (Soskin, 1988).

Table I.2 - Increase in Soybean, Wheat, Staple Food Area and Share of the Increase of Farmland, 1970-80

<table>
<thead>
<tr>
<th>Crops</th>
<th>Area (1,000 ha)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean</td>
<td>7,455</td>
<td>55</td>
</tr>
<tr>
<td>Wheat</td>
<td>1,226</td>
<td>9</td>
</tr>
<tr>
<td>Food Staple*</td>
<td>4,007</td>
<td>30</td>
</tr>
<tr>
<td>All Crops</td>
<td>13,486</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Calculated from IBGE, various years

(*) corn, black beans, rice and cassava

During the 1960s and 1970s, soybean enjoyed the highest growth rate (30%) of all crops in Brazil (World Bank, 1982), when it expanded by over seven million ha, which accounted for 55% of the total increase of farmland (see table I.2). Soybean yields increased from 300,000 to 13 million tons, and accounted for 25% of total agriculture-based exports (World Bank, 1982). Large farms produced most of the soybean (see table I.3). In Rio Grande do Sul, farms with less than 100 ha represented only 26% of the soybean area (Soskin, 1988). Second to soybean was the expansion of wheat, when it increased by 1.2 million ha, which accounted for around 10% of total new cropland. The government monopolized the trade in imported and domestically produced wheat, supplied the mills and controlled retail prices, with the aim of reducing imports and consumer prices. Wheat consumption increased by over 160% per capita, which in part forced Brazil to continue importing wheat (World Bank, 1982; Soskin, 1988).
Table I.3 - Participation of Different Size of Holdings in Yields of Main Crops (Percentages), 1972.

<table>
<thead>
<tr>
<th>Farm Size (ha)</th>
<th>Farm Land</th>
<th>Food Crops*</th>
<th>Industrial Crops**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 100</td>
<td>17.4</td>
<td>58.0</td>
<td>51.4</td>
</tr>
<tr>
<td>100 - 10,000</td>
<td>31.2</td>
<td>31.9</td>
<td>35.0</td>
</tr>
<tr>
<td>Over 10,000</td>
<td>51.4</td>
<td>9.0</td>
<td>11.7</td>
</tr>
</tbody>
</table>

Source: Estatisticas Cadastrais/2, INCRA, 1972
*Rice, Beans, Manioc and Corn
** Soybean, Wheat, Cotton and etc.

During the 1970s, these crops expanded mainly in three states: Rio Grande do Sul, Paraná and São Paulo. This was, in part, a result of soybean varieties brought from the USA adapting well in the Southern states and intercropping with wheat. In 1980, the South accounted for 78% of soybean and 90% of the wheat area. Rio Grande do Sul alone produced 43% of the wheat and 38% of the soybean (IBGE, 1980). Soybean production was stimulated by attractive prices on the international market and official policies, which promoted the expansion of the agro-industrial complex rural cooperatives, and wheat area (Sousa, 1990). During the early 1980s, soybean and wheat production fell as a result of the low prices in the international market, the increase in interest on rural credit and prices of fertilizers (Soskin, 1988). Production recovered in part because new varieties, developed by Brazilian agricultural research (EMBRAPA), allowed the soybean area to expand to Mato Grosso do Sul and Goiás (Sousa, 1990).

Although the area of staple crops increased (see table I.2), the per capita production of these crops fell and so did their yield growth rate. The exception was the Northeast, which
accounted for most of the new staple crop area (IBGE, 1980). In Rio Grande do Sul, during the 1970s, the area of staple crops, except rice, fell by 500,000 ha. Research efforts managed to improve seed quality for most of the food crops, but the production of improved seeds was neglected, which prevented farmers from having access to them. By the late 1970s, only around 4% of the black beans area under cultivation used improved seeds, whilst 70% of soybean and 90% of the wheat area used this input (Ribeiro, 1973, Glaeser, 1987).

Modern Agricultural Inputs

The expansion of industrial crops was followed by growth in the use of chemical fertilizers, pesticides, tractors, improved seeds and soybean meals (see table I.4). These inputs grew at an annual rate of 148% during the first half of the 1970s, when around half of total agricultural inputs were industrial in origin. Soybean fields used more than 20% of total fertilizers, followed by three other crops; sugar (14%), coffee (11%) and wheat (10%). Brazil was forced to import 80% of its consumption of fertilizers, which in 1976 accounted for 6.2% of total imports (Soskin, 1988). A relatively small group of farms (26%) had access to this input. A large part of the fertilizers (85%) was used in the South, Southeast and Centre-West. In Rio Grande do Sul and São Paulo more than 70% of the farms used fertilizers, and considering these two states plus Paraná, 53% of the farms used this input (IBGE, 1980).

After fertilizers came the expansion of tractors. During 1960-80, agriculture absorbed nearly 400,000 new tractors. Tractors were used mainly in large farms and industrial crop areas. Farms with more than 1,000 ha had 36% of the tractors while farms with under 20 ha had 1.2%.
Table I.4 - Consumption of Agricultural Inputs, 1960, 1978

<table>
<thead>
<tr>
<th>Type</th>
<th>1960 (Million tons)</th>
<th>1978</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPK</td>
<td>305</td>
<td>3,100</td>
</tr>
<tr>
<td>Pesticides</td>
<td>41,5</td>
<td>72,3</td>
</tr>
<tr>
<td>Soybean Meal</td>
<td>1,700</td>
<td>6,700</td>
</tr>
<tr>
<td>Tractors*</td>
<td>165,870</td>
<td>545,205</td>
</tr>
</tbody>
</table>

Source: Muller, undated

(*) Units

In addition, 43% of tractors were found in the South (Soskin, 1988). Brazil became the leading country in Latin America in employing these modern inputs (Grindle, 1986). Yet less than 25% of the increase in agricultural production was due to yield improvements, while 75% was the result of the expansion of the agricultural frontier (Ribeiro, 1973, Glaeser, 1987). Around 90% of the growth of soybean production was due to the incorporation of new areas (Soskin, 1988).

Increased Concentration of Landownership

During the 1970s and 1980s, the concentration of landownership increased significantly (see Table I.5). Large farms with more than 1,000 ha increased their number and their share of total area, in all regions. Noticeably during 1967-78, properties with more than 10,000 ha and less than 100,000 ha incorporated around 45,1 million ha and their share increased from 16% to 25% of the total area. The exception was the South, where the number of these huge farms fell, although this region had only 40 of a total of 3,200. Except in the North, small farms with less than 10 ha decreased their share of the total area, from nearly 2% to 1%, although their number increased, from 2,520 to 2,598 million. Farms with more than 10 ha and less than 1,000 ha, were relatively stable (Graziano, 1980).
As a result of this trend, the average size of farms increased from 59.7 ha to 70.7 ha (IBGE, 1970, 1980).

Table I.5 - Distribution of Landownership, Brazil, Farms and Area by Size: 1967, 1972 and 1978 (Percentages).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td>36.4</td>
<td>1.7</td>
<td>31.1</td>
<td>1.4</td>
<td>28.5</td>
<td>1.0</td>
</tr>
<tr>
<td>10 - 100</td>
<td>51.0</td>
<td>17.0</td>
<td>54.7</td>
<td>16.1</td>
<td>55.7</td>
<td>13.8</td>
</tr>
<tr>
<td>100 - 1,000</td>
<td>11.3</td>
<td>31.4</td>
<td>12.7</td>
<td>31.2</td>
<td>14.0</td>
<td>28.2</td>
</tr>
<tr>
<td>1,000 - 10,000</td>
<td>1.3</td>
<td>33.1</td>
<td>1.4</td>
<td>32.4</td>
<td>1.7</td>
<td>32.0</td>
</tr>
<tr>
<td>More than 10,000</td>
<td>0.1</td>
<td>15.8</td>
<td>0.1</td>
<td>19.0</td>
<td>0.1</td>
<td>25.0</td>
</tr>
</tbody>
</table>

Source: Graziano da Silva, 1981.

During the 1970s, it was mainly sharecroppers, squatters and tenants who were displaced from their plots, especially in the areas of industrial crop production (see table I.5). They were driven either into waged work or to the agricultural frontier, especially to squatting and sharecropping in the North (Graziano, 1980; Martins, 1981). During the early 1980s, the number of tenants and squatters increased in the Amazon region, mostly on new farmland (Hall, 1990) and in the South, mainly because large farmers rented land to grow soybean and wheat (Graziano, 1981; Soskin, 1988). The proportion of landowners fell from 80% in 1950 to 60%, in the mid-1980s (Martins, 1981), whilst the number of waged-workers nearly doubled their number, from 3.5 to 6.5 million. A large part, 2.5 million, were bóia-frias, seasonal workers, on the sugar-cane, coffee and cotton fields (Graziano da Silva, 1981), living on the outskirts of urban centres, submitted to hard working conditions and low salaries (D'Incao de Mello, 1977).
Table I.6 - Number of Sharecroppers, Tenants and Squatters (millions): 1970-72, 1975-76, 1978 and 1984

<table>
<thead>
<tr>
<th>Type of Farmers</th>
<th>1970-72*</th>
<th>1975-76*</th>
<th>1978</th>
<th>1984</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squatters</td>
<td>0.79</td>
<td>1.0</td>
<td>0.50</td>
<td>0.64</td>
</tr>
<tr>
<td>Sharecroppers</td>
<td>0.58</td>
<td>0.13</td>
<td>0.27</td>
<td>0.43</td>
</tr>
<tr>
<td>Tenant Farmers</td>
<td>0.60</td>
<td>0.57</td>
<td>0.12</td>
<td>0.18</td>
</tr>
<tr>
<td>Perm. and Temp. Workers</td>
<td>3.55</td>
<td>1.55</td>
<td>1.10</td>
<td>2.15</td>
</tr>
</tbody>
</table>


A large proportion of the small farmers displaced from their land went to urban centres (Faria, 1983). As a result, during the 1970s and 1980s, the rural population decreased from 55.3% to 32.2% of the total, the fall being especially marked in areas of industrial development and non-traditional agriculture (South and Centre-West). Most went to live in shanty towns, which exacerbated income concentration and aggravated regional and rural-urban disparities. In Rio Grande do Sul, during the 1970s, over 1.7 million people migrated from rural areas, in a population of eight million (Bertrand et al, 1987). In 1970, the poorest 50% of the rural population earned 22% of the total income in the rural areas. By 1980, its share was reduced to 15%, whilst the richest 5% in the countryside, had their share enlarged from 24% to 45% (Hall, 1989). The mean income increased by 49% in Brazil in the 1970s, and in the South and Southeast it was twice the value of the Northeast. Per capita income increased more in the rural areas but was considerably smaller in urban areas. This was also the case with indicators of well-being, related to water supply, literacy, school enrolment rates and the use of sewerage facilities (Soskin, 1988).
I.3 - THE MODERNIZATION OF AGRICULTURE IN PARANÁ

Traditional Agriculture in Paraná

Until the nineteenth century, the development of the state of Paraná was no different from other parts of Brazil. The first settlements emerged from the mining of precious stones and gold and extensive cattle ranching, based on slave labour, which developed in the Metropolitan and Ponta Grossa regions (see map I.a). Large farms developed in the Centre-East and Centre-South stimulated by the extraction of native erva-mate tea and logging of Araucária augustifolia (Westphalen et al, 1968). Coffee plantations developed in the Old-North, when large coffee growers from São Paulo were attracted by the region's fertile land. During the first half of the nineteenth century, Paraná differed from most other states when the emergence of small farms was facilitated. The government began to promote small farms as the means to produce both food staples and coffee in the Centre-North and North-West. The production of erva-mate tea and migration from Rio Grande do Sul, Argentina and Uruguay stimulated the establishment of small farms in the Southwest (Martins, 1926).

In the 1940s and 1950s, the development of small farms in the Southwest and West was promoted by migration from Rio Grande do Sul, which was stimulated by President Vargas' policy of populating Brazilian border areas with Argentina and Paraguay. Also, most of the large farms in the Centre-South based on logging and erva-mate, were divided into small farms by the colonization companies (Correa, 1970; IPARDES, 1987). The exception was the Centre-West, the Paranavaí and Umuarama regions, where large cattle ranches were established when
coffee prices declined. During the early 1960s small holders comprised 85% of the total and most were situated in the Centre-North, North-West, South-West and West. The large farms comprised the coffee plantations in the Old-North, with cattle rearing, *erva-mate* tea and timber mainly in the Southeast and Centre-South (Camara, 1985).

The Modernization of Agriculture

After the mid-1960s, official policies in favour of industrialization and the modernization of agriculture, especially subsidies to agro-industries and wheat and the promotion of rural cooperatives, combined with favourable international prices of soybean, promoted a major change in the agrarian sector in Paraná. During the 1960s and 1980s the area of arable land expanded by around four million ha, from 3.1 to 7.1 million ha. This was primarily the result of the growth of the area under soybean and wheat (see table 1.7). During the 1970s, the share of these two crops as a proportion of Paraná's total cropland increased from 8% to 34%. They expanded mainly in the North and Northwest (40%), facilitated by the infrastructure which resulted from the expansion of coffee, and in the West and South-West (44%), favoured by small farmers being used to operate in the market to trade part of their yields (IBGE, 1980).

The wheat area increased by nearly 900,000 ha, which accounted for 70% of the total new wheat area, and 90% of the increase in wheat production in Brazil. Paraná became the principal wheat producer, accounting for 50% of national production. The soybean area increased by nearly two million ha, which represented 22% of the total new soybean area, and
50% of the increase of soybean production (see table I.8). Paraná became second to Rio Grande do Sul in soybean production.

Table I.7 - Production of Industrial and Staple Crops by Size of Farms, Paraná, 1980 (Percentages)

<table>
<thead>
<tr>
<th>Crops</th>
<th>Soybean</th>
<th>Wheat</th>
<th>Black Beans</th>
<th>Rice</th>
<th>Corn</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 10 ha</td>
<td>4.4</td>
<td>2.5</td>
<td>34.0</td>
<td>30.0</td>
<td>22.0</td>
</tr>
<tr>
<td>10 - 100</td>
<td>47.0</td>
<td>44.9</td>
<td>57.0</td>
<td>49.0</td>
<td>58.0</td>
</tr>
<tr>
<td>More than 100</td>
<td>48.6</td>
<td>47.8</td>
<td>9.0</td>
<td>20.0</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Source: IBGE, 1980

Expansion of the area of soybean and wheat, which was produced mainly by large farms, was at the expenses of the area under staple crops, which were farmed mainly by small farms (see table I.7). The area of staple crops diminished relatively more in Paraná than in the rest of the country, except in Rio Grande do Sul. Black beans, cassava and rice lost 25% of their share of Paraná's crop land, falling from 75% to 50%. The area under corn fell by 260,000 ha, the equivalent of 15% of the total cropland of Paraná. These crops were cultivated by 75% of farms with less than 50 ha. Paraná's share of the staple crops area in Brazil fell from 11% to 6%, whilst its share of the wheat producing area increased from 14% to 43%.

Soybean began to expand in 1967 and 1968, when coffee production was diminishing and the government was eradicating coffee areas, due to frequent frost and declining prices. Paraná accounted for 26% of total production of coffee in the 1970s, falling to 5% in the 1980s (SEAB, 1982; IPARDES, 1991). The soybean and wheat area expanded first in the North and West, and reached the Centre-South only during the 1980s (IBGE, 1970, 1975, 1980).
Table 1.8 - Changes on Area of Main Crops in Parana, 1970, 1980

<table>
<thead>
<tr>
<th>CROPS</th>
<th>AREA (000 ha)</th>
<th>CHANGE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1970</td>
<td>1980</td>
<td>Area (000)</td>
<td>(%)</td>
</tr>
<tr>
<td>Soybean</td>
<td>395</td>
<td>2,350</td>
<td>1,955</td>
<td>594</td>
</tr>
<tr>
<td>Wheat</td>
<td>250</td>
<td>1,440</td>
<td>1,190</td>
<td>575</td>
</tr>
<tr>
<td>Planted Pasture</td>
<td>2,700</td>
<td>4,540</td>
<td>2,246</td>
<td>168</td>
</tr>
<tr>
<td>Planted Forest</td>
<td>205</td>
<td>408</td>
<td>203</td>
<td>198</td>
</tr>
<tr>
<td>Natural Forest</td>
<td>2,571</td>
<td>2,086</td>
<td>(-)484</td>
<td>81</td>
</tr>
<tr>
<td>Staple Crops*</td>
<td>3,577</td>
<td>3,401</td>
<td>(-)176</td>
<td>95</td>
</tr>
<tr>
<td>Perennial Crops</td>
<td>1,306</td>
<td>651</td>
<td>(-)1,241</td>
<td>50</td>
</tr>
<tr>
<td>Other Crops**</td>
<td>509</td>
<td>374</td>
<td>(-)135</td>
<td>74</td>
</tr>
</tbody>
</table>

Source: SEAG-PR/DERAL, 1981
(* ) rice, black beans, cassava and corn
(**) cotton, peanut, potatoes

The expansion of these crops was combined with the growth of cattle raising, logging and dairy activities, when the area of planted forest and planted pasture, increased by 100,000 and 2.2 million ha respectively (see table 1.8) (IPARDES, 1987).

During the 1980s, the area of soybean diminished due to low international prices and diminishing credit subsidies, when Parana's share of the production of soybean dropped to 23%. Yet the area of staple crops did not recover and only the production of cotton and poultry increased (IPARDES, 1991).

Agricultural Inputs and Rural Credit

In the 1970s, the state of Parana became a leading user of modern agricultural inputs and machinery (see table I.9). From 1970 to 1975, the use of lime increased by 220% and fertilizers by 60%. During the 1970s, fertilizers were introduced in around 170,000 farms, thus increasing from 11% to
61% of the total farms. Paraná absorbed up to 28% of the total fertilizers, fungicides and herbicides sold in Brazil (SEAB, 1985b). In 1980, most industrial crops used chemicals and improved seeds; soybean (93%), wheat (98%), coffee (88%) and cotton (95%). Only a minor proportion of staple crops used this input; corn (28%), rice (20%) and black beans (12%) (IBGE, 1980; SEAB, 1985b).

Table I.9 - Farms Using Tractors and Fertilizers, 1970, 1980

<table>
<thead>
<tr>
<th>INPUTS</th>
<th>1970</th>
<th>1980</th>
<th>INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farms (Nr)</td>
<td>(%)</td>
<td>Farms (Nr)</td>
</tr>
<tr>
<td>Fertilizers</td>
<td>34,134</td>
<td>11.6</td>
<td>207,011</td>
</tr>
<tr>
<td>Tractors</td>
<td>16,285</td>
<td>2.6</td>
<td>55,923</td>
</tr>
<tr>
<td>Total</td>
<td>554,448</td>
<td>100</td>
<td>454,103</td>
</tr>
</tbody>
</table>

Source: IBGE, 1970-80

From 1960 to 1980, the number of tractors grew by 388%, which was more than in Rio Grande do Sul, and the number of tractors per ha fell from 194 to 78. A large part of the tractors (43%) were in Paraná but only 10% of farms used them. Large farms, with more than 100 ha, accounted for 68% of the total number of tractors. Most farms that used tractors were in the North (16%), West (12%) and around the Curitiba area (11%), but fewer were used on the coast (8.3%) (IBGE, 1970, 1980).

Rural credit increased by nearly 600% in Paraná during the 1970s, when its share of total rural credit was 17.2% (BACEN, April 1991). A large part of this credit was allocated to soybean (28.24%) and wheat (20.73%), whilst during the early 1970s these crops' share was only around 5% (see table I.10). The proportion of credit allocated to coffee and cotton fell, although the total credit used increased. The share enjoyed by
rice, black beans and cassava, declined throughout the 1970s. The exception was corn, whose share was stable at around 11% (BACEN, 1981, April 1991). Most rural credit (81%) was employed by farms with more than 20 ha (IBGE, 1980; BACEN, April 1991). Industrial crops were planted by all sizes of farms. Thus small farms used more these inputs in Paraná than in Brazil as a whole.

Table I.10 - Production Credit by Crop, 1970, 1980 (Percentages).

<table>
<thead>
<tr>
<th>CROPS</th>
<th>SHARE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1970</td>
</tr>
<tr>
<td>Soybean</td>
<td>5.62</td>
</tr>
<tr>
<td>Wheat</td>
<td>5.47</td>
</tr>
<tr>
<td>Coffee</td>
<td>48.50</td>
</tr>
<tr>
<td>Cotton</td>
<td>14.60</td>
</tr>
<tr>
<td>Rice</td>
<td>2.34</td>
</tr>
<tr>
<td>Black Beans</td>
<td>2.37 (*)</td>
</tr>
<tr>
<td>Cassava</td>
<td>0.08</td>
</tr>
<tr>
<td>Corn</td>
<td>11.40</td>
</tr>
</tbody>
</table>

Source: BACEN, April 1991

(*) The share of black beans was less than 2.34% throughout the 1970s

The Agro-industrial Complex and Rural Cooperatives

The growth of industrial crops was followed by the expansion of agro-industrial capacity in Paraná. The soybean crushing industry progressed more than other agro-industries, and in the early 1970s, Paraná's crushing capacity was second only to Rio Grande do Sul and outclassed even São Paulo. In 1977, Paraná accounted for 30% of total soybean crushing capacity (Thompson, May 1979; Drefus et Cie, 1984). During the
1980s, this industry represented 37% of national capacity and together with fertilizers performed better than any other industries in Paraná (IPARDES, June 1991). These industries were concentrated in the Ponta Grossa region, which is on the way to the port of Paranaguá (see map I.a). The poultry industry also developed, mainly in the West, and was in part stimulated by the availability of soybean meal. Other industries include pig farming in the Southeast, and the dairy industries in the Centre-East, near Curitiba and Ponta Grossa. During the 1980s, the poultry industry increased more than the others and was an important economic alternative for small farmers (IPARDES, June 1991).

Similarly to what happened in other states in which industrial crops expanded, in Paraná rural cooperatives played an important role in the provision of storage facilities, agricultural inputs, rural credit, technical assistance, and agro-industrial capacity. Cooperatives were set up in the industrial crops areas, in the Centre-North and West (see table I.11). In the early 1980s, their members comprised around 40% of the farmers in Paraná, and most of them were producers of industrial crops. Rural cooperatives traded a large part of the production of soybean (57%), wheat (79%), and coffee (40%). They only dealt with a minor part of the production of food staples, 31% of corn, 37% of beans and 17% of rice (ACARPA, 1984). In 1985, rural cooperatives allocated a significant part of the rural credit (33%), and accounted for 18% of Paraná's crushing capacity (6,200 tons per day), for 36% of the storage capacity (6 million tons), and 18% of the oil production (6,200 tons per day). They also produced 55% of milk byproducts, and processed 25% of pigs and 15% of poultry (OCEPAR, 1986; IPARDES, June 1991).
Table I.11 - Rural Cooperatives and Members by Region, 1982

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of Rural Cooperatives</th>
<th>Members (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>33</td>
<td>17</td>
</tr>
<tr>
<td>West</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>South</td>
<td>15</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: ACARPA, 1984

Trends in Landownership and Labour

The modernization of agriculture was associated with a significant concentration of landownership in Paraná. During the 1970s, large farms, with more than 100 ha and less than 1,000 ha incorporated 1.4 million ha, and expanded their share of land in the state, from 28% to 34%. Of a total of 554,000 farms, 106,182 were merged, accounting for 893,604 ha, the equivalent of around 60% of the total new cropland in Paraná. Almost the totality of these farms had less than 50 ha (see table I.12). Holdings with less than 20 ha comprised 94% of the farms and 84% of the area merged. The majority of these holdings (92%) were in the Centre-North, where soybean and wheat replaced other crops and, as a result, average farm size increased from 26.4 ha to 36.1 ha, which was nearly half of the average farm size in Brazil as a whole. This trend continued from 1980 to 1985, when another 5,000 farms with less than 50 ha were merged. The total production of farms, with less than 50 ha, also decreased, whilst that of large farms increased (IBGE, 1980, 1985). Most of the farms merged were those of sharecroppers (59,893) and tenants farmers (25,401), although the total area of the latter increased after 1975 as a result of large farmers renting land to plant soybean and wheat (IBGE, 1970, 1980; IPARDES, 1987).
Table 1.12 - Changes in the Number and Area of Farms by Size, 1970-1980

<table>
<thead>
<tr>
<th>SIZE (ha)</th>
<th>CHANGE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>AREA (ha)</td>
<td></td>
</tr>
<tr>
<td>Less than 10</td>
<td>-80,277</td>
<td>-466,361</td>
<td></td>
</tr>
<tr>
<td>10 to 20</td>
<td>-28,725</td>
<td>-284,752</td>
<td></td>
</tr>
<tr>
<td>20 to 50</td>
<td>-6,397</td>
<td>-142,491</td>
<td></td>
</tr>
<tr>
<td>50 to 100</td>
<td>2,820</td>
<td>197,970</td>
<td></td>
</tr>
<tr>
<td>100 to 1,000</td>
<td>5,091</td>
<td>1,446,177</td>
<td></td>
</tr>
<tr>
<td>More than 1,000</td>
<td>450</td>
<td>1,004,254</td>
<td></td>
</tr>
<tr>
<td>Total loss</td>
<td>106,182</td>
<td>893,604</td>
<td></td>
</tr>
</tbody>
</table>


In the 1980s, 15,000 new farms with less than 5 ha emerged, and around 70% of these were rented out by large landowners, who were trying to resist the economic crisis and prevent their land from being expropriated for agrarian reform purposes (IPARDES, June 1991). The number of permanent and occasional workers increased by 61,112 and 71,357 respectively during the 1970s. The loss of family labour was considerable (327,054) as was the loss of job places in rural areas (173,845), concentrated on farms with less than 10 ha and 20 ha. Growth of the economically active population on these farms was -25.6% and -15.9% respectively (IBGE, 1970, 1980; Bowman, 1983). The crops that expanded most, soybean and wheat, used considerably less labour than the crops that declined, namely coffee and corn, beans and rice (SEAB, 1981b).

Concentration of land ownership caused the rural exodus to intensify and, as a result, nearly 1.3 million people left the countryside during the 1970s, when Paraná's rural population growth rate was negative (-3.32%), and its rural population...
population equalled that of the 1960s. Most of this population was from the Centre-North and North-West and migrated to the Centre-West and Metropolitan region. In 1980, the level of urbanization was 58.6% in Paraná, which was second to Minas Gerais (Soskin, 1988; IPARDES, 1987; IBGE, 1970, 1980).

The changes that the agrarian sector underwent in Paraná, mainly during the 1970s, were typical of the process of agricultural modernization in Brazil. As in other regions, soybean and wheat expanded in Paraná at the expense of other crops, including staples, which were farmed mainly by small farmers. A minority of the large farmers produced the bulk of these industrial crops, and absorbed most of the subsidies and the modern agricultural inputs. The expansion of the agro-industrial complex, especially the crushing capacity of soybean, was combined with the growth of the production of industrial crops, as occurred in other parts such as in Rio Grande do Sul and São Paulo. Large farms incorporated a substantial proportion of the small farms, mainly sharecroppers and tenants, and drove them to the agriculture frontier or urban centres or into waged work. The bóias frias and shanty towns proliferated in Paraná as much as in other areas where agriculture modernized. The case of Paraná also confirms that, although the production of soybean, the leading crop of modernization, was stimulated by market opportunities, official policies played a fundamental role in the expansion of soybean, agro-industry, wheat, and the use of inputs. In Paraná, as in Brazil generally, these policies met the interests of large farmers and industrialists, while the government largely ignored the voices of small farmers.
Revolts and Massacres

The history of the agrarian sector in Brazil shows that rural workers have been submitted to poor working conditions and denied access to land, often through violent means. Until the first half of the nineteenth century the indigenous population was forced to work as slaves on large estates, and their attempts to resist slavery were met with violent repression. African slaves used the quilombos, free territories set by runaway slaves, to organize their own armies to fight for their freedom. This resulted in the slaughter of thousands of slaves, as happened with the Quilombo dos Palmares, in the state of Pernambuco, where 20,000 people were decimated by the military.

After the second half of the eighteenth century, land-grabbing was the main reason for squatters and sharecroppers being expelled from their land and subjected to violence. The revolts of the destitute against the power of the coronéis, landowners with absolute power in their region, resulted in much bloodshed. Most of the uprisings were inspired by religious beliefs, such as in the Canudos revolt in 1893 in Bahia, where around 10,000 workers set up their own free territory. Another example is the Contestado rebellion in Santa Catarina and Paraná, where around 15,000 sharecroppers and workers attacked and looted farms and cities, after being expelled from their plots by the construction of the São Paulo-Rio Grande do Sul railway (Martins, 1981; Fernandes, 2000). In the Northeast, small farmers and rural workers became bandits and pillaged large states and villages to defy the power of the
coronéis, under the cangaço system. All these revolts were crushed by the military and landowners' private militia and brought few benefits for the small farmers (Martins, 1981; Hall, 1989).

Building the Power of the Weak

Only after the 1920s did the small farmers' revolts help to develop the means for small farmers to gain land and improve working conditions. Their disputes stimulated the creation of the trade unions, small associations and the organization of collective action, such as the self-help mutirões, which facilitated negotiation with the government. In the uprisings of Teófilo Otoni and Governador Valadares in Minas Gerais, as well as Trompas e Formoso and Rio Doce in Goiás, sharecroppers and workers succeeded in staying on their plots and increasing wages by mobilizing and negotiating with the government (Martins, 1981; Foweraker, 1981).

In Paraná, sharecroppers rebelled in Porecatu in the Centre-North, when the state government donated their land to large landowners and failed to deliver the land it had promised. Those workers were armed and resisted violent repression by the army, and were eventually settled in the region. In the Southeast in 1957, in the municipalities of Pato Branco and Francisco Beltrão, a larger revolt took place when farmers were forced to pay many times for the same land, and had to resist the violent methods used by the colonization companies' gunmen. Around 4,000 small cultivators took over the city of Francisco Beltrão, set up an independent local government and demanded that the state government intervene in their favour. They were heard and stayed on their plots. This
revolt has inspired small farmers' movements in that region up to the present day (Gomes, 1986).

The *Ligas Camponesas*, rural associations of sharecroppers, squatters, tenants and small holders, constituted the first organized and articulated movement calling for land redistribution. In the 1940s, these associations spread throughout the country and were especially strong in Pernambuco and Paraiba. Although important leaders of this movement were murdered, the *Ligas Camponesas* encouraged farmers to occupy land and persuaded the government to expropriate it (Martins, 1981; Hall, 1989). This movement stimulated the creation of unions, and the organization of meetings and congresses of small farmers and rural workers in various parts of Brazil, and the involvement of opposition parties and the Church, which paved the way for various organizations to emerge. These included the União dos Lavradores e Trabalhadores Agrícolas (ULTAB), supported by the communist party (PCB) and associations in the Northeast and South, supported by the Catholic Church, which advocated a gradual agrarian reform by peaceful means. The Movimento de Educaçào de Base (MEB), supported by the radical Catholic Church, the *Ligas Camponesas* in Pernambuco, and the Movimento dos Agricultores Sem Terra (MASTER) in Rio Grande do Sul, which supported a radical approach to land redistribution. In 1963, these organizations took part in the *Frente Ampla*, an alliance with the government which opted for a gradual land reform via democratic means, and facilitated the creation of the Confederaçào dos Trabalhadores da Agricultura (CONTAG). Those organizations were dismantled and the alliance was terminated by the military coup of 1964.
In spite of increasing violence against squatters, sharecroppers and workers, other movements only reappeared in the 1970s (Martins, 1981; Hall, 1990). The most articulated and vigorous movement was the MST, which re-emerged in 1978 in Rio Grande do Sul, when sharecroppers were expelled from their plots in the Nonoai indigenous reservation (Grzybowski, 1987). It expanded in Paraná, when the Justiça e Terra (Land and Justice) movement, was created by the Lutheran Church and the CPT to claim compensation for the land of small farmers that was flooded by hydroelectric dams. The MST spread in Paraná, as MASTRO (West), MASTEN (North), MASTES (Southeast), MASTRECO (Centre-West) and MASTEL (Coast), and was very active both in the struggle for agrarian reform and the organization of this movement nationwide (Geiger, 1987; Fernandes, 2000). Two major MST events took place in Paraná, the first 'Encontro dos Agricultores Sem Terra' in Cascavel in 1984, and the first 'Congresso Nacional dos Agricultores Sem Terra' in Curitiba in 1985 (MST, undated).

Agrarian Reform in Brazil

Despite the concentration of landownership, the immense number of landless farmers, and spread violence motivated by land conflicts, agrarian reform in Brazil has been systematically avoided. The laws that prevented private land from being expropriated were never revoked. The military government set aside any idea of land redistribution and adopted other means to resolve the conflicts motivated by land disputes and landlessness. This included introducing a new tax system, regulating land titles, and promoting colonization. This government intended to settle in the Amazonian region
those farmers who lost their land as a result of the modernization of agriculture in the South and Southeast, and from drought and the prevalence of the large estates in the Northeast. Moreover, the army was put in charge of solving conflicts that involved land disputes (Martins, 1984).

This policy largely failed. The colonization projects were not successful, mainly because the government bureaucracy was slow, overlooked the poor soil conditions of the Amazon basin and underestimated the remoteness of the region. Most small farmers who settled on official colonization projects eventually returned to their former places of origin, only to find even harder to re-establish themselves. A large part of the incentives was absorbed by large cattle ranchers, which polarized landownership structure as in earlier developments (Hall, 1990). The conflicts and violence against squatters and sharecroppers increased mainly in the Amazonian region, which accounted for over 600 deaths in 1980, in a total of 1,000 for Brazil as a whole. This situation forced small farmers to demand land in their home regions (MST, undated; Fernandes, 2000).

PNRA - Seeking Agrarian Reform

In the early 1980s, new hopes for the implementation of agrarian reform were brought about mainly by the crisis in the military government, the redemocratization process and the growth of social movements. This crystalized in the First National Agrarian Reform Plan (PNRA), created in October 1985, when the Nova República government created the Ministry of Agrarian Reform and Development (MIRAD). The Minister was nominated by the Church and opposition parties, and ambitious
targets were set. The PNRA planned to settle the population of 10.6 million landless families in one and a half decades, which would involve nearly 500 million ha (see table I.13) (MIRAD, October 1985).

Table I.13 - PNRA Targets of Number of Families, 1985-2000

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of Families (000)</th>
<th>Net Number of Families (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985-86</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1986-87</td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>1987-88</td>
<td>450</td>
<td>850</td>
</tr>
<tr>
<td>1988-89</td>
<td>550</td>
<td>1,400</td>
</tr>
<tr>
<td>1989-2000</td>
<td>5,700</td>
<td>7,100</td>
</tr>
</tbody>
</table>

Source: MIRAD, October 1985

This programme was intended to increase the production of food staples, create new jobs, diminish the rural exodus, improve social services and reduce conflicts in the countryside. These objectives were compromised even before the implementation of the PNRA had started, when the area targeted was reduced by nearly half as a result of the opposition by large landowners. The PNRA's scope was cut back even further in October 1986, when a decree-law considerably reduced the range of properties eligible for land reform by changing the criteria for expropriating land. The PNRA was further hampered after two ministers of agrarian reform resigned and one (Marcos Freire) was killed in an air crash in the Amazon under circumstances which have never been fully investigated or explained. The new constitution of 1988 was written by a conservative Congress under the influence of large landowners and eroded any remaining hope of introducing a comprehensive agrarian reform policy in Brazil.
As a consequence land conflicts increased significantly. In 1989, around 500 land disputes occurred involving 14.4 million ha and 190,000 farmers. In the South alone there were around 80 estate occupations, involving 13,000 families. Nearly 5,000 farmers suffered from different types of violence and 122 farmers died as a result. In 1990, only 30% of the land targeted by the PNRA had been expropriated, the government had taken possession of 10% of the land and settled 1.3% of the families planned for the first year (Hall, 1990). The number of occupations increased and the organization of the landless farmers progressed considerably, especially the MST. This movement set up a national headquarters and coordinating bodies in every state, and mobilized thousands of farmers in camps, occupations and agrarian reform projects, under the banner "occupy, resist and produce" (Grzybowski, 1987; Fernandes, 2000).

Agrarian Reform in Paraná

During the territorial occupation of Paraná conflicts motivated by multi-titling and confused land demarcation were common. This forced the government to intervene to title land, mainly along the frontier with Paraguay and Argentina. Rural workers began to demand agrarian reform in Paraná during the early 1960s, when they organized two workers congresses, one in Londrina and the other in Maringá. The government started dealing with agrarian reform in 1983, when a governor from the opposition party (PMDB) was elected. This allowed the first land settlement project to be created as a result of farmers' demands. The ilhéus, small farmers who lived on islands in the Paraná river, were settled on the ABAPAN project near Ponta
Grossa after a flood forced them to abandon their plots. In 1984, there were four land settlement projects in Paraná, and the beneficiaries were bóias frias, ilhéus and workers, enrolled by the Church and the MST.

The state government, especially the agricultural secretariat, was complacent about the landless farmers' movement. The Agriculture Secretariat assisted the activists of MASTRO, who occupied 1,000 ha of the Fazenda Anoni, a 90,000 ha estate, and provided seeds, fertilizers, food and medicine. The Secretary of Agriculture also supported farmers camped along the highways waiting to be settled, and was receptive to their suggestions of farms for expropriation. In 1984, around 300 farms were listed for agrarian reform purposes and the Secretary of Agriculture had inspected 215 of these.

The first Plano Nacional de Reforma Agrária (PNRA) further stimulated the Secretary of Agriculture to work together with the MST, CPT and trade unions, and the landless farmers in camps for the landless and in land occupations. However, as happened with the PNRA targets in Brasilia, conservative forces pressured the government of Paraná to weaken their commitment to agrarian reform, and as a result the Agriculture Secretariat, Claus Germer, was forced to resign. The responsibility of implementing land settlement projects was transferred to a especial secretariat (SECRA), which halted the actions taken in favour of agrarian reform and treated beneficiaries of land settlement projects equally with other producers. A new governor elected in 1987, further neglected agrarian reform by putting the Casa Civil, Secretary of Political Affairs, in charge of dealing with the landless farmers movement and land settlement projects. In 1988, this
responsibility was transferred back to the Agriculture Secretary, but the policy did not change. At that time there were 4,000 farmers camped in Paraná (IPARDES, June 1991).

Table I.14 - PNRA's Goals, Area and Number of Families Settled - Paraná, 1985-89

<table>
<thead>
<tr>
<th></th>
<th>AREA (ha)</th>
<th>Number of Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNRA</td>
<td>1,235,208</td>
<td>77,900</td>
</tr>
<tr>
<td>PARANÁ</td>
<td>58,088</td>
<td>2,835</td>
</tr>
</tbody>
</table>

Source: IPARDES, 1991

The performance of Paraná in relation to the PNRA's targets was typical of the country as a whole. Only 4.7% of the target area was expropriated and 3.6% of the families settled (see table I.14). In part, this was a result of INCRA's poor performance, due mainly to a lack of personnel and experience with agrarian reform projects. Significantly, the majority of the camps (60%) and the land settlement projects (60%) were in the Centre-South, where industrial crops did not expand, and most of the landless farmers came from the Southeast and West, which accounted for most of the production of these crops. The new land settlement projects were created largely due to the increase in land occupations promoted by the MST, together with the Church (CPT) and trade unions (IPARDES, June 1991).

1.5 - LATEST TRENDS IN AGRARIAN REFORM AND EXTENSION

The Slow Progress of Agrarian Reform

From 1985 to 1999, nearly 4,000 land settlement projects were created, which involved over 500,000 families and around 22 million ha. This was less than 10% of the families and 5% of
the area targeted by the PNRA and was largely a result of the mobilizations of the landless farmers, especially the MST. From 1990 to 1999, over 360,000 families were involved in land occupations and 330,000 were officially settled (see table I.15). Most of the families settled (70%) were in the North and Northeast. In Paraná only around 10% of the families involved in occupations (87,585) were settled. The MST was linked to 40% of all land occupations and 60% of the land settlement projects created from 1996 to 1999. Another 25 significant movements of landless farmers were active in Brazil (Fernandes, 2000).

Credit available through PROCERA increased from US$ 82 million to US$ 351 million from 1995 to 1999.

During the 1990s, family farmers were acknowledged as a new organized force, mainly as a result of the Gritos da Terra, annual campaigns that mobilized thousands of small farmers in the country, led by CONTAG and the Central Única dos Trabalhadores (CUT)\(^1\). These campaigns persuaded the government to create PRONAF, a subsidised credit programme for these farmers. PRONAF allocated over three billion American dollars from 1996 to 1999.

Table I.15 - Number of Land Settlement Projects, Occupations and Families, 1979-99

<table>
<thead>
<tr>
<th>Period</th>
<th>NUMBER</th>
<th>NUMBER OF FAMILIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Projects</td>
<td>Occupations</td>
</tr>
<tr>
<td>1979-84</td>
<td>115</td>
<td>-</td>
</tr>
<tr>
<td>1985-89</td>
<td>615</td>
<td>-</td>
</tr>
<tr>
<td>1990-94</td>
<td>478</td>
<td>421</td>
</tr>
<tr>
<td>1995-99</td>
<td>2,750</td>
<td>1,855</td>
</tr>
</tbody>
</table>

Source: Data Luta, Banco de Dados da Luta Pela Terra

\(^1\) CUT has been a member of CONTAG since 1994.
In 1999, 330,000 farmers benefited from this credit, and yet around 40% of the credit available was not distributed because private banks were insufficient to meet the demand and biased against small holders (MDA/INCRA (b), October 2000). The creation of the Ministry of Agrarian Reform in 1995 facilitated dialogue with the government. This ministry was renamed the Ministério do Desenvolvimento Agrário (MDA) or Ministry of Agrarian Development in 1998, and became responsible for PRONAF, which incorporated PROCERA, as well as agricultural extension policy for family farmers.

Conflicts involving agrarian reform projects and disputes with the authorities persisted. In Paraná since 1998 over 500 small farmers had been subjected to violence and 16 have been murdered in land disputes (CPT, April 2001). The government created the Banco da Terra (Land Bank) in May 1999, and allocated US$ 120 million for 15,000 farmers to purchase a total of 380,000 ha. The MST and supporters of agrarian reform believe the credit is expensive for small farmers and that it is intended to weaken the agrarian reform movement. Landownership became more concentrated, when from 1985 to 1995 nearly one million of farms disappeared, around 16% of the total, and one third of them had less than 100 ha. Nearly five million jobs were lost as a result (IBGE, 1998). It is estimated that around 2.5 million family farmers had insufficient land, less than 10 ha, and that landless farmers and rural workers totalled 1.1 million and 900,000 respectively. Also, it is predicted that a full programme of agrarian reform would require around 160 million ha and over US$ 100 billion (Guasques et al, 1998). At the present rate, it
would take over a hundred years to complete the agrarian reform programme (FAO, August 1994; Veiga, 1998).

The Changing Panorama for Agriculture Extension

After EMBRATER, the coordinating body of official agricultural extension services, was terminated in 1988, the assistance and coverage provided by government extension organizations (EMATERs) weakened considerably\(^2\), especially in the North and Northeast. They had to rely only on support from state governments, which were affected by economic adjustment and the budgetary crisis. Inter-American Bank projects, technical assistance to PRONAF projects and funds for extension of the MDA, which were allocated in response to the *Gritos da Terra* campaigns, helped EMATERs to continue operating. The latter increased from US$16 million to 48 million, in four years, but EMATERs have to compete with other extension organizations for access, especially NGOs.

NGOs were generally acknowledged as being more prepared to assist small farmers than EMATERs. The government implemented the LUMIAR project in 1997, which used NGOs to provide technical assistance to 70% of agrarian reform projects in Brazil (INCRA, January 1997; June 1998). The family farmers and beneficiaries of agrarian reform projects are enthusiastic about being in control and assisted by NGOs funded by the government. A CONTAG workshop called "A New Rural Extension Approach for Family Farming", held in 1996, resulted in a proposal to decentralize and submit extension services to the control of family farmers, through municipal commissions.

\(^2\)In 1999 EMATERs' personnel in Brazil totaled 22,527 compared to 23,033 in 1987 (ASBRAER, 1999).
funded by the government. This proposal was incorporated by the MDA, which promoted the decentralization of PRONAF by transferring credit allocation responsibility to municipal commissions.

This has created further difficulties for EMATERs, which are subordinated to the Ministry of Agriculture and heavily influenced by the large landowners' confederation (CNA) and rural cooperatives organization (OCB). These organizations have developed their own training programme for small farmers and rural workers, funded by FAT, the support fund for workers. Family farmers and landless farmers also set their own extension services through their cooperatives and NGOs. This situation has contributed to the actual debility of EMATER, which is in part caused by the government's intention to privatize extension services. These developments certainly constitute a new challenge to agricultural extension services.

1.6 - THE STUDY AND FIELD WORK

Objective of the Study

The objective of this study is to investigate how agricultural extension promotes producer participation, and the results of participation in terms of improving the livelihoods of small farmers. Studying agricultural extension in agrarian reform projects was chosen because they constitute an important alternative for the rural poor to have access to land and benefits, and represented a new challenge for the government agricultural extension service. Studying government extension centred on the relevance of EMATER and the expectations about the role it played in the implementation of these projects. I was interested to know more about the potential of government
extension services to assist the poor, who in my view, were the victims of official policies. Including the non-government extension organizations (NGOs) in the study was due to their contribution to the agrarian reform movement and the democratization process. Also, they were perceived as a substitute for government services in Brazil, as had happened in other parts of Latin America. In addition I was convinced that NGOs were more prepared than official agencies to assist small farmers and more interested in learning about their work.

The Case Studies

The empirical study is based on a comparison of two agrarian reform projects in Paraná: Vitória da União situated in the Centre-South and Nhundiaquara on the coast (see Map I.a). Studying land reform projects in Paraná was decided based upon the fact that the impact of policies in favour of the modernization of agriculture was relevant in this state, plus the fact that EMATER played an important role in that process.

Working as an extensionist during the late 1970s in the West of Paraná, I witnessed the relevance of EMATER for allocating credit, transferring new technology to farmers, the expansion of the soybean and wheat fields, and the use of chemicals and machinery. This contrasted with the backwardness of the Curitiba region, where I had lived and graduated as an Agronomist. Another reason was that the agrarian reform

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I was an extensionist with EMATER for over 24 years. I worked in the field for four years as an extension officer and in the communications department for six years, producing video courses for small farmers. For the past nine years I have been working with NGOs and trade unions through my trade union, SINDASPP, and held different positions in the association of EMATER extensionists (AFA) and in the National Confederation of Extensionists (FASER).
movement in Paraná was very active and well organized. Participating in the association of extensionists (AFA) in the early 1980s, when the agrarian reform and democratization movements were flourishing, I could witness the determination of the militants of the MST and trade unions to promote free elections and overthrow the dictatorship.

The Vitória da União Project was chosen because it was a product of action by the landless, which involved the major players in the agrarian reform movement. This included ASSESOR, which had been operating in the region for over twenty years and assisted Vitória. Also, Vitória was the first PNRA land settlement project in Paraná, and helped both the government and producers to learn about implementing this type of project. The fact that Vitória was assisted by EMATER was not originally considered, although later it proved to be important for showing the potential relationship between these two organizations. The Nhundiaquara Project was chosen for other reasons. Nhundiaquara was assisted only by EMATER and both the EMATER extensionists and the Secretariat of Agriculture had decided to make this project a model to be followed by all new land settlement projects. Therefore it was assumed that EMATER assistance to Nhundiaquara beneficiaries was what the government believed to be most appropriate.

Methodology

The research method employed for the empirical study was a survey. The main sources of information were the project beneficiaries themselves, and ASSESOR and EMATER extensionists. Secondary data were gathered from official project documents. All data collection was carried out directly
by myself. The collection of both qualitative and quantitative data was undertaken through structured questionnaires, with closed and open-ended questions, participant observation and semi-structured interviews.

Questionnaires were administered to the whole population. The members of Vitória assisted by ASSESOAR\(^4\) totalled 89 and the members of Nhundiaquara\(^5\) assisted by EMATER were 63. The questionnaires were administered to each beneficiary individually. A pilot survey and the pre-testing of the questionnaire were carried out in both projects. Participant observation was employed in meetings of beneficiary groups in their communities. Semi-structured interviews were conducted with extensionists, beneficiary leaders, authorities and people from organizations associated with the projects, either during the process of project creation or during implementation, and from the government and ASSESOAR. Lotus Statistic Package for Social Science (Spss) and Excell softwares were used in the analysis of the data collected through closed questions. The data collected by open-ended questions, participant observation and semi-structure interviews were organized and used along with the quantitative data.

Fieldwork

Fieldwork was carried out from May to October 1990. One month was spent on verifying secondary data, interviewing authorities and leaders, doing the pilot survey, designing and

\(^4\) The members of Vitória totaled 273, but only those that lived in communities assisted by ASSESOAR were included in the survey.

\(^5\) Four members of Nhundiaquara were not considered in the study.
pre-testing the questionnaire. Two months were spent at Nhundiaquara, and three months at Vitória, which had more farmers, was remote and involved a more complex situation than Nhundiaquara. The fieldwork presented difficulties caused by producers' distrust of outsiders and fear of government control. Vitória beneficiaries had been repressed by the landowners' militia and the army and had a dispute with the secretary of agriculture. They were very cautious in expressing their views to outsiders. ASSESAR officials who knew I was an EMATER employee avoided supporting the study openly. Introducing myself as a student of an English university was appealing to Vitória beneficiaries who were used to receiving support from abroad, and letting them know about my participation in the trade union and actions in favour of agrarian reform helped me to establish a rapport.

At Vitória, producers avoided talking about their group activities, meetings' records, associations' accounts, and strategies for negotiation. In both projects producers avoided talking about their agricultural practices, production and productivity, and the marketing of their produce. They feared it could be passed to the authorities in charge of the evaluation of their performance. Producers on both projects tended to overstate their difficulties, and to play down the benefits they received, their production and income. The poorer farmers overestimated their agricultural production and productivity for fear of being considered inefficient. Four farmers refused to take part in the survey at Nhundiaquara saying they were tired of being controlled by the government. Visiting each plot was useful for cross-checking the information provided by the beneficiaries and the secondary data.
EMATER extensionists were very helpful for verifying information about crop production and productivity, although they were reluctant to reveal official documents. They also preferred to talk about the events that involved the implementation of the projects, rather than their own work. No single organization held all the project records, and most of the documents available were incomplete, which made it impossible to determine the precise amount of relief, credit, and material and financial benefits received by each family. Nevertheless, these facts helped me to understand the manner in which the government implemented these projects and how the EMATER administration functioned.

Stages of Land Settlement Projects

The establishment of agrarian reform projects follows a series of steps, from the time they are identified, as a potential area for agrarian reform, until they are handed over to beneficiaries. During the 1980s, some steps were institutionalized as the government gained experience and these projects proliferated. According to the information provided by the Colonization and Agrarian Reform Institute (INCRA) and my own observations during field work, in Paraná agrarian reform projects normally went through three stages: (a) Expropriation, (b) Consolidation, and (c) Emancipation.

Expropriation (stage a), begins with the identification of an area of land for agrarian reform to INCRA, which in general is brought about through an invasion of the land by landless farmers. After the area is identified, INCRA personnel are put in charge of inspecting it. They determine whether the land is eligible for expropriation or it is considered
'productive', together with the official extension service, EMATER, and the Land and Forestry Institute of Paraná (ITCF). The criteria used include the type of land, size of the farm, soil fertility and topography, among others. Small farms are not liable for expropriation. After the analysis, INCRA is responsible for sending a report to the Ministry of Agrarian Reform, verifying whether the area should be expropriated for agrarian reform purposes or not. The expropriation is formalized by a Presidential decree, which allows INCRA to issue the Emissão de Posse to set up the project.

Consolidation (stage b) begins with a Preliminary Plan, designed to identify and select potential beneficiaries, and determine requirements related to funding and infrastructure. This is followed by the Programa de Ação Integrada (PAI) or Implementation Plan of which INCRA is in charge. This includes the natural resources appraisal and economic feasibility study, which is prepared by EMATER. EMATER's studies define the means that will provide beneficiaries' income, such as the type of crops, industrial activity and craft work, as well as the technical procedures related to agricultural inputs, road infrastructure, storage and housing, demarcation of the plots and the number of families involved. Families are allocated their plots normally by means of a draw. In general, representatives of the MST or trade unions take part in decisions concerning all these topics together with INCRA, ITCF, EMATER and beneficiaries, generally through a municipal commission.

The criteria for determining the size of the farm is the Módulo Fiscal, which is based on the production capacity per ha in each municipality.
The consolidation stage normally lasts three years and ends when the infrastructure is set and economic activities are implemented. Then the provisional title of each plot is issued. The final stage of emancipation (stage c), lasts ten years, and during this period beneficiaries have to meet a series of requirements concerning the planned economic activities, credit repayment and the maintenance of their plots. They will be qualified to receive a permanent land title if their performance is considered appropriated by the organizations involved. In the consolidation and the emancipation stages farmers are assessed individually, thus beneficiaries of the same project can be at different stages, depending on the assessment of the organizations about their development.

Preliminary Notes

Studying Vitoria and Nhundiaquara gave me the opportunity to see agricultural extension work from a different perspective. It revealed the oppression that small farmers suffered during their struggle to acquire land and implement their project, and the fear that both producers and extensionists felt of expressing their views. The existence of various antagonistic interests involved, and the dominance of the interests of large farmers were also revealed. This helped me to perceive the myth of the alleged neutrality of extension work. The findings about participation and the tangible results of the projects confirmed my belief that NGOs are more prepared to meet the needs of small producers than government organizations.

The determination of ASSES0AR to help the poor and the trust of the latter in its extensionists was very clear.
Vitória and Nhundiaquara demonstrated that EMATER extensionists are in no position to provide much support to farmers through official policy unless producers have political power. In fact, during my work with small farmers' unions, on the struggle for subsidised credit and new laws in favour of processing their produce, I rarely saw EMATER extensionists supporting producers' enterprises. The analysis of extension work in these projects and the interests involved concerning agrarian reform showed that EMATER experienced difficulties in meeting the extension needs of small farmers. Rather, EMATER has close extension links with larger commercial farmers and influenced the processes that define official agricultural policies.

These findings have helped me to introduce a different perspective on the debate about the role of official extension agencies and NGOs in meetings of the extensionists' movement in Paraná and at national level. This facilitated the contribution of EMATERs' extensionists to CONTAG's National Workshop in 1997, which proposed that these organizations should work together. Finally I hope that the outcome of this study will contribute to the establishment an alternative extension services in Brazil, that could help promoting the livelihood of millions of small farmers and workers.

1.7 - CONCLUSION

After World War II, the Brazilian agrarian sector underwent significant changes. Increasing food prices and a depressed international market persuaded the government to introduce official policies encouraging the modernization of agriculture, which was then based on a combination of large
export crop estates and subsistence farms. After 1964, the military government was determined that agriculture should support industrial development and it therefore emphasised policies in favour of the modernization of agriculture and colonisation of the Amazon region. Subsidised credit in particular was used to promote a significant expansion of the area of farmland and the agro-industrial complex, as well as changes in patterns of crop production, landownership and income distribution.

Most of the new farmland was under soybean and wheat, and together with the new agro-industries of chemical fertilizers and pesticides, machinery, and the crushing of soybean, were situated in the South and Southeast. The use of chemicals, tractors and improved seeds increased significantly, especially during the 1970s and 1980s, mainly in areas under soybean and wheat and on large farms. These farms absorbed most of the incentives and incorporated the bulk of new farmland, particularly on the Amazon agrarian frontier, where colonisation projects for small producers largely failed. A significant proportion of subsistence farmers, particularly those who enjoyed less permanent land use arrangements, lost their land and were driven either into to waged work or to the agriculture frontier, mainly as squatters, and to shanty towns. As a result, the concentration of landownership and the number of landless rural workers increased, the rural exodus intensified, rural-urban and regional disparities were aggravated, income concentration exacerbated and poverty proliferated, especially in large cities.

During the process of agricultural modernization, the interests of industrialists and large farmers have prevailed
and the voice of the subsistence farmers and rural workers has largely been ignored by the government. However, democratization along with social and economic crisis has subsequently helped small farmers regain the power they had acquired during the 1920s through 1950s through revolts and creating representative organizations, but which they had lost during the military regime. They also persuaded the government to create the first agrarian reform programme (PNRA). Although a Congress heavily influenced by large landowners dismantled this programme, agrarian reform projects have progressed as a result of land invasions promoted by the workers, especially the MST. Family farmers also won the right to subsidised credit through their mobilizations (Gritos da Terra), supported by the unions (CONTAG and CUT).

The changes that the Southern state of Paraná underwent during the 1970s and 1980s are a clear example of the modernisation of agriculture in Brazil. Furthermore, the agrarian reform projects considered in this study, are also situated in this state, and are assisted by EMATER and ASSESOAR, official and non-governmental extension organizations respectively. Their work is guided by two major conceptual paradigms of extension, which are analysed now in chapter II.
CHAPTER II
AGRICULTURAL EXTENSION: DIFFUSIONIST AND PARTICIPATORY APPROACHES

In this chapter, the diffusion-of-innovations and participatory approaches are discussed. Their origins, main characteristics, the development goals they pursue, extension methods they utilise and the consideration they give to gender are examined. A large part is dedicated to discussing the concept of participation and its three dimensions: objectives, intensities and instruments, and how these dimensions are addressed by these two approaches. This constitutes the theoretical framework that will guide the discussion of the official and non-governmental agricultural extension sectors in Brazil, which are addressed in Chapter III, and the analysis of two case studies, which are presented in chapters IV, V, VI, VII and VIII.

II.1 - DIFFUSION OF INNOVATIONS TRADITION

Origins and Diffusion Process

The diffusion-of-innovations paradigm originated in the early 1900s, based on the ideas of the French sociologist Gabriel Tarde and other European anthropologists, known as British and German-Austrian diffusionists. The rural sociology research tradition was the most influential and its studies were inspired and applied to the work of the Land Grant Colleges of Agriculture in the USA (Rogers, 1983). The diffusionist approach was consolidated in the early 1960s, when extension services spread, especially in the developing
countries. Its main contributors were the American sociologists Everett Rogers and Herbert Lionberger, and the Dutch sociologist van den Ban (Roling, 1988).

Diffusion is defined as the process by which an innovation is communicated through certain channels among the members of a social system (Rogers, 1983). It is based on the industrial 'research, development and diffusion' model of technology generation, and is seen as a three-stage process: (a) needs identification, (b) development of a solution, and (c) diffusion (Ban et al, 1988, p.26). The definition of farmers' problems and needs is considered the domain of experts, scientists and policy-makers. Innovations are created mainly to improve economic efficiency with no consideration of the different farming systems and the specific situations of producers. It aims at being economically competitive and suitable for a public to consume. The diffusion process relies on the joint action of extension and experimental stations (Rogers, 1983; Ban et al, 1988).

The main goal of the diffusionist approach is the 'adoption-of-innovations', whose roots lie in theories of learning and decision-making. It employs the learning approach based on the ideas of the psychologist B. F. Skinner (themselves based on Edward L. Thorndike's Law of Effect), that people act to achieve pleasure and avoid pain (Skinner, 1974). It is also inspired by Pavlov's notion of the conditioned reflex, and his experiments with animals which demonstrated that it is possible to condition needs and wishes by means of reinforcement. It consists of a process of trial and error, which does not necessarily induce insight or conscious reflection (Mackenzie, 1977).
The decision-making process focuses solely on the adoption process that was first observed by Ryan and Gross (1943) in the hybrid corn experiment. It is described by Rogers, 1962, 1983, as a five-stage process, which producers should go through: (1) awareness, (2) interest or persuasion, (3) evaluation, (4) trial, and (5) adoption. It considers the concept of 'innovativeness', defined as the degree to which an individual is relatively early in adopting new ideas compared with others in his or her social group or community. Individuals are classified according to their innovativeness or willingness to innovate (Rogers, 1983). An adoption curve classifies adopters according to their innovativeness as 'innovators', 'early adopters' and 'laggards' or 'late adopters' was established. It focuses on socio-economic characteristics such as level of education, social status, size of farm, 'cosmopolitainness', contact with extension and mass media exposure basically as elements that can affect adoption. It also assumes that late adopters are under the strong influence of earlier adopters (Rogers, 1962, 1983; Ban et al, 1988).

The Trickle-Down Effect

The diffusion process employs the two-step-flow of communication approach. It assumes that well-informed farmers play a key role in informing others and are seen as 'active adopters' or 'rejectors' who influence others to follow their lead (Rogers, 1962). It uses opinion leaders to inform, teach, organize and persuade farmers to adopt new ideas. Their personal and social characteristics are considered important in order to ensure effective communication and the persuasion of their followers. It is expected to make adoptions trickle-down
from innovators to laggards thus completing the diffusion process. According to this theory, in their groups, leaders tend to be better-off in relation to the average members. In addition, effective leaders are expected to be progressive, socially well-articulated and willing to help the community to improve their living conditions. Leaders are appointed by all or only a few members of their groups and can also be self-designated (Saville, 1965; Rogers, 1962, 1983; Roling, 1988).

Diffusion and Development

The diffusionist approach was inspired by the modernization paradigm and is based on the ideas of Emile Durkheim and Max Weber (Rogers, 1983; Webster, 1990). It aims at achieving rapid economic growth through urban-based and capital-intensive industrialization and the free market. Agriculture is not seen as being intrinsically important and the countryside is seen as a reserve army of labour for the industrial sector. Priority is given to urban populations through promoting favourable prices of basic foodstuff thus, reducing rural incomes (Hall, 1986; Hulme et al, 1990). Decisions concerned with the development of the countryside are centralised in urban areas. The causes of underdevelopment are seen mainly to be at local level and in the case of agriculture, at farm production level (Hulme et al, 1990; Webster, 1990).

In addition, this approach suggests that traditional societies possess no ability to progress by themselves and that intervention from outside is necessary. It idealises a model of society based on individual performance, merits personal autonomy in decision-making and relies on the capacity of
modern science. Traditional values are seen as obstacles to the introduction of a modern entrepreneurial ethic. In particular, diffusionist theory assumes that poorer farmers are naturally conservative, fatalistic and resistant to change (Hall, 1986). It advocates that they should change from traditional to modern, which requires them to undergo a change in their personality, values and attitudes. They should also acquire a need for personal achievement, which would favour adoption of new ideas and enable them to progress economically (Hulme et al, 1990).

During the 1950s and 1960s, this approach proliferated in the developing countries, supported by the developed economies of the west, with the aim of accelerating development. Only in the 1960s was it recognized that small and poor farmers were efficient economically, rational and used resources wisely. They were still required to change however, since it was assumed that they could progress if technology and price incentives were provided. It was a key idea behind the so-called "green revolution", which aimed at promoting agricultural production and incomes through the adoption of scale-neutral technologies such as improved seeds and chemical fertilizers (Schultz, 1964).

The diffusionist approach overlooked the differences among distinct agricultural systems, needs and interests of the various types of farmers, structural constraints, such as insufficient land, and provided no controls for policy implementation. In the early 1970s, despite achieving macro-economic growth, it became evident that the modernization paradigm had failed to accomplish development in the broader sense. Poverty, inequity, landlessness and the rural-urban
migration flow increased as never before, and large landowners monopolized inputs and benefits. The results of economic development tended to be concentrated within urban upper and middle income groups, the rural élite of traditional landowners and newer commercial farmers. The promise of an automatic 'trickle-down' of benefits to poorer populations was hampered. Among other reactions, these results drew policy-makers' attention to the majority which had been largely excluded from the modernization process and to the unequal distribution of the results of economic progress (Griffin, 1974, 1976; Lipton, 1977; Pearse, 1980; Chambers, 1981)

II.2 - PARTICIPATION PARADIGM

The Emergence of Participation

During the 1970s, the call for greater participation of the poor in the benefits of economic growth gained considerable weight among policy-makers, governments and development agencies. It was the United Nations that helped most to promote this idea through publications, projects and events. Two major documents issued in the 1970s: Popular Participation in Development (1971) and Popular Participation in Decision Making for Development (1975) were important landmarks. In 1975, the lack of participation of women in political activities and the development process was also emphasised by the resolutions of the World Conference on international Women's year, in Mexico City. In 1977, the International Labour Organization (ILO) launched the basic human needs approach, and introduced its programme called Participatory Organizations of the Rural Poor (PORP), mainly based on Chenery's (1974) ideas of
'redistribution with growth'. In 1982, the United Nations Research Institute for Social Development (UNRISD), in Geneva, created the Popular Participation Research Programme. In 1983, the Food and Agriculture Organization (FAO) launched the Popular People's Participation Programme (PPP) in rural development.

Other UN agencies such as, UNICEF and WHO also took up participation and produced significant contributions in the area of health. In particular with the 'Declaration on Primary Health Care' at the 'Alma Ata Conference' in 1977. The World Bank through its 'poverty-oriented approach' contributed in the area of housing and urban development. Some governments of developing countries influenced by international agencies, also acknowledged the need to promote participatory strategies on their development programmes. International NGOs were particularly engaged in the efforts to promote participation in development strategies, and academics and research institutions explored the concept of participation (Oakley and Marsden, 1984; Midgley et al, 1986; Hall and Midgley, 1988).

II.2.1 - EARLY STRATEGIES OF PARTICIPATION

Community Development

Until the 1970s, participation in rural development was fostered mainly through the community development (CD) or animation rurale approaches. These were developed in the 1920s and 1930s by the British and French governments respectively, to support post-independence development and were widely adopted by governments in Africa, the Indian sub-continent, Asia and Latin America. Its alleged characteristics of
political neutrality, was useful for governments to promote economic recovery and also to gain popular support (Hall and Midgley, 1988).

The community development strategy operated alongside the 'green revolution' and the diffusion-of-innovations paradigms (Pearse, 1980; Jones, 1982). It emphasized democratic values and community organization, and was used to promote formal organizations, mainly rural cooperatives. It was concerned primarily with motivating farmers to modernize, to become active members of the community, and cooperate with national development, while they could also improve their livelihoods. Development was sought mainly through modern technology and assumed that governments and the rural population as a whole had common interests. Following the diffusionist view, community development emphasized the use of 'technological packages', and tried to diffuse technology through 'progressive farmers', whilst the effects of modernization were expected to 'trickle down' to the poorer populations (Oakley and Marsden, 1984; Chambers, 1981; Pearce, 1980).

On the whole, however, this strategy was a top-down strategy of development, allowing the participation of only a few, and incapable of reaching the poor majority of the population. In practice, it marginalized the smallholder and landless farmers, favouring the rich farmers and contributing to concentrating wealth (Oakley and Marsden, 1984; Hall et al, 1988). Usually this approach was promoted by excessively bureaucratic and centralized administrations, which overrode local organizations. This prevented the poorer farmers from participating on decision-making concerning development policies and the allocation of resources.
Popular Participation

The relative failures of community development and animation rurale, and the modernization and diffusion of innovation paradigms to meet the needs of poor farmers, drove practitioners, academics, governments and development agencies to review the notion of participation. The UN's contribution strengthened the notion of popular participation (PP), which argues that involving people in development through popular participation should accelerate both economic and social progress. Unlike the previous approaches, it is concerned with distributing development benefits, income and wealth more equitably, improving access to education and other social services, creating new employment opportunities and also decentralizing the government to facilitate participation in decision-making (Midgley, 1986; Hall et al, 1988). The radicalism of this idea meant that it was referred to as "another development" (Haque et al, 1977), "counter-development" (Galjart, 1981), "alternative development" (Friedmann, 1992) and a "paradigm shift" (Chambers, 1997).

II.2.2 - PARTICIPATORY APPROACHES

Community Participation

Community participation is concerned particularly with small communities and local and social development, poverty and deprived groups. It is in line with the United Nations Economic and Social Council's resolution 1929 (LVIII), which describes the necessary conditions for the participation process as "...voluntary and democratic involvement of people in (a) contributing to the development effort, (b) sharing equitably..."
in the benefits derived from, and (c) decision making in respect of setting goals, formulating policies and planning and implementing economic and social development programmes". This is understood as 'genuine' or 'authentic' participation that differs from 'pseudo' participation. The latter is seen as a community involvement to help implementing or ratifying decisions already made by external bodies, which is common in the context of guided development, such as in the community development approach. In the cooperative movement, statutes, internal regulations and modes of operation were in general either predetermined by officials or professionals (Midgley et al, 1986; Hall, 1988).

Community participation is interested on sustainability and autonomy, advocates spontaneous and voluntary participation and condemns coerced participation. This approach holds the belief that the poor have the capacity for independent collective action to organize and deal with the problems autonomously without the assistance of external agents. It differs from the conscientization approach advocated by Paulo Freire, which stresses that the poor need outside intervention to become aware of their problems and to mobilize themselves, which was widely adopted in Africa, Asia and South America (Hall, 1986). Community participation recognizes the need for government aid but advocates that it should be done under people's control. It supports the view that it is possible to accomplish participation under government guided intervention, although authentic participation is unlikely (Midgley et al, 1986).
Learning Process, Farmer First and Alternative Development

The 'learning process approach' advocates a continuous dialogue between planners and beneficiaries and is an alternative to the blue-print approach that operates by implementing decisions made by administrators at the top, down to beneficiaries (Gow and VanSant, 1983; Korten, 1984). It was first employed in the 1980s, in the Philippines in the Irrigation Programme and in Mexico in the PIDER Programme (Cernea et al, 1991). The Farmer First approach further elaborates this idea and proposes reversals in administrations' power structures, management, and learning through alternative research and development techniques, and professionals' attitudes and values in relation to the poor (Chambers, 1983, 1989).

The alternative development approach was launched in 1976 by the International Foundation for Development Alternative (IFDA) and its report "Building Blocks for an Alternative Development Strategy". This approach is based on the 'basic human needs' approach and like the other participatory approaches, it believes that development can be fostered locally. However the alternative development approach emphasises structural change at national and international levels, as well as collective action, for enabling people to participate in decision-making. Moreover, this approach sees the need for empowering people to counter the power of the state and the market, for sustaining the environment and improving livelihoods (Friedmann, 1992).
Farmer-to-Farmer

The Farmer-to-Farmer approach consists of an alternative used for promoting farmer participation that began in the 1970s in Guatemala, Central America, supported by NGOs, World Neighbours and Oxfam. This approach establishes a relationship between extensionists and producers, that stresses farmers as the main actors in the process of generation and transfer of technology for sustainable agriculture. It promotes farmer extensionists, also called paraprofessionals, who live in the communities. Being farmers allows them to explain extension methods and practices better than 'outsiders' since they are able to use terms that producers are familiar with. They also know more about the needs of producers and can communicate them to extensionists.

The Farmer-to-farmer approach aims at developing networks based on farmer innovation and farmer solidarity. It has proliferated worldwide through NGO projects, mainly in South Asia, but it also has been adopted by public-sector organizations as Farmer-Led Extension. Rural development projects such as of the World Bank also have also incorporated this strategy. An International Fund for Agricultural Development project in Guatemala incorporated producers as part-time extensionists at the National Extension Service mainly with the aim of facilitating the identification of producers' needs, and also changed the National Research Service's annual plan as a result. In Peru, in another IFAD rural development project, small farmers defined their own extension programme and were hired to help implement it, along with formal extensionists (Splitz, 1992).
NGOs generally select farmers to be extensionists who participated in their activities, and in the case of religious NGOs, those who have been leaders in the Catholic Base Communities or local Protestant Churches. Paratechnicians receive special training and participate on discussions about new agricultural practices and programme evaluation. The compensation they receive for their work varies and includes food and lodging during training or visits, and salaries. Using farmer extensionists reduces extension costs considerably, as they require no transportation and receive lower salaries than technicians (Bebbington, 1993; Holt-Gimenez, 1997).

II.3 - DIMENSIONS OF PARTICIPATION

In the early approaches to participation, such as community development and animation rurale, which aimed chiefly to promote economic growth, participation was perceived as an input, or as a means to achieve an end. The notion of social development however, which is concerned with the distribution of wealth, removing structural constraints on peoples' access to resources, people's participation on decisions that affect their livelihood, and protection of environment and sustainability, saw participation rather as an end in itself. It assumed that development would be facilitated if people participated more directly in its implementation, especially in decision-making (Hall and Midgley, 1986). The dimensions of participation, suggested in Paul's (1987) analytical framework for participation, recognise these two notions and categorize them through three main dimensions of the participation process: objectives, intensities, and instruments, which are discussed in the following sections.
II.3.1 - OBJECTIVES OF PARTICIPATION

This section discusses the following objectives of participation: (1) efficiency, (2) cost-sharing, (3) effectiveness, (4) capacity-building and (5) empowerment. Efficiency is considered the simplest form and empowerment the most complex objective of participation. The objective that is closer to the notion of participation as a means is efficiency, as the complexity of the objectives increases they become closer to the notion of participation as an end or empowerment.

(1) Efficiency: participation as a means

According to Paul (1987), this is the simplest objective of participation, and is seen as a means for improving project efficiency. It is concerned with facilitating project planning and implementation and with reducing costs. Participation is seen as contributing to reducing conflicts and misunderstandings, promoting agreement, cooperation and interaction between project beneficiaries and the implementing agency. This may prevent delays and favour the flow of services, and as a consequence reduces project costs. The experience of the World Bank in housing projects, operating with heterogeneous groups, suggests that meetings organized with project beneficiaries to discuss a project's physical, financial, social and organizational aspects, prepared them for what to expect from projects in the future and ensured smoother implementation and better cost recovery.

Efficiency is not considered totally genuine participation because it is employed simply as an instrument to facilitate project implementation (Hall, 1986, 1988; Friedmann,
Nevertheless, project efficiency is not exclusive of economic goals and is recognized as being necessary for achieving social development. It is also concerned with integrating people and preventing feelings of hostility and unfairness among group members, which is related to human resource development. Economic efficiency can also be harmonized with the objectives of social development, such as the creation of new jobs and marketing opportunities. These are indeed part of the goals of genuine participation, since it takes people's needs and interests into account, rather than considering just economic goals.

(2) Cost-Sharing: helping cost-recovery

Participation may be stimulated as a means of facilitating project implementation by raising local resources, and diminishing public costs. It is used as an instrument to facilitate understanding among project beneficiaries about the need for sharing project costs. Beneficiaries may be required to contribute with financial resources, labour or both. The guidelines for succeeding on cost-sharing include detailed dialogue with beneficiaries prior to implementation, monitoring payment systems and criteria for adequate action in default cases, and extensionists to inform and help farmers solve their problems (Paul, 1987). On the other hand, several factors have been suggested that prevent beneficiaries from complying with cost-sharing agreements. These include feelings of insecurity in relation to policy implementation, a lack of guarantees about the quantity and quality of services provided, other financial obligations of beneficiaries, lack of communication about project components, and a lack of follow up such as
monitoring, response to default cases and institutional arrangements (Paul, 1987). It is also recognized that when producers contribute to the costs of extension and technical assistance services they have their control on extension increased, which promotes authentic participation. This has also been advocated by privatized extension and consultancy systems, such as ADAS in Britain, which are guided by clients' demands (Bell, July 1997).

(3) Effectiveness: meeting needs equitably

The concept of effectiveness is concerned with project or development objectives and meeting farmers' needs, and distributing benefits equitably. In the context of community participation, effectiveness has been defined as: (a) creating appropriate services to meet beneficiaries' demands; (b) promoting changes in project design to suit beneficiaries, and (c) creating adequate demand for project services. Thus, effectiveness is related to beneficiaries contributing directly to project design and implementation. It presumes that changes in a project may be necessary in order to meet the demands of beneficiaries, and that therefore, there could be a better match between project objectives and the needs of project beneficiaries (Paul, 1987).

Many writers have highlighted the need to better understand people's preferences since, these often are not apparent to agencies and extensionists (Paul, 1987; Chambers, 1983; 1989; Oakley, 1991). According to the basic needs approach, these preferences include: the minimum requirement for a family for private consumption such as food, housing and clothing; essential services of collective consumption such as
safe drinking water, sanitation, electricity, public transport, health and education facilities; satisfaction of basic needs such as basic human rights.

Based mainly on this concept, Friedmann (1992) proposes four types of need. Needs as an intense want, refers to those motivated by the market and thus concerned with individual market transactions. Individuals become frustrated when they have no means of satisfying their 'felt wants'. Needs as a 'functional' relationship, are related to meeting basic human requirements. For example, when nutritional needs fail to be met, degenerative diseases are likely to follow. Generally, these are the needs identified by professionals based on their scientific-technical principles and experience. Needs as a political claim are those made by a group on resources of common interest. It is seen as a political demand for reallocation of these resources (e.g., agricultural subsidies and agrarian reform) and is supposed to be dealt with by the political community. Finally, needs as a customary right are claims that have been politically accepted and institutionalized and thus, become rights or entitlements, e.g., free public education, health services, clean drinking water and public transportation. According to this view, needs are claims that, when met, become powers. It means that when effectiveness is accomplished it actually empowers people.

According to the advocates of community participation, effectiveness presumes participation in decision-making or co-participation of policy-makers, planners, project authorities and beneficiaries (Midgley et al, 1986). It is also referred to as a process of demand generation motivated by needs and preferences through dialogue between beneficiaries and donors,
which results in demand mobilization by the latter. Thus, it can be achieved through planning and as a result of negotiations between project members and implementing agencies. Demands are not motivated by the need to provide for basic needs, but also for structural reasons, such as terminating economic exploitation, and for psychological reasons, such as becoming more distinguished in the community (Rahman, 1981). The World Bank experience in housing projects offers practical evidence of this, where in countries like Thailand and Bolivia, on many occasions, the dissatisfaction of housing project beneficiaries led to changes in project priorities (Paul, 1987). In Mozambique, the lack of producer participation in decision-making led a World Bank project to import tools that were inappropriate for producers' farming conditions, and consequently the project was rejected by them (Splitz, 1992).

(4) Capacity-Building: the path to self-reliance

Although some writers consider capacity-building to be the same as empowerment, it can be seen as a more limited or specific objective of participation (Paul, 1987). Capacity-building is concerned with project sustainability and promoting people's self-reliance. Thus, it is concerned with people's ability to maintain their power and strength independently of the help of third parties (Oakley and Marsden, 1984). It implies that beneficiaries can assume managerial and operational responsibilities (Paul, 1987), and is related to developing the capacity of operating cooperatively in solving problems, interacting with other groups and taking action. It depends on creating mechanisms to enhance people's control over resources (Esman and Uphoff, 1984; Friedmann, 1992).
Capacity-building is directly related to strengthening social powers such as knowledge and skills and social capital. Thus, it is associated with investing in human resources, providing training, information, knowledge and developing analytical and organizational skills, and abilities to organize meetings and committees, choosing capable leaders and holding them accountable, attracting resources, and handling funds (Gow and Vansant, 1983; Paul, 1987; Friedmann, 1992). It is known that the use of people's knowledge and resources favours people's self-reliance by reducing their dependence on outsiders. Nevertheless, it must be recognized that complete independence is not possible, and no group or community can survive as a totally self-sufficient unit. Self-reliance also depends on the availability of resources and on the geographical, economic and political context. In general, local resources are insufficient and therefore, the use of external funds and expertise are both necessary and sought by the poor.

Social capital, which includes social organizations and connections between people and institutions, is seen as a mechanism for enhancing and sustaining self-reliance at local level (Evans, 1996; Harris, 1999). These attributes are not supposed to be imposed from outside but to be a result of the participation process (Friedmann, 1992). External help is seen as being crucial for building organizations but should not dominate them (Oakley, 1991). Involvement in formal and informal organizations, such as associations, trade unions, discussion groups, neighbourhood associations, can help convivial life, provide relevant information, mutual support, and self-reliant collective action, which is expected to enhance long-term economic prospects (Friedmann, 1992).
Social networks that connect people and institutions are suggested as being essential for enabling self-reliance based on reciprocity. Horizontal networks motivated by kinship, friendship and neighbourhood, or by membership in social, economic and political organizations, can help to promote information-sharing, mutual trust and solidarity, and thus cooperation, coordination and social action. Trust and solidarity are considered to be associated with common experiences for example, confronting poverty and hardship, and expectations and values, such as distributing land for accomplishing a better society. Vertical networks that connect different sections of society through social organizations such as cultural associations, voluntary unions, sports clubs, deliberating councils and informal policy networks, can promote cooperation, coordination and build social trust and consensus on a wider basis. Horizontal and vertical networks can be constructed, and as a result generalize trust, solidarity, cooperation, coordination and strengthen self-reliant social action. These elements can bring together different levels of government, even spanning public-private boundaries, and challenge bureaucratic organizations with inflexible rules and pre-established power structures that lead to dependent relationships.

Institutional barriers such as weak government administration are more harmful to the development of networks than the lack of the existing local networks. Social networks are influenced by equity in terms of wealth and power, and political and economical factors. Privileged groups in relation to income are favoured to develop links and thus, are more benefited by cooperation and mutual trust and accomplishing
self-reliance than low income groups. However, social networks are unlikely to bring about self-reliance when resources and the means to gain access to it are lacking (Evans, 1996; Harris, 1999). Achieving self-reliance is seen to be fundamental to ensure that local groups can have a favourable relationship with formal organizations and public or non-governmental sectors (Esman & Upholf, 1984). The social capital formed by local groups connected with the government administration and national policies was important for the self-reliance of the poor in various countries, such as in agrarian reform during the socialist revolution in China, and the Nicaraguan land reform promoted by the revolution in the 1980s (Stiefel et al, 1984).

Self-sufficiency requires accountable, representative and dynamic leadership. Leaders are expected to be appointed naturally, and charismatic leaders should be avoided, since they are known for controlling others, are associated with project failures and retarding the emergence of strong and enduring collective institutions. Traditional and emergent leaders in new decision-making bodies should be integrated and unite different factions. Leaders are expected to receive training courses, that can improve their organizational, administrative and leadership abilities and project development, implementation, monitoring and evaluation techniques (Midgley, 1986). More recently, it has been argued that farmers' leaders can lead the process of technology research and development and extension at community level, as in the case of the Farmer-led extension approach (Scarborough et al, 1997).
The VACVINA, a national membership organization in Vietnam, enhanced horticulture producers' self-reliance by enabling them to develop appropriate technology which increased their economic gains, mainly in horticulture (Du et al, 1997). Participatory approaches, such as the Farmer-to-Farmer extension, Farmer-First, Participatory Rural Appraisal, Participatory Action Research, employ various methodologies, which enable producers to identify their problems, to do research and develop technology/solutions. These methods include the process approach, learning and problem census/problem solving field schools and the - canasta metodologica (basket of methods) (Scarborough et al, 1997; Chambers, 1989, 1997).

(5) Empowerment: the broadest objective

Empowerment has become widely accepted as a critical dimension of participation since 1979, when the World Conference on Agrarian Reform and Rural Development (WCARRD) stressed the importance of the transfer of power as part of the participation process (Oakley, 1991). This notion has evolved to the point that nowadays participation is virtually synonymous with empowerment (Friedmann, 1992; Chambers, 1997). It is the cornerstone of the idea of CP, which sees the need for "effective devolution of power to local communities to decide on matters that concern their welfare and prosperity" (Midgley, 1986, p.150). According to Friedmann (1992) people enjoy three categories of power: political, social and psychological. Political power is directly related to participation in decision-making or people making their voices heard by policy-makers and planners, which involves the power
to vote and participate in collective action is essential in the struggle for inclusiveness or empowerment.

Social power refers to people gaining access to productive wealth or certain bases of household production, such as instruments of work and financial resources, economic assets. There are eight bases of social power suggested: life space, as a territorial base in which to live and relate to others; surplus time, as the time left for gaining a subsistence livelihood; appropriate information, as a resource for self-development; knowledge and skills, as investment on human resources through education, training and development of skills; social capital that includes both powers: social organization related to formal and informal organizations and social networks among family, friends, neighbours and through social hierarchy, which permit access to other forms of power; instruments of work, such as health and physical strength, water and productive land, implements and equipment, home appliances, such as a cooker, fridge, radio, TV and toilet facilities; and financial resources, such as monetary income, formal and informal credit. It is argued that the measurement of relative access to these resources is more appropriate through comparisons amongst households instead of using a single absolute yardstick. In addition, social power is usually a prerequisite for the attainment of political power; that is, social empowerment facilitates participation in politics.

Psychological power is related to the individual's sense of power, which should result from the successful accomplishment of the other two categories. It is expected to result in self-confident behaviour and positive effects on household's struggle to increase social and political power.
(Friedmann, 1992). It is also suggested that empowerment requires awareness-raising in relation to political and structural features which maintain people oppressed. Critical awareness and power to remove the causes of oppression can be achieved through concrete collective action (Freire, 1972). Furthermore, development is expected to increase the political awareness and strength of the poor, and lead to an equitable sharing of power (Paul, 1987). The cases of the revolutions of China in the 1950s and Nicaragua in the 1980s, showed small farmers acquiring social powers through agrarian reform conquered through political power. The example of Peru showed that small farmers acquired social powers such as land and credit when the government implemented rural cooperatives. However, it also showed that it was jeopardized when producers had no political power to prevent the government from withdrawing its support to cooperatives (Stiefel et al, 1994).

II.3.2 - INTENSITIES OF PARTICIPATION

This section discusses the four intensities of participation: (1) Information-Sharing, (2) Consultation, (3) Decision-Making, and (4) Direct Action. The intensity of participation is seen to increase from (1) to (4). Thus, information-sharing is considered the lowest and direct action the highest intensity of participation. Similarly to the objectives of participation, they are related to the notions of participation as a means and as an end. The most complex objectives, such as empowerment and capacity-building, are assumed to require primarily high intensities of participation, such as direct action and decision-making. The simplest
objectives such as cost-sharing and project efficiency are supposed to require low intensities of participation, such as information-sharing and consultation. All intensities however may occur independently of the desired objective of participation (Paul, 1987).

(1) Information-sharing: facilitating implementation and dialogue

This dimension is considered the lowest level of intensity of participation, and can be seen simply as project designers and managers sharing information with beneficiaries. It may be used with the aim of encouraging beneficiary cooperation either collectively or individually with the objectives of the project, and it can contribute to the achievement of project objectives, since beneficiaries may understand and perform their tasks better (Paul, 1987). According to this view, information-sharing aims at enhancing project efficiency and is in tune with the blue-print approach. However, this dimension can also be seen as a communication process between and among the agency's personnel and beneficiaries, as advocated by the Farmer First and the Learning Process approaches (Hall, 1986; Korten, 1987).

Information-sharing can lead to mutual learning and understanding and considers the farmers' knowledge, which is said to enhance project results, principally in relation to meeting needs, mainly for enabling policy-makers, managers and extensionists to learn about needs and interests (Chambers, 1983, 1989). This is verified in various participatory research and extension approaches that employ two-way communication, such as Farming Systems Research (FSR), Participatory Rural Appraisal (PRA), and Participatory Action Research (PAR).
In addition, it can be seen as facilitating dialogue that can contribute to raising awareness and developing people's critical consciousness, which aims at empowering the poor (Freire, 1972; Friedmann, 1992).

(2) Consultation: Facilitating Implementation and Consensus

Consultation represents a higher level of intensity of participation compared with information-sharing. Thus, in principle, it is closer to genuine participation. Beneficiaries may be consulted on key issues at some or all stages of the project cycle. Consultation presupposes interaction between beneficiaries and project agency, where donors can receive feedback from beneficiaries and take it into account in the design and implementation of the project. It is suggested that the project's outcome is enhanced when farmers are consulted on extension practices and arrangements, compared with when they are only informed (Paul, 1897). However, consultation can also be seen as a means of learning from beneficiaries' ideas and experiences, and achieving consensus between the farmers and authorities, since the views of both parties are taken into account, a feature of the 'Farmer-First' approach.

Consultation is a means of avoiding confrontation and diminishing conflict, since it helps development agencies to be more open to producers' demands (Midgley and Hall, 1986; Chambers, 1983, 1989). Like information-sharing, consultation has been employed by the Farming Systems Research, Rapid Rural Appraisal, and Action Research approaches, which are aimed mainly at overcoming the shortcomings of the top-down transfer-of-technology (TOT) approach by encouraging formal research,
policy-makers, managers and extensionists to consider producers' farming systems, their experience and knowledge (Chambers, 1989, 1997).

(3) Decision-making: authentic participation

This level of intensity of participation is higher than consultation and information-sharing. It is an integral part of the community participation concept and is accomplished when project members take part in decision-making in relation to project design and implementation. Decisions related to project issues can be made exclusively by them or jointly with project donors. Nevertheless, this means that project beneficiaries have a greater degree of control and influence over projects (Paul, 1987). Progress in both extension and research approaches requires the decentralization of decision-making in development, and empowerment requires participation in decision-making. This dimension acknowledges that needs must be differentiated in terms of territory (local, national, international) and social groups.

Participation in decision-making has motivated further modifications in research and extension methods, such as Farming Systems Research (which developed into Farmer Development Research), Rapid Rural Appraisal (that became Participatory Rural Appraisal), and the Action Research (Participatory Action Research) (Chambers, 1997; Garforth and Harford, 1997). The methods developed in the context of the Farmer-to-Farmer extension, such as problem census/problem solving, field schools and basket of methods give a stronger voice to producers concerning problem identification, research, development and delivery of technology/solutions (Kingsley et
Despite the progress made, it is recognized that farmer participation in decision-making is far from being the major approach adopted and outsiders still dominate decision-making in development (Garforth and Harford, 1997).

(4) Direct action: the road to empowerment

When project beneficiaries are able to initiate or take direct action in relation to project matters, the intensity of participation is said to achieve its highest level. It requires and contributes to capacity-building, since taking action requires beneficiaries to have pro-active capacity, being determined and capable of proceeding independently (Paul, 1987). As seen above, involvement in social and political action requires powers that need to be strengthened. The engagement of civil society and 'political communities', including political parties and social movements, in demonstrations, lobbying, rallies, protests, occupations of land, public and private buildings, can be an effective way of accessing political and social power. These confrontational tactics can be seen as a form of violence but in fact they can be a way of building up a dialogue between the parties where none was possible before (Hollnsteiner, 1979; Friedmann, 1992). This method can be far more effective than the formalized, institutional approach and can be useful for mobilizing community solidarity (Midley, 1986).

Social movements have played an important role in promoting empowerment. The movement of Villa El Salvador outside of Lima, Peru, began with an illegal land occupation in 1971 (Ballón, 1989). This settlement that is over 20 years old,
succeeded by setting up a representative body that was politically and economically self-sufficient and evolved into a municipal district with its own government. The Paros Cívicos, national strikes in Colombia, during the 1970s and 1980s consisted of social movements that developed largely outside of party politics and helped to achieve free elections of local governments by paralysing commercial, educational, and productive administrative activities (Friedmann, 1992). The mobilizations and land occupations of the landless workers have played an important role in the allocation of 17 million hectares for agrarian reform in Brazil in the last two decades (MST, 1997).

II.3.3 - INSTRUMENTS OF PARTICIPATION

This section presents two instruments of participation: (1) extensionists and (2) producer groups. These are seen as tools for promoting both the objectives and the intensities of participation and are also related to the notions of participation as a mean and as an end in itself. Extensionists are supposed to be simpler instruments than producer groups and more suitable for promoting participation as a mean. That is, the simplest objectives of participation, such as cost-sharing and project efficiency, and the lowest intensities of participation, such as information-sharing and consultation. Producer groups are seen to be instruments capable of promoting the highest intensities of participation such as decision-making and direct action, and the most complex objectives, such as capacity-building and empowerment. Both instruments however are seen as having the potential to contribute to all
intensities and objectives of participation to different degrees (Paul, 1987).

(1) Extensionists: Agents of change or facilitators of empowerment?

In general, implementing agencies use field workers to interact with and mobilise project beneficiaries. Although they operate directly with project members at community level, they are part of the project or extension agency. Nevertheless, it is assumed that spontaneous action and change is unlikely to be sufficient to empower the poor, and external support and expertise is often necessary (Midgley and Hall, 1986; Friedmann, 1992). It is said that their performance as instruments of participation depends primarily on their 'orientation' and 'commitment' to producers' needs and participation. Although their community mobilization skills and attitudes can be influenced by training, when they see themselves essentially as agents of the government or donor their ability to promote and sustain participation can be compromised (Paul, 1987).

According to the diffusion-of-innovation approach, extensionists are seen as the link between the extension institution and the farmers. His or her primary role consists of developing the needs of the latter by changing their attitudes and behaviour basically in terms of the technology they use. In addition, they are expected to provide information and persuade producers to adopt technological innovations. Once the decision to adopt is made, their role is to reinforce the message in order to prevent farmers from rejecting the diffused technology (Rogers, 1983). According to this view, extension
agents are seen mainly as communicators and teachers, who are not concerned with dialogue but with persuasion (Skinner, 1974; Mackenzie, 1977). They are also seen as playing leadership and active roles, such as coordinators and organizers of groups and communities, catalysts of action, advocates of innovation, enforcers of regulations and planners (FAO, 1980).

In contrast, participatory approaches see the extensionists' role as being that of facilitator of group development and the participation process and are expected to organize a structure for learning (Dilts, 1997). Normally, his or her role is referred to as that of convenors, scientists, consultants, searching for what people need and supporting them (Chambers, 1989). They are seen as educators, according to the problem-posing model of education, or communicators, facilitators, liberators and activists, in harmony with the dialogue process (Freire, 1972, 1973). The extensionists' role of raising the social and political consciousness of the poor is stressed, in particular with the aim of empowering them (Freire, 1972; Hollnsteiner, 1982; Midgley, 1986). Likewise, participatory approaches see the extensionists' basic task as being "to spark endogenous change 'from within', not to carry out the change program, that is a responsibility of the organized community" (Friedmann, 1992, p.144). In addition, they are expected to help community groups to move to 'new challenges' and 'appropriate actions', with the aim of gaining access to political and social power. They are to provide support that encourages the powerless to free themselves from traditional dependency (Hall, 1986; Friedmann, 1992).

Extensionists' backgrounds can create barriers to their relationship with producers. In general, they have very
different cultural backgrounds from those of the farmers and are educated in colleges or technical schools (Rogers, 1983; Chambers, 1983, 1989; Paul, 1987). The TOT approach suggests that extensionists should have empathy and credibility with producers to be accepted by them, for it can affect adoption. In theory, this would allow extensionists to see things through farmers' eyes for diagnosing farmers' problems. In reality, however, it is argued that it causes extensionists to prefer contacting the better off and more educated farmers who understand them better and are more prepared to adopt innovations.

Resource-poor and less educated farmers demand conflicting roles of the change agent for their needs are different from those which can be met simply by extensionists (Rogers, 1983; Chambers, 1989). The Community Participation and Farmer-First approaches propose that extensionists commit themselves to the needs and interests of the poor, and listen to them, because they know their own situation better than anyone else. It also believes that reversals of professionalism and management are necessary (Chambers, 1983; 1989; Paul, 1987). Farmer extensionists is an alternative which may close the gap between community members and extension worker (Scarborough et al, 1997).

(2) User groups: facilitating participation or adoption

The organization of user groups is said to have the potential to promote the highest level of participation, in terms of highest intensities and complex objectives. Groups may operate at any intensity of participation, and they can also move from one level to another over time (Paul, 1987). The
early diffusionist extension fostered groups in which the most progressive farmers were expected to influence others. Later, when diffusion research suggested that other aspects, such as culture, religion, kinship, economic interests and social status influenced the diffusion process, and that conflicting elements might inhibit diffusion, extension began to work with more homogeneous groups (Roling, 1982, 1988; FAO, 1980).

In general, diffusionist extension leads groups directly. It may decide to lead indirectly, when it judges that dialogue is productive and farmers are able to lead themselves. Groups are encouraged to form societies and clubs, and work cooperatively towards their interests. They are organized by gender and by age. There are men and women's groups and youth clubs. The youth group is seen as the most progressive audience of all. Extension believes that it can educate youth groups to serve the community and ensure greater innovation in the future. Groups are seen as the basis for farmers' organization. They can serve farmers' specific interests such as marketing and transport. Farmers' groups are expected to work on a cooperative basis and not become involved in religious and political matters (Saville, 1965).

In the context of community participation, groups are employed in a quite different way. They are considered tools for people to access all the dimensions of participation, and a critical requirement for enabling the poor to participate actively in development. They are perceived mainly as local level mechanisms that can promote and sustain development (Midgley, 1986). The forms of organization that simply use groups as tools for facilitating projects or policy implementation leave the poor out (Hall, 1988). Organizations
capable of promoting participation of the poor must emerge as a result of their own debate and action. Their development and internal structure need to develop as a natural process and result from peoples' own decisions, and not be imposed from outside. Although external support is seen as crucial, it must help and not dominate the organization (Oakley, 1991; Friedmann, 1992).

Extension group membership is expected to be based on common interests and needs, normally limited to between 10 and 35 members. Formal or membership organizations are associations, trade unions and cooperatives that seek benefits for their members by performing economic and political roles (Oakley and Marsden, 1984; Friedmann, 1992). The group's role is described as to gain access to bases of productive wealth and power, which includes the power to negotiate, bring political pressure on the state, receive credit, make bulk purchases at a discount, and accomplish more advantageous marketing (Friedmann, 1992). It is suggested that group process should follow key stages to sustain 'authentic participation'. These are (a) problem identification, (b) diagnosis of the situation and discussion of the problems, (c) development of internal organization, (d) the creation of awareness and training and, finally (e) accomplishing group action and developing linkages and articulation with other groups (Hall et al, 1988).

Problem identification (a) and diagnosis (b) presuppose joint action by farmers and extensionists, as emphasised by participatory approaches (Chambers, 1983, 1989; Scarborough et al, 1997). These stages also linked to identifying and understanding the structural causes of dependency (Freire,
1972, 1973; Friedmann, 1992). Internal organization (c) is mainly concerned with developing group cohesion and leadership. It is suggested that groups promoted by internal leadership are likely to achieve a high level of participation (Paul, 1987). Nevertheless, leaders are likely to be coopted, and groups and communities forced to comply with state rules to gain access to benefits. Group cohesion is said to be strengthened by internal conflicts when sorted out within a framework of democracy, diverse organizations and social practices (Friedmann, 1992).

Promoting learning (d) is one of the most important attributes of groups and organizations (Friedmann, 1992). It facilitates the ability of people to learn about democracy, how to defend a position, listen to one another, decide together, divide the work to be done, set objectives and attempt experiments (Palma, 1987). They have an important role to play in training for participatory skills, and providing structured opportunities for training at local level. As farmer's organizations develop, they can make decisions by themselves and undertake actions, which are considered the means to realize social and political powers (Hall and Midgley, 1988; Oakley, 1991; Friedmann, 1992). However, organizing people at local level does not necessarily ensure that they can influence development policies. Once some level of organization is achieved, linking them up with others, through social networks can promote solidarity and provides the chance to share experience and knowledge (Oakley, 1991; Evans, 1996).

Groups and organizations form the basis of decentralization which is a major goal of all participatory approaches. It is argued that development requires devolving central functions and resources to regional and local
governments, although these need not necessarily be formal power structures of government (Friedmann, 1992). It means changing the way bureaucracies operate to allow greater autonomy at local level (Chambers, 1983), increasing diversity by creating effective and democratically elected representative decision-making bodies with clearly defined powers to administer programmes and control revenues (Midgley, 1986). The idea of a local development council suggested by Majeres (1977) is an alternative method of implementing these principles. It should take responsibility for the administration at local level, initiate infrastructural and social development projects, be linked to higher authorities and be a channel for communicating ideas and innovations upwards. Allocating financial resources and monitoring and supervision in this type of local decision-making bodies from the government would be necessary.

II.3.4 - EXTENSION AND PARTICIPATION ISSUES

Extension Methods

Methods have been an important extension tool for communicating with, educating and involving its clientele. According to the diffusion of innovations approach, extension methods are the means of informing, teaching and persuading farmers to innovate. Individual-based methods are the most common, mainly to inform, persuade and reinforce farmers' decisions to adopt (Rogers, 1983; Ban et al, 1988). This method normally consists of contacts and farm visits, but it can also involve farmers' visits to the extension office, letters and phone calls. It is considered particularly useful for extension
agents to build up friendship with farmers and gain their confidence, although this restricts coverage. Generally, it is used via 'opinion leaders' and 'progressive farmers' (Ban et al, 1988; Saville, 1965).

Media-based methods, such as newspapers, film and radio are seen as useful for informing a large audience about an innovation with relative speed. They are assumed to be relevant for changing weakly held attitudes and more relevant for earlier adopters and opinion leaders, and for creating general awareness and interest in new ideas (Saville, 1965; Ban et al, 1988). Group methods, such as meetings, speeches or talks, demonstrations, group discussions, farm visits and excursions, are seen as being useful for diffusing new ideas, for they bring farmers together for meetings and group discussions. They also facilitate communication, feedback and interaction among farmers themselves (Ban et al, 1988; Chambers et al, 1989). Demonstrations are believed to be useful for the persuasion stage, and favour attitude changes by allowing farmers to learn by doing, and extension to teach farmers how to implement an innovation (Saville, 1965; Ban et al, 1988; Chambers et al, 1989).

Conversely, participatory approaches use extension methods as a means of facilitating the process of involvement and group development. As such, great emphasis is placed on group methods such as group meetings and discussions, which are seen as a medium for getting people involved and creating self-awareness. Meetings are perceived as a forum for promoting solidarity, cohesion and unity of action, and serve as a basis for building more formal organizational structures. Great emphasis is attached to analytical tools, data collection,
problem identification, diagnosis and identification of appropriate solutions and evaluation, jointly with extensionists and researchers. Such techniques are adopted by participatory approaches such as PRA, PAR, and PALM approaches and led by the Farmer-Led Extension approach. Extensionists are expected to conduct group meetings by creating an atmosphere of fraternity, informality and dialogue, where agents and group members can talk as equals. Group meetings are structured relatively loosely and discussions tend to be encouraged, so that people can participate freely. This also prevents extension agents from dominating the farmers' groups (Chambers, 1989; Oakley, 1991; Thomas-Slayter, 1995; Garforth and Harford, 1997).

Participatory farmers extension usually employs workshops, seminars and courses which tend to emphasize reflection over peoples' needs, analysis of their problems and the organizing of some form of action (Hall, 1988; Oakley, 1991). People are invited to define topics of interest and programmes, including the sharing of experiences and analysis of participants' situations. Inter-group or project learning activities are also promoted through seminars and short visits, which can provide new ideas to group members. It is believed that such techniques can ameliorate farmers' general lack of information caused by isolation (Chambers, 1989). Other methodological initiatives are popular theatre, songs and Bible circles, which are commonly used in Latin America. Other means, such as video, puppetry, and slides are widely spread and permit people's self expression and exchange of information among groups, and focus analysis and discussion on specific problems (Oxfam, 1985; Oakley, 1991; Scarborough, 1997).
Women and Extension

Diffusionist extension saw women primarily according to their reproductive and productive roles. Initially, in the 1950s and 1960s, it focused on women only as being responsible for child-rearing thus, with the aim of making them better mothers, through training in home economics and nutrition. During the 1970s when the weakness of the diffusion-of-innovation and modernization approaches for confronting underdevelopment became apparent, the diffusionist extension mode also recognized the productive role of women as income earners and as a means of overcoming underdevelopment. During the 1980s it continued to focus on women's participation in production as a mean of contributing economically to development and to their equity in relation to men.

Diffusionist extension only recognized the practical needs of women, namely their biological needs and interests, related mainly to child-rearing, including the provision of housing and basic services such as food, shelter and water.

In contrast, participatory extension is concerned with women's equity or rather their unequal situation of subordination to men. It assumed that to gain equity for women in development, they should participate actively in the development process. Thus, it recognizes the role of women in the community, which includes undertaking work for the provision of housing and basic services, and their community leadership role, which in general is the domain of men. It was also concerned with the strategic needs of women with the aim of freeing women from the burden of domestic labour and childcare, and providing them with greater autonomy as a mean of achieving equity in relation to men. From the 1980s,
participatory extension promoted women's self-reliance and empowerment by encouraging bottom-up mobilization through participation in party politics and trade unionism as a mean of confronting oppression (Moser, 1989). Thus, it has motivated women to take part in organizations and to participate in all types of projects and activities, as in the VACVINA organization in Vietnam, in horticulture activities, and in India, in animal husbandry and forestry, which include women as extension volunteers (EVs) (Selener, 1997).

Extension Topics

The diffusion-of-innovations approach emphasises science and modern technology as the means for farmers to increase production and home administration. Initially, agricultural production embraced topics such as crop production, forestry, marketing, credit and cooperatives and included subjects on new technology, relating to seeds, fertilizers, machinery and storage systems. The implications of the market and the agro-industrial complex in farmers' income, has forced extension to embrace subjects such as farm management and farm economics. Home administration was concerned mainly with improving families' housing, health, nutrition, education and home economics (Brunner et al, 1949; Ribeiro, 1985).

Participatory extension approaches deal with similar topics, but with different objectives, which reflect on the content. That is, participatory extension emphasises transferring principles, methods and a basket of choices that can be adapted to local situations, whilst the diffusionist approach is tied to a package of technologies that are assumed to be useful for all types of farmers, conveying standardised
messages and regulating practices. The latter aim at achieving uniform infrastructures, whilst the former aims at developing diverse capabilities that can increase sustainability in terms of social, economic and environmental aspects.

Thus, it emphasises the use of local resources, indigenous and appropriate knowledge while the diffusionist strategy emphasises imported and capital-intensive technology. Participatory approaches are holistic, for they take into account social, political, economic, and institutional aspects, among others, whilst the diffusionist approach is considered reductionist, since it stresses economic and technological aspects (Chambers, 1983, 1889, 1997). These topics are considered primarily as tools for households to achieve their goals, including that of empowerment (Friedmann, 1992).

Projects comprise an important vehicle for promoting development. Two types of projects can be distinguished: large scale projects or programmes and small scale projects. The first type are government-sponsored programmes that normally cover large areas as in the case of Intergrated Rural Development Programmes (IRDP). They are multi-sectoral and involve all the institutional, financial and material resources, necessary to tackle an identified problem. In general, they centralize decision-making in relation to funding and planning; learning is not emphasised; technology is capital intensive and imported, they have bureaucratic management, and are inflexible (Chambers, 1983, 1989; Friedmann, 1992). In addition, it is said that they create dependence, which makes projects vulnerable to changes in external circumstances (Oxfam, 1985; Cernea, 1988).
Small projects normally address social and economic development, involve the poorest farmers, emphasise learning, use appropriate and indigenous technology, foster participation in planning and collective action with the aim of empowering people. They are more likely to facilitates control by the beneficiaries, avoid bureaucratization and diminish costs. Small scale projects comprise the features advocated by the participatory extension and consist of alternatives to promote the reversals that development work requires to benefit the poor (Midgley and Hall, 1986; Chambers, 1983, 1989; Friedmann, 1992). Hopes that the benefits of small projects might spread among the poor reside on the proliferation of participatory extension organizations and on networks which may lead to influencing state policies (Friedmann, 1992).

Assessment of Participation

Despite some progress during the last two decades, the literature and practice on the evaluation of participation on development is still limited. In general both qualitative and quantitative evidence are essential and complementary. In addition, the intangible goals of participation, such as awareness-raising and material attainments, are mutually inter-dependent. Consequently, the achievement of one type of goal is expected to lead to the accomplishment of another. For example, increasing political power is expected to facilitate producers to achieve their basic needs such as housing, food and water, which in turn, empowers producers (Cohen and Uphoff, 1980; Gow and Vansant, 1983; Bhasin, 1985; Moser, 1983; Midgley and Hall, 1986; Marsden et al, 1991; Oakley, 1991). This study adopts this view and examines both
the tangible and less obvious goals of participatory development.

II.4 - CONCLUSION

This chapter has suggested that the diffusion-of-innovations approach was consolidated in the early 1960s, when extension services expanded in the developing countries to support the modernization of agricultural policies. This approach seeks social change through the diffusion of new technology and incorporated the industrial 'research, development and diffusion' model of technology generation, and the 'two-step-flow' model of communication. It also adopts the view that progressive farmers (early adopters) should persuade traditional farmers (late adopters) to incorporate new agricultural technology. It considers agriculture primarily as a means to promote industrialization and economic growth, and that the causes of underdevelopment are situated at local and farm level. In addition, it considers participation simply as a mean to facilitate the diffusion of new technology and promotes farmer participation through the 'Community Development' approach. It supports the simplest dimensions of participation especially the objectives: project efficiency and cost-sharing, the intensity: information-sharing, and the instrument: extensionists.

The participatory approach that was consolidated during the 1970s was motivated by the exclusion of small farmers from the modernization process, and the proliferation of poverty, inequity, landlessness and rural-urban migration whereas, the landowners and newer commercial farmers attained most of the
benefits of economic growth. This approach focuses on small communities, deprived groups and women, and seeks economic and social progress through popular participation and equal distribution of development benefits. This was consolidated through various participatory approaches, named 'Community Participation', 'Farmer-First', 'Learning Process', 'Alternative Development' and 'Farmer-to-Farmer'. In addition, this approach perceives participation as an end and promotes all dimensions of participation, especially the objectives: effectiveness, capacity-building and empowerment; the intensities: consultation, decision-making and direct action, and the instrument: producer groups.
CHAPTER III
GOVERNMENTAL AND NON-GOVERNMENTAL AGRICULTURAL EXTENSION

In this chapter the Brazilian governmental and non­governmental agricultural extension services are discussed. The origins of the two sectors, types of policies they support, characteristics of their administration, their links, the programmes they have developed and the clientele they have assisted are analysed. The types of farmer organization, extension methods and groups they have pursued and the features of their extensionists are also analysed.

III.1 - AGRICULTURAL EXTENSION IN THE USA

Early Extension Experiences - Extension first promoted by farmers

Extension began in the USA when farmers set up associations and institutes in the eighteenth century motivated by the need to develop new farming methods to increase agricultural production and productivity. These promoted exchanges of information, educational and organizational activities and the creation of local agricultural organizations. The Society for Promoting Agriculture, which was set up in 1785, in Philadelphia was an important enterprise that helped extension to be what it is today. By the mid-1800s these societies existed in several states which led to the creation of the United States Agricultural Society, an influential organization in the country (Brunner et al, 1949).

Farmers' Institutes began in 1863 in the state of Massachusetts and by the end of the 1800s they had spread to
all but one state, totalling 2,000 institutes and involving around 500,000 farmers. Acceptance by farmers together with government financial aid resulted in their rapid expansion and in 1914 there were such 8,861 institutes which reached over three million farmers. These were popular schools of agriculture that worked with the farmers' associations and promoted informal and continuous educational activities such as short courses, conferences, practical demonstrations, field experiments, and also produced printed material. They had a mobile library and farmer, housewife and youth clubs and worked with women in cooking and nutrition activities (Brunner et al, 1949; Oliveira, October 1986).

The Patrons of Husbandry, commonly known as Grange, founded shortly after the American civil war in 1867, educated its members on the "art and science of agriculture", which inspired mostly the teaching of practical agriculture and domestic science in agricultural colleges. The government demonstration farms were a major contributor for introducing the idea of extensionists, when Dr. Seaman Knapp introduced the demonstration method as a means of motivating farmers to adopt new technology. By 1904, these employed 700 agents and had around 7,000 farmers working voluntarily as demonstrators. These demonstration farms ended but agents continued the demonstrations on private farms, paid for by farmers (Brunner et al, 1949).

Institutionalization of Extension - Government guidance

The early experiences of extension contributed largely to the institutionalization of the extension services in USA. It began in 1862, when the Morril Law, the so-called Land Grant
College Act, allowed the creation of an agriculture college and the allocation of land for research stations in each state. These were intended as public agricultural universities, dedicated to teaching agricultural production techniques to the rural population in general (Oliveira, October 1986). The Hatch Law of 1887 allowed the provision of substantial financial and technical support to the Land-Grant Colleges.

In 1914, the Smith Lever Law consolidated the extension services in the USA and laid down the basis for the Agricultural and Home Economics Extension Services. According to this law, government financed activities of Colleges that incorporated an extension department which worked alongside the Department of Agriculture. It was largely influenced by the Country Life Commission report that originated the so-called country life movement, whose aim was 'developing the countryside equal to urban areas'. This report suggested that rural areas lacked 'a proper kind of education', and the government to set up a department of extension to address problems of agriculture, sanitation, education and home-making (Brunner et al, 1949).

Objectives, Agents and Programme

Until World War II, the US extension services concentrated on developing farmers' ability to farm. In the late 1950s, new factors outside the farm-gate, such as new markets and the expansion of the agro-industrial complex, forced the service to become geared towards new subjects concerned with increasing profit and economic efficiency, such as farm management and the economics of farming (Brunner et al, 1949; Ribeiro, June 1985). The colleges incorporated the idea
of a "district agent" who was either an employee of the
government or of the college. They diffused among farmers the
new technology that research produced. The colleges addressed
farmers and their families and used basically the same methods
developed previously by farmer organizations and the government
demonstration farms. They introduced, however, the liasing
community leaders and interpersonal contacts with farmers and
community meetings (Oliveira, October 1986).

The US extension service was primarily an instrument of
the federal government. It aimed at harmonizing the objectives
of the US Department of Agriculture with the state governments'
priorities and the needs of the counties and communities, and
emphasised integration with local government and farmer
organizations. It assisted all type of farmers and its
programmes included crop production, forestry, marketing,
credit, cooperatives, land tenure, labour and income, and the
areas of home administration, health and nutrition. However, it
tended to give priority to increasing production and
progressive and better off farmers (Brunner et al, 1949).

Extension Administration - Government Control

Extension service was meant to operate integrated with
education and research and thus, with Farmers' Agriculture
Associations, Farmers' Institutes, Land Grant Colleges and
Research Centres, as well as the federal and state governments.
The Agriculture Colleges and Research Stations that operated at
the state level, and the Department of Agriculture, at federal
level, cooperated towards a national programme of extension,
which was agreed in a 'memorandum of understanding'. Extension
administration, however, was hierarchical and largely
centralized and thus constrained producers' influence. The federal government was to provide co-ordination and advice. The states were concerned with the work in the field. The allocation of resources was decided jointly by the federal and respective state government organizations. Farmers were not involved.

The federal office of extension service was headed by a director and staffed by administrative officers and subject matter specialists. These basically served the demands of the field agents. Their work involved persuasion and suggestion, for it had no authority over the states. Their responsibilities basically consisted of producing extension information, field studies and training, technical support, and providing coordination of field personnel and supervision of extension work.

At state level, the extension organization worked as a department of the Agriculture College. It had a director appointed by the College in agreement with the Department of Agriculture, whose role was to co-ordinate the state extension programme. Under the authority of the director were the supervisors and subject matter specialists. The supervisors were responsible for the development of the extension programme at county level. Specialists had to ensure the flow of information between extension agents, farmers and the subject matter specialists of the Colleges, the Experiment Stations and Department of Agriculture (Brunner et al, 1949).

The local units were staffed with the so-called county agents and home advisers, who were in charge of the administrative work of the county office and the extension work with farmers. It also included the training of volunteer local
leaders. The local office budget was formulated at local level, and approved by local and state governments. The home advisers were involved exclusively with home economics extension work, while the county agents were generalists. Extension work in the field received technical support from the state subject matter specialists as well as specialists from the Colleges and Experimental stations.

III.2 - GOVERNMENT AGRICULTURAL EXTENSION SERVICES

III.2.1 - EMERGENCE OF EXTENSION IN BRAZIL

Transferring the US Model

As seen in chapter I, after World War II industrialization was the priority in Brazil, but agricultural production was also to expand to put an end to malnutrition, provide food for a growing population and support industrial development. It was in tune with the policy of the industrialized countries of the West, led by the USA and the United Nations, and engaged in the task of developing and modernizing the developing countries (Hulme et al, 1990). At that time the US Land Grant model of extension was transferred to many of these countries, particularly to Latin America, as a result of the growing political and economic leverage of the United States on the region. In Brazil, it was embodied in the agreements that were signed between the Brazilian and US governments, such as the Alliance for Progress, which promoted exchange of technical personnel, training programs and financial aid, facilitating the development of official extension services in Brazil (Fonseca, 1985; Oliveira, October 1986).
Early Extension Experiences - Government-guided extension

The Fomento System was the official programme for promoting agriculture production before agricultural extension was introduced in Brazil. It consisted of a network of government offices normally linked to a rural association with storage facilities and staffed by agronomists and vets. Their main task was to provide free technical advice to farmers, and to offer agriculture inputs such as seeds, fertilizers, breeding stock, and tractor patrols at subsidised prices. However it became discredited among farmers and the government. Among other problems, it was dominated by politicians and favoured larger farmers who were socially and politically powerful. It was essentially crop-and-animal-oriented and not concerned with motivating farmers to change their farming methods or improve their living conditions. Technicians did not usually visit the farms (Schuh, 1970; Araújo et al, 1984).

The first agricultural extension trials in the country were the Farmer's Week, introduced by the US Professor Peter H. Roofs during the 1930s, at the School of Agriculture of the University of Viçosa, in the state of Minas Gerais. These trials followed the tradition of the US farmers' associations and institutes, but in this case, were promoted by the university. It consisted of an agriculture show that involved thousands of farmers and their families and included practical demonstrations, conferences, meetings and courses. The success of the Farmers' Weeks led to the creation of a Rural Extension Department in the School, which developed a diffusion programme similar to the model of the Land Grant Colleges. It remained confined however within the university boundaries.
A pilot project set up in Santa Rita do Passo a Quatro, in the state of São Paulo, which encouraged cooperation among farmers and the local and federal government with the aim of solving problems of milk production, was more effective in terms of laying down the institutional and technical principles for extension services in Brazil. This project started in 1948, remained operational until the mid-1950s and counted on the financial support of the Mr. Nelson Rockfeller's American International Association for Economic and Social Development (AIA) (Ribeiro, 1985). The community development experience of Itaperuna, in the state of Rio de Janeiro was another initiative of extension work. This experience was promoted by the American-Brazilian Commission for the Education of Rural Populations (CBAR), which was part of the Ministry of Agriculture, and financed by UNESCO and the Organization of American States (OAS). It consisted of a group of five technicians: one agronomist, one vet and three social workers, who carried out a development programme based on principles and methods of extension. Its positive results led the Ministry of Education to create the National Campaign for Rural Education, and the Ministry of Agriculture to set up the Rural Social Service (SSR) (Gabriel, September 1970; Fonseca, 1985). The impact of these initiatives was not significant but created a favourable environment within the government for the creation of the official extension service.
ACAR-Minas and ETA Project - Institutionalization of extension

The first governmental extension organization in Brazil resulted from an agreement between the AIA and Brazilian government. It enabled the creation of the Credit and Technical Assistance Rural Association of the state of Minas Gerais (ACAR-Minas), on December 6th, 1948. It constituted the embryo of the Brazilian official extension services (Fonseca, 1985). In 1953, cooperation between the US and Brazilian governments was broadened when the two countries agreed on an agriculture cooperation programme. This operated through the Agricultural Technical Office Brazil-USA (ETA-Project) and was part of the Ministry of Agriculture (ACARPA, 1977).

The creation of ACAR-Minas, was associated with the beginning of the teaching of extension in universities. The first agricultural extension course in the country was set up in the state of Paraiba, in the Northeast region. There, in 1951 a FAO expert, Mr. Willy Johanan Timmer, who taught rural extension, wrote what came to be the first extension manual issued in the country, published by the Agriculture Information Service, a Ministry of Agriculture body. This was followed by the first course in agricultural extension, at the University of Viçosa (UFV), in the state of Minas Gerais. It was addressed mainly to extension agents and was supported by ETA and the Institute of Inter-American Affairs. This Institute also trained teachers for seven Brazilian universities and provided technical support for the introduction of agricultural extension to their curriculum. After the establishment of ACAR-Minas, ANCAR, a similar organization was created in 1954, in the Northeast, to assist eight states. By 1956 government
extension services were operating in nine states in the South and Northeast regions. This totalled more than one hundred local offices and over 250 extension agents (Schuh, 1970; Gabriel, September 1970; Ribeiro, June 1985).

ABCAR - The national extension services emerges

The development of extension organizations shows that at that time, the government had accepted extension as an instrument for developing agriculture (EMBRATER, 1978; Fonseca 1985; Ribeiro, June 1985). A national extension service was consolidated on June 21st, 1956, by the creation of the Brazilian Rural Credit and Technical Assistance Association (ABCAR). ABCAR was a private organization supported by the government and the AIA, which was the head of the Brazilian Rural Extension Service (SIBER). Similar to the USA system, its main role was to coordinate extension services nationally, preserve the philosophy of the system and its homogeneity of action. It was also expected to promote the expansion of the system and contribute to its financing. Among other tasks it promoted the training of extension personnel and the creation of regional training centres to support training activities for extension workers all over the country (Gabriel, 1970; Fonseca, 1985; Ribeiro, June 1985).

In 1961 twelve state extension organizations were operating. Their work covered some three hundred municipalities and there were around five hundred extension agents working in the field. By this time, the AIA had withdrawn its participation from ABCAR and, according to the Land Statute Law of 1964, ABCAR became part of the Ministry of Agriculture. In 1968, ten years after the inception of ACAR - Minas, extension
was consolidated in Brazil. It was operating in all but three states and its work covered nearly 1,500 municipalities, and had around two thousand local agents. The fast expansion of extension organizations and the quality of training required led the extension service to create eight training centres. These were financed by the ETA-Project and strategically situated in the South and South-west regions, and staffed by their own teachers trained in Brazil and in the USA. Later, other centres were set up under the initiative of state governments (Gabriel, September 1970).

EMBRATER - Extension for modernizing the countryside

In the mid-1970s the policies in favour of the modernization of the countryside were intensified, as seen in chapter I, and the national extension service was reformed and strengthened. The Brazilian Technical Assistance and Rural Extension Organization (EMBRATER), was created in 1975, as the head organization of the Brazilian Technical Assistance and Rural Extension System (SIBRATER). EMBRATER was created simultaneously with the national agricultural research organization in the country, EMBRAPA, which was aimed at providing modern technology for extension to diffuse countrywide. The year EMBRATER started, funding for agricultural extension increased by around 350% in relation to 1973. The peak of this trend was reached in 1982, when EMBRATER received 260% more financial resources compared with 1975. Extension funding continued to be significant until the late 1980s (See table III.1) (EMBRATER, April 1985).
Growth of the extension budget was associated with the expansion of its coverage. In 1972, extension work covered 37% of the total municipalities in the country and assisted 9% of farms. In 1983, extension work covered nearly 90% of the municipalities and assisted 22% of farms. In 1984, extension work covered over 3,000 municipalities and employed nearly 10,000 extension agents. It continued to increase until the late 1980s, although less intensely (see table III.2) (EMBRATER, April 1985; Ribeiro, June 1985).

### TABLE III.2 - Number of Municipalities, Local Units, local extension agents and total Personnel

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<tbody>
<tr>
<td>Municipalities</td>
<td>275</td>
<td>634</td>
<td>1,349</td>
<td>2,010</td>
<td>2,581</td>
<td>3,151</td>
<td>3,239</td>
</tr>
<tr>
<td>Local Units</td>
<td>189</td>
<td>424</td>
<td></td>
<td>1,243</td>
<td>1,565</td>
<td>2,506</td>
<td>2,680*</td>
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<tr>
<td>Local Agents</td>
<td>478</td>
<td>860</td>
<td>1,950</td>
<td>2,786</td>
<td>4,419</td>
<td>10,138</td>
<td>11,759**</td>
</tr>
<tr>
<td>Total Personnel</td>
<td>596</td>
<td>1,813</td>
<td>4,118</td>
<td>6,543</td>
<td>9,694</td>
<td>21,665</td>
<td>23,033</td>
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(*) 262 local units were situated in districts or communities.
(**) Forecast.

### III.2.2 - EXTENSION ORGANIZATION

**Extension Administration**

The administration of the Brazilian official extension service resembles the US model, although it has its own
features and was more under the control of the government than the land-grant model of extension of the USA. The main differences include not being part of the universities, and being directed by an administrative board, comprising representatives of relevant sectors of the economy. The ABCAR's administrative board was constituted by the representatives of the ETA-project, the American International Association for Economic and Social Development (AIA), the Brazilian Rural Confederation (the landowners' national organization), Banco do Brasil, and the ACARs, which were the state extension organizations. Later, the Ministries of Agriculture, Education, Health also became members. ABCAR's programme was administered by a secretary elected by the Board. This arrangement was intended to harmonize the extension programme and goals with the interests of various sectors of the economy and the guidelines of the international sponsors.

Noticeably no representative of the small farmers were on the ABCARs administrative board, only landowners' (Fonseca, 1985). Moreover, the participation of representatives of society in the ABCAR's administration was reduced after 1969, when ABCAR became part of the Ministry of Agriculture. The Minister himself became ABCAR's President. The extension programme was integrated to federal government programmes as a result, and the various organizations represented in ABCAR's administrative board lost their influence over extension (Schuch, 1970; Fonseca, 1985). This centralized administration system was consolidated when EMBRATER was created.

The administration of extension, at state level, followed the same pattern as the federal level. Until 1966, the state Extension Organizations (ACARs) had an administrative board
similar to the ABCAR's, which elected the presidents of the ACARs and was subordinated to the State Agriculture Secretary. ABCAR provided around 60% of the ACARs' budget, and thus exercised considerable control over their administration and programme. The state and municipal governments provided the other 40% of ACARs' funding and consequently they also had authority over them.

After 1969, when ABCAR was subordinated to the Ministry of Agriculture, control of the state's Agriculture Secretary over the ACARs also increased. The control of the federal government intensified when EMBRATER and its associates in the states, the Technical Assistance and Agriculture Extension Organizations (EMATERs) were created. An administrative board was maintained and a representative organization of the small farmers was included, but the influence of the board was symbolic. Presidents of the EMATERs, were directly appointed by EMBRATER, which provided literally all EMATERs funding, and designed programmes with national coverage, to be implemented regionally by EMATERs. Basically, the EMATERs were instruments of the federal government for executing national and regional policy priorities. The EMBRATER explicitly advocated centralized decision-making and decentralized execution (Fonseca, 1985; EMBRATER (b), 1985).

Role, Hierarchy and Personnel

The ABCAR until the mid-1970s, and the EMBRATER after that period, were responsible for allocating funding respectively to the ACARs and EMATERs in the states. Their main role consisted of coordinating and monitoring the implementation of the national agricultural extension
programme, and providing technical information and training, mainly to higher-level extensionists through its subject matter specialists.

Both the ACARs and EMATERs were organized into three hierarchical levels: central, regional and local, thus introducing one more hierarchical level in its administration compared with the US extension system. The central office resembles the organization of the federal level. It had mainly controlling functions. The subject matter specialists, like their counterpart at federal level, were in charge of planning, providing technical information and controlling a state extension or commodity programme. The regional officers also had administrative and subject matter specialists with similar responsibility at regional level. The local offices were in charge of implementing the extension programme, in general in a single municipality, and involved clerical, administrative and technical work. These had literally no say over the extension programme. This hierarchical structure was strengthened by a system of performance evaluation that rewarded extensionists who complied with administrative rules and programme goals.

An analysis carried out in 1986 by EMATER-Paraná, concluded that normally those who followed the organization’s rules were promoted from the field to regional and central offices. Those also had influence in the administration, and had more access to training courses and salary increases. Those who challenged extension rules and objectives were penalized normally by being left in the field without access to pay raises and training, and were often subjected to disciplinary action (Schuh, 1970; Gabriel, September 1970; AFA, 1986).
In general, local extension agents were male, agronomists, vets, agriculture technicians, and a smaller percentage (around 10%) of them were female social workers. The technical personnel at federal and state level were either graduates or postgraduates, and at field level, there were graduates and undergraduates from agricultural technical schools (Schuh, 1970; EMBRATER, 1978). The number of undergraduate technicians working in the system increased substantially, as they earn less, thus increasing the coverage of extension. During the period of ABCAR, there were over five technicians working in the field for each clerical worker, on average. During the period of EMBRATER, this rate was one to four technicians. Programmes planned from above required meticulous control and consequently demanded more paper work. The increase on the number of supervisors also required more secretaries (EMBRATER, April 1985).

Training of Extensionists

Until the Brazilian extension system was established, extensionists were trained in the USA, especially those at high- levels. Later, when Brazilian universities and the governmental extension organizations had incorporated the US know-how of extension, training began to be carried out in Brazil (Schuh, 1970). Formal education, however, provided insufficient training in extension and therefore training constituted an intensive activity of the official extension organizations. In 1969 alone, the ACARs' training centres, distributed in various parts in the country, trained around 2,300 extensionists (Gabriel, 1970). A 45-day intensive course, followed by a three-month period of practical training in the
field, was compulsory for all extensionists. It aimed at training them in extension methods and in the administration of extension programs in the field. In addition, short courses, designed to keep them informed about new technology and improve extension skills, were promoted periodically. Clerical workers received no training in extension (Schuh, 1970; Gabriel, 1970). The training of extensionists was based on the diffusion-of-innovations paradigm and the community development approach until the late 1970s, when the policy of EMBRATER changed. After that, mainly in the late 1980s, participatory methods, raising extensionists' and producers' critical awareness, and farmer organization were addressed by EMBRATER's and EMATER's training courses (EMBRATER, 1987). In 1987, around half of EMATER's personnel (over 11,000), were trained according to this philosophy (EMBRATER, November 1988).

III.2.3 - FEATURES OF EXTENSION

Extension Programme

The extension programme in Brazil closely followed the steps of the US land-grant college. During its first years, it addressed only questions of agricultural production and home administration, except land tenure. Agricultural production programmes were designed to introduce new technology such as improved seeds, chemical fertilizers, machinery and storage systems, while the home administration programme, focused on health, nutrition and education issues. It was assumed that the transfer of technology alone would be sufficient to improve the lives of farmers and their families. In the early 1960s, when official policies began to emphasize economic growth,
modernization and industrialization, the extension programme incorporated the principles of economic efficiency and rural enterprise. Programmes related to farm administration and marketing organization were introduced, and increasing agricultural production was emphasised (Fonseca, 1985; EMBRATER, 1978).

These objectives gained even greater importance in the mid-1970s when EMBRATER and EMBRAPA were created, and the modernization of agriculture became the main objective of extension. Brazilian research integrated with international research centres and extension work consisted of transferring to farmers technological packages produced by EMBRAPA (Aguiar, 1986). By the late 1970s, extension became part of the government's regional and national programmes, such as those for developing the Amazon and North-east regions. During the 1980s however, the democratization process and the changes in EMBRATER polices encouraged extension to address programmes that focused on improving the livelihoods of farmers, farmer's political organization, protection of environment and even land reform (EMBRATER (a), 1985).

The number of extensionists involved in agricultural and home administration programmes and trends in the provision of credit via extension corroborates these changes in extension priorities. In 1956, the number of extension agents working on programmes of technical assistance to agricultural production and home administration was fairly similar. In the mid-1960s, there were approximate 10% more extensionists working on technical assistance than in home administration, rising to 30% in the 1980s (EMBRATER, 1984). During the 1990s, those working in agriculture comprised the majority (ASBRAER, June 1999).
Since its inception, extension used subsidised credit as an instrument for inducing farmers to adopt new technology. Credit gained greater importance in 1966, when the National Rural Credit System was created for supporting modernization policies, as seen in chapter I. In 1969, extension accounted for nearly 4% of the total rural credit distributed in the country. By 1975, the participation of extension services in total credit distributed had increased to 8%. Its peak was 9% in 1976, and was around 4% until 1984 (EMBRATER, 1984). It fell considerably later as subsidised credit was withdrawn due to economic adjustment.

Official Extension and Agrarian Reform

Until the late 1970s, official extension services pursued the objective of improving farmers' living conditions without changing social or political structures. They advocated assisting the rich and poor farmers alike. EMBRATER set up different projects separately, addressing both large and small farmers, but in general it was assumed that poorer farmers could have their living standards improved by simply adopting modern technology, using credit and operating in the market. By the late 1970s, the democratization process allowed small farmers and rural workers to influence EMBRATER's policy, usually through the rural trade union movement (CONTAG), the radical Catholic Church (CPT and CEBs), and the landless movement (MST), but far less so in the case of EMATERs (EMBRATER, 1978, January, April, 1985).

In the early 1980s, both the Ministry of Agriculture and EMBRATER included in their policies, the interests of small farmers, sharecroppers, squatters, landless farmers and rural
workers. The democratization process that allowed Congress to elect the first president after the military coup of 1964 consolidated this process. The Ministry of Land Reform (MIRAD) and the National Plan of Agrarian Reform (PNRA) were created, as discussed in chapter I. The official extension services were put in charge of providing technical assistance to the rural workers and landless farmers in the land settlement projects created by the PNRA. EMBRATER took the lead in assisting the rural poor and supporting land reform and set ambitious targets for itself. It intended to double its capacity in only three years by employing over 11,000 extension workers for assisting around three million farmers. However, EMBRATER had no chance to achieve these goals, as more traditional policies were enforced subsequently, as discussed in chapter I (MIRAD, October 1985; Figueiredo, June 1986).

By 1987 only around 5% of government extensionists (around 600) were assisting land settlement projects. The nature of the work in rural settlement projects differed from extension work in communities. It required greater commitment and creativity because they faced extreme lack of infrastructure, financial resources and experience of the extension and the state bureaucracy in dealing with them. EMBRATER also prescribed a more participatory approach to working with agrarian reform beneficiaries. It required extension services to work along with small farmer organizations, such as the landless movement and trade unions, which were uncommon. Participatory methods as well as the links and the commitment these extensionists had with the landless farmers and rural workers conflicted with those that held more traditional values. Those extensionists working on agrarian
reform projects became isolated within EMATERs as a result (Figueiredo, June 1986; EMBRATER (a), 1985, January and April, 1985, 1988; Ming et al, 1991).

Extension Clientele

From its inception the official extension service was intended to assist small farmers. In practice however, until the early 1960s it assisted small and medium landowners and sharecroppers, and not rural workers or squatters. After 1964, when the agriculture modernization policies were emphasised, official extension focused on industrial and export crop producers, mainly large and medium farmers and therefore largely jeopardized work with small farmers. It worked again with small farmers after the mid-1970s, mainly as a result of official policies in favour of the production of food crops, incentives for increasing the production of sugar to process alcohol and the influence of agencies such as the World Bank (Figueiredo, 1982, July/August 1984; EMBRATER, 1984).

The credit distributed via extension corroborates these trends. In 1965, both the number of credit plans and the amount of credit distributed by extension was 4% of the total. By 1975, extension distributed 5% of the credit plans, or 7.6% of total credit. The size of the loans and farmers increased. In 1980, the share of extension in credit plans doubled (10%), and their value fell to less than 7% of the total, which indicates that smaller farmers once again became extension's clientele (EMBRATER, 1984). This trend continued during the 1980s, motivated by the need to increase food production for a growing urban population and the democratization process. The New Republic allowed EMBRATER, for the first time, to officially
include small farmers, sharecroppers, squatters and rural workers amongst its clientele. EMBRATER emphasized programmes addressed exclusively at the poor but it did not oblige EMATER to prioritize them (Figueiredo, June 1986). However, on the whole, extension benefited the larger farmers throughout the 1970s and 1980s, as seen in chapter I.

Extension Methods

Official extension used basically the same methods that the US extension service used and with similar objectives. They were tools to diffuse new technology and persuade farmers to adopt it, as well as to change social behaviour and attitudes on health, nutrition, education and community life (Fonseca, 1985). Great emphasis was placed on group methods at the beginning, when extension promoted the community development approach. The use of individual methods, however, increased during the trend towards modernization. Extension work was concentrated on larger farms, which were better prepared to respond to commercial stimulus to increase production, and more capable of influencing others to change, according to the diffusion-of-innovation approach. In 1964, an extensionist assisted 223 farmers, on average. By 1971 each extensionist assisted 167 farmers, and in 1975, only 90. As extension adopted more progressive policies and addressed the small farmers, extensionists made more use of group methods. By 1981 each extension agent assisted 151 farmers on average (EMBRATER, 1984).

By the late 1970s, extension services advocated the use of groups as an instrument to help identify small farmer priorities. In practice this largely meant using groups to
persuade small farmers to participate in extension programmes. In the mid-1980s, when EMBRATER took up the policies of the New Republic, it suggested that extensionists use a more participatory extension methodology, which would stress dialogue through group discussions and value farmers' knowledge. It intended to reverse completely the diffusionist methodology of extension (Figueiredo, July/August 1984, June 1986).

EMBRATER promoted this methodology through training courses, supervision and consultancies to EMATER extensionists. However, the fear of the large landowners, the government and EMATER administration of the participation of the poor and the extensionists' biases largely thwarted these efforts. It was more successful with a minority working on agrarian reform projects and small farmer associations, or linked to trade unions of rural workers and small farmers, the landless movement, the Church or specific community and regional projects (Figueiredo, 1982, Figueiredo, June 1986; EMBRATER, (b) 1985, 1988).

Farmer Organization Approach

Until the early 1960s, extension emphasized community organization and community groups, including youth and house-wife groups, and county council commissions. It was fairly well integrated with local councils, trade unions, and small associations. When modernization policies were adopted this approach declined. In 1960, there were 157 youth clubs and 3,604 by 1969. Eight years later, in 1977, they had decreased to less than half of that number, while the number of extensionists had increased over 300% (Grabriel, 1970; EMBRATER, 1978, (a) 1985).
In the early 1970s, extension prioritized rural cooperatives as a means of organizing farmers. It fostered cooperatives to provide storage facilities, facilitate the provision of credit, technical assistance, industrial fertilizers, pesticides and improved seeds, as seen in Chapter I. In 1964, extension assisted around 170 rural cooperatives in the country, and by 1973, this number had increased to over 700. It continued increasing throughout the 1970s and 1980s (EMBRATER (a) 1985, January 1985). By the late 1970s, as work with small farmers became part of the extension agenda, group organization was gradually emphasized as well as the view that farmer organizations was a means of making producers play an active part in development. By the mid-1980s, when EMBRATER began supporting policies in favour of agrarian reform, the organization stressed a more radical view of farmer organization that advocated groups linked to trade unions and farmers' organizations engaged in the struggle for land and benefits for the poor (EMBRATER (b) 1985, January 1985).

However the large landowners pressured EMBRATER and EMATERS, through their organizations, and used their political power to discourage EMBRATER's initiative. As with the other initiatives discussed above, it was overridden by traditional forms of organization that extension had prescribed previously. Only a minority of extension agents incorporated those more radical policies in their practice, and were subjected to retaliation as a result (EMBRATER, (a) (b) 1985, 1988; Ming et al, 1991). In 1987 EMBRATER was terminated and funding from the federal government to the official extension services was cut, in part due to its policies (Ming et al, 1991).
III.3 - NON-GOVERNMENTAL AGRICULTURAL EXTENSION

Emergence and Characteristics

Non-governmental organizations (NGOs) are private enterprises, known as voluntary or common interest organizations that emerged mainly with the aim of doing relief work in war-torn Europe, after the World War I. In the developing countries they appeared during the independence movements in Africa and Asia, motivated by initiatives such as the non-violent citizen's pressure, appropriate technology and popular education (Clark, 1991). After 1950, NGOs expanded worldwide and worked in a diversity of fields such as development, environmental, philanthropic, research, advocacy and emergency aid. They addressed issues such as appropriate technology, social development, grassroots democracy and self-help initiatives. In the last two decades they supported advocacy and networks and prioritized issues related to environment, external debt and women's rights. Large NGOs include the Children Fund, Oxfam, Catholic Relief Services, and the US Co-operative Agency for Relief Everywhere (CARE). In general NGOs of developed and developing countries worked integrated such as the UK-based OXFAM with the Federação de Orgãos para Assistência Social e Educacional (FASE) in Brazil. They often were contracted by governments to implement components of official programmes (Esmann and Uphoff, 1984; Cernea, 1988; Clark, 1991).
III.3.1 - NGOs IN LATIN AMERICA

Objectives and Roles

In Latin America, NGOs emerged during the 1950s to do relief and welfare work as well as to support industrialization and the modernization of agriculture by transferring new technology. They perceived this as an alternative to supporting the poor and promoting egalitarian development (Landim, 1987; Bebbington, 1993). Therefore their objectives coincided with those of official extension services, as seen above. In the mid-1960s, however, the proliferation of poverty in developing countries suggested that both welfare work and transfer of technology could not improve the life conditions of the poor on a sustainable basis. At that time, NGOs' philosophy was influenced by new alternatives related to social development and grassroots participatory development. This motivated professionals and activists to create NGOs with the aim of fostering strong farmer organizations to support more radical development interventions such as agrarian reform (Oxfam, 1985; Korten, 1987; Clark, 1991; Bebbington, 1993).

NGOs expanded during the 1960s and 1970s motivated by the movements that resisted authoritarian regimes such as in Chile, and Bolivia. They also challenged the import substitution and modernization of agriculture policies, discussed in chapter I (Landim, 1987; Bebbington, 1993). Their work was mainly inspired on the ideas of the Liberation Theology, that were endorsed by the Vatican II Council of 1965 and papal encyclical Populorum Progression. This permitted the Liberation Theology to gain popularity and the Church to incorporate the "option for the poor" and engage in democratic and egalitarian
conceptions of rural development. It also was associated with Paulo Freire's ideas of uniting popular education, political empowerment and the critical consciousness approach. This contributed to the development and consolidation of grassroots organizations, such as the Christian base communities (CEBs), which became the basis of local self-help actions and opposed those regimes and modernization policies in Latin America. NGOs such as the Centre for Agricultural Services (CESA) in Ecuador, the Pastoral Social Secretariat (SEPAS) in Colombia and the grassroots support organizations (GSOs) in Peru were created within this framework.

During the 1970s, when totalitarian regimes repressed social development policies, NGOs advocated an alternative development approach which included agrarian reform, alternative technology and the participation of the poor in official policies and gaining access to benefits, resources and services. During the 1980s, when the weaknesses of agricultural modernization were widely acknowledged, NGOs emphasised popular education and popular organizations such as small farmers organizations, trade unions, political parties (particularly opposition factions) and social movements related to the poor and minority groups. They also incorporated advocacy activity and issues such as ecology, citizenship and gender. Their clientele comprised primarily small farmers and rural workers, industrial workers and shanty town dwellers (Landim, 1987).

In the 1990s, democratization and economic adjustment brought about new opportunities to NGOs. They received funding from public sector and multilateral agencies, such as the Inter American Development Bank, which offered them opportunities to work alongside governments. In addition, NGOs were perceived as
being competent to work with the poor, an effective means of strengthening civil society and helpful in the process of social participation. Also they were known to favour self-help enterprises, local control of programmes, the use of locally available resources and adaptation of technology to local conditions and operate on a low-cost basis (Cernea, 1988; Clark, 1991, 1995).

This has motivated governments, such as Chile and Ecuador, to transfer the provision of technical assistance from the official extension services to the private sector and cover most of the operational costs (Aguirre and Namdar-Irani, 1991; IICA, 1991) or simply reducing the official extension services capacity while hoping that NGOs would assume part of this responsibility, such as in Bolivia (IFAD, 1991). However, collaboration between the two sectors still faces barriers. NGOs are suspicious of governments' real intentions in relation to democratization, fear jeopardizing their autonomy, and governments continue to support modernization policies. Also NGOs have limitations in terms of coverage, administrative capacity and personnel (De Janvry et al, 1989; Bebbington, 1993).

III.4 - NGOs IN BRAZIL

Emergence and Policies

In Brazil the history of the non-governmental organizations is similar to other Latin American countries. They emerged during the 1950s when the government and the church were the major players in welfare relief and mass education programmes. They provided technical consultancy in
fields that included evaluation, animation and education work, especially literacy. This was demanded mainly by popular organizations supported by the Church, namely the Community Education Movement (MEB) and the Movement of Catholic students (JUC), and by the government which was the Brazilian Legion of Assistance (LBA) and the Ministry of Education.

In the early 1960s, these church organizations engaged in development work and together with the Brazilian NGOs they promoted the community development approach, similar to the government extension services. The flaws of the modernization policies, such as the inability to reduce poverty and concentration of landownership and wealth, led church organizations and NGOs to promote social development, democratization, citizens' rights, and the participation of the poor in official policies.

After the military coup of 1964, NGOs continued to support these policies alongside the social movements and organizations to which they were linked, but were repressed by the government as strongly as their Latin American counterparts (Landim et al, 1988; Pontual, May 1988). These NGOs also worked inspired by the resolutions of the Vatican II Council, the Liberation Theology and the conscious raising approach. They supported the Church's educational campaigns that addressed the situation of the poor and oppression by the military regime, and provided legal advice to poor farmers and rural workers. In the mid-1970s they worked in tune with the radical Catholic Church, which constituted a major opponent of the military regime. NGOs contributed to the creation of the pastoral commissions, among them the Pastoral Land Commission (CPT),
which proliferated all over the country alongside the Community Religious Groups (CEBs).

In the late 1970s, as the democratization process gained strength, NGOs emphasised social organization and links with opposition parties, political factions, trade unions and social movements. NGOs were supported by the Church's manifesto, Christian Demands for a New Order, issued in 1977, which radicalized the Church's position against modernization polices and authoritarianism and in favour of democratization, building popular organizations and the so-called, "counter-society" (Landim et al, 1988, p 34). In the 1980s, NGOs supported most of the 80,000 CEBs, with over two million members, and triggered the creation of an immense number of community group initiatives in rural and urban areas, that supported this movement (Landim et al, 1988; Hall, 1988).

During the 1990s, NGOs had new opportunities as a result of democratization, economic adjustment and decentralization of public services. Funding from government and bilateral agencies permitted them to collaborate with government programmes, studies and research. They were demanded mainly for their ability to work with the poorer populations and promote their participation and low cost of operation as well as funding cuts of the official extension services. The Inter-American Bank funded the LUMIAR project, which supported small NGOs to provide technical assistance to agrarian reform projects countrywide (INCRA, January 1997 & June 1998). Also NGOs took part in municipal commissions that allocated official credit for small farmers alongside government and other farmer organizations (PRONAF, October 1997).
Number, Clientele, Scope, and Sponsorship

By 1988 there were over 1,200 NGOs in Brazil. Around 60% of them were created during the first half of the 1980s, when the pressures for participation in official policies, structural change and alternative technology gained strength (Landim et al, 1988). Most of them were situated in the states of São Paulo (Southwest), Rio de Janeiro and Minas Gerais (Southeast), Pernambuco and Bahia (Northeast), and Rio Grande do Sul (South). Around 60% (729) were situated in the capital cities of Rio de Janeiro and São Paulo.

Their clientele included small farmers and rural workers, rubber tappers, women, children, black population and indians, the disable, unemployed or underemployed, the elder, beggars and migrants. At the end of the 1980s, small farmers and rural workers together constituted the largest social group assisted by Brazilian NGOs, making up over 40% of their clientele, while women comprised around 10%. Their priority was community level work, with permanent and direct intervention. Around 60% of them operated only at local level, 30% at regional and only 10% at national level (Landim et al, 1988).

During the 1990s the NGOs' clientele changed. Research by the Brazilian Non-Governmental Organizations Association (ABONG) (1998), that included 184 member organizations, suggested that rural dwellers, mainly rural workers and the landless, were the major group assisted and the majority (55%) had women as their main clients. Over 60% of NGOs worked directly with popular organizations and 20% with rural trade unions. Social organization and participation were the main topics for the majority (63%), and the others were human rights (43%), ecology (37%), agrarian reform and agriculture (25%),
and local and regional development (20%), although they often worked with more than one of these topics. They also widened their impact as around 50% of ABONG's members operated regionally and 46% nationally. Initially, when relief and mass education was their priority, NGOs were supported by the Church and the United Nations or related organizations (Landim, 1987). In the 1970s, when the model of development based on local self-help emerged and the Brazilian NGOs began to work with small and local community projects, their main contributors were international NGOs, followed by the Church, universities and political parties. More recently, government funding to NGOs has increased, similar to other Latin American countries, whereas funding from international NGOs has decreased. ABONG's study (1998) showed that 50% of its member organization relied on some type of official funding. Moreover, multilateral agencies and governments of industrialized countries increased funding to NGOs, as they became interested in them for implementing official programmes. Similar to their South American counterparts, NGOs fear it will make them lose their legitimacy and autonomy (ABONG (a), 1998).

Administration and Personnel

During the 1960s and early 1970s, when non-governmental organizations operated informally or clandestinely, they depended on the initiative of individuals, generally militants, who worked closely articulated with popular movements. Their administration was predominantly informal with little or no hierarchy although in the mid-1970s, they became institutionalized and professional. They responded to the demands of both the Church and social movements and took on the
responsibility for implementing development projects. Projects aimed at tangible results which required a greater control and number of professionals, professionalism and specialization. The voluntary work that had been common diminished considerably as a result.

The personnel that make up Brazilian NGOs originate from different organizations and professional backgrounds. In general, they have university training and although there are agronomists and vets, the majority consists of educational specialists and social scientists (ABONG, (b) 1998). Many of them have a Christian background, are former militants of JUC and MEB and clerical and lay workers of the CEBs. Others are university lecturers, researchers and former militants of left-wing groups and political parties, with revolutionary traditions (Landim et al, 1988).

Links and Relationships

In general NGOs operated isolated from one another and lacked co-ordination (Gryzbowski, 1987). During the 1970s, this was ameliorated by their tendency to form networks, which were largely informal and preserved their plurality and autonomy. Networks began to be formed driven by common interest, such as human rights, land reform and appropriate technology or with the aim of providing specific services. Others were formed around a determined NGO experienced in a specific field or led by large organizations such as the Catholic Church (Landim, 1987-88).

During the 1960s and 1970s, literally all Brazilian NGOs were associated at the Catholic Church. Later they diversified their links as a result of political liberalization. By 1988,
less than 30% of non-governmental organizations maintained formal or informal links with the Catholic Church, whereas links with the trade unions, political parties, social movements and the government increased (Landim, 1988; ABONG (a), 1998). In addition, their links expanded significantly at regional, national and international levels, which contributed to increasing their impact and bringing them into the public eye (ABONG (b), 1998).

Their linkages created an identity crisis as a result of operating as satellites of political parties and social movements. Often this made unclear whether they were independent organizations or para-religious groups, para-party entities and para-trade union organizations (Padrón, 1982; Landim, 1987). In addition their links with the government during the 1990s was equated by many non-governmental organizations with being coopted, endorsing government programmes and losing their freedom to criticize. Yet they have preserved their links and also learned about the government apparatus, which strengthened their ability to negotiate (ABONG, (a) 1998).

Programmes and Activities

In general NGO programmes were primarily aimed at improving the living conditions of their clients and achieving long-term transformation of society. They emphasised education work which involved literacy, technical training and political education (Landim, 1987-88). During the 1960s and 1970s, NGOs emphasised alternative or appropriate technology programmes with the aim of creating technology that suited to the circumstances of the poor. They promoted subsistence crops,
soil conservation techniques, production of indigenous seeds, natural fertilizers and pest control methods. They also encouraged processing alternatives and the use of locally available resources. NGOs included setting up trial centres in different parts of the country. Farmers were encouraged to take part both in determining problems and in the experimentation activities. It constituted an alternative to the technology package that official research and extension services promoted (FASE, September 1984, June 1985; Weid, 1985).

NGOs were engaged in programmes to improve the provision of services and resources to rural workers, small farmers and women, which involved encouraging producers to take action for gaining access to resources such as credit, transport, infrastructure, machinery, health services and education. In the late 1970s, they supported the struggle for land when they addressed the problems caused by governmental and private enterprises such as the construction of large dams and the deforestation of the rubber-trees, which evicted small farmers and rural workers from their land or jeopardized their living conditions. Other relevant programmes include self-sustaining development in tropical forest areas, such as supporting the organization of the rubber tappers to prevent deforestation in the Amazon area, and better working conditions for rural workers (FASE, September 1984, June 1985, October 1986; Leroy, June 1987; Hall, 1990). In the last decade they have expanded their activities in the field of studies and research on economic and social issues to provide trade unions, political parties and social movements with technical information. Gender has become an important programme aimed at valuing the role of women in production and in society as a whole (ABONG (a), 1998).
NGOs and Farmer Organization

Brazilian NGOs mainly saw producer organisations as a solution to the plight of the poor. During the 1960s and 1970s, NGOs fostered political participation as the means for removing structural barriers to their development, such as lack of access to land, credit and public services, and submission to violence and unfair working conditions (Martins, 1984, 1986; Hall, 1989). NGOs were involved in peasant movements which challenged the violence from large landowners' private militia and supported the agrarian reform movement (FASE, October 1986; Hall, 1989, 1990).

During the 1970s and 1980s, their work contributed to peasant movements motivated by the construction of hydro-electric dams, and the tobacco and pig farmers who fought for better prices, or sugar-cane workers who went on strike for better pay and working conditions. They also contributed to the emergence and strengthening of the landless movement, and the creation of regional movements such as the Encruzilhada Natalino in the state of Rio Grande do Sul, and the Landless Farmers Movement (MASTES) in the state of Paraná (which are discussed in chapter I). NGOs worked to organise beneficiaries of rural settlement projects when the PNRA was launched (Geiger, 1987; Grzybowiski, 1987; Hall, 1989; Torrens, October 1990).

Non-governmental organizations favoured political organization of small farmers, rural workers, squatters and landless farmers through the organization of local groups based on common interests and needs, and encouraged them to link with similar groups, trade unions and political parties, with the aim of strengthening their power to defend their interests.
They organized rank-and-file opposition in order to take over the control of trade-unions dominated by officials who were sensitive to the needs of their members. They also aimed at democratizing trade union practices in order to allow their members to participate actively in their affairs. NGOs encouraged women to be politically active and take part in trade union activities, since they were rarely affiliated and largely marginalized from political activities (FASE, October 1986; Leroy, June 1987).

Collective economic enterprises were seen as the means to educate and prepare group members to work together and organize, and also to achieve economic self-sustainability. One of the most traditional forms of collective work was the Mutirão, where neighbours or group members get together to perform a particular task. The mill houses, that associated processing with organization strategies, collective savings or revolving funds, community canteens and consumer co-operatives were also another important strategy that they used for organizing producers (FASE, October 1986, October 1989).

**Extension and Group Methodology**

Non-governmental organizations emphasised a variety of alternative participatory methods and models of group organization, with the aim of facilitating discussions, raising awareness and also helping people to take decisions democratically and to exercise self-determination (FASE, October 1986, October 1989). Bible circles, religious and popular music and songs as well as theatre were frequently used as the basis for group organization and integration and played an important role in motivating and keeping people united.
especially in their struggle for land. They used economic projects as a means of achieving a wider educational process, that involved politicised and participatory work, with the aim of empowering and encouraging greater independence of poor populations. In the 1970s they began to support advocacy and lobbying at local, regional, national and international levels especially in issues such as agrarian reform and protection of tropical forest areas (Hall et al, 1988; Landim et al, 1988).

Using a wide range of methods, and promoting debate about economic, social and cultural aspects of the poor, allowed extensionists and group members to work together. Extension methods applied to leaders, group members and the mass of the poor alike. Leaders were chosen by extensionists or NGO officials or elected in their groups. They received specific training which included formal meetings, courses, seminars and talks, supported by educational materials and produced specifically for that purpose. The topics taught included how society works, analysis of different economic and political systems and Brazilian political and economic history. Leaders were expected to lead their peers through the process of organization and struggle towards access to state resources, and to improve their livelihoods (FASE, October 1986, October 1989).

Group members passed through a similar process but it was normally adjusted to their own daily responsibilities and immediate needs, and included topics such as the price trend for their produce, work load and wages. Group demands were often the result of group discussions based on their awareness of needs and solutions. Members of groups such as associations and saving groups were encouraged to assume all types of
responsibility and, in general, they rotated different functions so all group members could experience the existing roles in their organization. Mainly in the landless camps, people were encouraged to organize task groups to deal with different demands, such as catering, education activities and security.

NGOs encouraged farmers to put into practice their own views about how they should organize and operate their societies or projects, and enabled them to use their knowledge as well as to question proposals coming from outside (FASE, June 1985, October 1986, October 1989). NGO's work with the mass of the poor allowed priorities determined by community groups to become the banner of larger organizations such as trade unions, political parties and social movements such as the landless farmers and CONTAG's *Grito da Terra*.

III.5 - CONCLUSION

This chapter has showed that in Brazil the official extension services emerged after the World War II and supported the modernization policies. This service expanded through centralized and hierarchical organizations at federal and state levels, which controlled funding and programme implementation and trained personnel. Official extension adopted the American Land Grant College extension approach, which was based on the diffusion-of-innovation paradigm thus fostered the transfer of technology based on chemical fertilizers, machinery and improved seeds provided by the official research organization. The majority of its personnel were agronomists and vets and its main clientele comprised large and medium farmers, who produced
industrial and export crops. The government extension services used extension methods to diffuse technology and farmer organization to facilitate the provision of agricultural inputs, credit and technical assistance. During the 1980s democratization allowed it to incorporate policies in favour of social development, agrarian reform, small farmers and rural workers. However it was limited to the federal level and ended with the termination of EMBRATER, its national coordinating body.

The non-governmental organizations emerged in Brazil in the early 1950s primarily to do relief and mass education work connected with the Church. They began working towards the modernization policies but soon changed in favour of social and participatory development, inspired by the Church's "option for the poor" and Liberation Theology. In general their administration was small-scale and largely informal but during the 1970s became more hierarchical, bureaucratic and professional to respond the growing demands of the Church, social movements and implement development projects. Their personnel were social scientists, former militants or lay workers of popular movements and opposition parties. They supported producer organization linked with trade unions, political parties and social movements, and promoted the participation of the poor in official policies. Their main clientele comprised small farmers, rural workers and women and worked with alternative technology, agrarian reform, ecology and gender. During the 1990s, NGOs were strengthened when they received official funding and were called to work with the government.
CHAPTER IV
THE VITÓRIA DA UNIÃO PROJECT

This chapter presents the contextual information and the observations made on the survey at the Vitória da União project, in the state of Paraná. The mobilization of producers before Vitória started is considered. The characteristics of the project members, their influence on project design and implementation, the type of project funding, and the manner in which land and credit were distributed, the access they gained to public services, how they met their basic needs and developed farming is discussed. The features of ASSESOAR and EMATER extensionists, the role they played, the professional conflicts of the latter, the type of extension methods they employed and the control of extension organizations over them are also analysed. Beneficiary organizations and linkages are considered mainly in terms of the support they provided to their actions and sustainability. Finally, the main features of ASSESOAR are presented.

IV.1 - THE ROAD TO VITÓRIA

Land Occupation and Encampment

By 1980, the landless movement had organized two land occupations in the South-West and one in the West of the state of Paraná. In 1984, the Landless Farmers Movement of the South-West Region (MASTES) decided to occupy a latifundio of around 10,000 ha, called IMARIBO, the propriety of ESTIL, a large timber company. It was situated in the Municipality of Mangueirinha, in the Centre-South region, around 400 Km from
the capital city Curitiba. The occupation was carried out in June 1984 by a group of ninety landless farmers, including 25 women, who were from twelve different municipalities of the West, South-West and Centre-South regions of Paraná.

During the occupation these farmers confronted the landowner's private militia and the police, who isolated them in the area and prevented from having access to food and fresh water. In addition, the government refused to negotiate with them whilst they were at the land. Three weeks later they left IMARIBO and set up camp just outside the area, in a state property known as Canhada Funda, situated along the highway. They initiated negotiations with the government immediately and the encampment continued to receive landless families. Half a year later, in January 1985, President Figueiredo signed the act expropriating 'IMARIBO' and on 30th March of that year the government legalized it as an official land settlement project (SEAB, 1985; MIRAD, October 1985; Vincenzi, 1989). By that time nearly 500 families were camped there and they named the project Vitória da União, the Victory of Unity, inspired by their struggle.

Beneficiaries' Conquest

The Vitória da União project started in part due to the democratization process that followed the end of the military dictatorship, which is discussed in chapter I (SEAB, 1985; Vicenzi, 1989). Nonetheless, Vitória was largely a result of beneficiaries' determination and organization which was acknowledged by a great number of people, including the leaders of Vitória, ASSESOAR and EMATER extensionists and authorities. According to the Secretary of Agriculture (at that time, Claus
"it gave them sufficient strength to resist at the encampment under critical conditions, and to develop the actions necessary to press the government for land".

According to Marcelo Apel, an ASSESOAR extensionist, the landless farmers' plan in the occupation of IMARIBO consisted of remaining on the farm and cultivating the land for their subsistence, whilst negotiating the expropriation of the area with the government. An active leader of Vitória, Otalívio Vieira Ferreira (Formiga) also mentioned: "as the government and police made it impossible for us to stay on the land we occupied we decided to set up camp, despite knowing that we had no means to have our ends met, as a strategy for continuing to put pressure on the government".

At the camp producers developed active mobilizations and negotiations both at local and regional levels. These included demonstrations, invasion of official Banks and offices, negotiations with authorities and talking to the media. Their most important actions were carried out in the capital city of Curitiba. These consisted of setting up a camp with one hundred landless farmers in front of the National Agrarian Reform Institute (INCRA), the invasion of an INCRA coordinator's office, starting a hunger strike and negotiations with INCRA, the Paraná state government and the Congress. These drew the attention of the government and politicians at state and federal levels, especially of the minister of agrarian affairs. These were associated with other mobilizations that occurred in the country and were part of a larger movement in favour of agrarian reform.
Farmer Organization

The basis for the organization of the land invasion were the municipal commissions of the landless. These were set up at least one year before in various municipalities of the South-West and West regions with the aim of selecting landless farmers, organizing the agrarian reform movement and invading unproductive land. There were over 20 commissions which were organized by the landless farmers' movement (MST) and supported primarily by the Church Land Commission (CPT) through its Religious Communities (CEBs), the 'authentic' trade union movement and ASSES0AR, which provided training and technical information (Vincenzi, 1989; Branderburg, March 1987; CPT, undated).

Producer organization at the encampment consisted of a general assembly, a central commission and task commissions. The general assembly comprised all camp members, who had the right to vote, representatives of participating like-minded organizations and movements and ASSES0AR extensionists, who had only the right to speak. It was coordinated by those farmers that led both the municipal commissions and the land invasion and supported by ASSES0AR and the other like-minded organizations. These assemblies occurred normally once a week, but in critical negotiation periods it could take place every day, and more than once, it was open continuously for over two days. It addressed literally all topics related to the encampment as well as their actions, the strategy for dealing with the government and the outside world, and the project design.

The central commission coordinated all task commissions, and was comprised by the coordinators of the general assembly
and each commission, two of whom were women. They were in charge of making camp members follow the decisions made at the general assemblies, coordinating the encampment, carrying out the negotiations with the government and politicians and the camp's external affairs. They were the voice of the farmers outside the camp, for informing the general population about their cause and demands through the media and visits to authorities, businessmen and politicians. They also monitored what was broadcast and published about their movement, and responded promptly to the arguments issued against them.

There were eleven task commissions which were made up only by members of the camp and had their own elected coordinator and responsibilities. Each commission had special meetings to organize their own activities. These included the food provision commission which was in charge of providing two meals a day to all camp members in the communal kitchen, milk to children and bread, coffee and cooking oil to all families. The commission that looked after the provision of fresh water, which was critical in the area and the commission of shelter, sewage system and hygiene. This commission ensured a fairly clean environment for the families and prevented diseases, although they lived in huts with plastic roofs and faced extremes of hot and cold weather. The commission in charge of the provision of medical assistance which involved providing medicine and transporting the sick to health centres. The commission that guaranteed the security of the camp since their demonstrations and the growth of the movement of the landless provoked the anger of the landowners and some ordinary people also.
The commission in charge of providing the means for their subsistence looked after the farming, marketing of wood craft, and hiring out the labour of camp members. The mothers' commission was responsible for the camp nursery, as many mothers were involved in other commissions, and in negotiations, demonstrations and being hired for working on other farms. The education commission organized the teaching of the children by camp teachers. The youth commission was mainly involved on promoting meetings to discuss their role in the other commissions, their situation and their future in the land settlement project and their contribution to the cause of agrarian reform.

The leisure commission organized games and sport which involved all adults and children and often promoted late afternoon soccer matches and weekend competitions. The religious commission organized religious education and activities, which were regularly attended by all members. According to producers, their participation in the general assembly, in commissions and actions helped to keep their morale high, increase friendship ties among camp members, built their unity, which was fundamental to keep them active in the pursue of their cause.

Early Farmer Influence

The Vitória da União project constituted the first victory of the agrarian reform movement in Paraná. Thus it constituted a singular opportunity for the supporting organizations and movements to put into practice their ideas in relation to the implementation of agrarian reform. They intended to use Vitória da União as a model to be followed by
the new agrarian reform projects in the state (SEAB, 1985; Vicenzi, 1989; Branderburg, March 1987; Torrens, October 1990). Before the Vitória project was created, members of the encampment negotiated their vision of the project with the State Agriculture Secretary (SEAB) through the Land Institute (ITCF) and EMATER. The negotiation consisted of a series of meetings between ITCF officials and groups of landless farmers and their representatives. For this negotiation the central commission of the encampment added one elected member from each municipality group that comprised the encampment.

Negotiations ensured that some terms, related to the project's design and implementation were agreed between the government and project beneficiaries. It constituted a document for ITCF to negotiate with the National Agrarian Reform Institute (INCRA). The main points the ITCF and the landless farmers agreed upon were: the land-use regulation, size of the plots, allocation of beneficiaries, and the provision of education, health and agricultural extension services, which are discussed in the following sections.

IV.2 - SOCIAL AND ECONOMIC ASPECTS

Plot Sizes and Location of Families

According to their leaders, farmers wanted their plots to be around 22 hectares\(^1\). They tried to reconcile their notion of an ideal small farm and the need to allocate as many landless families as possible in the area, which were 350 families (MST, January 1986; July 1988). However, EMATER's economic

\(^1\)Producers were supposed to have the right to buy their plots after 10 years if their performance was satisfactory.
feasibility study, based primarily on soil quality, indicated that there should be three different farm sizes in the project: 28, 36 and 40 hectares, which would allow settling only around 200 families (EMATER (b), 1985). However, farmers were able to modify EMATER's criteria in part and as a result, 280 families were settled at Vitória. The average area of the farmers assisted by ASSESPEAR was 26.66 hectares, whilst the minimum size was 15 and the maximum 36 hectares. Plots were only demarcated after the families were transferred from the encampment to the project area. They camped in groups made up by families from the same municipalities they had come from, according to their agreement with ITCF officials. These became the 13 communities named after their respective municipalities (see table IV.2).

Table IV.1 - Communities and Number of Farmers

<table>
<thead>
<tr>
<th>Community (*)</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sao Joao</td>
<td>7</td>
<td>7.9</td>
</tr>
<tr>
<td>Coronel Vivida</td>
<td>10</td>
<td>11.2</td>
</tr>
<tr>
<td>Ampere</td>
<td>7</td>
<td>7.9</td>
</tr>
<tr>
<td>Sao Miguel</td>
<td>5</td>
<td>5.6</td>
</tr>
<tr>
<td>Planalto</td>
<td>5</td>
<td>5.6</td>
</tr>
<tr>
<td>Medianeira (I)</td>
<td>15</td>
<td>16.9</td>
</tr>
<tr>
<td>Medianeira (II)</td>
<td>9</td>
<td>10.1</td>
</tr>
<tr>
<td>Capanema (I)</td>
<td>9</td>
<td>10.1</td>
</tr>
<tr>
<td>Capanema (II)</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Santa Izabel</td>
<td>5</td>
<td>5.6</td>
</tr>
<tr>
<td>Nova Prata (I)</td>
<td>6</td>
<td>6.7</td>
</tr>
<tr>
<td>Nova Prata (II)</td>
<td>4</td>
<td>4.6</td>
</tr>
<tr>
<td>Dois Vizinhos</td>
<td>5</td>
<td>5.6</td>
</tr>
</tbody>
</table>

source: Survey 1990.

2 The project area totalled around 10,000 ha, and is divided into AREA I (8,000 ha) and AREA II (2,000 ha). Around 5,000 ha are considered agricultural land (EMATER, (b) 1985).

3 The 170 families that were left out of Vitória were allocated to new projects later on (EMATER (a) & (b), 1985).
Project Members

The members of Vitória da União were selected by the organizations involved in the mobilizations for creating the project namely ASSESOAR, MASTES and CPT (EMATER (a) 1985; CPT, undated). They came from different municipalities of the West and South-West and Centre-South of Paraná. Most of them were migrants from the Southern states of Rio Grande do Sul and Santa Catarina. The majority were Italian and German descendants and native Brazilians, the latter known as caboclos. The predominant religion was Roman Catholic, and then Protestant. Despite these differences, the group had many similarities in terms of culture and values. This included subsistence farming systems, an active communal life, political activism in trade unions, political parties and social movements, which was typical of the region, as seen in chapter I.

Before they came to the project, the majority of members were farmers and only around ten of them were working in the urban area. Most of them (63) were tenant farmers or sharecroppers, a quarter (23) were squatters, and three farmers worked on their parents' land (see table IV.1). Before coming to the project, eighty of them (92%) were not assisted by any extension organization. Only one farmer was assisted by ASSESOAR and two by EMATER. The first time they were assisted by ASSESOAR was during the mobilization for the land occupation, in the municipal commissions. According to their accounts, they joined the movement motivated mainly by other landless farmers, and participated in the process of their own accord.
Table IV.2 - Professional Experience and Type of Landownership

<table>
<thead>
<tr>
<th>Professional Experience</th>
<th>Type</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmer</td>
<td>67</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>Rural Worker</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Former Land Ownership</th>
<th>Tenant Farmer</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Squatter</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Family Land</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>


The majority of farmers in the project (95%) were married, and there was one single member and four widows with children, whose husbands passed away after the project started. The majority of farmers (76%) were literate; those that attended school, studied on average for 4.25 years. There were 15 (20%) farmers who attended school for over seven years and 23 (26%) who were illiterate. The average age of the men was 36 years and the average number of family members was five, and on average three children.

Funding and Services

The investments planned to the project should come exclusively from official credit programmes. It was intended to finance part of roads, community schools and health centres, housing, and agricultural equipment and inputs. It was estimated that the returns from farming would allow beneficiaries to pay for the land, equipment and inputs (EMATER (a), 1985). In practice, Vitória received credit from the federal government through the Agrarian Reform Credit Programme (PROCERA)^ and the Social Fund (FINSOCIAL)^ (BADEP, 1990). The

^ The PROCERA credit required repayment of 50% of the loan,
state government contributed with relief such as food and agricultural inputs during the first year, and credit for installing electricity facilities in producers plots. Services such as, building new roads and bridges and road maintenance were provided by both the state and local governments. The municipal government provided also public transport, teachers, doctors and nurses for their community schools and health centres (EMATER, July 1987).

All beneficiaries received PROCERA and FINSOCIAL credit to which they were entitled. They decided the distribution criteria and mainly allocated credit according to their priorities (EMATER, March 1986; MST, January 1986; BADEP, 1990). According to EMATER extensionist, Gilmar da Costa, "initially I tried to allocate credit according to my technical requirements, which meant purchasing improved seeds, lime to correct the soil, chemical fertilizers and pesticides. However, I soon realized that they were determined to operate according to their own priorities". Moreover, hardship forced them to use their loans to purchase food and medicines, build their houses and buy home appliances such as cookers and fridges, instead of ploughing the soil and purchasing seeds and equipment. Often delays on credit delivery prevented them from acquiring these inputs in the appropriate time. As Mr. Costa noted, the amount of credit and the manner the government delivered it jeopardized the productive activities.

with 8% per annum interest, in eight years and a grace period of two years (BADEP, 1990).

5 The FINSOCIAL credit required payment of the total loan in five years with 8% per annum interest and grace period of two years (EMATER (b), 1985; March 1986).
Moreover, they did not obtain credit from the state government during the second and third years, due to their conflicts with the government, which is discussed in the next sections. Relief and services were not delivered accordingly which led producers to take actions such as lobbying politicians and government officials. On one occasion, they held two ITCF technicians locked up for two days as a strategy to force the government to deliver food supplies. Beneficiaries had no access to private bank loans as the landownership system prevented them from using the land as collateral. They obtained subsidised credit especially addressed to farmer groups, which was employed to purchase equipment and build seven corn mills and three timber mills. They also received loans from ASSESORAR's revolving fund to build brick ovens to produce charcoal. During the first two years, project members had no credit in local shops. Local entrepreneurs were reluctant to deal with them, since they were seen as outsiders and troublemakers by the locals. Later, the prospect of increasing sales changed the attitude of the local shoppers.

Health and Education

Vitória was remote and had no infrastructure when it started. Beneficiaries negotiated successfully with the government to set up ten schools that covered an area of three kilometres in diameter, and six medical posts in communities inside the project area. Practically all families had access to a medical doctor and hospital facilities. Also, over 60% of the families (57) had children of school age, and all but five families attended school. Three community schools and three health centres had no staff. The teachers of three schools were
project mothers and beneficiaries. The local council argued that it lacked resources and personnel, but farmers believed that this was a result of the lack of political will to support the project.

Many families experienced difficulties with transportation due to lack of public transport and roads. The distance from health facilities was also a problem as for many families it meant walking around five miles. The idea of setting up ten small community schools to reduce the distance from the plots, a victory won by farmers, created another difficulty since these schools could teach no further than the primary level. Consequently, 15 children were forced to travel over fifteen miles to attend secondary school. This constituted a problem for both parents and children, considering the cost and the difficulties of travelling, particularly on rainy days. Also, for some it meant walking long distances to reach the nearest public transport.

Farming and Economic Alternatives

Producers cultivated mainly subsistence crops such as corn, beans and rice. This was mainly due to the soil and climatic conditions in the area, their familiarity with these crops, requiring less inputs, and serving both subsistence and commercial purposes. Some farmers produced cash crops such as soybean and wheat and the native erva-mate tea (EMATER (b), 1985). Agricultural production in Vitória, however, faced serious difficulties. During the first two years of the project, frost and drought virtually destroyed all crops (EMATER, July 1988). Furthermore, farmers had to contend with low soil fertility and lack of funding, which prevented them
from purchasing seeds and equipment in time. Not surprisingly, the majority of members said agricultural production was insufficient to provide the means of subsistence during the first two years. Crop production and productivity in the first year had not achieved even 30% of its targets (EMATER (b), 1985).

Animal production was an important activity both in terms of the subsistence of the families and commercially (EMATER (b), 1985). Purchasing cows constituted their first investment on farming. However, the lack of grazing land, a hostile climate and wilderness, caused around 40% of the cows to perish. The production of milk, eggs and meat were fundamental to meeting subsistence needs. Only a minority produced pigs and poultry commercially and animal production also was behind the targets. Producers farmed collectively but they preferred to farm mainly in their own plots. As agricultural production was low and credit was insufficient, farmers and ASSESAR extensionists looked for other economic alternatives for the project. One of the alternatives ASSESAR extensionists proposed was the production of charcoal, which enabled them to utilise native trees that grew on most of the plots. This was the primary source of income for most project members during the first three years of the project. In the fifth year of the project 42 farmers (47%) had brick-ovens on their farms producing charcoal. The collective timber mills also made up for producers difficulties with farming.
Equipment and Assets

Until the fifth year farmers were unable to acquire all the equipment they needed. However, they were able to cultivate their plots by sharing equipment obtained by their associations and community groups. Only two farmers had tractors. This was due partly to the lack of financial means and credit but mainly to their determination to use animal traction. The majority had their own oxen (60%) and ploughs (90%), thus the majority was prepared to cultivate their land using animal traction.

Vitória beneficiaries were in general unable to construct expensive buildings. Only 23 farmers (26%) had barns, and these were of modest quality. The pigsties and chicken houses were small, built with trees and bamboo. There were rare exceptions however, such as one farmer, Mr. Arno Hauer, who had a large and well-built barn, a tractor and a car, which was mainly a result of assets that he had before the project started. Three of the buildings of the rural associations, where mills and timber cutting plants operated, were considerably better than the others, and two were built of wood and one of bricks but they were also very basic.

Housing and Domestic Appliances

Five years after the project started, all but one family were living in their own houses. Although 90% were wooden houses, their quality was reasonable, considering their needs, and also the type of housing of small farmers in the region. There were on average four rooms per house and most of them had bathrooms and toilets, mainly built inside the house. Before they came to the project, the majority of project members (63%) already had a house, but most left them behind and only a few
farmers were able to sell them. The others had been homeless, 6% lived with their parents, 12% in rented accommodation in towns, and 19% lived in the landowners' houses on farms where they worked. The majority had home appliances such as, radios, television sets, wood and gas cookers, fridges, mostly acquired after they came to the project. There were a considerable number of farmers that had not acquired more valuable items such as fridges (37), television sets (38) and gas cookers (47).

Families had access to fresh water from wells and springs in their plots but only a minority of farmers had their water sources properly protected. Almost all houses (97%) were supplied with electricity, although farmers did not consider it a priority and only invested in this during the third year of the project. The majority (75%) had no difficulties with public transport and most plots (90%) were connected by roads. The state government failed to build some roads that were traced out by the ITCF and INCRA. The conditions of the roads varied according to the volume of traffic, but when it is wet it can become difficult to travel. Farmers could be isolated for weeks in the rainy season.

IV.3 - ASSESOAR AND EMATER EXTENSIONISTS

ASSESOAR Extensionists

Two extensionists from ASSESOAR cultural department assisted project members on grassroots mobilization during the organization process for the land occupation. Five extensionists from ASSESOAR technical department assisted farmers both during the encampment and after the project
started. Three extensionists: Marcelo Apel, Christophe K. de Lanoy and Ari de Davi spent a considerable amount of time in the project. Marcelo Apel participated most actively in helping the organization of farmers, particularly during the encampment and the first year of the project. He was raised in the same region in which the project was situated and his father was a small farmer. He was a sociologist, worked for ASSESOAR and used to be an ITCF employee, where he had the opportunity to learn about government bureaucracy and to work with the landless in a land entitlement programme. According to him, his commitment to the cause of the small and landless farmers led him to leave the ITCF for a job which would allow him to work in their favour.

Ari de Davi worked mainly on appropriate technology, which included setting up field experiments to test alternative crops, fertilizers and soil protection techniques. His parents were also farmers and he was trained as an agronomist. During his years at university he was an activist in favour of agrarian reform, and after finishing school in 1980, he worked for two years for the landless movement (MST), in the state of Rio Grande do Sul. Mr. Lanoy, was raised in the city and became an agronomist in 1982. His first job was in ASSESOAR and, according to him, he had always been involved with the situation of the poor farmers. He contributed to both the organization of producers and to developing appropriate technology. He was responsible for introducing the charcoal production alternative to the project and the ASSESOAR revolving fund for project beneficiaries.

These was also supported by other extensionists, Valdir Mafioletti and Beatriz de Castro.
EMATER extensionists

EMATER allocated two extensionists working full time at Vitória, José Rogério da Costa Lopes and Gilmar Pinto da Costa. The former worked for six months on the project, and was transferred to the Nhundiaquara Project, which is considered in the next chapter. Mr. Costa worked for three years at Vitória. He was trained as an agronomist and at the university he took part in the agrarian reform movement. He was allocated to Vitória in response to its members' request, since they knew about his commitment to their cause. He saw himself as a political activist and his work as an instrument for changing the situation of poor farmers. He also believed that he was part of a minority inside EMATER, as most of his colleagues did not support his work, particularly in relation to his involvement with the landless.

ASSESOAR Extensionists' Role - Commitment to farmers

During the organization of the municipal commissions of the landless, ASSESOAR extensionists worked on raising farmers' critical awareness about the landownership situation and official policies for agriculture. This included questioning the role of the state's agricultural research and extension systems, mainly in relation to the type and effectiveness of the technology they transferred to farmers. They also encouraged farmers to challenge the official extensionists knowledge, judging it to be biased in favour of large farmers and cash crop production systems and inappropriate for small farmers. As the ASSESOAR extensionist, Mr. Lanoy, pointed out: "during that period, ASSESOAR extensionists questioned the role played by their colleagues working in the official extension
service. It helped to demystify extensionists' authority and encouraged farmers to think about the impact of their recommendations in their situation and development as a whole."

During the encampment ASSESOAR's extensionists worked mainly to support farmers in their organization and in political actions. This consisted basically of providing information on group organization and contributing to formulate strategies for farmers' mobilizations, negotiations and lobbying with government officials and politicians. After farmers were allocated to their plots, the extensionists also assisted them in their productive activities. According to ASSESOAR extensionists, during this phase their main role consisted of providing information and training to farmers in agricultural techniques, based on the notion of appropriate technology. Thus, they encouraged producers to value their experience and knowledge and use local resources.

They conducted field experiments, and encouraged the official agricultural extension and research services to find economic alternatives for the project. They also tried to provide farmers with alternatives from research centres and land settlement projects in Paraná and other states. The extensionists themselves believed that their main role consisted of providing producers with relevant information and helping them to adapt it to their situation, with the aim of solving their problems.

EMATER Extensionists' Role - Difficulties to meet the demand

Despite elaborating the economic feasibility and land use study, EMATER had no technical assistance plan to assist the project. According to its extensionists, Mr. Costa and Mr.
Lopes, EMATER expected their work at Vitória to be no different from that in other communities, although the project was not an usual situation for EMATER. However, they thought the number of extensionists allocated to the project was insufficient to meet the demand particularly for technical assistance. Furthermore, there was no adequate housing in the area and they had to live around fifty miles from the project. They also lacked office facilities and vehicles appropriate to project road conditions. It certainly created difficulties for them in carrying out their work.

EMATER extensionists were the voice of the government in the project. They were responsible for distributing and monitoring credit, determining the technology that should be adopted by project beneficiaries and also bridging the gap between producers and government's departments (EMATER (b), 1985). In practice, however, they were forced to assist farmers in meeting their most urgent needs such as health services, housing, credit, and the provision of food, seeds, fertilizers and equipment. As a result, they were involved in activities like transporting farmers to hospitals, driving them to meet authorities, helping them to purchase inputs in regional markets and to negotiate resources and services with government officials and local entrepreneurs. In relation to PROCERA credit, in agreement with project leaders, they normally produced only one type of credit plan for all farmers.

EMATER extensionists considered that there were more important demands than simply providing technical assistance to project members. As Mr. Costa pointed out, "we did everything we could to make the project work, although we knew our efforts were insufficient to solve the problems farmers were facing,
and that both farmers and EMATER could blame us for any bad result. Extensionists saw themselves permanently in conflict by being forced to choose between EMATER's priorities and the demands of the project members and the supporting organizations and movements.

Conflicts With EMATER Hierarchy

Farmers opposed extensionists' views on priorities for the allocation of credit, type of technology and inputs, and the scope of groups. According to Mr. Costa, farmers and their leaders often rejected their suggestions on the basis that it was in line with EMATER's technological package and was not appropriate to their needs. They also perceived that project members were interested in learning with them about the government's administration for gaining access to benefits and services, but not in taking their technical advice into account. According to Mr. Lopes, this was his main reason for asking EMATER to transfer him from Vitória to the Nhundiaquara project.

EMATER extensionists from the central and regional offices disagreed with the manner Mr. Costa and Mr. Lopes operated in the project. Conflicts between them, working in the field, and extensionists located in EMATER's higher levels were aggravated when the former disregarded the bureaucratic rules of EMATER. This included ignoring EMATER's bureaucracy in the regional and central offices and directly contacting EMATER's directors and several government departments in Curitiba, the state capital. As Mr. Costa pointed out, "frequently we negotiated directly with our directors, which made other minor bosses angry at us, mainly when they were told by the former to
attend to our demands". They also exceeded the mileage limit of their vehicles, because they travelled out of their municipality for transporting inputs and taking project members to the hospital, which was considered a serious fault by EMATER's administration.

This type of 'privilege' did not last long for the field extensionists. At the end of the second year the secretary of Agriculture, Mr. Claus Germer, resigned on the basis that the Paraná government had shifted to more conservative policies, which did not include supporting the landless or agrarian reform. The EMATER directors changed as a result and so did EMATER's policies in relation to agrarian reform. This reinforced the position of EMATER regional and central officers that its work in the project should be no different from 'normal' community work. That is, Mr. Costa and Mr. Lopes should not become involved in producers' 'private' problems, which included providing food supply and medical care, but they should just provide technical information and distribute and monitor credit allocation.

As a result, on many occasions the extensionists were subjected to disciplinary actions, such as written notifications of the regional and central officers, which could justify dismissing them in the future. Mr. Costa remained working on the project after Mr. Lopes left, and was threatened with being transferred to work in other municipalities on various occasions. However, the support of the farmers allowed him to continue working on the project. Moreover, in more controversial matters he supported the farmers while they negotiated with the government. As the farmers' leader, Otalivio Ferreira suggested, "the extensionists were committed
and struggled alongside us, which allowed them to remain working on the project”.

Technical Assistance - Insufficient and producers’ knowledge valued

The majority of producers agreed they learned and used some of the technology the extensionists recommended. However, technical assistance of both ASSESOAR and EMATER extensionists’ was insufficient and rather different. EMATER extensionists forced project members to adopt some kinds of technology due to credit requirements, such as applying chalk to correct soil acidity and using fertilizers. As for ASSESOAR extensionists, according to extensionist Ari de Davi and Beatriz de Castro, they facilitated producers to take charge of the technology they wanted which led them to search for new technology, set up experiments in their plots, diffuse results among peers and adapt the extensionists’ recommendations to their individual needs. They also assisted project members on new income raising alternatives which resulted on the introduction of the corn and timber mills and charcoal ovens.

On the whole, producers challenged EMATER extensionists’ advice as well as credit rules. Moreover, the technology farmers used was either prescribed or agreed upon by ASSESOAR extensionists. As Marcelo Apel pointed out, "curiously, we were their reference point in relation to agricultural technology as well as to the general strategy. Farmers tended to check with us any type of technology before they decided to use it on their plots, including those prescribed by EMATER extensionists”.

However, ASSESOAR extensionists were too few to assist
all members and focused mainly on promoting their organization and strategies for negotiating with authorities, and neglected farming activities themselves. Mr. Apel emphasized "we all concentrated on getting land and when we achieved it we realised that we did not have many economic alternatives for the project". Furthermore, the experimental and demonstration plots ASSESOAR set up were abandoned because extensionists were absorbed by other communities' demands and the Agricultural Research Institute of Paraná (IAPAR) failed to provide producers with seed varieties that they should test. The two experiments IAPAR and EMATER set up jointly to test corn and pasture seeds were discontinued (IAPAR, March 1986, 1987).

Extension Methods

ASSESOAR extensionists emphasised group methods and group enterprises. This included operating in groups to develop experimental fields, produce animals and crops, sell produce, buy inputs, and set up corn and timber mills. In addition they used groups as instruments for supporting producers' mobilizations, lobbying and negotiations. They encouraged farmers to give opinions, debate, make decisions and choose leaders and priorities, and women to participate actively in these types of activities and play leading roles. This helped producers to use their knowledge and resources and develop their farming activities.

Extensionists did not use the media. Instead, they encouraged farmers, especially the leaders, to participate in radio programmes, talk to journalists and give interviews to newspapers and television programmes. They believed it was an important instrument for making the general population aware of
the situation of the landless and their ideas about agrarian reform (ASSESOAR, 1988). The women were also at the forefront of these activities, helping to raise the awareness of the general population about their situation and cause.

By promoting group formation and producers' freedom to express themselves, ASSESOAR largely determined the attitude of EMATER's extensionists in terms of supporting producers' initiatives and priorities. The latter were pulled along by the dynamic that both ASSESOAR and producers created. It forced them to listen more to producers and reconsider their preconceived ideas. In addition, they considered topics related to producers' political and economical situation, instead of only technical issues. This was also due to their own beliefs and practice which, in turn, were the passport for working at Vitória.

IV.4 - MECHANISMS OF INFLUENCE AND SUSTAINABILITY

MLSC - Mechanism of government control

The Municipal Land Settlement Commission (MLSC) was in charge of implementing the project. Its members were the National Agrarian Reform Institute (INCRA), Secretariat of Agriculture (SEAB), EMATER, the Paraná's Land Institute (ITCF), State Development Bank (BADEP), Banco do Brasil, Banco do Estado do Paraná and the local Mayor (see diagram IV.1 below). The INCRA Paraná's office coordinates the Commission. Only the representatives of project members were invited to take part in meetings.
Diagram IV.1 - GOVERNMENT CONTROL MECHANISM AND GROUP ORGANIZATION

Municipal Land Settlement Commission (MLSC)

Members' Leaders (20)

Members
- INCRA
- SEAB
- EMATER
- ITCF
- BADEP
- Banco do Brasil
- Banco do Estado do Paraná
- Local Mayor

Central Commission

Central Association

ASSOCIATION

COMMUNITY GROUP

ASSOCIATION

COMMUNITY GROUP

Community Groups (13)
Associations (12)
(All 89 Families)
All these organizations but INCRA had no experience in dealing with this type of project. The ITCF, the first organization to be involved in the project, worked associated with INCRA and was responsible for legal aspects such as land use and demarcation and preservation of the environment. It helped farmers to sort out basic problems, which included the transportation of families from the encampment to the project area and the provision of food and shelter. It often operated on behalf of INCRA as a link between beneficiaries and the government. EMATER was officially in charge of providing technical assistance. As for the project members only their representatives were invited to take part in meetings.

There were no rigid rules in relation to how decisions should be taken on the MLSC. In general they were reached by consensus and by voting on more controversial issues such as size of plots and action on loan defaults. Producers were only consulted and had no right to vote and the mayor also did not take part in decisions concerning the project. The Secretariat of Agriculture was an important organization because it comprised ITCF and EMATER. Moreover, the Agriculture Secretary, Mr. Claus Germer, was personally committed to agrarian reform and Vitória was the first land settlement project in Paraná. During the first year the secretariat contributed food, seeds and tools.

According to project leaders, at the end of the second year when Mr. Germer resigned, they no longer had direct access to the Secretary of Agriculture. Furthermore, they clashed with the new Secretary, Mr. Osmar Dias. He disagreed with producers's criticisms and participation in demonstrations against official policies in favour of agrarian reform and
small farmers. Producers reacted against Mr. Dias' attitude and as a consequence, the Secretary of Agriculture discontinued credit to Vitória. According to the leader, Antonio Ribas, the new Secretary rejected their demands for credit, inputs and technical assistance because they were not on his side. EMATER extensionist, Mr. Costa, noted that "preventing resources from reaching the project was the strategy the Secretary used to force farmers to weaken their political commitments". This aggravated producers' hardships and forced them to adopt a more favourable attitude in relation to the state government. Negotiations with the Secretary of Agriculture were resumed only two years later, when they obtained credit from the state government again.

The local Mayor only took part in the commission because INCRA invited him in order to force the local government to contribute resources and services. Initially, however, the local council opposed the creation of the project and was reluctant to cooperate, mainly because it saw Vitória as the initiative of its opponents such as the Workers Party (PT), the Landless Farmers Movement (MST) and rural workers trade union. After the second year, however, the positive impact of Vitória and another two land settlement projects in the municipality on local business persuaded him to favour this initiative. This facilitated the delivery of services and benefits such as new roads, community schools and health centres, teachers, nurses and doctors, and public transport.
Beneficiaries' Central Commission

The central commission of the encampment remained operational and was the link of the project members with the MLSC (see diagram IV.1). It comprised a total of twenty leaders and six of them were leaders of the former encampments' central commission. Their performance during the encampment gave them sufficient status to continue being leaders, which was approved by the vote of beneficiaries in each community group. They were the representatives of the beneficiaries in the MLSC. The other fourteen leaders were elected by their community groups. The central commission played the role of coordinating the activities of the community groups and associations. It was also the main link with the supporting organizations and kept project members involved in the politics of the political parties, trade union and agrarian reform.

Producers at the MLSC - A forum for negotiation

Only around six months after the inception of Vitória did they begin to take part in the meetings of the MLSC. INCRA expected that the participation of producers representatives at the MLSC, would help to bridge the communication gap between project members and the government. Especially during the first year it enabled them to negotiate their demands and exert considerable influence on project design and implementation. It included determining credit allocation and repayment and group organization, and delivery of PROCERA and FINSOCIAL credit, credit for electricity services and the association's corn and timber mills, food supply, allocation of extensionists and new roads (EMATER January and March, 1986; ASSESOR, July 1988).
The participation of beneficiaries on the MLSC encouraged them to operate according to a plan, largely based on their own plan, developed at the encampment. Leaders coordinated the implementation of the project alongside the government institutions. The Paraná government was willing to assist and learn from its experience, while beneficiary mobilizations, linked to the agrarian reform movement, drew the general public's attention to their cause. Moreover the launching of the PNRA led the government to become fully involved in assisting agrarian reform projects. By the time that Mr. Claus Germer resigned the bulk of decisions related to project design had already been made. In this process, the MLSC became the most important link between project members and the government.

Trade Unionism and Party Politics - Active Participation

After the inception of Vitória, its members continued to operate alongside the organizations that had taken part in the land invasion and the encampment. ASSESOAR encouraged beneficiaries to continue participating in the landless movement and in the politics of political parties and trade unions. Project leaders were also leaders of the MST in the region, and Vitória members took part on the MST mobilizations regionally and in Curitiba. Their participation on activities of supporting organizations activities increased considerably. They elected a project leader, Valdair Sotti, as president of the rural workers union and overthrew the president who was an allied of the landowners and offered no support to Vitória. They counted on the support of small producers, the MST and members of agrarian reform projects in the municipality. This victory helped beneficiaries to debate and set up their
priorities as well as lobbying and negotiate with politicians and authorities.

They used their influence in the trade union as an instrument to support the agrarian reform movement locally and regionally. Their success in the union's elections encouraged them to become more involved in party politics. Three leaders, including two women, Mrs. Rocha and Mrs. Sotti, who had taken part in the land invasion, ran in the municipal elections and one leader, Cézar Tonelli, ran for mayor. None of them was elected, however. They ran for the Workers Party (PT) and members of land settlement projects were not accepted by the local community.

Opposition and Hardship - Weakening farmer organization

The active participation of the project members in politics provoked great opposition from those who used to dominate local politics. They were mainly the landowners and their allies, that included the local mayor, most local councillors, trade union leaders and the local priest. This weakened the project members' relationship with local authorities which obstructed negotiations and as a consequence worsened the situation of insufficient and delayed benefits. Opposition and hardship eroded producers' hopes to implement the project and even to meet their needs, and led them to look for alternative solutions. The offers of the local priest, Padre José, which included houses, agricultural equipment and community assembly halls proved to be very tempting.

Around one-third of the 280 families settled in Vitória choose to follow Padre José. An equivalent group preferred to operate primarily individually and not become involved directly
either with ASSESOAR or with the associations and community
groups, but only in specific actions or enterprises, such as
negotiating some services with the local council and selling
charcoal jointly. Only around 90 families agreed to continue
operating with the community groups, associations and ASSESOAR.

This weakened both beneficiaries' plans and their
leaders. The six leaders of the central commission became self-
designated coordinators of the project and kept information and
decisions to themselves. The fourteen community representatives
were indicated simply as a consultative group for the former.
As a result hostility emerged between the six leaders and the
other leaders, which thus became isolated from one another. The
six leaders justified this by arguing that the others could
inform the landowners and Padre José about their plans to
conduct the project.

Gradually, all the leaders participated again in the
MLSC, and negotiated producers' demands successfully which
fully restored the role of the central commission, among the 90
families. However, set backs such as crop frustration, delays
with credit delivery and their clash the Secretary of
Agriculture considerably reduced the ability of the central
commission to coordinate the various community groups and
associations, which dispersed groups and beneficiaries.
According to the leader, Otalivio Ferreira, they never managed
to be the strong leaders that they had been during the
encampment.
IV.4.1 - COMMUNITIES AND ASSOCIATIONS

Community Groups - Source of solidarity

The thirteen communities producers started evolved to be fairly organized groups. They had a board of officials comprising a president, a secretary and a treasurer, who were elected more or less annually, and functions rotated among community members. Often women were elected to play such roles including president. Community groups were involved in productive, cultural, religious, educational and leisure activities. This helped producers to farm by enabling them to share equipment and work together during peak periods. Farmers were in charge of the administration of the eight community schools. The families of these communities elected a coordinator and a secretary for each school. In some cases the president and secretary of the community jointly held these positions. They provided support to the schools, which normally meant negotiating with the local mayor on the allocation of teachers and materials, and transportation for students attending the municipal secondary school in Mangueirinha.

The leaders should organize a monthly mass in the community. Religious festivities were sometimes organized jointly by two or three communities, as were leisure activities that usually involved lively parties on weekends, in which farmers themselves performed music, danced, barbecued, and played football matches. Women participated actively and usually they were in charge of cooking and serving the meals.

Leaders totalled 26 and at least two members in each community led most of the enterprises of the communities and associations, although functions rotated frequently.
These activities provided a strong motivation for communities to meet, even during critical periods of hardship due to crop losses and delays of credit delivery.

Getting together strengthened solidarity as some leaders declared, "their community gatherings were important to strength friendship ties". During community meetings producers could talk freely about their business and find alternative solutions for their difficulties. It helped the action of their leaders and consequently of the trade union and PT. However, it did not prevent conflicts from happening which were motivated mainly by set backs of collective enterprises, unsuccessful negotiations and benefits being allocated to collective enterprises instead of individually.

Farmer Associations - Supporting economic activities

There was no pre-conceived model for associations as they were created as the need arose. According to Mr. Apel there was no policy as to what form they should take. In fact, the group experiences carried out by the CPT and MST in other states became the main reference point for the rural association model in this project. During the first year some community leaders were sent by the MST to visit associations in other projects (EMATER, July 1987, November 1987, July 1988).

The administration of the associations was structured similarly to that of the communities, although associations required more commitment and managerial skills. There was a president, a secretary and a treasurer, who were normally elected for one year. As a general policy, the members of the association rotated these functions and women were often elected to these positions. The president of the 12 de Julho
association had been a woman, Mrs. Lourdes Terezinha da Rocha, since its inception. She was at the forefront of the land occupation. The activities developed by the rural associations included trading agricultural inputs and products, acquiring farming equipment and organizing the mutirão, a collective labour activity. They were legally registered, which enabled them to take out bank loans. It allowed them to set up their corn and timber mills. The associations, along with the community groups, were the main link between project members and the central commission (see diagram IV.1).

Associations' Weak Points

The government's policy was to favour associations and their members instead of individual farmers which motivated producers to create associations. At one stage there were 23 associations operating. However, many of them disappeared shortly after their members got hold of their share of the credit. According to the leaders and extensionists they terminated mainly due to lack of interest of their members to operate in groups. Remarkably, the twelve associations that ASSESOAR assisted remained operational. They were set up for reasons other than simply qualifying farmers to receive official credit.

Associations differed significantly in relation to their degree of organization and performance. After three years, only six associations were active, promoted frequent meetings with their members and managed their economic enterprises appropriately. The others simply carried out their economic activities such as making corn flour or cutting timber. The main constraints of the associations included lack of technical
assistance and training. The president Mrs. Rocha, pointed out that "the development of each association depended largely on the willingness and ability of its members to organize and make it efficient". The Planalto association bought an outdated steam locomotive which failed to work and indebted its members. As Mrs. Sotti, the wife of its president reported "they realized that the machine they had bought to move a timber cutting station was out of order after had already been installed. As a result, the association could not operate and they had no means of paying back the loan".

The fact the state government ceased to deliver benefits from programmes of the state for two years demobilized the associations. Mrs. Rocha pointed out "the disagreement with the Secretary was a further setback for our organization, since we had already been suffering from credit delays and crop losses". This discouraged members from taking part in meetings, which reduced group solidarity and group organization in the project as a whole. The involvement of leaders of the associations in the politics of the trade union and political party detached them from community groups and associations. Especially during the elections they prioritized the campaign instead of more tangible demands of their groups. Mrs. Rocha pointed out that she had hardly met the project leaders involved in politics in the last two years. She mentioned that, "they really abandoned us, which weakened our groups mainly in terms of our ability to negotiate with the authorities. The mayor and the Secretary of Agriculture also became our enemies because they supported their opponents". In addition, a crooked leader, the secretary of the Nova Prata association, Mr. Machado, took over the association's corn mill which he was in charge. The members of
the association reported, "we simply lost all our investment to this farmer and this situation is unlikely to change, since he does not listen to us and is also a violent person".

Authoritarism, Hardship and Changing Demands

The extensionists and farmers suggested meetings and integration between associations were frequent at the beginning but decreased significantly over time. The EMATER extensionist, Mr. Costa, suggested that group activities diminished as producers confronted government repression. According to Mrs. Rocha, "on the first year and especially during the election campaigns, we used to have meetings weekly, and sometimes more frequently than this. But when politics were no longer on our side, we rarely met and then only for dealing with economic or productive matters". Reducing the chances of gaining benefits through meetings and negotiations discouraged producers from getting together.

According to ASSESOAR extensionist, Mr. Apel, when the government closed its doors to the project, its leaders were unable to deliver solutions for farmers' problems and consequently they became distant from farmers. Producers became basically concerned with their economic situation and the leaders lost their ability to coordinate or represent beneficiaries at the MLSC. A leader, Mr. Arno Hauer, pointed out, "as we lost ground in politics, our organization began to perish". According to Mr. Costa, "the leaders, including the president of the trade union, used to control the whole process (project), but when they failed to deliver the solutions farmers needed, mainly in terms of credit and agricultural technology, they were isolated by the members of the project".
In addition, the government was prepared to negotiate directly with the associations and community groups and bypass leaders, as an strategy to avoid dealing with the opposition. As a result producers links with the supporting organizations and movements became "barriers", as they obstructed negotiations with the government. This situation encouraged the leaders as well as producers to comply with the government rules and rejected previous alliances and ideas.

The nature of the demands of the project changed over time. The demands during the creating of the project and settling the families were political and when beneficiaries needed to develop farming they were technical and economical. The leaders farmed poorly, as they spent most of their time responding to the demands of project members. Extensionists and producers recognized that project leaders were politically effective but were not capable of leading the productive process and this affected their ability to lead others. Leaders of the associations and community groups became more influential in coordinating and representing beneficiary interests. They developed friendship ties among group members by working together over time and they were committed to more tangible matters whereas the others were involved in the politics of trade union, agrarian reform and the democratization movement, which farmers found difficult to connect with their day-to-day problems.

Central Association - Conflicting goals

In the third year, the leaders at Vitória organized a central association, which was supported by ASSESOAR and EMATER extensionists. It aimed to help associations process and market
their produce and purchase inputs and strengthen links between communities and associations. It was able to carry out some activities that were economically advantageous to the farmers, such as buying equipment and agricultural inputs in bulk. It also purchased a tractor which was useful for some farmers. However, it lacked funding and largely failed to convince farmers that it would be worthwhile keeping. Producers' hardship, the controversies involving padre José and the State Secretary, and the leaders being absorbed in party politics and trade unionism contributed to its demise.

During the survey, two years later, project leaders started to organise a new central association. They received funding from the government and international NGOs to build a corn mill with a processing capacity that exceeded the demand of the members of Vitória. According to its provisional president, Mr. Antonio Ribas, it was an initiative of the Vitória leaders and intend to support Associations of all land settlement projects of Mangueirinha. Associations were members instead of individual farmers and each member elected its own delegate for the central association. However, this gave rise to criticism from both project members and ASSESOAR extensionists. According to extensionist Mr. Apel, he was not sure that it was a real priority for beneficiaries, since they still faced the problem of low productivity and production. However, re-starting the central association was also an attempt by leaders' to approach communities, build ties and solidarity between Vitória and other land settlement projects in the municipality, and strengthen their authority.
IV.5 - ASSESOAR

The Associação de Estudos, Orientação e Assistência Rural (ASSESOAR) is a non-governmental organization located in the municipality of Francisco Beltrão, which operates in the South-Western region of Paraná. It was founded on 17th October 1966 by 33 small farmers supported by Belgian Catholic missionaries. The latter came to the region to stimulate a politicized pastoral programme, inspired by the Second Council of Latin American Bishops (Vatican II). They introduced a religious practice concerned with political and economic issues, that focused on the organization of its members through trade unions and rural co-operatives. This work contributed to creating the Catholic Rural Youth (JAC) in 1964, the establishment of the local Rural Cooperative of Francisco Beltrão (Confrabel) in 1965, and the creation of community religious groups (CEBs), in the region, in 1968.

ASSESOAR started motivated by the need of lay workers to set up a place for regular meetings and the production of printed materials to support pastoral work. From the beginning its administration was largely controlled by its members and was conducted by an administration board with 13 members. Three of them are directors, eight are in charge of its departments and two were non-members. Directors and department members are elected by ASSESOAR members in an annual general assembly, while the non-members are indicated by its department members. Non-members usually are a priest and a professional such as a lawyer or agronomist, committed to the teaching of Christian principles and the cause of the small farmers (ASSESOAR, 1966).
These are important to link ASSESOAR to farmer organizations and the government (ASSESOAR, 1981).

ASSESOAR supported movements that challenged official policies and authoritarism, which included EMATER's commitment to modernization policies and larger farmers. This deteriorated its relationship with the government and in the late 1960s, one of its members was prosecuted by the military government for ideological reasons (Batisti, 1989). Church members gradually withdrew from ASSESOAR's administration mainly because a new Bishop disagreed with its autonomy and policy. By the end of 1970s, clergy members no longer participated in its administration, thus making ASSESOAR fairly independent from the church. It strengthened its links with like-minded organizations and movements, in particular with the pastoral Land Commission (CPT), the landless farmers movement (MST), the 'authentic' trade unions, and the workers party (PT) (Batisti, September 1989; Feres, 1989). Religious teaching was no longer ASSESOAR's priority, but rather socio-political and economic work with small farmers. It saw its role as being to prepare its members to take responsibilities in their organizations, and act as 'animators' of mass movements working towards socio-economic and political change in the country. It also focused on encouraging small farmers to adopt and generate alternative technology. Its objectives included help small farmers to achieve a 'descent' livelihood, critical awareness of their situation and society as a whole, value small farmers' culture, participate in official polices (Batisti, 1989).

ASSESOAR contributed significantly to the various small farmers' movements that occurred from the late 1970s, which included major mass movements that demanded better prices,
favourable agricultural policies and land reform, the organization of the encampments of the landless and land invasions, and the organization of the landless movement in the region (MASTES), which were dealt with in chapter I. By the end of the 1980s, ASSESOAR's members comprised around 600 small farmers, who were its primary clientele and were in charge of its administration. They participated actively and played important roles in trade unions, co-operatives, Church and opposition political parties. Some of them were part or full time collaborators of the MST, the church land commission (CPT) and ASSESOAR itself. Moreover, in 1982, two of its members were elected local councillors and one Paraná's state congressman (Batisti, 1989).

During the 1980s, ASSESOAR emphasised raising farmers' awareness about ecology and reducing farmers' dependency on industry and private banks. It involved experimenting with organic fertilizers with its affiliates, organization of community education centres where it worked with groups of animators (from 10 to 15 small farmers). It supported alternative agriculture groups, which involved around 450 families, in 13 municipalities. It supported the creation of small associations and advocated that their administration and programme should respond primarily to their members' needs (ASSESOAR, July 1988). In the early 1990s, ASSESOAR assisted 25 small associations which networked with others situated in various states of Brazil. They provided their members with several types of agricultural equipment and services that included milling, sawing, harvesting and marketing their produce.
IV.6 - CONCLUSION

This chapter has showed that the Vitória da União Project started as a result of the project members' actions, which counted on an active group organization linked with like minded organizations such as the MST, CPT, unions and opposition political factions. Beneficiaries negotiated benefits and the project design with the government that included size of plots, location of beneficiaries, type of groups and the assignment of EMATER extensionists. All members were landless farmers selected by their own organization and supporting organizations. Vitória received official credit but it was not enough and often delayed. This contributed to their hardship especially during the first two years when they lost crops due to frost and drought. Members profited from planting mainly subsistence crops and keeping animals, their plot sizes being fairly sufficient and obtaining income from various economic activities. All members obtained reasonably equipped houses and equipment and only a few gained no access to roads, school, health services, public transport and electricity despite Vitória being quite remote.

ASSESOAR, a small NGO, fully supported agrarian reform and producers' priorities and actions. ASSESOAR extensionists assisted members before and after Vitória started and were identified with beneficiaries' objectives, assisted women and men equally and focused on group organization, awareness raising and appropriate technology. EMATER extensionists were committed to producers' priorities despite EMATER hierarchy being indifferent to them. The Extensionists were not enough to assist project members adequately. Producers set up fairly
active groups which comprise 13 community groups, 14 associations and one central commission. These contributed to keeping alive communal life and bringing members together, implementing farming, economic alternatives, marketing their produce, taking out bank loans and obtaining benefits. These also created opportunities for men and women to take responsibilities and play roles, strengthened their leaders' representativeness and facilitated new leaders to emerge. Beneficiaries' interests were jeopardized in part by taking part in the politics of the trade union and political party, and the authoritarianism of the government and lack of technical assistance.
CHAPTER V
THE NHUNDIAQUARA PROJECT

This chapter presents the contextual information and observations of the survey carried out at the Nhundiaquara Land Settlement Project, in the state of Paraná. The type of involvement of the Nhundiaquara members in the events that preceded its inception and influence on project design and implementation, the characteristics of the project members, the manner in which land and credit were distributed, farming implemented and basic needs met, as well as the access they obtained to services and resources, are considered. The characteristics of the extensionists, and roles they played are also analysed. The type of producer groups and role played, their contribution to project results and the manner in which they were located are looked into. Finally, the features of EMATER are analysed.

V.1 - THE SHORT ROAD TO NHUNDIAQUARA

Benefited by the PNRA

The Nhundiaquara Project is situated in the coastal region of Paraná, around 30 kilometres from the capital city Curitiba. In this region farmers have no tradition of participation in social movements. The rural workers trade unions have traditionally been very passive never involved in demonstrations and rarely in negotiations. The fisher people organizations were more aggressive in terms of standing up for their members' interests yet they were also very conservative compared with the 'authentic' trade union movement. The
existing small farmers organizations were basically associations involved in productive activities resulting mainly from EMATER's intervention. Producers were not engaged in the agrarian reform movement until the National Agrarian Reform Plan (PNRA) was created, in 1985 (IPARDES, 1976, 1980, 1983; SEAB, 1984; Branderburg, March 1987). In that year INCRA expropriated several farms in Paraná, including one farm in the municipality of Morretes, to allocate land settlement projects according to the PNRA (EMATER, 1985; MIRAD/INCRA, October 1997).

Until that time, INCRA acknowledged no landless farmers in the region and the farm in Morretes was encouraged to settle landless farmers removed from islands in the Paraná River in the west region, as a result of the construction of the Itaipú dam. However, the president of the rural workers trade union of Antonina, Mr. Belizário, a neighbouring town of Morretes, became aware of this situation and decided to claim it from the government to settle landless farmers living in the region.

He identified and registered two hundred landless farmers as a means of sustaining his plea. The president managed to secure the support of the church land commission (CPT), which participated actively in recruiting landless farmers for the project, and persuaded Mr. Belizário to support the creation of the landless movement of the coastal region (MASTEL). He agreed to help create MASTEL because he learned about the other farms being made land settlement projects as a result of the action of the Movement of the Landless Farmers (MST), including the Vitória da União project. They convinced the government (INCRA) to agree to settle the landless farmers living in the region in Morretes' farm, instead of those from the Paraná river islands.
In November 1985, a total of 73 families began to be settled in the area denominated the Nhundiaquara Project (EMATER, 1986; EMATER, August 1987).

However, as EMATER extensionist, Mr. José Rogério da Costa Lopes, stated soon after Nhundiaquara started, the president of the trade union ceased to support the landless movement, MASTEL, and excluded the CPT from the process of implementation. He preferred instead only the support of the State Federation of Small Farmers and Rural Workers Trade Unions (FETAEP), which was not involved in land disputes, and enjoyed a good relationship with the government. Moreover it constituted an opposition to the authentic trade union movement, which was integrated with the CPT and the MST. From the beginning, negotiations with state government departments concerning the project were carried out by Mr. Belizário. At that point neither the MST nor CPT had any influence over Nhundiaquara. Consequently, the trade union, that was linked to FETAEP, a traditional ally of the government (Branderburg, March 1987), became the only farmer organization with leverage in Nhundiaquara.

Once the government approved the project, it created the municipal land settlement commission (MLSC). The president of the trade union was nominated by the members of the MLSC as the representative of the members of Nhundiaquara. According to Mr. Lopes, who assisted Nhundiaquara, the president of the trade union had a good relationship with the government, was well informed about project matters, and was the only representative of project members. The government intended to make Nhundiaquara a model for other land settlement projects in the state, as Mr. Claus Germer, Paraná Secretary of Agriculture
during that period emphasised to the media and the members of the MLSC (SEAB, 1987).

V.2 - SOCIAL AND ECONOMIC ASPECTS

Project Members

Farmers were selected by the municipal land settlement commission. The ITCF technician and EMATER extensionists who worked in Morretes were very influential in the selection because they knew most of the farmers enrolled in the trade union. The commission selected 54 families from the trade union's list and 19 were tenant farmers of the company that cultivated the project area. At the end of the first year, eleven families were substituted for not performing according to INCRA's criteria, which is discussed below. Seven of the new families settled on their plots were appointed by EMATER extensionists, two by ITCF and two by the president of the trade union.

The majority of project members came from different places and only became acquainted with each other after they were settled on the project. Only 18 were raised locally while the majority were migrants from other regions of Paraná and other states. Over 20% came from the northern part of Paraná, and among these there were migrants from North-East Brazil. Around 10% were from the West of Paraná, and 20% from the South region. Farmers from other states such as Santa Catarina, São Paulo, Minas Gerais and Alagoas, constituted 17% of the members. All migrants had lived in the region for at least seven years and thus they were used to the environment, the culture and the farming system of the area.
Around 40% of project members had been assisted by EMATER before they came to the project, while the other 60% had received no technical assistance at all. In relation to their previous occupation, practically half of the project members were sharecroppers or tenant farmers and the other half were squatters (see table V.1). Around 40% of the latter were also rural workers, and their main income was their salary. The farmers of the Nhundiaquara project had a variety of cultural backgrounds, as they were descendants of various races such as Japanese, European, and African, and also native. The majority was Roman Catholic and a minority members of three different evangelical churches. The majority of project members were married with children. There were three widows with children on the project. The average age of the men was forty-four, and the average number family members was six. Over 80% of project members were literate, and on average they had attended school for nearly three years. Among those, there were four members who attended school for at least eight years.

Table V.1 - Professional Experience and Type of Landownership

<table>
<thead>
<tr>
<th>Professional Experience</th>
<th>Type</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmer</td>
<td>33</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>Rural Worker</td>
<td>29</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Former Land Ownership</td>
<td>Tenant Farmer</td>
<td>33</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>Squatter</td>
<td>29</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Family Land</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Farm Sizes and Location of Families

According to the initial plan of EMATER, there were to be two plot sizes: 8 and 14 hectares (EMATER, August 1985; EMATER (a), 1987; EMATER, August, 1987). However, the average farm size on the project was around 12 hectares, while the minimum size was 2.5 hectares and the maximum 24 hectares. Over 20% of farms had under 8 hectares and nearly 60% over 8 hectares (see table V.2). Various factors contributed altering the plot sizes planned. These included soil conditions and topography of the area, and type of the crops each farmer should plant but, also the farmers' individual need for land.

Table V.2 - Project Plot Size

<table>
<thead>
<tr>
<th>Plot Size (hectares)</th>
<th>Number</th>
<th>Percentage</th>
<th>Minimum (hectares)</th>
<th>Maximum (hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Eight</td>
<td>15</td>
<td>23.8</td>
<td>2.5</td>
<td>7.5</td>
</tr>
<tr>
<td>Around Eight</td>
<td>12</td>
<td>19.0</td>
<td>8.0</td>
<td>8.7</td>
</tr>
<tr>
<td>Over Eight</td>
<td>36</td>
<td>57.2</td>
<td>9.0</td>
<td>24.0</td>
</tr>
</tbody>
</table>


The project area was divided into 77 plots. Four plots were considered unworkable by EMATER technicians, due to their soil and topographical conditions. The 19 families that were former tenant farmers in the project area were assigned the same land they were cultivating and living on when the project was established. They cultivated areas from under one hectare to 20 hectares, for periods that varied from five to twelve years (EMATER (a) & August, 1987). Some of them had their area enlarged according to EMATER criteria to determine the land

1The land was property of the government and producers should have the right to buy their plots after 10 years.
necessary for providing the means for the subsistence of a family, but others resisted to reduce their former areas.

Only 54 new families were actually settled, and 11 were expelled from the project. Four of the families who substituted those expelled from the project needed no land but were selected because they had the means to purchase the assets left on the plots by the excluded families. Seven farmers already owned some land, which was insufficient for their subsistence, and consequently they needed less land than the others. As a result, the size of some plots was reduced by up to one hectare. This caused some farmers to have more land than they needed and others had insufficient land to produce for their subsistence. Surprisingly, one farmer was actually landless, and resided on another farmer's land.

Funding and Services

Nhundiaquara, like Vitória, was supposed to be funded by official credit. The PROCERA and FINSOCIAL credit programmes were allocated to all families (BADEP, 1990), as suggested by INCRA officials and EMATER extensionists. INCRA benefited 41 families with credit for housing from the federal government. It was to be paid in instalments over five years and farmers were expected to start repaying after two years. INCRA also provided food allowances to twenty of the poorest families during the first year, while EMBRATER provided credit for a rice-hulling machine for collective use.

The state government provided Nhundiaquara members with two machines for draining drenched soils. Farmers had two years to pay for these and costs were indexed to the price of corn. Seeds of native plants for environmental protection were given
free to farmers. Beneficiaries were provided with seeds of rice, beans and corn, which were given to the poorer families (22), while the others had to repay an equivalent amount after the harvest. During the first six months of the project, the State Health Secretariat (SESB), mobilized by EMATER, provided funding for the construction of toilets, a sewage system, protection of wells, and to buy manual water pumps, which benefited 52 families. Also, as a result of negotiations by EMATER extensionists, the Official Charity Organization (LBA) donated bricks for the foundations of 25 houses, and the local council provided some timber and bricks for helping them to build their houses. The services provided by the local council included ditching streams, improving and building roads and building small bridges inside the project area to allow transport of agricultural produce and draining of agricultural land. During the first year, it also helped with food provision for the families in most need (EMATER, August 1987; (b) 1987).

Some tenant farmers (14) had taken out loans from private banks before, and continued to do so after the project was set up. According to EMATER's project report, in the second year, another eleven farmers used credit from private banks to finance farming and equipment. In the fourth year of the project, half of project members were using credit from private banks. This credit was allocated mainly on farming activities such as ploughing, drilling, and purchasing agricultural inputs, although some farmers also used it to purchase equipment. According to beneficiaries, only those who managed to produce commercial crops and had an income were given credit in the local shops (EMATER, 1990).
Obtaining these benefits and credit required different interventions by both extensionists and project members. Access to the credit from FINSOCIAL and PROCERA, and from INCRA and SEAB, required extensionists to negotiate with the government bureaucracy. This was facilitated by the fact that the government was keen to implement Nhundiaquara. The services provided by the mayor and some state government departments were a result of negotiations by extensionists along with the presidents of the associations and some project members. Gaining access to private credit depended on the individual's economic situation and their ability to approach the bank managers, as well as the criteria adopted by local bank managers.

The resources allocated were not sufficient to provide essential basic housing and infrastructure for all project members, and to enable all farmers to cultivate their plots adequately. Most were forced to use credit destined for farming and housing to solve difficulties with acquiring food and medicine. Credit delivery was invariably late, which prevented most producers from buying seeds and fertilizers in time. The local government failed to construct some ditches and bridges, and the state government provided insufficient financial aid for food and housing. Some farmers were seen by technicians and other project members as people lacking managerial and technical skills, and were blamed for using their loans inappropriately (ITCF, 1987; EMATER, 1990).

The EMATER extensionist assisting Nhundiaquara tried to allocate credit according to his perception of farmer's needs, which in practice proved defective. Many farmers were left empty-handed on several occasions, with serious consequences
for their farming activities. Around 60% of farmers declared that they were not satisfied with the way credit was distributed. According to Mr. Edson Cardoso, one of the project leaders, some farmers in need were neglected, while others were favoured by the extensionist, who distributed it according to his own judgement.

No specific structure for education or health services was planned for the project, since it was situated close to an urban centre. Therefore, members were expected to use the existing service structures of the municipality of Morretes (EMATER, August 1987). According to EMATER's social worker, although farmers were not familiar with using the public health services, they did have access. Literally all families (95%) indicated they were assisted by the public health services. Three farmers considered the service was inappropriate. Over 60% of families (37) had children of school age and all were attending school.

Roads, Bridges and Ditches

The project area was well connected with the market by tarmac roads. Many farmers confronted road problems to transport their produce. According to EMATER's report, when the project was initiated the poor transport infrastructure situation required the following: around seven miles of new roads, repairs to around seven miles of existing roads, around fifty new ditches, which required about one hundred and fifty cement tubes. Three bridges were to be erected. After five years, only a small part of this had been accomplished: one new bridge was erected, around two miles of roads were repaired, around two miles of new roads had been built and about thirty
percent of new ditches dug (EMATER, 1990). As a result, around 20% of farms were subjected to systematic flooding during the rainy season, and others had part of their soil permanently saturated with water and therefore inappropriate for farming (ITCF, 1987; EMATER, 1990). Yet other farmers had to cross a river to deliver their produce, which also caused problems during the rainy season. These services were not totally installed mainly due to the lack of financial resources and failure of the state government and local council to comply with their promises of aid. Nevertheless, most producers believed that their access to land gave them the opportunity to obtain other resources such as credit and services, a belief that is borne out by the evidence.

Farming

A small group of farmers planted mainly vegetables for trade and the majority planted mainly subsistence crops such as rice, beans and corn. EMATER planned banana to be a commercial crop but it was mainly produced for subsistence and without the technology required for commercial production. According to the EMATER plan better off farmers would plant mainly vegetables, as they required relatively more in terms of equipment and financial resources. Vegetables were more profitable than subsistence crops. Subsistence crops should be produced by the worse off farmers who were more affected by the insufficient credit. Over half of Nhundiaquara members did not produce enough to meet their needs. According to the local EMATER extensionist, Mr. Haroldo de Carvalho, on the fifth year, 10% of its beneficiaries had no ability to produce at all, and another 10% produced very little.
On the other hand, a few farmers produced and gained considerable more than the others. One farmer produced around 20% of the cucumber, while another produced around 60% of the production of ginger, which was an export crop and highly profitable compared with other crops. The majority of farmers kept chickens and pigs and some farmers had cows. These were not for selling but one farmer sold milk. According to farmers these were important for their subsistence. Only some farmers had horses and oxen and seven farmers used animal-drawn implements. According to EMATER plan they should have used tractors.

Equipment and Assets

Many farmers lacked equipment for cultivating their plots. Vegetable producers were those were well off in terms of equipment and machinery. The tractor and implements of one of the beneficiaries' associations assisted its members (31). But the members of the other association (22) that went bankrupt, which is discussed in the next sections, were forced to hire the equipment, although often they could not afford it. In the fifth year of the project only 20 farmers had barns on their farms. Two farmers had large equipped barns for washing and packaging ginger for export. Four farmers had a fish pond on their farms, and selling fish provided them with an extra income.

One farmer in particular was much better off compared with other farmers in the region. He had three fully equipped tractors, two cars, and his own lorry, and a well built house with a large barn. He had other land apart from his plot in the project, which he cultivated, and also rented two further farms that totalled
around 40 hectares. He refused to participate in the survey, however, as he feared that it could have been a government investigation.

Housing and Home Appliances

When the Nhundiaquara project was set up, the economic situation of its members varied. Before being settled on the project 27 families had their own houses, 23 families lived in rented accommodation and 13 resided with their relatives. By the fifth year of the project, this situation had changed. All the farmers but one owned their own houses. The homeless family was living in a plastic tent. The quality of the houses varied. Eight houses were well built and made from brick, forty houses were reasonably built, considering the other farmers in the region, with parts made from timber and others from bricks, and fifteen were poorly built and made from just timber. Surprisingly, six farmers built an extra house on their farms for their relatives.

The average number of rooms in the beneficiaries' houses was five, and around 85% of them had from four to seven rooms. Around 90% had toilets, around half internal, and 90% were supplied with electricity. According to the families who had no electricity, this was because they could not afford the installation costs. Thirteen houses were supplied with tap water, 36 had a well and 21 of them were equipped with manual pumps. Fourteen families, however, used water from streams and rivers, which according to the local EMATER extensionists were contaminated with sewage and insecticides. Most houses had gas cookers (69%), fridges (67%) and TV sets (61%).
V.3 - EXTENSIONISTS

EMATER Extensionists

The EMATER's work on the project involved extensionists from regional, central and local offices. Extensionists from the central office were in charge of the economic feasibility and land use study, which defined the project design. EMATER regional officers helped the latter and were in charge of supervising EMATER's work in the project. Accordingly, regional extensionists supervised the work of the local extensionists that assisted the project.

Most of EMATER's assistance to the project was carried out by two local extensionists: Mr. José Rogério Lopes and Mrs. Marinalda Aparecida Costa. Mr. Lopes worked full-time on the project during its first three years. He was an agronomist raised in the city, and his experience in the countryside began only after he graduated. At college he was a political activist who supported policies in favour of small farmers and the rural poor. He worked for ITCF before he became an EMATER employee in August 1984. As mentioned in the previous chapter, he worked for six months at the Vitória da União Project before coming to Nhundiaquara. According to him, his experience and commitment to the cause of the landless contributed to EMATER allocating him to work on land settlement projects. The other extensionist, Mrs. Costa, had been based since 1981 in the municipality of Morretes as EMATER's social worker. Her father was a small farmer, and she was raised on a coffee farm in the North of Paraná. She only left home when she went to college, where she graduated in education.
Although this type of project required different skills from EMATER's work in communities, neither extensionists received any special training to work on land settlement projects, apart from the conventional training that all extensionists received from EMATER. By the third year both extensionists ceased to work full time in the project. Thereafter, Mrs. Costa became responsible for assisting all the rural communities of Morretes, which also included the members of Nhundiaquara. Mr. Lopes became the local extension officer, and project members were only one of the communities for which he was responsible.

Two other local extensionists also assisted project members during the first five years, either in the absence of Mr. Lopes or to attend to specific demands, such as preparing credit plans. These were agricultural technician Sérgio Luiz Lissa, and agronomist Haroldo de Carvalho. Mr. Lissa had worked in Morretes since 1980 and was the local extension officer during the first two years of the project. He was raised in the countryside and his father was a small farmer. His knowledge about the area and leadership enabled him to participate in the selection of project members, as well as assisting them, while Haroldo had only minor participation in the project related to technical assistance. Since 1988, his main responsibility had been to help the local rural association, PROHORTA.

EMATER Extensionists' Role - Responding to EMATER's goals

According to EMATER the extensionist, Mr. Lopes, had to prepare credit plans, monitor credit allocation and train farmers in agricultural technology. The social worker, Mrs. Costa was expected to assist women in nutrition, health and
home administration. In practice Mr. Lopes spent most of his time preparing credit plans, as each family required one agricultural technical plan, and attending to the demands of farmers related to financial aid, machinery, seeds and fertilizers, material and credit to build houses and food. Mrs. Costa worked mainly with women and children in activities related to domestic matters which included teaching cooking techniques, hygiene, and also development of vegetable gardens and handicrafts for sale. In addition, due to the situation of some families she became involved in the provision of fresh water as well as house construction and sewage systems.

Extensionists often confronted conflicting demands as the policies of EMATER and the needs of the project members differed in many respects. Therefore they were constantly forced to choose between attending to farmers' demands and the role EMATER expected them to play in the project. According to Mrs. Costa, EMATER's regional officers held a technical and bureaucratic view in relation to their role, "... since they were distant from the real situation, and were not involved in the problems the families faced". However the two extensionists assisting project members in fact were sympathetic to the farmers' situation and discovered that it was not possible to teach farmers about agricultural technology, health and nutrition while their basic needs, such as housing, food, farming tools, equipment and seeds were not being met.

As a consequence, extensionists decided to focus their attention on the poorest members to help them meet their most urgent needs. They contacted authorities, government departments and bank managers to request services and financial aid on behalf of project members. According to the social
worker, many families facing health and nutritional problems had no knowledge of how to access public services or approach authorities. She decided to join to help them to negotiate with authorities such as the local and regional health officers. She often acted as project members' representatives by negotiating their demands with the help of the mayor's wife, who was useful particularly for providing financial aid for housing and food provision. However, she points out that in this process, many farmers, both men and women, learned how to deal with authorities and make their voices heard.

Farmers perceived the difference between EMATER's demands and what extensionists themselves wanted to do. This became more evident when the local extensionists decided to motivate farmers to create a community group, and the regional officers opposed it. As the leader, Edson Cardoso, pointed out "not all extensionists have the same idea about farmer associations. In our case the disagreements between the regional and local extensionists of EMATER created many problems for the development of our community group and the project too". In practice, however, local extensionists managed to respond to some of the beneficiaries' demands only during the first year, when the situation was more critical. On the whole they acted as EMATER expected of them.

Technical Assistance

The demands created by the project were well beyond the capacity of the local extensionist assigned to the project. He and the social worker were involved in meeting various demands that included the need to build houses and implement farming which was hindered by lack of relief, credit delays and
producers' hardship. Moreover, credit allocation, including needs assessment, preparation of a technical plan, and follow up, took up most of Mr. Lopes' time. As a consequence, he was prevented from providing adequate technical assistance to all farmers. He preferred to assist technically those that took credit from private banks or grew primarily commercial crops that required the use of chemicals and sophisticated machinery. As a result, he provided less assistance to subsistence crop producers, who were the poorest farmers.

Credit demands also prevented the extensionist from preparing a technical assistance plan for all beneficiaries and forced him to assisted them individually. The time he was in the field he spent mainly on the supervision of credit allocation, particularly with the tenant farmers who also borrowed from private banks. These were more rigorous in terms of technical supervision requirements than PROCERA and FINSOCIAL credit. Extensionists held meetings basically during the first year, when they had to inform members about the rules of the project related to cost-sharing and agricultural technology. Only three farmers declared that they systematically received extension advice. Nevertheless, the extensionist's visits helped farmers and most of them admitted having learned some technology from EMATER extensionists.

Extension Methods

Extensionists employed the same type of methods at Nhundiaquara that EMATERs normally used (chapter III). The social worker frequently used group methods during the first year. In general, groups operated only for a limited period in order to develop a demonstration plot such as a vegetable
garden, a tree nursery or to learn specific subject matter such as nutrition and hygiene. In these groups she organized meetings, talks and demonstrations. Mr. Lopes blamed the paper work and the supervision required by credit plans that had to be done individually for carrying out visits.

Mrs. Costa pointed out that there were many difficulties associated with working in groups. These included economic and cultural disparities among project members and the fact that they hardly knew one another, which contributed to the emergence of conflicts, which frustrated her efforts to organize community groups. According to the local extensionists, they encouraged farmers to participate in discussions, express their ideas freely in meetings and visits, exchange information with their colleagues, as encouraging the women to take part in project activities. However, these aims were largely frustrated by the difficulties in organizing permanent groups and by the extensionists' controlling role, which inhibited producers.

Technology Transfer - Enforcing the technology package

EMATER's programme for the project was no different from its ordinary programmes for other communities (chapter III). It aimed at increasing production and productivity by means of using modern agricultural inputs such as chemical fertilizers, improved seeds and tractors. The main difference consisted of the need to make the plots self-sustainable after five years (EMATER, August 1987). EMATER also determined the type of crops each farm should cultivate based on technical criteria related to the size of each plot and soil conditions. The technology in terms of seeds, fertilizers, equipment and machinery was also
planned by EMATER. The regional officers prohibited from cultivating crops or using any technology other than that stated in EMATER's programme. In some cases, EMATER required farmers to sign a declaration stating that it was not liable for any failure arising from cultivating another crop and using a different input than the one prescribed. Lack of financial resources and the small number of extensionists to attend the demands for technical assistance caused EMATER to largely fail in enforcing its technology package. As Mr. Lopes stated, "nowadays (after four years) EMATER has little control over producers' farming". Eventually, farmers were able to use their experience and knowledge as a result of hardship. Not surprisingly, the majority (80%) admitted to using their own technology. Opportunities for learning with their colleagues however were rare, as meetings were infrequent and groups were not active, which is considered below in more detail.

V.4 - MEMBERS' ORGANIZATION

MLSC - Instrument of government control

The Municipal Land Settlement Commission (MLSC) was set up according to the rules of the agrarian reform programme (PNRA) (see diagram V.1). It was in charge of selecting project members and controlling the implementation of the project. The members of the MLSC were the representatives of INCRA, Secretary of Agriculture, EMATER, ITCF, Banco do Brasil, Banco do Estado do Paraná, the president of the rural workers trade union of Antonina, the President of the local landowner's trade union and the Mayor of Morretes. Decisions at the MLSC were in general reached through voting. However, not every member had
the right to vote. INCRA and state government representatives voted on all issues concerning the project whereas the other members were in general only consulted. The size of plots was decided by the ITCF and EMATER alone, and credit allocation was decided only by EMATER. INCRA decided on the selection of producers but EMATER influenced this process as it was the institution that knew most about potential project members, particularly the local extensionists. EMATER extensionists from the central and regional offices made the decisions concerning both the budget and the agricultural plan of the project.

Diagram V.I - GOVERNMENT CONTROL MECHANISM AND GROUP ORGANIZATION

Municipal Land Settlement Commission (MLSC)

Members
- INCRA
- SEAB
- EMATER
- ITCF
- Banco do Brasil
- Banco do Estado do Paraná
- President of the Rural Workers Trade Union
- President of the Local Landowners’ Trade Union

Influence
- EMATER Local Extensionist
- ITCF Technician
- President of the local rural workers trade union

NHUNDIAQUARA ASSOCIATION
(41 Families)

TERRA TOMBADA ASSOCIATION
(22 Families)

COMUNITY GROUP
(14 Families)
The authority of the president of the rural workers trade union, Mr. Belizário, at the MLSC was mainly a result of performance in the negotiations that gave rise to the project, which made him the main link between producers and the government. It helped to persuade producers to accept the credit rules and the project plan. He was also supportive in the decision to substitute eleven families which ITCF and EMATER technicians had classified as poor performers, and helped them to find substitutes. The role of the local council and the rural trade union of Morretes was mainly co-operative, and according to the opinion of EMATER's extensionists and project members, they had little influence on the project. Furthermore, the local mayor was a member of a different political party to that of the state government, which contributed to his marginalisation in the main decisions related to the project. The mayor also obstructed ITCF's attempt to include local representatives of the state government's political party in the commission.

Representatives of the project members only took part in meetings of the commission through their presidents, after the associations had been created. Both EMATER extensionists and project members' saw their role as being mainly that of facilitating communication from the MLSC to project members. They were introduced onto the commission a year after it had started, when the main decisions had already been made. These included the selection of project members, the substitution of the eleven families, size and location of farms, agricultural programme for the project, and the form of distribution of the initial funding for the project, and the manner in which credit would be distributed. Producers' representatives were only able
to make the farmers' needs for funding and resources known to the government.

PROHORTA - Outsiders without force

EMATER intended that Nhundiaquara beneficiaries should operate with the local association PROHORTA, which was supported by EMATER and the Secretary of Agriculture and had around 350 members. It helped its members to sell their produce, basically vegetables, in the state market (CEASA), in Curitiba. The vegetable market was largely controlled by the middleman, and those without the means of transporting their produce to this market were exploited. PROHORTA was also expected to provide fertilizers and seeds at better prices. In practice however, beneficiaries did not operate with PROHORTA. Its costs were too high for them and they were a minority not able to influence its administration. In addition they were seen as opportunists because they wanted to be benefited by PROHORTA but did not help to set it up. As a result, most producers (90%) were left to sell their produce to the middleman, which meant losing up to 40% of its value. They also had to take all the risks, which included obtaining their unsold produce. Only the better off members (10%), who had means of transporting their produce were able to sell it directly in the Curitiba market.

Community Group - Farmer control and sustainability

The community group was the first producer initiative for organizing themselves in a different manner from that proposed by EMATER's plan (see diagram V.1). It was created three months after the project started and was encouraged mainly by the
extensionists assisting the project. According to Mr. Lopes, "the organisation of a community group aimed mainly at enabling the poorer farmers to begin their farming activities in the project by sharing equipment, working together and allowing them to negotiate with the government".

The group was set up under the leadership of three project members and motivated by EMATER extensionists assisting the project, Mr. Lopes and Mrs. Costa. According to Mr. Lopes, these were farmers with potential for exerting some leadership in the project, and were receptive to the idea of working in a group. However, the idea was not discussed in depth, and the group was set up with only fourteen families. The main activity consisted of a collective vegetable garden. They shared the equipment they had, and bought new tools, seeds and fertilizers jointly. They also negotiated successfully for seeds and pesticides with the state Secretary of Agriculture. Women participated fairly actively, taking part in meetings and discussing all topics alongside men, especially in the development of the vegetable garden.

The whole enterprise was successful and the first harvest was sufficient to cover all production costs. It enabled families that had no means of farming their plots individually to produce food for their subsistence. Furthermore, their organization, performance and contacts with authorities to demand assistance attracted the attention of the media and government officials. They succeeded in making INCRA remove the remaining cattle in the area that damaged their field by using the influence of this group. They had failed in their earlier complaints to INCRA. It also helped them to establish links with the landless movement and the Church land commission.
Overriding Producers' Initiative

The extensionists intended to use this experience as the basis for the organization of all project members. However, the community group initiative created profound disagreement on the part of both the trade union representatives and EMATER's regional officers. According to Mr. Belizário, the president of the trade union, it consisted of a hostile operation with the aim of overriding his own leadership. He believed that the initiative was organized by a technician who lacked knowledge of the culture and the traditions of the region. Furthermore, he characterized the enterprise as being stimulated from outside, and in his own words: "driven by an ideology that restrained the freedom and self-determination of the project members".

EMATER's regional officers also repudiated the extensionists' efforts to promote the community group, mainly on the basis that it was not part of EMATER's plans. According to Rogério, "the regional officers' main concern was the original project plan and the fear of being blamed for any failure in the project". Therefore, he was not prepared to take any risks, especially with an enterprise such as the community group that would contribute to disregarding project rules. The fact that the local extensionists, Rogério and Marinalda, supported the community group initiative motivated EMATER's regional officers to place them under tight control. In particular, Mr. Lopes, who was more involved in the enterprise and was subjected to written disciplinary action for attempting to continue assisting the community group. According to him, the reason for EMATER's regional extensionists rejecting the innovations proposed by local extensionists and being obsessed
with EMATER's programme targets was their concern with their position in the EMATER hierarchy, as well as the fact that they were detached from the daily life of the communities, mainly that of poorer farmers.

The community group came to an end around eight months after it started. The local extensionist, Mr. Lissa, pointed out that it was precipitated by the absence of the extensionist, as he was on sick leave at the time. He also observed, however, that it was caused mainly by the negative influence of the trade union representatives and their followers. They persuaded members that it would only make matters worse as EMATER bosses and the president of the trade union disagreed with the initiative. He also recognized the fragile organization of the group caused primarily by lack of information about group organization as one important contributing factor in its collapse. Although the initiative was short-lived, some experiences of that group related to the technology they used, such as using indigenous (cheap) seeds and less chemicals were adopted by other members of the project. Former members of the community group often worked together by sharing equipment and farming together to maximize their labour.

Nhundiaquara Association - Control from above

The Nhundiaquara rural association was created almost a year after the project was established, and based on primarily PNRA rules (see diagram V.1). According to ITCF local agronomist Margit Hauer, the main objective of the association was to facilitate project implementation. Therefore, it was expected to facilitate the distribution of financial aid,
organize agricultural production and marketing, and encourage communication between the government and project members. It was not hoped to establish any other links with the outside world, apart from operating with the PROHORTA association. All producers were enrolled as members of the association.

The idea of an association was well received by the local extensionist Mr. Lopes, who saw it as an opportunity to revive the idea of the community group. He encouraged the former leaders of the community group to take the lead for creating it. However, the president of the rural workers trade union, Mr. Belizário, was sceptical in relation to the initiative. He used arguments similar to the ones he used in relation to the community group, that "it would create conflicts as the trade union was already representing beneficiaries on the MLSC". The regional bosses of EMATER and ITCF, however, agreed with the idea of the association, as it was part of PNRA rules and would facilitate project implementation. They persuaded the president of the trade union to back the enterprise. A campaign was carried out by two candidates for president. A leader of the former community group was candidate for president backed by the two extensionists that assisted Nhundiaquara, as well as a follower of Mr. Belizário, backed by himself and EMATER bosses. Mr. Belizário's friend was elected president of the association and this caused a division between the "winners" and the "losers".

Despite the election campaign, there was little chance of preparing the enterprise. Moreover, it was largely controlled by ITCF and EMATER technicians. They admitted that too few opportunities were created to allow project members to discuss the idea of the association and enable them to properly
understand its objectives and the manner in which it would operate. They also agreed with producers' view that it was largely manipulated by the regional officers of EMATER and ITCF. Producers had no opportunity to decide about its creation. According to the extensionist Sérgio Lissa, the idea was immature and was a result of a top-down process in which farmers had no opportunity to discuss it adequately. He also pointed out that the government wrote about the existence of the Nhundiaquara association in a newspaper before it had actually been set up. In the general assembly for the creation of the rural association, the farmers' role constituted basically of donating their votes, since it was presided and documented by the regional officer of EMATER. Women were not considered members of the association, and had no right to vote, as each plot or family could have only one vote. This fact reflected farmers' perceptions, who often referred to it as the ITCF or EMATER association. In practice, the association allowed beneficiaries to participate in the commission through its president, and facilitated the reduction of costs, while allowing producers to purchase and use equipment and machinery collectively.

**Terra Tombada Association - Farmers' initiative that failed**

The animosity between "winners and losers" increased after the Nhundiaquara association began to operate (see diagram V.1). The latter were not satisfied because its officials kept all decisions to themselves and passed little information about it to the members. Despite their attempts to persuade administrators to clarify their doubts, they refused to respond. A group of 22 members withdrew from the
Nhundiaquara association as a result, and created another rural association called Terra Tombada. This was facilitated by the encouragement of the extensionists, the leaders of the Landless Movement (MST) and the credit provided by the Paraná's Development Bank (BADEP). The leaders of the MST that had contacts with some producers opposed the role that the Nhundiaquara association played and encouraged beneficiaries to create an association with the aim of promoting their influence on project affairs. Local extensionists once more saw an opportunity to build a group under the control of the farmers.

*Terra tombada* had the same status as the other association. It had access to a bank loan to acquire a tractor and equipment. Its members and officials unlike the other association's, intended to participate actively in the decisions concerning its administration and wanted to be well informed, to be more efficient, more accountable to its members, and also defend their interests on the MLSC. The women, however, were excluded from the association and not expected to play any role, despite participating actively in the productive activities. Furthermore, producers established no links with any farmer organization or movement.

Producers had high hopes of gaining some influence in the project. However, they were hindered by their lack of managerial skills and income. The association got into serious debt and became bankrupt. According to some of its former members and the local extensionist, and its latest president, Mr. Edson, it failed to administer operational costs properly while producers were unable to pay the loan instalments for the tractor, which was returned to its former owner. It was no longer able to offer any service and became an economic burden.
to its members rather than a source of support. Its members and directors became discouraged and discredited, and eventually its president withdrew from the Nhundiaquara project. The association continued to exist but was not active. It served however, as an instrument for its members to obtain some benefits and services from the government. They obtained subsidised diesel fuel to fix roads with their tractor, forced the local extensionists to assist them, and obtained materials that helped them to build houses and pigsties.

Lack of Opportunities to Meet

According to local extensionists, meetings were insufficient for them to get to know each other sufficiently to be motivated to engage in enterprises jointly. Farmers complained about the lack of opportunities for members to discuss their difficulties or learn about government plans for the project. As one member, Aelson Roberto Rodrigues, pointed out, "we have been too isolated from each other, and meetings are rare. They tend to occur only when our sponsors want something from us".

Meetings occurred in the project basically when arranged by the MLSC, the association officials and the EMATER extensionists. Meetings set up by the MLSC occurred mainly during the first year. On these occasions, farmers were informed about implementation rules and they informed the government about their situation. Farmers tended to participate in all of them, since there was great anxiety about the resources the government could make available. According to local extensionists and leaders, these meetings were not scheduled, and were motivated by urgent problems. In contrast,
the community group created solid opportunities for producers to meet, debate their problems and suggest alternative solutions. It also promoted producers' critical awareness, as they were able to consider their situation and the flaws of the government concerning inappropriate delivery of benefits. Unfortunately, the community group involved only fourteen families. Extensionists and farmers indicated that meetings promoted by the association were the second most important opportunity for a large group of farmers to meet. They were more frequent during the campaign to elect their directors, and for organizing their services. Apparently, the Terra Tombada association statute was the issue most thoroughly discussed by its members.

The meetings promoted by EMATER were concerned mainly with the subject matter of the extension programme, such as agricultural technology and nutrition or credit rules. The meetings promoted by farmers occurred basically for the organization of the 'community group', and the creation of the Terra Tombada association. These were organized by leaders along with extensionists, who pointed out that it was difficult to motivate farmers to participate in meetings. Meetings of neighbours's became the most frequent type on the project as the others declined over time. According to producers, talking with their neighbours about the project was common but was insufficient to integrate project members into a larger group. Farmers were not active in the trade union despite becoming members. Affiliation was practically compulsory, since the president was organizing the list of applicants for the project. In general, the trade union did not organize meetings, while its administration was centralized by its president and a
few officials. Beneficiaries were not engaged in political party activities either. The church was the only organization where they participated more frequently but its activities were not related to the project. Their membership in the local association, PROHORTA, did not signify their participation in its activities, especially as it was of no use to them.

V. EMATER-PR

The Empresa de Assistência Técnica e Extensão Rural do Paraná (EMATER-Pr) is the official extension service of the state of Paraná. It was established in 1956 by the ETA project, shortly before ABCAR was set up, as the Associação de Crédito e Assistência do Paraná (ACARPA). It started operating in the South region of Paraná, with five local offices and one central office. Subsequently, other local and regional offices were created in the North and South-west regions. By the late 1950s, when Paraná's agriculture began to expand, ACARPA already constituted a service with significant coverage, with 18 local and four regional offices, which were situated in the main agricultural regions of the state at that time (ACARPA, 1982; EMBRATER, 1978). It began with twenty one extensionists, two-thirds of them agronomists and one-third social workers. In the early 1960s, its extensionists had increased in number to 68, and the proportion of these professionals was maintained. The number of local offices had increased to twenty-four, and regional offices to six. The greatest growth of ACARPA's personnel and physical structure coincided with the emergence of EMBRATER in 1975 (chapter III), when modernization policies were enforced (chapter I and III). At that stage, ACARPA was renamed to EMATER-Pr (ACARPA, 1981, 1982).
By the late 1970s, EMATER's personnel had increased to 2,000. At that time, there were over 600 extensionists working in the field in nearly two hundred local offices. Only around 20% of them were social workers. There were 18 regional offices, and 200 extensionists working in the local regional and central offices. At that point, EMATER was operating literally in every municipality of Paraná. In Paraná, the tendency in the official extension organization towards centralization was no different from that in the national agricultural extension system. Therefore, as it expanded it became hierarchical and centralized. Moreover, its goals and programmes were decided by EMBRATER, and these were supervised by EMATER's specialists and managers located in its central and regional offices (ACARPA, 1982).

EMATER's objectives and programmes were no different from those of ABCAR and EMBRATER. During the ABCAR period, its objective consisted of 'improving the living conditions of farmers and their families through increasing agricultural production', while its programmes also emphasized education, health and nutrition. It stressed community development and promoted the organization of farmer and women's groups and youth clubs, as the basis for the introduction of new agricultural technology. In the early 1960s, when the agricultural modernization policies began to be implemented (chapter I), it became more oriented towards the transfer of new technology. As a consequence, EMATER emphasized the use of rural credit as an instrument for persuading farmers to adopt chemical fertilizers and pesticides, improved seeds, and tractors, whilst rural co-operatives were encouraged as the principal means of farmer organization. It considered no work
integrated with trade unions or farmers' political organizations and movements (ACARPA, 1980; EMBRATER, 1978). EMATER was important for the state of Paraná to develop and modernize its agriculture. As in other states, it favoured commercial and export crops, as well as larger and more capitalized farmers who were able to obtain credit. During the 1980s, although EMBRATER's Small Farmers Programme targeted poor farmers, these comprised less than 10% of its clientele (ACARPA /EMATER-Pr, 1985).

The democratization process that started in the late 1970s, and brought about policies in favour of landless and small farmers (as seen in Chapter I), had a significant impact on EMATER. In 1982, an opposition party (PMDB) took office through direct elections, which meant changes for EMATER in terms of its administration and programmes. It was forced to favour demands from the field and to operate alongside small farmer organizations, instead of simply implementing programmes designed in its head office or by EMBRATER. EMATER also became more open to the involvement of the state government and its various departments, as well as of politicians at local, regional and state levels, which at that time helped to diminish the influence of EMBRATER and decentralize EMATER's administration.

At that time, EMATER adopted the so-called "New Mission". This involved a survey that included over 1,000 community leaders, 100 trade union and CEB leaders and 60 authorities (politicians and government officials). Its extensionists also promoted debate about EMATER's objectives and roles with producers. Its objectives and programmes were redesigned as a result (ACARPA /EMATER-Pr, 1985). This included greater
commitment by EMATER to rural families with regard to their technical, political, socio-economic and cultural development. It also advocated promoting "education, participation, and protection of the environment" (ACARPA /EMATER-PR, 1985, p.03). Its objectives incorporated concepts of 'distribution of land and income, as well as raising awareness and farmer participation and the use of appropriate technology. EMATER supported the organization of farmers in groups, trade unions and political parties and encouraged taking action with the aim of demanding that the government and politicians attend to the needs of the poor.

EMATER linked up with the state research service (IAPAR), and openly advocated a research methodology that would allow extension and research to take into account the know-how of farmers, and a technology more appropriate to small farmers needs that could reduce their dependency on modern agricultural inputs. It also supported extension work in agrarian reform projects. EMATER engaged both in an intense campaign to diminish the use of pesticides and herbicides, and in a programme to introduce new form of soil protection, a major problem in the state. It advocated supporting small associations instead of large rural cooperatives, and working with trade unions, and mass movements, such as the MST (ACARPA /EMATER - Pr, 1985).

The new phase did not last long, however. After three years in office (1985), the PMDB's policies changed in favour of more conservative values which rejected agrarian reform. This process was mirrored at federal level, which adversely affected EMBRATER's policies in favour of poorer farmers and the National Agrarian Reform Plan (PNRA).
Agriculture Secretary resigned and, as a result, EMATER's directors were changed, which resulted in EMATER centralizing its administration and emphasising programmes designed by the Secretary of Agriculture. The more traditional type of extension administration was strengthened. Extensionists retaliated and over 100 of them were made redundant as a result. Many returned to their positions after resorting to legal action on the basis that they had been the victims of political repression. Nevertheless, EMATER's objectives and programmes returned to the traditional approach of the 1970s. It continued to assist land settlement projects because it was required to do so by the National Agrarian Reform Plan (PNRA).

V.6 - CONCLUSION

This chapter has suggested the Nhundiaquara project started within the National Agrarian Reform Plan (PNRA) and the negotiations of the local trade union with the government, which counted only with a circumstantial participation of the landless farmers movement (MASTEL). Project members were landless farmers selected by the local trade union's president and EMATER field extensionists. The EMATER plan determined the project design including the size of plots, type of crops, animals, equipment and machinery. Nhundiaquara was benefited by official credit but it was insufficient and often delayed. Only half of the farmers were able to take out bank loans and around one-third received credit and material from the regional and local governments to build houses and wells and purchase seeds and equipment.
Families used the existing structures of health services and education and only a few had no access to roads and had their plots frequently flooded or part of them permanently saturated with water. All families but one obtained houses which were fairly equipped but 20% took water from streams and 10% obtained no access to electricity. Half of the producers were better off due to their previous situation and planting commercial crops whereas the others confronted hardship and lacked equipment, seeds and fertilizers.

EMATER was not familiar with assisting agrarian reform projects or landless farmers. Its field extensionists were committed to beneficiaries' needs and stood for their interests but EMATER hierarchy forced them to follow the original plan. They were not sufficient to assist all members and focused on agricultural technology and bureaucratic work, and assisted women only on gardening and home economics. Around 90% of the members were exploited by the middleman. They set up two associations which only took out bank loans to purchase machinery and one of them went bankrupt. Fourteen families created a community group that helped them to work together, negotiate with authorities and obtain benefits but it only lasted eight months.
CHAPTER VI

PARTICIPATION I: PROJECT EFFICIENCY, COST-SHARING, INFORMATION-SHARING, CONSULTATION AND EXTENSIONISTS

This chapter as well as chapters VII and VIII examines the participation of beneficiaries in the Vitória da União and Nhundiaquara Land Settlement Projects. It is based on the theoretical framework presented in chapter II and considers three major dimensions of participation: objectives, intensities and instruments. The accomplishment of these dimensions is verified in each project and the two projects compared. It draws on the information provided in chapters IV and V, and the survey data. This chapter looks into the objectives of participation: project efficiency and cost-sharing; the intensities: information-sharing and consultation; and the instrument: extensionists.

VI.1. - PROJECT EFFICIENCY

Examination of project efficiency considers the opportunities created for beneficiaries to learn, in particular about the project design, planning and implementation. It also includes beneficiary cooperation and commitment to project implementation and the manner in which this was encouraged. It involves their contribution to reducing operational costs and increasing incomes, as well as the opportunities created for improving their livelihoods, and of the population living in the project vicinity. The contribution of various groups to

1 See the field work questionnaire in Appendix II
this process are analysed. The pre-project period during the land occupation and the encampment is also considered.

VI.1.1 - LEARNING OPPORTUNITIES

Early Opportunities

The opportunities created for beneficiaries to learn were considerably different in each project. Differences were apparent even before the projects were created. At Vitória, producers' learning started over a year before the land occupation, mainly in meetings at the municipal commissions. It continued during the land occupation and especially in the encampment, where producers stayed for around a year. This was motivated by the need to negotiate with the government, remain in the land, survive in the encampment and persuade the authorities to create Vitória. This was promoted by their participation in debates and negotiations and in the activities of the eleven task commissions, the central commission and the general assembly.

The issues producers dealt with in these opportunities were related to raising their awareness about their circumstances and alternative solutions, designing strategies for conquering the project and working in groups. The main topics were the following: the reasons for their poverty, economic and political alternatives for overcoming their hardship (such as obtaining land and farming), notions about agrarian reform, strategies for mobilizing and negotiating with government, organizing groups, and how to deal with the media. Most of these issues were not related to the actual project,
but they provided beneficiaries with a vision of the potential of the project and the manner it could be implemented.

It was in the encampment that they conceived their own idealized project design. However, unlike what might have been expected, the farmers' agenda did not stress agricultural issues or economic alternatives at that time. They concentrated their attention on convincing the authorities to set up the project and, thus, it led them to focus primarily on their action and on organizational issues. At Nhundiaquara the scenario was rather different since, the period that preceded its inception hardly contributed to farmers' learning at all. Beneficiaries were not involved in any relevant activity and no other opportunity was created for them to learn about project design or implementation.

The MLSC - Promoting learning

The Municipal Land Settlement Commission (MLSC), which was as an instrument to control and coordinate project implementation, also promoted learning opportunities. It was the main source of information for producers at Vitória and Nhundiaquara to learn about official project design, plan and rules. However, the process was different in each project. At Nhundiaquara during the first three months, the meetings of the MLSC were the only means beneficiaries had to learn about the prerequisites for staying in the project. It included the type and amount of farming they should do, credit entitlement and repayment rules and how their performance would be monitored. After this period, the EMATER extensionists, were the main promoters of producers' learning. They helped beneficiaries to get to know more about the credit distribution and repayment
system, the manner they should develop their plots, the type of agricultural technology, crops, animals, inputs and machinery they should use. The participation of the president of their associations in the MLSC promoted no relevant learning opportunities for them.

At Vitória da União the MLSC created different learning opportunities. Farmers did not take part in this commission but their leaders of their own central commission, who helped them to learn about government organizations policies and about the results of their negotiations with government officials, by acting as facilitators and as a source of information. The size of plots, credit rules, infrastructure of schools and health facilities, type of crops, inputs and animals, group organization and the manner their performance would be monitored were issues in question.

Producer Groups

The learning opportunities created during project implementation were considerably different in each project. At Vitória da União, beneficiary learning was chiefly promoted by their participation in the community groups (13), associations 12 and central association. This allowed women as well as men to learn about project implementation and how to operate in groups. All these groups were involved in negotiations with the government on a variety of issues such as provision of credit and services. In addition, community groups and associations were actively involved in organizing, discussing, researching and experimenting with new technologies and economic alternatives. These included indigenous seeds, non-tillage cultivation, commercial crops, corn and erva-mate processing,
charcoal production, and timber exploitation, although these activities formed no part of EMATER's project plan. As the farmer-to-farmer approach advocates, the discussions and meetings that the leaders of these groups promoted were important for them to pass on to their colleagues what they had learned with ASSESOAAR extensionists and their peers.

Operating with the association helped farmers learn about marketing, in terms of selling their produce and purchasing inputs, and to establish links with other associations and like-minded organizations and movements. Groups excelled on promoting learning opportunities among peers and the majority (75%) confirmed their learning with their associates was important. This did not allow producers to learn sufficiently about timber mill machinery, how to harmonize trade union and party politics with their more tangible needs and avoid crooked leaders. By contrast, at Nhundiaquara the association named after the project did not favour its members' learning. It started without members understanding its purpose, its meetings were rare and the administration involved chiefly officials. The Terra Tombada association was important for allowing its members (29) to learn about the bureaucratic requirements for creating an association, taking out bank loans and how to work in groups. It did not help them to learn sufficiently about management since it went bankrupt for lack of management. The community group did stimulate learning opportunities amongst its members (16), allowing them to learn with their neighbours as well as with the extensionists. Both EMATER extensionists were actively involved in the development of the community group, especially in terms of teaching producers about agricultural technology, how to operate in groups and how to
negotiate with government and authorities. This was not sufficient to enable them to maintain the group operational without the support of EMATER extensionists.

**Extensionists and Methods**

In both projects, extensionists and extension methods contributed to creating learning opportunities. At Nhundiaquara, EMATER extensionists were the main source of learning about agricultural technology and credit allocation and repayment rules. They promoted meetings and collective enterprises such as, the vegetable garden, tree nursery and community group which consisted of learning opportunities about agricultural technology and group organization mainly for men. They also promoted the workshops on nutrition, health and home economics which allowed women to learn. Extensionists also involved some beneficiaries, mainly men, in negotiations with the government bureaucracy, which helped them to learn how to make their voices heard. However, these initiatives were very limited, involved only a small group, and took place only during the first year.

At Vitória ASSESOAR and EMATER extensionists created far more chances for beneficiary learning and most of them relied on the experience of their leaders as well as on the outcome of their group activities. Especially ASSESOAR extensionists stressed group methods and promoted group meetings, discussions, negotiations, experimentation and demonstration plots, community groups, task groups and economic enterprises. These extensionists stimulated leaders to play the role of facilitators, because they believed producers could help them assist beneficiaries. This attitude contributed to both men and
women learning about farming technology, group organization, processing and marketing skills, and strategies for negotiating with authorities and mobilizing. In addition, enabled them to learn about various economic alternatives, such as the corn mill, as well as charcoal and erva-mate tea production. Moreover, extensionists encouraged farmers to learn about using mass media such as talking on radio and TV programme, and to newspaper reporters.

VI.1.2 - COOPERATION AND COMMITMENT

Before the Project and the MLSC

Before Vitória started various factors demonstrated producers' commitment and also encouraged their cooperation. The meetings of the municipal commissions helped clarify their common goal, to acquire land. The land occupation put at risk their own lives, and the subsequent encampment meant a long and hard struggle with government and authorities and landowners, which allowed them to elaborate their own project plan. They were determined and keen to participate in all types of activities to provide them with the means to subsist and persuade the population and authorities to support their cause. Moreover, beneficiaries were aware they had to promote agrarian reform and create Vitória. Their links and the solidarity of their leaders with various like-minded movements and bodies helped them feel that they had a responsibility with a larger group. Before Nhundiaquara started, producers had no chance to cooperate but volunteering to take part in the project. The participation of Nhundiaquara beneficiary representatives in the MLSC, and the role it played was useful for promoting their
cooperation with project implementation. The MLSC was in charge of supervising their performance and had the power to determine whether they would stay in the project or be eligible to receive financial and material help, or services from the federal, state and local governments, or even leave the project. Their fear of being expelled from the project was stressed by their leaders, who shared the view that only those who could perform according to the project plan should continue in the project. At Vitória, the participation of producers' leaders on the MLSC encouraged their cooperation and commitment. This was due not only to the desire for land, benefits, and to the fear of exclusion. They also perceived that their participation on the commission ensured that most of the project design they elaborated during the encampment was incorporated by the institutions in charge of the project. The fact they could implement 'their own' project plan was an important incentive for them to cooperate with its implementation.

Groups, Extensionists and Extension Methods

Groups were important for encouraging producer collaboration and commitment at Vitória. Farmers saw groups as their own enterprise, as an instrument for gaining benefits, and as a means of contributing positively to agrarian reform. The central commission enabled them to negotiate with the MLSC and to ensure that their interests were taken into account. The associations and community groups enabled them to obtain credit. Mainly ASSESOR extensionists' extension methods encouraged farmer cooperation and commitment. They favoured group methods, especially discussions, experimentation,
economic enterprises, taking divert action and negotiations. Extensionists also stimulated farmers to share their knowledge with their colleagues, which made them feel they were taking part in the implementation process. Beneficiaries also saw the methods extensionists employed as a means of achieving their own goals such as, introducing their own technology, determining credit and establishing links with like-minded organizations and movements.

At Nhundiaquara, the community group which was mainly a production-based initiative, shows that its members were committed to looking for alternative farming methods and to sort out difficulties, similar to what producers did at Vitória, stimulated by ASSESOAR. They drew the attention of the authorities to their hardship, lack of inputs and INCRA's cattle damaging their fields. The associations were also a result of producers' desire to expand association benefits and increase incomes and did facilitate cooperation by enabling members to share a tractor and equipment. However, these initiatives but one association were short-lived. EMATER extensionists facilitated cooperation of the members by keeping them informed about the planning and rules of the project and by supporting their initiative in organizing the community group and the Terra Tombada association. However, the results were jeopardized by the disagreement of EMATER regional and central officers.

Willingness and Barriers

Vitória producers provided significant evidence of their commitment to the project. They organized and operated groups and planted crops by using their experience, and sharing what
they knew with their colleagues, with the aim of increasing incomes, despite these being part of their own plan or EMATER's, and moreover, in the face of enormous difficulties with credit availability, technical assistance, poor soil fertility and climatic complications. They also participated in various movements and organizations and elections campaigns by putting forward project members as candidates. Their eagerness to contact and negotiate with authorities at local, regional and national levels to get help to implement the project was also notable.

Nhundiaquara beneficiaries also showed that they were willing to implement their plots and overcome difficulties. They made significant efforts to cultivate the crops prescribed by EMATER and to organize two rural associations (although one went bankrupt), a collective tree nursery, and a community group, despite EMATER's opposition. They even tried, although unsuccessfully, to market their produce through the local rural association, as EMATER prescribed.

However, various factors jeopardized producers' cooperation and commitment. The insufficient number of extensionists and moreover, the excessive demands of credit bureaucratic work involving EMATER extensionists hampered the provision of technical assistance. This was a more serious problem at Nhundiaquara because group initiatives were poorer and EMATER restricted beneficiaries' plan to use their experience and to pass it on to their colleagues, thus, producers were left without assistance. Economic hardship at Vitória, caused around three-quarters of the project members to abandon their original plan, drawn by promises of funding. At Nhundiaquara it prevented beneficiaries from working together.
On both projects hardship forced beneficiaries to deviate from both their plan or EMATER's. At Nhundiaquara producers were forced to deal with the intermediaries which jeopardized their incomes and discouraged them from expanding production. On the whole however, at Vitória producers had considerable more chances to cooperate with project implementation largely due to their group initiatives. The cooperation of Nhundiaquara members were mainly hindered by them working individually and their hardship.

VI.1.3 - REDUCING COSTS AND INVESTMENTS

Groups' Excelling on Contributions

The Nhundiaquara's community group contributed to reducing investments and running costs for its members. It enabled them to farm collectively instead of working individually on their own plots. This maximized their labour and prevented them from hiring labour during peak periods. Furthermore, it enabled them to share the costs of tools, equipment and expensive machinery, like the micro-tractor with its corresponding plough and drill. However, this was only for eight months and 16 families. The associations also helped members to share the costs of a tractor and tools but one went bankrupt.

At Vitória producers introduced their views into project design which promoted cost reductions through the same strategy as that adopted at Nhundiaquara\(^2\). The community groups allowed producers to set up collective fields and keep animals jointly,

\(^2\) The contribution of groups to economic results is further considered in the section on project effectiveness.
which allowed them to share equipment, barns, pigsties and their labour. The associations enabled their members to purchase equipment and corn (7) and timber (3) mills. They also helped farmers to operate in regional markets, instead of only locally, which enabled them to pay around 30% less for farming inputs. The price reports of the Agricultural Secretary of Paraná indicated that agricultural inputs cost from 20% to 40% more in the local compared with regional markets. The extensionists and extension methods also contributed to cost reductions since they encouraged these enterprises in both projects, although ASSES incorporating extensionists contributed more than E.M.A.T.E.R.'s, especially because they encouraged producers to help themselves, such as passing on information to their colleagues and organising group activities.

Various factors contributed, however, to increasing operational costs. At Nhundiaquara, farmers took out credit to buy tractors and equipment individually, which were largely under-utilized. One farmer had one equipment to wash ginger production which would have served at least five producers that planted the same crop. The 20 barns could also have been utilized by most producers if they had belonged to the associations. The debts of the tractor of the Terra Tombada association that was returned to its former owner also increased the costs of its members. At Vitória, the associations' timber mill that never operated because it was out of order and the corn mill that was snatched by the association leader added to the costs of their members.
VI.1.4 - NEW OPPORTUNITIES

Both projects created important opportunities for their members and the local population. They improved the livelihood of their members and reducing landlessness in their respective regions. In addition, project members became relatively better off compared with their former situation. They obtained housing, education, health, leisure, social status and income (which is further analysed in project effectiveness and empowerment). Beneficiaries had to work on their plots, which meant that the projects created jobs. In addition the producers' actions and the community groups and associations' activities allowed beneficiaries to play the role of extensionists. The economic alternatives, especially the collective ones, served to increase incomes.

Some beneficiaries became small entrepreneurs at Nhundiaquara by selling tropical fruits, which were abundant on their plots, and their byproducts, alongside the highway to Curitiba during the summer. Others had an extra income from craft work made out of material from their plots. One project member managed to establish a shop where he sold fruit and home-made fruit byproducts. The economic results of his small business were far better than those from farming, and looking after it kept four people busy: his wife and two daughters, as well as himself, and they still looked after their farm. At Vitória, the corn and timber mills created part-time jobs for around 20 beneficiaries. They were paid a percentage of the total produce processed and marketed. Around 50% of beneficiaries also became producers of charcoal and erva-mate tea. The production of vegetables at Nhundiaquara increased the
demand for temporary workers, as it required extra labour during peak periods.

Vitória catalysed the introduction of social services such as schools, health facilities, roads, public transport and electricity in the project area, which created both temporary and permanent jobs, particularly for teachers and bus drivers. Nhundiaquara caused no significant impact in this respect for it used existing facilities. The projects increased the number of farms in the municipalities, which intensified the use of the non-cultivated land, and increased agricultural production. The impact upon the local economy was obvious, although the project area and total production were relatively small, considering the total number of farms and the farm land available.

It increased the demand for goods such as equipment, machinery, agricultural inputs, material to build houses, TV sets, fridges, cookers, food staples and clothing, which boosted local business and created new jobs. Local entrepreneurs themselves highlighted the impact on their profits, especially in Mangueirinha. Vitória also increased the supply of various products, such as milk, cheese, meat, pork, and their byproducts to the local population. Only at Vitória was there project involvement in local politics. Certainly, agrarian reform and local democracy gained from this process because producers' opinions about the need for the poor to take part in economic development and political activities spread in the municipality, mainly during the election campaigns.

Four years after Vitória was incepted, the beneficiaries of land settlement projects in Mangueirinha, totalled around a thousand families.
VI.2 - COST-SHARING

This section looks into the ways in which producers coped with cost-sharing. It examines the funding provided, cost-recovery requirements, the type of farmer contribution, and the means extension services used to make beneficiaries understand and agree with cost-sharing. The obstacles producers faced in following cost-sharing rules, the manner in which they tried to remove them, the monitoring system employed by donors, and the criteria for action in default cases are also considered.

Funding and Farmer Contribution

Beneficiaries of both projects received PROCERA and FINSOCIAL credits which were subsidised. Only Nhundiaquara beneficiaries received aid to build their houses. This included INCRA credit for 41 families, timber from the local council to 25 families and bricks to build the foundations from LBA. Also 52 families received aid from SESB to purchase water pumps, protect wells and build sewage system. Only at Nhundiaquara farmers could count on credit from private banks. Fourteen former tenant farmers took out credit in the first year and another 11 farmers in the second year.

Credit for installing electricity supplies were provided to both Vitória and Nhundiaquara. The associations also obtained credit on both projects. At Nhundiaquara, they took loans for purchasing two tractors with tools and at Vitória for seven corn mills and three timber mills. At Vitória 42 farmers took out loans from ASSESOAR's revolving fund to set up charcoal ovens. Both projects received some food supply, seeds for planting subsistence crops and tools from the local council
or state and federal government in the first year. Only at Nhundiaquara some farmers, the better off, were required to repay these items.

More beneficiaries had difficulties in coping with cost-sharing rules at Nhundiaquara. Around 40% of them were in arrears on their credit instalments, two years after repayments should have started. This percentage would have been greater if the eleven families that were excluded from the project had also been considered, as they could not repay their loans. This situation was mainly a result of producers not being able to implement their activities adequately. At Vitória, only 30% were in arrears and none was excluded from the project, which in part was a result of the credit the associations obtained. The reasons for this performance at Nhundiaquara and Vitória are looked into, in more detail, when the other objectives of participation are examined below.

Understanding and Agreeing

Beneficiaries on both projects understood well that they were required to comply with cost-sharing rules but this was dealt with differently in each project. At Nhundiaquara producers beneficiaries had no say in relation to this topic and were simply informed about it at two meetings organized by the Municipal Land Settlement Commission (MLSC). At Vitória, in contrast, they had the chance to discuss the issue thoroughly. First, at the encampment they discussed funding and cost-sharing with government representatives through the central commission, and among themselves at the camp's general assembly. Later, after the inception of Vitória, leaders could discuss it with the members of the MLSC, which was then debated
in the associations and community groups along with extensionists.

In practice, farmers of both projects had no option but to comply with the cost-sharing rules in order to stay in the project. They were in great need of financial help, and attached greater importance to taking out credit than the problem of repayment or the idea that they were entitled to free support. At Nhundiaquara, they were easily persuaded to simply accept the rules as they learned that this was the only way to take part in the project. At Vitória, various other factors contributed to producers accepting the idea. The context of the agrarian reform was one of them. Obtaining land to farm was a great achievement in itself for landless farmers, especially for Vitória, which was the first land settlement project officially approved by the government in Paraná. The PNRA had just been launched and the landless considered it a significant political gain. However, their negotiations with government and authorities were important since these talks revealed the difficulties involved in obtaining further benefits from the government and therefore, the need for them to contribute to project costs.

Barriers

At both Vitória and Nhundiaquara members faced various barriers in complying with cost-sharing, but they were more prejudicial at Vitória. Moreover, initially Vitória beneficiaries faced difficulties to gain access to benefits and services to which they were entitled due to the government's lack of experience, in view of the fact that the PNRA had just been launched. Their situation was made even more difficult
when the state government denied them subsidised credit from ordinary programmes for approximately two years. In general both projects had insufficient financial support, which prevented beneficiaries from acquiring adequate agricultural equipment and inputs and building up the necessary infrastructure. This was particularly harmful to Vitória producers, however, as it initially had less infrastructure and resources than Nhundiaquara and was situated far away from service facilities. Delays in credit delivery was a problem on both projects, preventing beneficiaries from acquiring equipment and agricultural inputs and equipment on time. At Nhundiaquara, however, 15 farmers had implemented their farming before the project started.

Floods at Nhundiaquara damaged crops in 10 plots and prevented up to 15 families from transporting their produce at various times, which caused them to lose produce and income. Climatic problems were more serious at Vitória, however, where producers lost literally all their crops during the first two years as a result of drought or frost exacerbating farmers economic hardships.

The credit distribution criteria and problems with association and community groups were more harmful to cost-sharing at Nhundiaquara. Around 30% of its members did not receive all the credit to which they were entitled, due to the criteria adopted by the EMATER extensionist. At Vitória credit distribution was not a problem. The fact that the Terra Tombada association at Nhundiaquara lost the only tractor it owned caused indebtedness to nearly 30% of members, and the collapse of the community group jeopardized the ability of 14 families to farm. The two associations at Vitória (Planalto and Nova
that had problems with outdated machinery and a dishonest leader who stole a corn mill, only jeopardized the capacity of 11 families to follow cost-sharing.

Monitoring

Repayment of PROCERA and FINSOCIAL credits was controlled by the MLSC. According to PNRA rules, the BANCO do BRASIL, INCRA and BADEP were in charge of controlling credit repayments. EMATER extensionists monitored credit use and default cases. In practice, however, extensionists and farmers' representatives shared this responsibility with members of the MLSC and, in particular, with the funding organizations. Leaders at Vitória also monitored repayment schedules and negotiated with these organizations to extend it in default cases. Farmers convinced them that giving beneficiaries time to farm would enable them to overcome hardships and comply with cost-sharing requirements. Probably for this reason, no clear criteria were defined to deal with loan default at Vitória, and both farmers and extensionists did not expect the government to take any action at all in such cases.

As for Nhundiaquara, the president of the trade union collaborated with the government to identify the families with 'bad performance' and agreed to remove 11 families for not being able to repay any of the loans they had taken out. As far as EMATER and banks were concerned, they simply followed PROCERA rules and stuck to the repayment schedule without taking into account the reasons for failing to meet their obligations. Farmers had to meet their credit repayment instalments despite their difficulties with farming.
VI.3 - INFORMATION-SHARING

The mechanisms that extension services used to promote information-sharing, such as the Municipal Land Settlement Commission (MLSC), producers' groups, extensionists and extension methods are examined in this section. The type of information that donors and extension passed on to producers and which they shared with their peers, as well as extensionists communication processes and the objectives are considered.

Before the Projects' Inception

In the case of Vitória da União, mechanisms of information-sharing were created at least a year before the land occupation. Producers received information in the municipalities in which beneficiaries lived in meetings of the municipal commissions of the landless. These were provided by ASSESOAR extensionists along with leaders of the landless movement (MST) and the church land commission (CPT). During the land occupation, these commissions amalgamated into one single group which was important for leaders and farmers to exchange information among themselves and with authorities. Later, in the encampment, information-sharing was further intensified through various mechanisms, namely the general assembly, central commission, task commissions, ASSESOAR extensionists and leaders of like-minded organizations, mainly of the MST and CPT. This allowed producers, their leaders, and extensionists to exchange information and ideas frequently, particularly during meetings, mobilizations and negotiations. It kept producers as well as ASSESOAR extensionists and leaders of
other organizations and movements well informed about the results of their negotiations and the encampment activities.

The type of information that they shared at the municipal commissions included notions about the unfair distribution of landownership in the country and the possibilities for farmers to change that situation and obtain some land to farm. ASSESCAR also provided them with information about alternative designs for a land settlement project related to group organization and collective use of land. During the encampment, the issues that farmers dealt with was mainly about strategies for acquiring land and benefits, the manner they would get organized and implement the project. It comprised information that could help them in their negotiations such as data about the disadvantages of unproductive latifundia, the importance of small farming in the economy, the situation of landless farmers and costs and potential production of agrarian reform projects.

They also focused on topics related to the project such as types of groups, and ideas about the collective use of land, and how they could control the project. These ideas were drawn largely from ASSESCAR's work, their negotiations and mobilizations and the views of the participating organizations. They also kept updated information about the results of their mobilizations and negotiations and the progress of the agrarian reform movement in the region and countrywide. Information about agricultural technology was hardly considered.

In the case of Nhundiaquara, before its inception, information-sharing consisted basically of the president of the local trade union informing producers about the bureaucratic requirements for project membership eligibility criteria, such as being a landless farmer, married, and a member of the local
Representatives of the landless movement involved in recruiting the landless had little chance to provide them with any relevant information about agrarian reform or group organization. Producers were left out of the negotiations with the government which were monopolized by the president of the trade union.

At the MLSC

The MLSC was the government's mechanism for informing beneficiaries about project design and implementation, through their leaders and EMATER extensionists. However, the type of information passed on to beneficiaries differed considerably in each project. At Nhundiaquara, leaders took the one-way communication strategy. That is, they simply informed producers about the rules to be followed and did not take their demands to the commission. At Vitória, the leaders used a two-way communication strategy by exchanging information with project members and government officials alike. They informed the government's representatives at the MLSC about producers' interests and needs, which had been agreed in community groups' and at association meetings. They informed producers about the official credit policy, the government project plan concerning agriculture and group organization.

At Beneficiary Groups

Beneficiaries' groups were an important mechanism for promoting information-sharing in both projects. However, groups were considerably more effective at Vitória, where community groups and associations challenged EMATER's rule that farmer groups should only facilitate the downward flow of information
from government and extensionists to producers. The various associations and community groups promoted information-sharing particularly among beneficiaries, including men and women, which was considerably intense during the first year. They consisted of fora for debating all issues related to project design and implementation, including the role of extensionists and strategies for dealing with external bodies, economic alternatives, agricultural production and community life in general. They also enabled producers to exchange information, mainly through their leaders, with leaders of the MST and CPT and authorities.

In contrast, at Nhundiaquara associations simply informed producers (primarily men) about project design and rules related to project implementation, that included type of agricultural technology and inputs, credit allocation and repayment rules. The members of Terra Tombada association could talk about the problem of monopolizing the association administration and the need to allow members to participate. The community group was the exception, as it facilitated beneficiaries, including men and women, to exchange information among themselves. The main topics were how to obtain official support, implement farming collectively and operate in groups autonomously. It also allowed its members to exchange information with government officials, authorities and outside organizations such as the MST. However, this was insufficient to convert the small contribution of groups in information-sharing.
Promoted by Extensionists

At Vitória, extensionists were more effective than at Nhundiaquara. They facilitated the information flow both from agency to farmer and among farmers, encouraged communication with other organizations and made women feel free to exchange ideas. At Nhundiaquara extensionists neglected the information exchange among peers and only promoted communication with the government. At Vitória, extensionists employed meetings rather than visits and ASSESOAR extensionists encouraged producers to debate, even about their advise. The experimental fields ASSESOAR extensionists set up, despite being discontinued were helpful in that they encouraged producers to exchange information about farming, especially in terms of performance of indigenous seeds of beans and corn. At Nhundiaquara, extensionists preferred individual contacts and debate was quite limited since the rare meetings they promoted were simply aimed to pass information to farmers. They were in favour of farmers expressing their ideas yet they enforced a rigid control on producers' performance under the EMATER plan, which discouraged producers from exchanging ideas.

ASSESOAR extensionists at Vitória dealt with a large range of subjects which included environmental and economic drawbacks of modern technology, advantages of indigenous crops, natural fertilizers and soil protection techniques. They also suggested group organization and strategies for negotiating with authorities. These were addressed to both men and women. At Nhundiaquara they were primarily concerned with informing beneficiaries about regulations and the agricultural technology that EMATER prescribed, which was based on expensive machinery and chemicals. These were addressed to men and women were only
informed about home administration, hygiene, cooking techniques, craft work and gardening.

VI.4 - CONSULTATION

This section examines the mechanisms donors and extension services used to consult beneficiaries, especially groups, the MLSC, extensionists and extension methods. The issues producers were consulted about and its impact on diminishing conflict between the latter and beneficiaries are considered.

Before the Projects' Inception

As with the information-sharing process, the members of Vitória were consulted before the project was created. During preparations for the land occupation, farmers were consulted by ASSESOAR extensionists and leaders of the agrarian reform movement, both during their visits and in meetings of the municipal commissions. Such consultation related to their views about their situation, the agrarian reform movement, and especially their willingness to participate in the struggle for land. During the land occupation, leaders consulted producers permanently as they had to organize and negotiate with authorities.

In the encampment, consultation was facilitated by the general assembly, the central commission and, to a lesser degree, the task commissions. The central commission was the mechanism ASSESOAR used most to consult beneficiaries and their leaders. These enabled producers to be consulted frequently about setting up the encampment, and the ways in which they could make a living and continue their struggle until the
project was set up. Producers also could make suggestions about the objectives and the tasks of the commissions such as education, security, negotiation, income generation, cooking and the provision of food supply. In addition, ASSESAROAR listened to farmers' ideas about both the design and implementation of the project, which included suggestions about crops, inputs, equipment, and machinery, and group and community organization. At this stage, dialogue was non-existent with the government and EMATER. In the case of Nhundiaquara, farmers were not consulted at all before the project was established.

During Project Implementation

When Vitoria da União was started consulting producers was not on either the government's nor EMATER's agenda. However, farmer mobilizations and negotiations forced the government to listen to their ideas and interests. The actual forum that permitted government officials to listen to beneficiaries was the MLSC. The producers' central commission was the mechanism that enabled farmers to have their ideas heard on the MLSC through their leaders. The main topics they were consulted about were related to the size of the plots, the geographical distribution of the families in the project area, the type of crops, and the allocation of credit. This helped to promote consensus between the government representatives and producers mainly about plot size, land ownership system and group organization. The MLSC at Nhundiaquara was not involved in consulting farmers at all.

At Vitoria, the community groups, associations and central commission were important mechanisms for consulting
farmers about all issues related to project design and implementation. These included group organization, agricultural technology, economic activities, marketing of their produce and farming inputs, and their priorities. This helped to diminish conflicts between producers and extensionists, especially EMATER's, in terms of allocating credit, type of crops, machinery, inputs, economic activities and working through groups.

At Nhundiaquara, the associations were not used as a mechanism for consulting farmers. The association created on the producers' initiative allowed members to make suggestions about its administration but went bankrupt. The community group, which was an initiative of beneficiaries, enabled extensionists to consult farmers about various aspects of project design and implementation. It included the type of crops, inputs, machinery, the use of their labour, and market in which sell their produce. It also allowed producers to be consulted about their ideas for the project as a whole, in terms of having more effective technical assistance, equal credit distribution, and more solid group organization. Lack of consultation at Nhundiaquara favoured disagreements between producers and extensionists, especially in relation to credit allocations for each family. No significant confrontation occurred but it generated widespread disillusion among beneficiaries.

As with information-sharing, extension methods such as meetings, visits and demonstration fields constituted instruments of farmer consultation particularly at Vitória. There, 91% of farmers suggested that extensionists always allowed discussions during meetings and visits, whereas only
around 65% of Nundiaquara's beneficiaries indicated this. Moreover, 72% of Vitória's beneficiaries believed extensionists always considered their opinions, compared to only around 52% in Nundiaquara. The limited consultation at Nundiaquara constrained producers' motivation and satisfaction, despite the fact that circumstances often allowed producers to conduct matters their own way.

VI.5 - EXTENSIONISTS

This section examines the characteristics of extensionists in terms of their ability to promote farmer participation. It considers their backgrounds, the roles they played and their commitment to producers' needs.

Background

The extensionists who worked at Vitória, particularly ASSESOAR's, had more in common with beneficiaries than those at Nundiaquara. As seen in chapter IV, the Vitória da União Project was assisted by eight extensionists from ASSESOAR and six of them had social science backgrounds, which allowed them to be familiar with the situation of the landless. The other two extensionists had agricultural origins but they assisted only the experiments of beans and corn. All but one were raised in the countryside and their parents were small farmers. All of them saw themselves as political activists in favour of agrarian reform and the rural poor. This allowed them to better

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4 The impact of extensionists in the other dimensions of participation is considered when they are analysed.
understand the situation of small farmers. Their background and ideas also were in tune with ASSESOAR's goals. The two EMATER extensionists only had an agricultural background and were raised in the city but they had also been political activists in their college days when they engaged in the struggle for agrarian reform. This was an important reason for beneficiaries inviting them to work in the project.

At Nhundiaquara, only one extensionist, Mrs. Costa, had social service origins and the other three had agricultural backgrounds. All of them were raised in the countryside and their parents were small farmers. They worked with all types of farmers, including small producers. However, only Mr. Lopes, who was transferred from Vitória and worked full time at Nhundiaquara, had been a political activist. Except for him, their backgrounds fitted the EMATER's tradition, which was concerned with assisting all types of farmers, and had not previously been involved in agrarian reform projects.

Role and Commitment

The fact that the extensionists were willing to work at Vitória and Nhundiaquara was sufficient to show that they had some commitment to beneficiaries and to agrarian reform. Both projects were very demanding and working on land settlement projects would be unusual for someone who was not concerned with these issues. This was particularly so in the case of Vitória, which was remote, lacked infrastructure, including housing for extensionists, and faced considerable government opposition. Nevertheless, ASSESOAR extensionists demonstrated that they were significantly more committed to producers and worked more in tune with their demands than did EMATER's,
especially those at Nhundiaquara. ASSESOAR extensionists supported the organization of the landless movement in the region, raised beneficiaries' awareness of their situation and about agrarian reform, and encouraged them to take action.

They played an important role in the organization of the municipal commissions of the landless which prepared producers for the land invasion. They helped negotiations with government authorities during the land occupation and at the encampment. They were at the centre of the organization of the encampment, especially in relation to the organization of groups. During project implementation, they spent most of their time supporting the organization of community groups, associations and the central commission, and assisting producers in lobbying and negotiating with government officials and politicians. They helped producers to develop links and collaborate with like-minded organizations. They also searched for and provided beneficiaries with economic alternatives, such as the revolving fund, the charcoal ovens and mills, which increased producers' incomes.

In part, the role played by ASSESOAR extensionists forced EMATER extensionists to deviate from the official role that they were expected to play. They agreed with the group organization that farmers and ASSESOAR extensionists proposed jointly and allocated and monitored credit according to the choices made by producers' associations and the central commission, which were different of EMATER extensionists. In addition, they allowed them to use different technologies from those set out in the EMATER plan. EMATER extensionists also taught producers about how the government bureaucracy worked and allowed them to profit from their links with authorities.
and government officials which facilitated them to obtain resources. Furthermore, extensionists actively cooperated with producers to assist them in lobbying and negotiating with EMATER officers and government officials, despite facing repression by EMATER's hierarchy.

Conversely, EMATER extensionists at Nhundiaquara emphasised the official role that EMATER demanded they play. They spent most of their time formulating credit plans, as well as monitoring credit repayments, and producers' performance in relation to EMATER expectations. They participated actively in the selection of beneficiaries and also in the process of exclusion of the eleven families for 'poor performance'. Nevertheless, they tried to deviate from EMATER's blueprint and attend to producers' needs and interests. Their main endeavour in this direction consisted of supporting the organization of the community group and the Terra Tombada association, and acting as beneficiaries' representatives in negotiations with government officials and authorities.

However, this was hindered by the opposition of EMATER's regional and central officers and forced them to focus on technology transfer and credit allocation and repayment. The other local extensionists who occasionally assisted producers at Nhundiaquara did not show concern for the conditions of Nhundiaquara beneficiaries nor did they help their colleagues working at Nhundiaquara. They were primarily concerned with carrying out their technical assistance programme, as they did in the other communities.

Beneficiaries' opinions confirmed the role that extensionists played in the two projects. Around 75% of Vitória beneficiaries saw extensionists primarily as facilitators of
their actions whereas only 30% of Nhundiaquara held this view about them. Moreover, nearly 50% of farmers at Nhundiaquara saw extensionists mainly as teachers, while only 15% at Vitória's thought so. Around 25% of Nhundiaquara's members perceived extensionists primarily as being controllers or leaders whereas only around 9% of Vitória's perceived them as such. Beneficiaries' views also corroborated the commitment of extensionists. Around 60% of Vitória members believed that extensionists were committed to their interests. At Nhundiaquara it was the opposite, where 60% of beneficiaries felt that extensionists were more committed to the objectives of EMATER.

Extensionists' Openness

A significant number of farmers both at Vitória (90%) and at Nhundiaquara (80%) said they felt free to speak about their ideas, during extension meetings and visits. However, their views about extensionists' willingness to listen to their opinions suggested that they were more open at Vitória, especially within ASSESOAR. At Vitória, over 90% of producers were positive about extensionists always allowing discussions during meetings and visits, whereas only 65% of Nhundiaquara's said so. Likewise, all beneficiaries at Vitória said that extensionists always listen to their opinions while at Nhundiaquara only 51% said so and moreover, around 40% said they only listen sometimes and 10% that they rarely or never listen to their opinions. Around 70% of Vitória members considered that extensionists were prepared to listen as much as to speak while only 50% at Nhundiaquara agreed with this. Around 20% of Vitória beneficiaries said the extensionists
spoke more than they listened, whereas 34% of Nhundiaquara's thought this way. The agenda of extension meetings and visits at Vitória were more open to members' suggestions. The majority (60%) said that farmers suggested the topics of the meetings that the extensionist organised. The opposite happened at Nhundiaquara, as the majority (60%) indicated that it was extensionists who defined the agenda.

VI.6 - CONCLUSION

This chapter has suggested that the objective of project efficiency was better accomplished at Vitória than at Nhundiaquara. Vitória producers had considerably more learning opportunities that involved relevant topics. They also cooperated more with project implementation and created more alternatives to reduce running costs, mainly by using local resources and sharing assets and equipment. Vitória created more new jobs and services as well as strengthening local business and democracy by operating in groups and implementing economic enterprises. The objective of cost-sharing was also better realised at Vitória. There were more opportunities, such as debates and negotiations to facilitate beneficiaries to understand and agree with cost-sharing rules. Also, beneficiaries created more economic enterprises and negotiations with donors helped to overcome obstacles of meeting cost-sharing requirements. Cost-sharing was jeopardized at Nhundiaquara mainly due to lack of economic alternatives and negotiations.

The intensities of information-sharing and consultation were considerably more accomplished at Vitória. Vitória’s
beneficiaries received considerable information about project design and implementation from extensionists and government organizations. Producers were also able to exchange information among peers, especially about their group organization, negotiations and economic alternatives. The main information-sharing mechanisms were community groups, associations and central commission. Producers were consulted through their groups and more often through their leaders at the central commission. This helped build consensus between them and the government. At Nhundiaquara information-sharing was very limited, especially among peers. EMATER extensionists were the main mechanism of information-sharing and producers were informed mainly about credit repayment rules and agricultural technology. Consultation was not promoted at all.

Extensionists encouraged much more beneficiary participation at Vitória. In particular, ASSESOR extensionists were committed and open to producers. They mainly played the role of facilitators and their background had much in common with project members. At Nhundiaquara, EMATER field extensionists were committed to producers and their background had something in common with them, but EMATER forced compliance with its plan, making extensionists act as teachers and controllers.
CHAPTER VII

PARTICIPATION II: DECISION-MAKING, PROJECT EFFECTIVENESS
AND BENEFICIARY GROUPS

VII.1 - DECISION-MAKING

This section examines how producers participated in decision-making. The decisions producers made by themselves or jointly with supporting parties, extensionists and donors related to project design, planning and implementation are considered.

Early Decisions

Members at Vitória began to make decisions related to the project around one year before it was inaugurated. The municipal commissions, the land occupation, and the encampment's general assembly, central commission and task commissions were the main decision-making fora. During that period, each farmer had to make important decisions. These were related to taking part in the landless movement, which implied significant changes in their lives, such as engaging in a struggle that often involved violence and had an uncertain outcome. They took the decision to take part in the land invasion. Their discussions made them aware that it was a uncertain operation which would involve serious risks, such as being prosecuted, arrested and even losing their lives. So did their actions such as direct confrontation with the landowners' private militia, repression by the police and the army, and being surrounded by these forces without having access to food.
or fresh water. It certainly forced each of them to make their own decisions about whether to participate.

It was no different when they had to decide to take part in the encampment in order to continue their struggle for land. This involved taking part in demonstrations, bringing to the surface a serious social problem, and creating an uncomfortable situation for the government. Consequently, it could have brought about repression by the government through various means, which included being crushed by the police force, being morally degraded by starvation and by a media campaign portraying them as outlaws and trouble-makers. Farmers were aware that this had happened before, yet these decisions were motivated by the expectation of obtaining a piece of land, by growing critical awareness about their situation and alternative solutions, collective solidarity and support from other organizations. These factors encouraged them to take their destiny 'in their own hands'.

Beneficiaries also took part in decisions related to the strategy of their struggle. It included the type of group organization, which meant operating through a general assembly, central commission and task groups, and the type of mobilizations, negotiation strategies, and activities that kept them organized and provided them with the means of subsistence. They also took part in decisions concerning project design, including size of plots, credit allocation, type of inputs and technical assistance. Decisions were in general made in groups through open voting, preceded by active discussions and supported by the information provided by leaders and ASSESOR extensionists. ASSESOR extensionists and leaders of supporting organizations had no right to vote. Nevertheless, they
participated actively in meetings, especially in the central commission, along with producers' leaders and general assembly and influenced decision-making. They formed part of the vanguard of the agrarian reform movement and project members trusted them. The scenario of decision-making at Nhundiaquara was quite different. The state government set aside the land for the project and selected beneficiaries. Consequently producers' decisions consisted simply of making up their minds about whether they would enrol in the list of candidates, and then wait for the Agriculture Secretary to summon them.

During Project Implementation

The participation of Vitoria members in decision-making was substantial after project inauguration. It was a process that involved producers themselves, the extensionists, especially ASSESOAR's, and members of the MLSC. The community groups, associations, the central commission and the MLSC consisted of the main decision-making fora. The decisions made in these groups were taken to the MLSC by the leaders of the central commission.

The decisions producers made influenced both project design and implementation. They reduced the average size of plots which allowed the settling of more families than EMATER had anticipated, introduced family and origin criteria to allocate families in communities, allocated more and smaller community health centres and schools, built wood houses, barns and pigsties that were the materials available in the region, according to their resources and custom. They incorporated new objectives into groups, which included preparing their members, both men and women, to mobilize and negotiate with government
and authorities, developing economic enterprises, taking out bank loans and influence project design and implementation. They also introduced the community groups, associations and the central commission which were not part of the EMATER plan.

They allocated credit according to their idealized project design and priorities set by their own groups, which included purchasing dairy cows and planting indigenous seeds, instead of purchasing improved seeds and fertilizers, and investing in soil correction. Around 80% of members mentioned that they changed the technology prescribed by EMATER, and 40% said that this was done jointly with extensionists. They set up economic enterprises, either individually or collectively. These included the charcoal ovens and erva-mate tea processing plants, which were private, and the associations' and community groups' erva-mate fields, dairy cows and corn and timber mills.

They also decided to establish links with other farmer organizations and market their produce through their associations, which involved decisions related to the marketing of their produce and the purchase of inputs in regional markets and operating with other associations. They grew crops according to their experience and tradition, although this was influenced in part by hardship and lack of technical assistance. They prioritised subsistence crop production such as corn, beans, and the use of animal traction, indigenous seeds, and considerably reducing the use of chemicals. They often decided the agenda of extensionists' meetings and visits.

The MLSC made literally all decisions at Nhundiaquara concerning project design and implementation and as a result, project members participated considerably less in decision-making. Nevertheless, as at Vitória, farmers themselves decided
on the type of houses and farm buildings such as pigsties and barns. Most of them also decided to re-allocate credit from farming to meet their subsistence and housing needs, to plant more subsistence crops and use less fertilizers and chemicals than EMATER had planned. Around 90% of Nhundiaquara producers mentioned that they modified the technology that EMATER prescribed. But unlike at Vitória, they decided this individually. They also decided the extensionist's meetings agenda but much less than Vitória members. EMATER extensionists made the decisions concerning credit allocation. They set up an association with similar objectives of Vitória's, which allowed them to take out loans from a private bank and purchase a tractor and equipment.

Moreover, producers started a community group, which permitted them to make decisions related to farming in a group, organizing their labour, purchasing inputs and equipment, setting up a collective tree nursery and negotiation strategies. Most producers decided to operate through the middleman motivated by the high operational costs of the local association (PROHORTA). Also some better off farmers decided to market their produce directly in the capital city Curitiba. Producers with financial means, better knowledge about commercial crops, and influence in the local community, made decisions concerning the purchase of tractors and equipment and taking credit from private banks.
VII.2 - PROJECT EFFECTIVENESS

The examination of project effectiveness looks into the manner in which beneficiary needs were met. The provision of means for producers to meet their basic needs and sustain their livelihoods and wellbeing are considered. Actual project results are compared with the goals set by government at both Vitória and Nhundiaquara projects. The modifications that producers introduced in EMATER's project designs and their impact in terms of meeting their needs are also looked into. The manner in which benefits, services and assets were distributed, the mechanisms implemented to avoid the exploitation of the middleman, and the integration of producers in the local community are also examined.

VII.2.1 - PROVISION OF RESOURCES

This section examines the more tangible results in relation to the infrastructure of farming, such as land, equipment, barns and actual crop and animal production, as well as the situation of housing and use of social services. The situation of producers in the fourth year, in relation to these components, is compared with the goals set by the EMATER plan, and their situation before the project was started. The circumstances both in individual and collective terms are considered.
In the fourth year, neither project had reached the EMATER targets in terms of the area farmed, number of producers cultivating the crops planned, crop production, productivity levels, or crop income. Nevertheless, Vitória had performed better than Nhundiaquara. Vitória beneficiaries were closer to EMATER's target in relation to the farming area. They farmed around 60% of the total area that was planned (842 of 1,398 ha), while members at Nhundiaquara farmed 51% (245 of 479 ha) (table I). Vitória producers also managed to plant considerably more of the main crops that EMATER had planned compared with Nhundiaquara. Subsistence crops (corn, beans and rice) were planned to make up around 80% of the total farming area (table Ia), and all producers would grow them (table IIa). Most producers (91%) did in fact plant these crops (table IIb), comprising around 65% of the area that EMATER had planned and totalling nearly 90% of the total area farmed (table Ia). Less than 40% of the area planned for commercial crops (wheat and soybean) was farmed (table Ia). Only three farmers (3%) planted wheat rather than the 60 (67%) planned, and 46 (52%) planted soybean instead of the intended 60 (67%) (table IIa & IIb). These crops required expensive equipment and inputs. In addition, producers avoided planting wheat because it was vulnerable to frost, which is common in the area.

At Nhundiaquara, both subsistence and commercial crops (vegetables) were meant to comprise around 50% of the crop land. Commercial crops would be planted by 45 farmers (70%), except banana which all members were expected to grow.

1Tables of this section are in Appendix III.
commercially. Nevertheless, only around 53% of the area planned was actually farmed with these crops (table Ib), and by only from 27 to 35 farmers (60% to 78%), and banana by only 20 producers (30%) (tables IIa and IIb). These crops required more expensive equipment, fertilizers and pesticides than subsistence crops. The area cultivated with subsistence crops also reached only 56% of the area planned (table Ib). It was achieved largely as a result of 26 producers (41%) planting beans instead of the planned 10 (15%) (table IIa). They farmed a total of 33 hectares instead of 21, or 1/3 more that was intended (table I). It was an important foodstuff that farmers were used to growing, and relatively cheap to produce compared with vegetables. Only 50% of the producers planned to plant rice and corn actually did so. The area with rice reached 90% of what EMATER had planned but this was due to some farmers planting larger areas. The area cultivated with corn reached only 40% of what was planned (table I). Rice required fertilizers and corn required large areas and there was no tradition of growing corn in the region.

The production of both subsistence and commercial crops was fairly low on both projects, compared with EMATER's targets. The exception was the production of rice at Vitória, which did reach the level planned by EMATER (98%). Wheat production was irrelevant (4%) in relation to the plan, as only three farmers planted it (table III). At Nhundiaquara, the production of beans and rice reached only around 50% of EMATER targets. The number of producers farming beans exceeded EMATER's plan (table IIa), but productivity was low, as seen below. The production of commercial crops, which were supposed to be cultivated by most producers (70%) (table IIb), achieved
only from 20% to 50%. The production of banana and manioc achieved just 10% of the levels expected, despite being local (table III). Most producers who did cultivate it (around 30%), let them grow spontaneously, mainly for their subsistence. Those with the means to purchase fertilizers, pesticides and improved varieties preferred to grow vegetables, which they believed were more profitable.

The productivity of all crops was fairly low on both projects in relation to EMATER targets (table IV). The productivity of corn and rice at Vitória was respectively 66% and 70% of what EMATER expected, whereas at Nhundiaquara it was only 40% and 54% respectively. Vitória producers were more used to planting these crops and the seeds they used were more adequate to the soil conditions than those used by producers at Nhundiaquara. The productivity of beans was similar on both projects, at around 35% of the planned level. At Vitória, it was significantly reduced as a result of frost and drought and at Nhundiaquara, due to lack of fertilizers and appropriate seeds. The productivity of banana and manioc at Nhundiaquara was respectively 62% and 50% of what was expected, for the reasons mentioned above. At Vitória, the productivity of soybean and wheat was respectively 73% and 57% of the EMATER's expectation. Producers who planted them were able to invest in fertilizers and equipment, although they were few. The productivity of commercial crops (vegetables) at Nhundiaquara varied from 55% to 80% of what was expected.

The income from crops on the fifth year confirms the better farming performance of Vitória². The total income from

² The income from farming was estimated based on the farmed area and the productivity levels that producers stated (See Appendix IV, tables III and IV).
crops was 35% of what was planned by EMATER at Vitória and 27% at Nhundiaquara (tables XVIIIa & XVIIIb). The proportion of income from subsistence and commercial crops was close to the plan on both projects. At Vitória, subsistence crops provided 61% of the crop income and the plan was 57%. At Nhundiaquara, it was the opposite: commercial crops provided 89% and the plan was 84%. The total income from crops achieved at Vitória (7,379 points\(^3\)) was around 7% lower than at Nhundiaquara (7,927 points), and it was planned to be 30% lower. The total income from commercial crops (vegetables) at Nhundiaquara was planned to be nearly three times the income of subsistence crops at Vitória. However, commercial crops at Nhundiaquara were only 1.7 times that of Vitória. The low production of banana and manioc, which achieved 8% and 10% of what was expected, considerably reduced the total income from commercial crops at Nhundiaquara (table III). In addition, Vitória farmed more of the area planned, as seen above. Vitória producers had income from other activities namely the charcoal production (42 farmers), timber (18 farmers) and erva-mate tea (15 farmers)\(^4\).

Animal Production

Animal production was planned as an important component at Vitória to complement the income from crops, support beneficiaries' subsistence and help farming activities. Like crop production, it fell short of EMATER's targets (table V). The number of cows, chickens and pigs were respectively 88%, 37% and 54% of what EMATER had planned.

\(^3\) See estimates of income from crops on tables III and IV in Appendix IV.

\(^4\) The incomes producers obtained from these activities were not estimated due to the lack of reliable information, although it was relevant.
number of oxen (128), which was around 80% greater than expected (72) and 13 horses which were not planned at all. These were used as animal traction for farming activities. For this reason producers also kept calves, instead of selling them, although they had many fewer (50) than planned (180). Groups owned 10 cows, 40 pigs and four young oxen (table IX), which were worth around 4% of the total animal herd (table XXI). Animal production at Nhundiaquara was designed primarily to support the producers subsistence. The bulk of farmers' income would come from crop production, and only motor driven machinery was planned. The size of animal herd at Nhundiaquara was quite similar to EMATER's target. The number of cows coincided literally with EMATER's plan, while horses and chickens were respectively 36% and 18% above planned figures, and pigs were only around 50% of what was planned (table V). Groups owned no animals at Nhundiaquara. The value of the total animal herd at Vitória was planned around at five times (36,376 and 7,333 sacks of corn) and was actually four times higher than at Nhundiaquara (24,541 and 6,112 sacks of corn) (tables XIXa and XIXb).

The majority of Vitória producers however possessed the type of animals that EMATER planned: cows (83%), chickens (94%), and pigs (90%). At Nhundiaquara, the majority (70%) of producers had chickens according to the plan, but only a minority had cows (33%) and pigs (40%) (table VI). Members at Vitória also acquired considerably more animals after coming to the project than at Nhundiaquara. The total number of cows increased nearly 3.5 times, chickens more than doubled, pigs increased 1.6 times and all the oxen they had were literally acquired after they came to the project (table VII). At
Nhundiaquara the number of cows and chickens doubled, and producers acquired all their four oxen and 15 horses after the project started (table VII). The value of the animal herd increased 2.6 times at Vitória and 1.9 times at Nhundiaquara (tables XIX a & b). Therefore, despite the Nhundiaquara animal herd being closer to EMATER targets, at Vitória the total animal herd, the number of producers that had animals, and the number of animals acquired after the project was established were considerable greater.

Machinery and Equipment

On both projects farmers had less machinery and equipment than EMATER planned. Vitória farmers, however, obtained considerably more of the equipment that was essential for implementing their farming than at Nhundiaquara. They acquired over 90% of ploughs, sowers, drills and carts that was planned, considering both equipment owned individually and collectively, except sprayers which totalled only 53% (table VIII). At Nhundiaquara, beneficiaries acquired only around 50% of the equipment that was planned (micro-tractors with drills and ploughs). The exception was the number of tractors with their respective drills and ploughs, which were nine times greater than EMATER planned (table X). Their value outclassed both the value of all other implements that existed in the project, and the value of all the implements plus tractors that existed at Vitória (tables XIXa and XIXb).

Vitória associations provided all rice and wheat husker machines that existed in the project, 70% of the corn crushing machines, and 40% of electric motors, among others, which were used for planting, harvesting and processing (table IX). The
value of the equipment and tractors owned by associations and groups totalled 42% of the value of all the items that existed in the project (table XXI). This allowed all producers to gain access to essential equipment for farming. At Nhundiaquara around 50% of producers had no access to all essential equipment for farming (table X). The association had only a tractor with a drill and plough, which meant only 10% of the tractors with implements that existed in the project (table XI), and totalled only 9% of the value of all the items that existed in the project (table XXI).

The total value of equipment and tractors at Nhundiaquara (63,637 sacks of corn) was worth around 2.5 times the value of equipment plus tractors that existed at Vitória (25,679 sacks of corn). The total value of the equipment and tractors that members obtained after Nhundiaquara started (52,535 sacks of corn) was around twice of Vitória (25,125 sacks of corn) (tables XIXa and XIXb). Beneficiaries of Vitória acquired all their equipment after taking part in the project (tables XIV), whereas Nhundiaquara members, particularly the tenant farmers already had equipment and tractors that were worth nearly 20% (11,102 sacks of corn) of the value of all the items that existed in the project (63,637 sacks of corn) (table XIXb). This included around 30% of the mini-tractors, 15% of the sprayers, and 20% of the tractors with drills and ploughs (tables XIIb). Nhundiaquara members also acquired more cars (9) than Vitória (3) after the projects started, which were worth (10,700 sacks of corn) more than four times the value of the those members acquired at Vitória (2,400 sacks of corn) (tables XIXa and XIXb).
Assets and Housing

EMATER planned for all plots to have a pigsty and a barn on both projects but this was not accomplished. All farmers had pigsties in their plots on both projects, which matches EMATER targets although, on the whole, the quality was better at Nhundiaquara. Nhundiaquara also came closer to meeting the target in terms of barns and had a total of 20 barns (32%) while Vitoria had 23 (26%) (table XV). Vitoria reached 100% of the EMATER target for each family to have a house. At Nhundiaquara, one family had no house (table XV). Five farmers at Vitoria and six farmers at Nhundiaquara owned extra houses, where their relatives lived. The houses were, in general, better built at Nhundiaquara. Around 25% of the houses were made out of brick and relatively comfortable. All houses but two had at least four rooms.

At Vitoria, 90% were of timber construction and one-third had fewer than four rooms. Over 70% had bathrooms and toilets on both projects. Vitoria was closer to meeting the planned targets than Nhundiaquara in relation to home appliances (tables XVI and XVII). More families had TV sets (86%) and gas cookers (85%) at Nhundiaquara than at Vitoria (53% and 57%) and more families had radios at Vitoria (88%) than at Nhundiaquara (76%). The average value of home appliances per family at Nhundiaquara (334 sacks of corn) was around 30% greater than at Vitoria (224 sacks of corn) (based on tables XIXa and XIXb). Nhundiaquara was situated near the urban area and thus had no difficulties with TV reception while cooking gas was distributed to the houses. TV reception was poor in most parts at Vitoria, firewood was abundant and they had to carry their own cooking gas cylinders.
The beneficiaries of Vitória managed to build more barns and pigsties and acquire more home appliances and animals than those at Nhundiaquara, after they came to the project. Five members of Nhundiaquara had barns and eleven had pigsties beforehand. At Vitória all barns and pigsties were built after the project was created. Noticeably more families (60%) owned a house before coming to Vitória than at Nhundiaquara (40%), but many of them simply had to leave their houses behind and the members of the latter received credit to build their project houses (table XVI). At Vitória the number of radios increased 1.9 times, TV sets 3.1, fridges 2.6 and gas cookers 1.9. At Nhundiaquara the number of radios increased only 1.1, fridges 1.4, TV sets 2.7 and gas cookers 1.4 (table XVI). The value of home appliances at Vitória increased 2.6 times whereas at Nhundiaquara it was around twice. The value of animal herd increased 2.6 times at Vitória and 1.9 times at Nhundiaquara (table XIXa XIXb).

Social Services and Infrastructure

Vitória experienced more problems in using public services than Nhundiaquara. Two families at Vitória had problems in transporting their produce, since no road reached their plots, and most producers had similar problems when it rained. At least 10% of producers had problems in transporting their produce during wet weather as a result of floods and lack of drainage ditches. Four families at Nhundiaquara had problems in crossing a river to reach the road to Morretes. Nhundiaquara was situated close to public services and its members had no difficulties in using it. At Vitória, gaining access to education and health services was more difficult. The teachers...
at three community schools were women members of the project and three of the six health centres had no doctors allocated. Fifteen children had to travel up to fifteen miles to attend secondary school and 13 families reported having difficulties in being assisted by doctors and get medicine. In addition, nearly 50% of producers had difficulties in obtaining access to public transport due to remoteness and bad road conditions. Nevertheless, all children under 14 years old were going to school and all families managed to receive medical care.

Vitória performed better in terms of obtaining electricity, since literally all families (97%) were connected at Vitória but only 79% at Nhundiaquara. Vitória received more credit than Nhundiaquara for implementing this service. There were no shortages of drinking water on either project. The quality of water, however, was better at Vitória. All families used water from wells or springs whereas around 20% of the families at Nhundiaquara used water from streams and rivers. Considerably more farmers at Vitória (around 70%) were positive about the reduction in illness after coming to the project, compared with Nhundiaquara (around 40%).
VII.2.2 - EQUITY

This section considers the manner in which benefits such as land, credit and assets were distributed among producers, and the impact of the various economic activities on the distribution of wealth among producers.

Land

Land was distributed considerably more equitably among Vitória beneficiaries than at Nhundiaquara. EMATER's final plan defined three different plot sizes for Vitória (20, 25 and 30 ha) according to soil fertility and topography, and the average size would be 25.5 ha. After land was distributed, the average plot area was 25.13 ha, and 60% of the farmers had between 22 and 28 ha, the smallest plot was 15 ha and the largest 36 ha. Farmers and extensionists agreed that the discrepancies in terms of the size of plots should be a consequence of adjustments to the topography and the quality of soil. However, in practice, farmers with larger areas were better off compared with others. They had more resources on their plots, such as timber and firewood for their charcoal production. They also managed to farm more land by using appropriate seeds to overcome the unfavourable soil conditions. This helped to explain why around 20% of farmers indicated that they were not satisfied with the land distribution criteria adopted.

At Nhundiaquara, EMATER's plan stated that the plot sizes of vegetable producers should be 8.47 ha, and subsistence crop producers 14.52 ha, but this did not happen in reality. Around 15% of farmers ended up with less than four hectares and 15% with more than 17 ha. This discrepancy was created when the
project began, mainly because the tenant farmers opposed reducing in size the plots that they were already farming before the project. It became worse after the eleven families were substituted in the project. EMATER and ITCF modified the original size of those plots according to various criteria, which included the land, equipment and financial resources that each new family had and the type of soil and topography of the area. Therefore, it contributed to distorting even further a structure of land distribution criteria that was already unequal. As a result, many of them ended up with insufficient land, while others had more land than they needed. This situation helps to explain why 30% of beneficiaries indicated they were not satisfied with the criteria used to allocate land.

Credit

The majority of beneficiaries at Nhundiaquara (around 60%) were not satisfied with the manner in which credit was distributed. Complaints included insufficient credit, delays in credit delivery, and the hardships that farmers experienced, mainly during the first two years of the project. Nevertheless, the criteria employed for credit distribution contributed significantly to producers' disappointment. According to producers' accounts, around 30% of them received only part of the credit they were entitled to. Mr. Lopes justified the whole situation of credit distribution by saying that it was allocated according to his own perception about the needs of each individual family. However, even the farmers that received credit supported the view that the extensionist favoured some families, including better off ones, while others were
neglected. In addition, 25 farmers obtained credit from private banks, which made credit distribution even more unequal.

The criteria that EMATER extensionists used to distribute credit to the members of Vitória were different and ended up being more equitable. Both farmers and extensionists admitted that all beneficiaries received the credit they were entitled to. The extensionists basically handed over all the credit available to the project to their associations, which distributed it according to the priorities agreed by their members, which is discussed in the section on decision-making. This was decisive in terms of achieving a fairly equitable distribution of credit. Nearly 30% of farmers, however, indicated that they were not satisfied with the way credit was distributed. Not everyone agreed with the priorities that the groups determined. For example, these included allocating credit for purchasing cows instead of growing pasture and acquiring fertilizers and equipment in the first year. Some farmers who held a more individualistic view, were also discontent because credit was used for collective enterprises run by the associations instead of being distributed to each farmer. Insufficient credit and delays in credit delivery also caused anxiety, as it did at Nhundiaquara.

Assets

The situation of housing, buildings, animal herds and equipment, seen in detail in the previous sections, shows that at Nhundiaquara benefits accrued disproportionately to a small group of farmers and jeopardized the majority, who were the

[^5] More information about difficulties with credit distribution at Nhundiaquara is available in the field work methodology in Appendix I.
poorer project beneficiaries. Only 20 farmers (31%) built barns and 16 (25%) had brick houses, and one family had no house (table XV). Most of the animal herd was also possessed by a relative small group, and only 30% owned cows and 40% pigs (table VI). In terms of equipment and machinery the situation was similar. Just seven farmers owned nine tractors with their respective ploughs and drills, which value was worth more than all other equipment that existed in the project (table XIXb). This would have been quite sufficient for all project members, if they could have shared it. Only eight farmers owned an irrigation system and 11 farmers owned cars. Therefore, less than 10% of the members possessed the bulk of all the equipment and machinery on the project. The Nhundiaquara producers' opinions confirm this inequity. Around 70% of were not satisfied with the form in which benefits were distributed. At Vitória, benefits were distributed far more equitably.

As seen also in the previous sections, 95% of houses were of timber construction, while animals and equipment were owned by the majority of farmers. Around 80% of beneficiaries owned cows, 90% kept pigs, and around 90% of farmers had access to the essential equipment needed. The reasons for this are discussed in more detail in the section on capacity-building and empowerment. However, around 40% of Vitória members reported that they were unhappy with the manner in which benefits were distributed. In fact, only 5% of farmers had brick houses, two farmers had large brick barns and three farmers owned cars. Almost 40% of the members had no oxen for traction, nearly 20% had no cows, 50% had no sprayer.
Causes of Economic Imbalances

Various factors contributed to economic imbalances in both projects. At Nhundiaquara, EMATER favoured the better-off farmers (70%) by determining that they should farm vegetables because they already had the means to do so (table IIB). The income from vegetables was planned to make up over 80% of the total income from crops (table XVIIIb). Only around 50% of the members managed to cultivate vegetables, instead of the 70% that was planned, but they enjoyed around 90% of the income from crops. EMATER determined the type of equipment based on producers' initial economic situation. For example, it planned only 24 sprayers instead of 45 to supply all vegetable growers (table X). At Vitória, fewer farmers (52%) managed to plant commercial crops (soybean) than planned (67%) (table IIB) but the income from these crops comprised around 40% of the total crop income (table XVIIIa). The equipment Vitória producers had was more or less what EMATER had planned. Producers took part in different economic activities and the outcome of their collective enterprises was diverse. At Vitória not all farmers produced charcoal, erva-mate tea and timber. The association that lost its corn mill to its president and the association that bought outdated timber mill equipment jeopardized the situation of their members. At Nhundiaquara one family was able to set up a craft shop and some families could reach better markets than others. The association that went bankrupt compromised the situation of its members (41). Producers' previous situation also contributed to enhancing differences among them. This also was the case of encouraging individualism at Nhundiaquara.
Integration in the Community

There were significant negative reactions by the local communities to the members of Nhundiaquara and Vitória da União when they were established. The reasons for this were related mainly to the negative image the population had of the agrarian reform movement, as well as of its members, who were seen as being vandals, opportunists, poor and inefficient farmers. This was more obvious in the case of the Vitória, mainly because the creation of the project was preceded by an intense struggle between the future project beneficiaries, local landowners and the government. The latter promoted substantial propaganda against the landless during the land occupation and the encampment.

In the case of Nhundiaquara, the reaction of the local community was much softer. The project was not preceded by any significant political struggle. On the contrary, the national agrarian reform plan had been launched and the state government intended to cause a good impression both on the local community and on the federal government, by being efficient in project implementation. The tenant farmers, who already lived in the project area were well established and known locally.

Surprisingly, Vitória producers were more integrated in the local community than at Nhundiaquara. Various factors contributed towards ameliorating conflicts both at Mangueirinha community which also occurred at Morretes. The project boosted the local economy when its members purchased agricultural inputs, machinery and food in the local shops, as well as increasing agricultural production, and thus the local council's tax revenue. Producers participated actively in their own communities, in the church, in the political party and the
rural workers trade union, that included running in local
elections with their own candidates. This was also the opinion
of local politicians, trade union leaders and local
entrepreneurs. Moreover, the frail integration of most of
Nhundiaquara beneficiaries, with the community of Morretes, was
largely a result of their difficulties to produce, hardship and
lack of participation in the existing organizations.

Middleman Exploitation

On the whole, Vitória managed to be more effective in
avoiding the middleman. Beneficiaries benefited from the price
guarantee mechanisms for subsistence crops. Also they partially
avoided local intermediaries by selling their produce namely
charcoal, timber and corn flour, and purchasing inputs in
regional markets, through their associations and cooperatives
of other land settlement projects and small farmers. The local
cooperative also was useful mainly for purchasing inputs. At
Nhundiaquara the market for vegetables was considerably
competitive and was largely dominated by the existing
monopolies. The PROHORTA association largely failed to provide
the services that EMATER had planned for Nhundiaquara. The two
farmers' associations were not involved in marketing. The
community group that managed to acquire agricultural inputs in
bulk was short-lived and involved only 16 families.
Consequently, farmers had to struggle individually to buy
inputs and sell their produce. Only the three farmers with vans
managed to avoid at least the local intermediaries, although
they had often to deal with large ones at the Curitiba market.
Some reduced the degree of exploitation by being better
informed about the market, as a result of their own initiative
and knowledge, and were able to negotiate prices much better. However, around 90% became hostages of the local intermediaries thus loosing 40% of their profits.

VII.2.3 - CHANGES AND NEEDS

Changes in project design and implementation were introduced in both projects but they were considerably greater at Vitória. Changes at Vitória were primarily motivated by producers' interventions based on their ideas and plans, whereas at Nhundiaquara they were mainly a result of general circumstances. At Vitória, planning was very flexible and responsive to producers' needs. It allowed producers to introduce family and origin criteria for defining the geographical location of families in the project area, and various community groups and associations and one central commission, which made it easier for farmers to work together. This proved to be very helpful as the analysis has suggested so far, and will be further demonstrated in the following sections.

In addition, producers' hardships, insufficient credit, credit delays, lack of technical assistance and equipment and climatic problems drove beneficiaries to introduce modifications. These included changes in credit allocation, agricultural technology, and the introduction of economic alternatives. Credit was allocated to collective farming and to economic alternatives which EMATER had not planned. As mentioned earlier, over 90% of producers said they changed the technology that EMATER prescribed. They used indigenous seeds that required less fertilizers and no soil correction instead
of improved seeds that were highly demanding of chemicals. They introduced charcoal ovens and the timber and corn mills. All these changes facilitated farming and increased incomes significantly, because they allowed producers to use local resources, reduce costs and use their experience and knowledge, as discussed in project efficiency.

However, some modifications that producers introduced largely failed to achieve their objectives. This included the small community schools and health-care centres scattered over the project area to provide easier access to beneficiaries, instead of the larger and more centralized structures that had been planned. Not all health posts could regularly receive doctors' visits. The number of teachers allocated was insufficient and they could only offer primary level education, which forced the older children to travel a long way to study in Mangueirinha. Credit allocated for the acquisition of cows was also controversial as the lack of appropriate feeding and installations caused many of them to die.

Hardship also encouraged most farmers at Nhundiaquara to use credit for purchasing food, clothing and housing instead of agricultural inputs and equipment, especially during the first year of the project. It was the only way out for them. They were forced to cultivate subsistence crops that required less chemicals than vegetables and the majority. As at Vitória, over 90% of beneficiaries changed the technology that EMATER prescribed. Unlike at Vitória, however, it was not part of a deliberate plan but a consequence of lack of inputs and technical assistance. Farmers were not encouraged to use their knowledge. On the contrary, EMATER's regional officers repressed producers' attempts to alter the project design, and
even forced them to sign a document which obliged them to assume total responsibility for changing the technology that EMATER had prescribed. Therefore, the results were not as successful as at Vitória, as seen above. The changes that producers introduced concerning group organization were productive but short-lived. These included the Terra Tombada association, the community group, the vegetable garden, and a tree nursery.

VII.2.4 - RESULTS AND BENEFICIARY OPINIONS

Project effectiveness was found to be stronger at Vitória in terms of both the provision of resources to beneficiaries and equity among them, related to achievements in terms of farming, access to benefits, instruments and assets, distribution of these components, integration of families in the community and independence from the middleman. Beneficiaries of both projects, however, were fairly satisfied with their living standards. Furthermore, more farmers at Nhundiaquara (90%) were happy in this respect than at Vitória (80%). Nhundiaquara had easier access to social services because it was situated practically within the urban area of Morretes. The quality of housing was better and families had access to more home appliances. In addition, Nhundiaquara beneficiaries had lower expectations in relation to the performance of the project and the benefits they could receive compared with Vitória. It did not require them to make significant effort to take part in the project (as discussed in project efficiency). In addition, the exclusion of the eleven families for poor performance emphasised their weakness in
relation to the government. This contributed many of them assimilating the government's paternalistic attitude and believed that the fact that they were in the project and received benefits that constituted a gift. This led them to overestimate what they had and lessen their ambitions and forget the difficulties with insufficient credit, delays in credit delivery and hardship.

This also helps to explain the fact that almost 90% of farmers at Nhundiaquara felt that the project had fulfilled their aspirations. Only 60% of members at Vitória felt that way. The awareness raising, promoted by ASSESOAR that showed them the solutions they could implement to solve their problems and their commitment to agrarian reform led them to have high expectations in relation to the project. They were frustrated by the demands which government turned down, such as the allocation of teachers, doctors, public transport and credit. Its remoteness, lack of public transport and adequate roads made some families feel cut off from schools, health centres and shopping facilities.

VII.3 - BENEFICIARY GROUPS

This section considers how ASSESOAR and EMATER promoted groups. It considers how they emerged and were organized in terms of number, members, leadership, objectives, the role they played and the links they developed. As with extensionists the contribution of beneficiary groups are considered in the analysis of the other dimensions of participation.
Emergence, Motivation and Members

ASSESOAR and EMATER extensionists promoted groups very differently in each project. ASSESOAR promoted groups before the project started when it created the municipal commissions of the landless along with the supporting organizations. These totalled over 20 and were inspired by the cause of conquering land and the possibility of improving livelihoods. These commissions amalgamated in one large group during the land invasion, which was mainly motivated by the need to resist in the land and negotiate with authorities. At the encampment beneficiaries along with ASSESOAR extensionists set up three types of groups: the task commissions (11), the central commission (coordinating) and the general assembly. These were mainly animated by the need to subsist and persuade authorities to create the Vitória project. Conversely, no groups were set up before Nhundiaquara started.

After Vitória was created, producers along with ASSESOAR extensionists created three types of groups: community groups (13), associations (14) and a central commission. These were a legacy of the previous groups and designed to facilitate implementing the productive activities, marketing produce and purchase inputs, to negotiate benefits and support the agrarian reform movement. The scenario was very different at Nhundiaquara. EMATER field extensionists along with other government organizations and the president of the local trade union created one association motivated by the need to enhance communication and control upon producers. Producers and EMATER extensionists created a community group and another association which intended to sort out their members' farming problems and to negotiate benefits, share equipment and labour.
Group meetings at Vitória initially were very frequent. The municipal commissions used to meet at least once a month. At the encampment the task commissions promoted meetings every day to sort out their obligations. The general assembly had regular meetings, once a week, but during more demanding periods, once or twice a day. Once it was open for two days continuously. The associations and community groups promoted meetings frequently, in general once a month, during the first year. Meetings of the associations reduced drastically afterwards, when producers became more concerned with productive activities instead of negotiations. The community groups, however, continued to promote meetings more or less regularly. They were in charge of organizing community, religious, educational, health services. The central commission also continued to meet. Its motivation was mainly the role the leaders played in the implementation of the project. At Nhundiaquara the MLSC promoted meetings with beneficiaries during the first three months. The Nhundiaquara association promoted meetings only for its inauguration and when credit arrangements were necessary. The Terra Tombada association and the community group promoted more meetings, especially the latter motivated by farming activities.

At Vitória all families were members and participated in groups' activities. The women were active in all groups, including in the central commission, and especially when they involved dairy and gardening activities. The number of members in each group presented no difficulties. It varied from five to

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6The municipal commissions and the encampment general assembly kept record of their meetings. The community groups and associations only kept records during the first year. Later this was quite neglected.
thirty, except the camp's general assembly that all beneficiaries took part. At Nhundiaquara only 41 beneficiaries were members of an association on the fifth year since the other groups were terminated. The women only took part in the community group as in the associations they were not members but the men. The number of members varied 16 to 63 (all members). Certainly a group involving all producers was not helpful, especially considering they were not allowed to discuss about the enterprise.

Roles, Control and Links

At Vitoria, groups played much broader roles compared with groups at Nhundiaquara. The various municipal commissions of the landless were important to prepare producers for engaging in the landless movement, which required courage, determination, awareness and skills. At the encampment, groups enabled producers to get organized, meet their basic needs, negotiate with government and authorities and take actions. After Vitoria was started, groups played the role of facilitating the implementation of farming and other economic activities, producers to work together, to negotiate with government and coordinate project implementation along with the government. At Nhundiaquara, one association played the role of facilitating the government to monitor credit allocation and its members to take out a bank loan and share a tractor. The other association enabled producers to take out a bank loan and share a tractor and failed to fulfil a role its members set, which consisted of facilitating members to participate in its administration. The community group played a broader role, although only for a short period, which consists of allowing
members to work together and negotiate benefits with authorities.

Producers at Vitória were pretty much in control of their groups. They defined their roles, the manner they should operate, elected their leaders such as coordinators, presidents, secretaries, although they were influenced by ASSESOAR extensionists and leaders of like-minded organizations. Their control was facilitated by a coordinating group and producers' determination of taking matters into their own hands from the beginning. However, this did not prevent groups from dispersing when producers confronted hardship and opposition from the landowners and government or loosing the control of one association to its own president. Members of Nhundiaquara had no control of the local PROHORTA association and were totally out of the command of the Nhundiaquara association. They only managed to control the Terra Tombada association and the community group, which were created as a result of their own initiative, although supported by the EMATER field extensionists. However, they did not hold the control of these groups, which contributed to their termination.

As with the features discussed above, groups at Vitória also established considerably more linkages both internally and with external bodies than at Nhundiaquara. From the beginning, the municipal commissions and the encampment task commissions established close links with supporting organizations. After Vitória commenced the community groups, associations and central commission continued to connect with these organizations and intensify their involvement with local ones, namely the union and political party. There were periods,
however, these links weakened. On the other hand, connections with other producer associations and cooperatives as well as with the government increased. Groups at Nhundiaquara were quite disconnected both from one another and from the outside world but the government. The linkages the president of the local union and the members of the community group established with leaders of the MST, and members kept with the PROHORTA were all short-lived.

VII.4 - CONCLUSION

This chapter has indicated that beneficiaries at Vitória participated more in decision-making than at Nhundiaquara. They participated in decisions before the project started, which included the land invasion and encampment, the size of plots, allocation of benefits, group organization, crops, agricultural technology and type of actions. In general they made decisions by themselves and in groups, especially through the central commission, and often under the influence of extensionists. At Nhundiaquara beneficiaries' representatives were introduced in the Municipal Land Settlement Commission after the main decisions concerning project design and implementation had been made. Mainly the better-off beneficiaries made decisions individually concerning their own plots and economic activities in general.

The objective of project effectiveness was accomplished better at Vitória than at Nhundiaquara. At Vitória producers achieved more in relation to the EMATER project plan and gained more access to resources to meet basic needs and sustainable livelihoods. That is, a larger percentage of farmers overcame
remoteness and lack of infrastructure and gained access to essential equipment, credit farming, income, assets and social services. The total crop income was greater and assets (value and quality) were better at Nhundiaquara but at Vitória these were distributed more equitably. Vitória producers also were well integrated in the local community and largely avoided the exploitation of the intermediary whereas, Nhundiaquara beneficiaries were not well integrated and 90% were exploited by the intermediary.

Planning was more flexible at Vitória and responded more to beneficiary needs such as food, education, health services and housing, although some of the changes that producers introduced were unsuccessful. They could set up groups inspired by their goals; these responded to basic needs, especially credit, farming and income, and a variety of other demands that included organizing debate, searching for alternative agricultural technology and economic enterprises, negotiating with government, making decisions, developing links with supporting organizations and marketing. At Nhundiaquara planning was very inflexible and restrained producers' initiatives to overcome hardship, especially in terms of type of crops and agricultural technology, group organization and actions. This jeopardized the situation of half of the members in terms of incomes, farming and housing.

The organization of beneficiary groups was much more encouraged at Vitória. There were more groups (27) with a greater variety of objectives and roles, including supporting actions and economic activities. All beneficiaries (women and men) were affiliated with groups, which established links with like-minded organizations. All groups emerged as a result of
the initiative of producers and their leaders and were supported by the extensionists. At Nhundiaquara the objective of the two associations was simply facilitating producers to purchase machinery and control credit repayment. Producers initiated only one of the associations and one community group. The community group was the only group that supported beneficiaries' actions. Not all members were affiliated to groups and only to the community group had women members. Groups established no links with other organizations.
CHAPTER VIII
PARTICIPATION III: CAPACITY BUILDING, DIRECT ACTION, EMPOWERMENT, MAIN FINDINGS AND MAJOR CONCLUSIONS

VIII.1 - CAPACITY-BUILDING

This section examines the operational and managerial capacities of beneficiaries related to their knowledge of farming and the development of skills. Producers' self-sufficiency is also analysed in relation to farming and the operation of groups and economic enterprises, the representativeness and accountability of their leaders, establishment of links, development of solidarity and mutual trust, and group cohesion.

VIII.1.1 - OPERATIONAL AND MANAGERIAL CAPACITIES

Knowledge of Farming

There were no significant disparities in relation to the backgrounds of beneficiaries at both Vitória and Nhundiaquara. Literally all of them (98%) were farmers or rural workers before the projects commenced. Around 20% were illiterate in both projects. At Vitória, they had on average 4.25 years of formal education and at Nhundiaquara, around three years. Beneficiaries were used to growing the subsistence crops that they cultivated on the projects such as corn, rice and beans, and banana at Nhundiaquara. They were mainly familiar with indigenous farming techniques and inputs, which included native
seeds, hand-held equipment and animal traction. Both groups had lived in the project regions for at least five years, where these crops were traditional among small farmers. Vitória farmers were not quite familiar with the production of soybean, wheat and erva-mate tea, and Nhundiaquara producers were not used to growing vegetables, except former tenant farmers who lived in the project area. Therefore, most producers were not used to the technology these crops normally involved, which included using chemical fertilizers and pesticides, improved seeds and heavy machinery.

Producers received technical assistance from the extensionists on both projects with a similar frequency. Around half (55%) were assisted only occasionally and only a small group (7% at Vitória and 5% at Nhundiaquara) reported that they were regularly assisted. Therefore, a large group (around 40%) on both projects received no technical assistance at all, as there were no other sources of assistance apart from EMATER. However, members of Vitória were fortunate in terms of being able to learn about agricultural technology with their peers. As discussed under project efficiency, the majority (around 75%) of them suggested that their colleagues were an important source of information about agricultural technology. Learning with peers helped beneficiaries to adjust their farming to the resources available such as, soil conditions, lack of fertilizers, pesticides, equipment and funding. Women participated actively in farming activities and contributed with their knowledge especially on the dairy and horticulture activities, which they were generally in charge.

The opportunities for Nhundiaquara beneficiaries to develop their knowledge of farming with their peers were
considerably fewer. Only 30% of them indicated that they learned about agricultural technology with other farmers. As at Vitória, producers confronted difficulties with lack of fertilizers, seeds, equipment and soil, plus the fact that many were not familiar with growing vegetables. Only the community group promoted some opportunity for producers to learn with their colleagues but they grew only subsistence crops. Women could use and develop their knowledge about farming only in the community group where they worked along with men, and in the vegetable garden, where only women took part. However, this involved only fourteen of the total 63 families, and did not last long. The fact that EMATER extensionists enforced EMATER's technological package did not contribute to developing producers' knowledge. On the contrary, it prevented them from using their own knowledge and learning with their peers.

The majority of Vitória members suggested that most of the technology they used (80%) was their own or of their colleagues, compared with around 30% at Nhundiaquara. However, the lack of inputs and financial means, crops that producers were not familiar with and poor soil conditions suggest that producers definitely needed technical assistance on both projects, in addition to their own knowledge. In fact, around 80% of members of Vitória mentioned that their knowledge of farming was insufficient to meet their needs, while only 30% of Nhundiaquara's believed that this was the case. Vitória producers were outspoken about their limited knowledge of farming, their willingness to learn, and discuss their difficulties. ASSESOR extensionists encouraged them to learn with their colleagues, to experiment with new alternatives and to search for appropriate solutions to their situation. At
Nhundiaquara, on the other hand, EMATER inhibited farmers' initiative to experiment and learn with others.

Development of Skills

Beneficiaries at Vitória had considerably more opportunities to develop skills, in particular in terms of operating in groups and taking action. They gained practice during the organization of the land occupation, demonstrations, and taking part in negotiations with authorities. The majority of farmers, men and women, were able to take on various types of responsibility at the encampment, in the eleven task commissions, and in the central commission. This included teaching the children, organizing the provision of food which involved cooking, shopping and distributing food to the families; income raising by building fences and barns, operating machinery, harvesting fruit for large farmers, and dealing with the media and negotiating with authorities. They also took part in trade unions, community religious groups, and political parties, which contributed to the development of coordination and organization skills. These included taking part in discussions, doing clerical work and accounts, and coordinating meetings, negotiations and mobilizations.

After the project was started, farmers took on responsibilities either within community groups or farmer associations, which included organizing and coordinating the actual groups and their meetings, preparing and controlling accounts, doing administrative work, buying inputs and selling produce, representing group members and taking part in negotiations with the authorities. Practically all of them had to perform at least one of these roles in the community groups
and associations. The leaders at the central association were privileged in terms of having opportunities to develop coordination and negotiation skills, as a result of having taken part in the negotiations at the MLSC, and having coordinated the project along with the government representatives. Women participated in these activities alongside the men, including on the central commission, although there were more men playing leading roles.

In contrast, the majority of members at Nhundiaquara had no chance to play any relevant role related to group organization. Leaders were exclusively men who centralized the administration of the Nhundiaquara association. The administration of the Terra Tombada association, which its members intended to be considerably more open to the participation of producers largely failed and it went bankrupt. The 14 families involved in the community group had more chances to develop group organization skills because they were involved in the organization and coordination of meetings, controlled accounts and negotiated with government and authorities.

The enhancement of farmers' operational and managerial abilities by participating in groups is suggested also by producers' own perceptions. Around half of Vitória beneficiaries believed that they were fit to lead their associations and community groups, whereas at Nhundiaquara only 20% though so. Despite active participation in groups at Vitória, only 13 (20%) members considered that they were more prepared to conduct the administration of their associations than their farming. Only 3 producers (5%) suggested the same at Nhundiaquara, which is congruent with the few group activities.
Group Economic Situation

The economic situation of producer groups at Vitória was fairly sound. Only two of the eleven associations faced financial and production problems, and were behind in their credit repayments. The president of the Nova Prata I association prevented members from using the corn mill, and yet they had to pay credit instalments. The Capanema I association, that bought an outdated timber mill had also to cope with its debts. The other associations (9) were operational and were very effective, especially in terms of increasing incomes. At Nhundiaquara, the situation was not so good. The Nhundiaquara the association coped satisfactorily with credit repayments, and the community group left no debts to its members. However, the debts of the Terra Tombada association hit members' economic situation badly.

Credit rules required associations to keep records of their accounts and possessions. Associations kept their accounts pretty well on both projects, comprising a book with hand-written notes but, on the whole, it was reliable. The exception was the association that went bankrupt at Nhundiaquara where account records apparently went missing, although its members argued that it was only a strategy to prevent an investigation by the government or project members. At Vitória, the president of the Nova Prata I association also withheld accounts from members.

Group Meetings

Initially, during the first year, all groups kept careful records of their meetings, especially of the decisions they made and of any elections. As groups became more involved in
productive activities and the extensionists were absorbed in technical assistance and credit allocation these details became secondary and were almost ignored. On the whole however, meetings were much more numerous and frequent at Vitória. During the first year, Vitória associations promoted meetings usually once a month. They could meet weekly though, when decisions about credit allocation and implementation of mills and its administration required this. After that, meetings became more sparse and happened on average every two months.

The decrease in the number of meetings coincided with an increase in difficulties, especially in terms of gaining access to credit. Also producers prioritized productive activities. Less frequent meetings helped to compromise the administration of the associations by discouraging them to participate in their groups' administration and to increase discontent among members.

The central commission however, continued to value meetings and met more regularly than the associations, as the leaders were interested on coordinating the project and negotiating with authorities. Meetings took place at least once a month until the third year of the project. However, after that, the leaders met sporadically because they were unable to respond to the economic problems experienced by producers, such as lack of credit and conflicts with the government. Demobilization of the central commission also demotivated the associations' members to meet. The community groups met considerably more regularly, even during the periods in which official benefits ceased. Meetings were informal and motivated by community activities such as religious events, festivities, sports and school activities and administration.
At Nhundiaquara, the Agriculture Secretary promoted meetings through the MLSC during the first six months. They were motivated in general by specific demands, such as government information on how producers should allocate credit, or purchase equipment and inputs. They took place more or less, once a month but they terminated after the information on operational rules was passed on to producers. The associations promoted meetings mainly when they took out bank loans and organized credit repayment. Community group members met almost every day. This was their channel to implement their farming and deal with difficulties such as lack of credit, seeds, tools, equipment, housing and food supply. Unfortunately it was a brief experience.

VIII.1.2 - SELF-SUFFICIENCY

Dependence
The fact that both Vitória and Nhundiaquara fell short of the goals set in EMATER's plans, especially in terms of crop production, productivity, animal herd and equipment suggests that both projects continued to depend heavily on outside help. Thus, to reduce dependence on official aid, most producers of both projects needed agricultural inputs and equipment, to improve their organization to increase crop production, productivity and incomes. This is confirmed by farmers' perceptions of their situation. The majority of Vitória beneficiaries indicated that they were still dependent on outsiders for financial help (94%), agricultural inputs and technology (90%), political support (80%) and assistance to organize their groups (94%). It was no different at
Nhundiaquara, where the majority suggested that they were also dependent in terms of financial support (94%), agricultural inputs (94%), technology (75%), political support (80%), and assistance for organizing their associations (76%).

Their perceptions about the component upon which they were most dependent confirmed that lack of funding, agricultural inputs (fertilizers, seeds and equipment) and technical assistance were crucial for keeping them dependent on government help. Nearly half of Vitória's and 60% of Nhundiaquara's members suggested that they depended most heavily on outside financial help. A quarter of Vitória producers indicated agricultural inputs and agricultural technology their source of dependence, compared to 20% at Nhundiaquara. Around 10% on both projects mentioned political support as the component they were most dependent on.

Independence

Beneficiaries at Vitória suggested that they were more prepared to sustain their livelihoods without outside support compared with Nhundiaquara. As seen in the discussion on project effectiveness, Vitória producers were closer to EMATER's targets in relation to various components, including farming area, equipment and crops. In addition, the distribution of project benefits at Vitória was more egalitarian than at Nhundiaquara in relation to most components such as plot size, farmed area, income from farming, equipment, credit, animal herds, housing and economic activities. In fact, over 40% of Vitória farmers suggested that they could carry on farming without outside help whereas only 10% of Nhundiaquara's said so. Yet the latter were close to the capital city of
Curitiba, therefore, they could sell practically everything they grew and bred, and also have easy access to tropical fruit, native crops and fish. Beneficiary perceptions about their ability to conduct their associations and groups suggested a similar pattern of dependence on the two projects. Around 40% of Vitória farmers and 13% of Nhundiaquara’s considered that they were prepared to administer the projects without outside help. This was surely a consequence of Vitória having more numerous and active groups, more economic enterprises and assets. Nevertheless, a considerable group, around 60% at Vitória and nearly half at Nhundiaquara considered that they were more prepared to farm independently than to conduct their collective enterprises. This shows that despite Vitória having better developed groups, producers still needed to develop their managerial skills.

Links with Organizations and Groups

The members of Vitória were actively involved with various organizations and movements before and after the project was started, as seen previously. The main ones were the Landless Farmers Movement (MST), the Church Land Commission (CPT), political parties, in particular the workers party (PT) and the small farmers trade union (STR). They operated jointly with these organizations to conquer and implement the project. Producers at Nhundiaquara, in contrast, were only superficially involved with the local rural workers trade union and the MST, which negotiated for them the creation of the project with the government. The affiliation of producers to these organizations was more solid at Vitória.
A large proportion of farmers (72%) at Vitória were already members of community groups before they came to the project while none were at Nhundiaquara. Membership of church groups and political parties at Vitória was considerably greater than at Nhundiaquara. The majority of Vitória farmers were members of church groups (92%), and political parties (56%), whilst at Nhundiaquara it was only 40% and 13% respectively. The affiliation to the trade union was similar in both projects (85% at Vitória and 84% at Nhundiaquara). However, in the latter it was simply a precondition for farmers to be able to enrol in the project, whereas at Vitória it meant a solid relationship, especially during the actions at the camp, and negotiations with government and authorities, until the second year of the project.

The increase in the affiliation of beneficiaries after the inception of Vitória, with political parties, from 12% to 56%, and church groups, from 7% to 92%, confirms that their involvement with these organizations, especially the latter, expanded considerably during project implementation. Their membership of the trade union, which increased from 70% to 85%, shows that they were already linked to it before Vitória was created. Such membership on the part of Nhundiaquara's beneficiaries increased less than at Vitória in relation to church groups (from 28% to 41%), and political parties (from 5% to 13%). The exception was membership of the trade union, where the majority (57%) were already members before the project started, increasing to 84% during project implementation. This did not signify participation in its activities or politics however. Producers were favoured by the president of the trade union to become members when they enroled as project applicants
simply as a mean of legitimizing their plea. Later, the trade union president's closeness with the government persuaded producers to become members.

Producers' participation in the activities of these organizations was consistent with the pattern of membership. Nearly 90% of Vitória members took part in the trade union activities and around 80% of them participated actively in the political parties, which were numerous. Only 65% of Nhundiaquara members participated in the rare trade union meetings, and only 20% had contacts with a political party. The same tendency could be observed in associations and community group activities. All Vitória producers took part in group meetings promoted by the associations, community groups, ASSESOAR and EMATER extensionists compared with less than 40% at Nhundiaquara.

Producers' accounts of the contacts they made with the various organizations confirm the fact that at Nhundiaquara they were closer to the government, especially EMATER, and isolated from other organizations. In contrast, the members of Vitória were in frequent contact with the government and authorities but also closely linked to producer and other organizations. At Vitória, around 90% of members had regular contacts with the trade union compared with 71% at Nhundiaquara. The majority (57%) at Vitória regularly contacted political party leaders, while only 20% did so at Nhundiaquara. There were no significant discrepancies between the two projects in relation to the percentage of beneficiaries that made contact with local council (50% at Vitória and 40% at Nhundiaquara) and regional government officials (73% at Vitória and 94% at Nhundiaquara), although more at Vitória contacted
them. Vitória negotiated more with local council and Nhundiaquara with the Secretary of Agriculture.

According to producers' accounts at Nhundiaquara, government officials were the most frequent contact for the majority (70%), followed by the trade union officials (24%). At Vitória, the trade union official leaders were the most frequent contact for 45% of its members, followed by ASSESOAR (30%) and government officials (20%). Vitória farmers contacted more organizations more frequently, yet nearly 70% of them complained about lack of contact. Only 35% of Nhundiaquara's members complained about this. This reinforces the notion that Vitória producers were more aware of the importance of their links to gain access to benefits and resources. Links weakened significantly after the second year, however, as a result of government oppression.

Leaders' Representativeness

There were two types of leaders at Vitória: (a) six leaders of the project, who emerged during preparations for the land occupation and in the encampment, and continued to represent project members after the project was created, particularly in the central commission; and (b) at least 26 leaders who emerged during project implementation, at community groups and associations. The main leaders of the central commission (one woman and five men) emerged mainly a result of their political ability and their courage in standing up for the landless farmers' rights to gain access to land. They played a leading role both in the organization and the actual

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1 The influence of these organizations on the projects is discussed in the section on empowerment.
land occupation, in the encampment, in negotiations with the government, and at the beginning of project implementation along with the extensionists. This made them being highly representative during the struggle for land and the settling of the families in the project.

This declined considerably during project implementation as other problems emerged. Namely, political problems with the state government, difficulties in obtaining credit, resources and services, climatic problems, lack of equipment and agricultural inputs, and consequently hardship and difficulties in cultivating the land. Nevertheless, they continued to be representative during the implementation of the project, since they succeeded in keeping the central commission operational and the community groups and associations fairly integrated, and representing producers in the MLSC. They also organized the central association during the third year of the project, although its role was controversial. They represented project members in the rural workers trade union, in the local party and the landless movement. One of them was elected president of the local rural workers trade union and another ran for mayor, although he was not elected. Ironically, their political activism contributed to diminish their representativeness since it isolated them from the day-to-day problems of project members.

The 'new' leaders that emerged at Vitória in the community groups and associations (both men and women) gained representativeness over time. They were more in tune with farmers' production problems and, thus, filling the gap left by the initial leaders. They negotiated benefits with government and authorities mainly through their own associations. Two of
these leaders (one a woman) took part in local politics running for local councillor. Furthermore, all leaders were elected by fairly organized groups, which debated, voted decisions, monitored group members and had positive results on negotiations. This contributed to strengthen beneficiary trust.

Vitória producers’ perceptions about their leaders’ representativeness confirms this pattern of leadership. More farmers (43%) believed that the leaders of community groups and associations were highly representative, compared with old leaders (23%). Likewise, more farmers (32%) believed that the representativeness of these older leaders was either weak or non-existent, compared with the new leaders (18%). This suggests also the limited representativeness of leaders at Vitória.

Unlike Vitória, Nhundiaquara had only six leaders and beneficiaries had no chance to get to know them. They represented project members on considerably fewer occasions than at Vitória, at the MLSC meetings and in negotiations by associations to obtain credit. The president of the trade union and president of the Nhundiaquara association, were more representative than those who came to be leaders later at the Terra Tombada association (2) and at the community group (2). Nearly 25% of producers believed that the representativeness of the leaders that emerged first was high. In addition, far more farmers (more than 70%) suggested that the representativeness of the leaders of the community groups and farmer associations was weak or non-existent, compared with the 30% who suggested the same for the former. The Terra Tombada association went bankrupt and the community group was short-lived. The Nhundiaquara association continued to operate and the president
of the trade union was considered by the extensionists of EMATER and government officials.

Leaders' Accountability

Vitória leaders were fairly accountable to producers. They were, in general, determined to help and to facilitate group development and see that beneficiaries had their goals met. Producers were very demanding of their leaders, and their group organization enabled them to monitor and have a considerable degree of control over their leaders' actions. The active struggle and the type of group organization which took place before Vitória began, enabled producers to get to know their colleagues fairly well, become aware of the type of project they wanted, and understand the role their leaders had to play. After the project was created the new leaders emerged mainly as a consequence of group enterprises. Farmers demonstrated with their words and acts to be very rigorous about the criteria for choosing their leaders. They needed to be sure that their leaders shared the same views about agrarian reform and were engaged in the mission of accomplishing it. They also needed to know if he or she could defend their ideals and was aware of the issues to be able to negotiate with the authorities.

Leaders' individualism and lack of accountability became apparent on various occasions, however. This included the president of the association monopolizing the facilities of the association's mill and denying its members the right to use it or to have access to the accounts. The leader, who was elected president of the trade union, was accused of using his leadership position to advance his political career. In
addition, the six leaders of the central commission did not hesitate to centralize information and act as if they were superior to their colleagues.

Nhundiaquara leaders were significantly less accountable to producers than Vitória's. Before it was created, beneficiaries hardly knew each other and had no opportunity to take part in group activities or actions. During project implementation they did not have opportunities to work together. The exception was the community group, but it was insufficient as pondered previously. They were not able to build a common agenda with their leaders. As a result, they had lower expectations of their leaders' performance, and were less able to monitor them. In the fifth year of the project, the leaders were practically absent from any discussion related to the project, either at government level or with project beneficiaries.

The president of the rural workers trade union, was an outsider as far as beneficiaries were concerned. They did not elect him, as mentioned above, and only met him when they were encouraged to enrol as candidates to participate in the project. He was more accountable to the authorities than to beneficiaries. The type of assistance he gave on the removal of the 11 families largely showed this bias. His role as project leader was primarily a result of his links with the official bodies and authorities. The president of the Nhundiaquara association centralized information and restricted members' access to the association's accounts. He acted as if he was accountable only to EMATER, since he was mainly concerned with following its rules. He was nominated by the president of the trade union and supported by members of the MLSC, particularly
EMATER and ITCF. Beneficiaries came to know him during the inception of the association, when they elected a president that he supported.

Initially the leaders of the Terra Tombada association proposed implementing a more open administration, but this was jeopardized when the enterprise went bankrupt. Its president was accused of abandoning it and using the financial resources and political influence to set up his own grocery store. The two leaders of the community group had much more in common with its members. They created and participated actively in its activities with its members, which allowed them to set up common objectives and priorities for negotiating with the government. This included demanding agricultural inputs, food and the removal of cattle from their plots.

Solidarity, Trust and Group Cohesion

Vitória farmers were part of the landless movement (MST), unlike at Nhundiaquara. The process that preceded Vitória, on the municipal commissions, strengthened their convictions and their commitment to agrarian reform. Their actions, notably the land occupation, demonstrations, negotiations, and the democracy they experienced in their organizations at the encampment, contributed to expanding friendship ties and building mutual trust and solidarity both among themselves and with members of like-minded organizations. This was intense when project implementation started, but diminished as farmers got their plot of land, started struggling for benefits and faced political problems. The division of the project into two groups under two different leaders (ASSESOR and the local priest, padre José) confirmed this change.
Nevertheless, the assistance of ASSESAR and the inception of the community groups, associations, and the central commission contributed to maintaining solidarity and mutual trust, consolidating friendship ties and promoting group cohesion, at least among the group considered by this study. The involvement of the community groups and associations in economic enterprises, the credit they took jointly, the marketing and links they developed with other associations were also important. The responsibility of the community groups in relation to the organizations of formal education, religious activities and festivities promoted democracy. It created opportunities for beneficiaries to debate their problems, find jointly solutions and keep the associations active. The coordination that the central commission promoted among the associations and community groups, the negotiations it carried out at the MLSC, and their links with leaders of the MST, CPT and trade unions, were also important for promoting solidarity among producer and other organizations. The intense and relatively successful negotiations of the leaders of the associations, community groups with local and regional government, contributed to strengthening mutual trust and solidarity.

However, solidarity between associations and community groups was affected when the activities of the central commission weakened as a result of economic problems, repression by the government, absorption of leaders of the central commission by the demands of the trade union and party politics. Producers' views corroborates this panorama. A significant group (around 85% of the beneficiaries) suggested that the solidarity and group cohesion in the community groups
and associations were reasonable (from moderate to high). Only a small group, (around 30%), believed that this was the case among project members as a whole.

Nhundiaquara members had much less opportunities to develop trust, solidarity and group cohesion. Although they had common interests, group activities did not exist before the project was created and were fairly weak afterwards. The associations and the community group were largely unsuccessful, particularly in terms of promoting democracy and developing ties among project members. The Nhundiaquara association only provided their members with machinery and promoted no participation in its administration or debate about its objectives and role. The Terra Tombada association and the community group commenced on the basis of considerable solidarity among producers, and making a democratic and transparent administration, but it soon terminated. The community group, which involved enthusiasm and determination of its leader and members, helped to expand friendship ties, solidarity and trust among its members, and built group cohesion, but it did not survive the opposition of EMATER. As a result producers remained quite isolated from one another and from producers' organizations.

Producers' views largely confirmed this. Over half suggested that solidarity and group cohesion of the project members as a whole was weak or non-existent, and nearly 60% believed that this was also the case in relation to the members of the only association that was operating. However, considerably more producers at Nhundiaquara (60%) than at Vitória (30%) considered that solidarity and group cohesion among all project members overall was reasonable. Considering
that circumstances demonstrated exactly the opposite it suggests that Vitória members aspired towards significantly more solidarity and group cohesion than Nhundiaquara's.

VIII.2 - DIRECT ACTION

This section examines the actions in which producers participated. The type and objectives of the actions they took, either individually or in group, by themselves or jointly with extensionists and like-minded organizations and the role they played are looked into. The impact of their actions are considered in the analysis of the other objectives and intensities of participation.

VIII.2.1 - MOBILIZATION, LOBBYING AND NEGOTIATION

Early Actions

Beneficiaries of Vitória took part in various important actions related to its initiation. They were involved in the mobilization of the municipal commissions and carry out the land occupation, which mobilized over 90 families who confronted the police, the army and landowners' private gunmen. During the three weeks they resisted on the estate, under severe circumstances, they carried out active negotiations with the authorities directed at remaining on the land without being repressed, and creating the project. They set up a camp as a strategy to continue negotiations where they promoted various types of actions, including two large demonstrations in the capital city of Curitiba and various mobilizations locally and in the Southwest region of Paraná. They occupied the offices of
the agrarian reform institute (INCRA) in Curitiba on two occasions. They lobbied state and federal congressmen, and negotiated the creation of the project, as well as policies in favour of agrarian reform, with both state and federal authorities. They also negotiated basic resources for their subsistence and materials such as plastic to built their tents. They approached the media to raise public awareness about their situation.

Notably, women took part in these actions equally with men, and often played leadership roles. Beneficiaries shared the leadership of their mobilizations, lobbying and negotiations with ASSESOAR extensionists and leaders of the organizations that supported their struggle. Many project members were themselves leaders or officials of these organizations, which included ASSESOAR, the Church Land Commission (CPT), Landless Workers Movement (MST), opposition political parties and trade unions. In contrast, beneficiaries of Nhundiaquara were not involved in any relevant action before its inception. The only action was the preparation of a list of potential beneficiaries for the project which was carried out by the president of the local rural workers trade union. Beneficiaries simply had to justify their condition of landlessness to qualify for the project.

During Project Implementation

Vitória producers continued to carry out various type of actions after its inception. Mobilizations continued at local and regional level. In general, these were carried out in groups, where women took part equally with men, and led by producers' leaders along with ASSESOAR extensionists and
leaders of the organizations that supported them in the municipal commissions and at the encampment. Negotiations however were normally led by producers and just supported by extensionists. Most of the negotiations were carried out directly with government representatives, members of the MLSC, local mayors and councillors, the Agriculture Secretary and EMATER extensionists. Over 80% of project members participated in negotiations with authorities and the majority (over 80%) were carried out in groups.

Producers' actions after the inception of the project aimed at obtaining benefits, resources and services. Vitória was set up just before the National Agrarian Reform Programme (PNRA) was launched. The Paraná's Agriculture Secretary and EMATER were not used to demands for agrarian reform projects such as the provision of food supply, agricultural inputs such as seeds, fertilizers and building electricity and health facilities and schools. Obtaining credit for economic enterprises such as the corn and timber mills required negotiations with the Agriculture Secretary and the Development Bank (BADEP), and in the MLSC. The charcoal ovens involved negotiations with ASSESAR. The allocation of EMATER extensionists required negotiations with both EMATER and the Agricultural Secretary. However, producers' mobilizations, particularly rallies and demonstrations, along with the landless and opposition parties and factions had a negative impact. It caused the government to retaliate, since it saw their actions as a political attack. The negotiations producers carried out with government officials and politicians helped to revert this situation in their favour.
In contrast, Nhundiaquara farmers did not carry out many actions. They were not involved in lobbying and demonstrations at all. Some producers were involved in negotiations with officials of the Agriculture and Health Secretaries to obtain food, construction material, seeds and equipment. Others also negotiated services such as new roads, bridges and ditches with the local mayor. Beneficiaries did not negotiate in the MLSC, a process which was led by the extensionists. The better-off producers negotiated with the private bank managers and the officials of the associations negotiated bank loans to purchase a tractor with implements. The members of the community group mobilized to negotiate bank loans, food supplies and seeds with the Agriculture Secretary and to remove its cattle from their plots. Around 80% of producers mentioned that they were involved in negotiations but only half of them were carried out in groups. The women only took part in negotiations with authorities along with the EMATER extensionist, Mrs. Costa, and at the community group, where they joined in mobilizations and negotiations.

VIII.3 - EMPOWERMENT

This section examines the manner in which producers were empowered. The attitude of the extension agencies in relation to beneficiaries being in control of project matters and producers' political awareness and strength are also analyzed. Links with social movements and organizations and their contribution to beneficiaries' power, the influence of beneficiaries and the various intervening parties and in project matters and the realization of beneficiaries powers are investigated as well.
VIII.3.1 - EXTENSION AGENCIES' ATTITUDES

Project Control

From the beginning, ASSESOAR extensionists encouraged producers to be in control of their groups and actions. It was ASSESOAR extensionists, along with the leaders of MST and CPT, who initiated the preparation for the land occupation by organizing the municipal commissions of the landless. Nevertheless, producers were encouraged to take control of these commissions and their subsequent actions. Taking part in these commissions and engaging in actions required producers to take their future into their own hands. Producers were fully in charge of their negotiations and activities during the land invasion. At the encampment, producers were in charge of the task groups, presided over the general assemblies, and were at the forefront of the negotiations with authorities and the voice of the encampment in the media. ASSESOAR extensionists promoted this mainly by providing information, as the examination of the extensionists' role suggested, and by standing by them alongside the supporting organizations.

The attitude of ASSESOAR extensionists was not different after the project was created. Its extensionists encouraged farmers to influence project design and implementation which, was not an objective of the government's Agrarian Reform Plan (PNRA). ASSESOAR extensionists and leaders of the supporting organizations encouraged beneficiaries to be in control of their groups, namely the associations, the community groups and the central commission. The examination above of other dimensions of participation, especially decision-making and project effectiveness, showed that they were quite successful
in this objective as they could introduce their ideas and manage them according to their own priorities. Beneficiaries' autonomy from EMATER and government in general and the influence of the central commission at the MLSC, also substantiated this fact. ASSESOR extensionists deliberately avoided taking the initiative of coordinating or getting involved in their conflicts and preferences. Farmers were aware that they had to take on responsibility for their organization and the management of their groups. EMATER regional and central officers were mainly concerned with conveying the PNRA rules, and producer control was seen very much as a problem. The attitude of the extensionists of ASSESOR in encouraging producer control contributed to reducing EMATER's control upon the project, as earlier analysis has suggested.

The situation at Nhundiaquara was very different. Only EMATER and other government organizations assisted the project and they complied only too well with the norms of the National Agrarian Reform Programme (PNRA). EMATER deliberately constrained producers' ability to control project matters. As seen earlier in other dimensions of participation, producer groups and participation in the MLSC was very passive and designed to oblige beneficiaries to comply with EMATER's plan and credit rules. EMATER's field extensionists helped beneficiaries to obtain some control over project matters by encouraging farmers to take initiatives related to changing the group organization design and introducing new economic activities such as the community group, the second association and the collective tree nursery. However, this was quite marginal considering the bulk of project activities and the decisions that beneficiaries could have made to meet their needs.
Political Awareness and Strength

ASSESOAR extensionists had a deliberate strategy of increasing farmers' (men and women) political awareness. According to formal reports and farmers' own accounts, the agenda of the extension meetings and individual contacts with the landless during the period that preceded the inception of the project, consisted mainly of discussing social inequalities in society, in particular, the concentration of landownership, and lack of official policies in favour of agrarian reform.

The actions in which ASSESOAR encouraged farmers to participate, namely the land occupation, encampment, local and regional mobilizations, participation in the media and negotiations with politicians and authorities, contributed to promoting both farmers' political awareness and strength. It allowed them to receive information and deal with a variety of topics related to credit, technical assistance, agricultural technology and the political interests of local and regional governments and landowners'. It made producers determined to fight for what they believed were their rights and allowed them to constitute a countervailing political power against the large landowners. ASSESOAR and Vitória beneficiaries were part of a wider reform movement and counted on its political strength.

No evidence was found to suggest that, before Nhundiaquara was created, EMATER extensionists worked towards raising the political awareness of the landless. Interestingly however, the action of the trade union that simply comprised drawing a list of landless farmers living in the region and thus, proving to the National Agrarian Reform Institute (INCRA) that they actually existed, was sufficient to create a new
political power in the region. It strengthened beneficiaries' political power which succeeded on persuading the authorities to settle them at Nhundiaquara. Nevertheless, this was largely facilitated by the National Agrarian Reform Programme (PNRA) which was an achievement of the agrarian reform movement.

The trade union meetings at Nhundiaquara also helped increase farmers' awareness about agrarian reform but only marginally. Union officials' views about agrarian reform differed considerably from ASSESOAR's. Unlike at Vitória, they had no criticisms of official polices, and were not required to take any radical action to persuade the government to create Nhundiaquara. The union meetings were rare and did not address problems of unfair distribution of landownership, democracy or social justice. On the whole, producers had rather rushed opportunities to raise their political awareness, as the analysis of the learning opportunities also suggested.

ASSESOAR continued to work on raising farmers' awareness and political strength after Vitória was initiated. Beneficiary meeting agendas, especially during the first year, favoured discussions about farmers' disadvantaged situation in society and the need to increase their influence upon official policies. Producers continued to formulate strategies, negotiate resource provision with the government and to force the continuation of the implementation of agrarian reform. The fact that ASSESOAR encouraged group organization, links with the agrarian reform movement and like-minded organizations further strengthened their political power. This empowered them to negotiate with government organizations, and the organizations in charge of project implementation such as INCRA, Banco do Brasil, ITCF and EMATER. It was vital for
beneficiaries obtaining credit, technical assistance and services.

EMATER regional and central officers, in contrast, were not concerned with raising the Nhundiaquara producers' political awareness and strength. Nevertheless, in practice, EMATER's work contributed to enhancing farmers' power. Beneficiaries constituted a new power by simply being in the project. It introduced them to the government agenda, which allowed them to gain access to benefits. In addition, the work of the two EMATER extensionists at Nhundiaquara, Mr. Lopes and Mrs. Costa, helped producers to debate their situation on the project and agrarian reform in general, although considerably less than at Vitória. The implementation of the Terra Tombada association and the community group encouraged its members not only to discuss these issues but other farmers too. This also contributed to increasing producers' political power. The members of the community group succeeded in having the Agriculture Secretary's cattle, which were destroying their crops, removed from their plots. They also succeeded in negotiating financial help and services with local and state authorities. Finally, the organization of these groups showed that they had overcome EMATER's control, at least in part.

The perception producers demonstrated about agrarian reform underlines these differences between the two projects, in relation their political awareness. Practically all Vitória farmers (98.9%) indicated that they were aware of the fact that the distribution of wealth and landownership in the country was not fair, and that they could do something to change this situation. Fewer farmers, but a significant group (nearly 80%) at Nhundiaquara admitted having similar views, although they
were not as confident or committed to changing the situation. Their actions corroborated this. Noticeably, 20% of Nhundiaquara beneficiaries thought that there were no significant inequalities in society and that they should not be involved in any action demanding agrarian reform. In general, Nhundiaquara members trusted that the government was aware of their needs and concerned with their well being, and perceived their project as an example of the government's goodwill.

VIII.3.2 - INTERVENING PARTIES

Links and Empowerment

The links that Vitória producers established with the agrarian reform movement and like-minded bodies were fundamental for empowering producers at the Vitória da União project. Their linkages to the landless movement (MST), the Church Land Commission (CPT), the rural workers trade unions and opposition political parties and the Workers Party (PT) allowed them to benefit from the political power of the national movement in favour of agrarian reform. Earlier attempts at agrarian reform in Brazil (discussed in chapter I) had demonstrated that it was a task which required more than just a group of obstinate farmers to accomplish but a larger movement that would involve a considerable number of organizations and political parties and factions nationwide.

Initially beneficiaries' links with the landless were held by the municipal commissions, and later at the encampment they were kept by the task commissions and the general assembly. As seen in the examination of producers' actions, this contributed to beneficiaries' success in their
negotiations. After the project was implemented producers' links with these movements and organizations expanded even further. As seen in the discussion on capacity-building, a large proportion of beneficiaries were active members of the workers' trade union (85%), church groups, (92%) and political parties (56%), especially the Workers Party (PT). Also, one project member was elected as president of the rural workers' trade union, and four project members ran for office as councillors and one for mayor, under the PT banner. Their links were supported by their groups, especially the central commission. This was crucial for enhancing their political power as it allowed them to obtain credit, relief and services, from the regional and national governments.

However, Vitória producers' links with opposition political parties weakened their power. The state government boycotted them by terminating financial or material aid for about two years. By the third year, producers had diminished their links, especially with opposition parties. They simply had other priorities and their surplus time was sufficient to attend meetings and make contacts. This diminished the hostility of the government which empowered them to obtain official support such as corn seed and lime programme.

As seen in capacity-building, links at Nhundiaquara were very weak both before and after the inception of the project. Their association with the trade union and the momentary connection they established with the MST before Nhundiaquara started, helped them to persuade the government to create the project. Later, the fact that the president of the union did not oppose official policies and the government intended to make Nhundiaquara a model for other agrarian reform projects
empowered them but not sufficiently to ensure that their demands were properly met. There is no indication that their participation in political parties and in the church empowered them.

Influence on Project Matters

The official organizations that took part in the MLSC, namely the ITCF, EMATER, INCRA, Banco do Estado do Paraná, Banco do Brasil, Agriculture Secretary and the local Council, were naturally influential on the projects. However, as the analysis of other dimensions has suggested, especially decision-making and project effectiveness, farmer organizations and movements and beneficiaries themselves also influenced the projects, especially at Vitoria. Beneficiaries' views about the influence of each one of these parties, shed light on this phenomenon, and corroborated previous analyses, mainly in terms of the significant strength of producer influence at Vitória.

The majority of Vitória producers suggested that the rural workers trade union (93%), ASSESOR (90%), government (MLSC) (79%), political party (PT) (67%), and the local council (50%), were influential on project matters. However, more farmers appointed the trade union (38%) and ASSESOR (35%) as the most influential organizations in the project rather than the government (20%). The perception of Nhundiaquara producers about the influence of these organizations was rather different. The majority believed that the government (92%) and the trade union (69%) were influential on the project, and fewer members suggested the local council (20%). Noticeably, 84% of them thought that the most influential organization was the government, followed by 13% who indicated the trade union.
This ratifies the influence of the government, which includes certainly EMATER. As for the trade union its influence was through its president, who supported EMATER's initiatives, as discussed previously in capacity-building and decision-making.

Producers' views on the influence of the organizations that actually operated in the project and their own, corroborates the pattern of influential parties seen above. Vitória beneficiaries indicated that the groups which were influential over project matters were the MLSC (100%), ASSESOAR's officials (92%), extensionists (87%), their leaders (91%), and themselves (96%). A significant group believed that producers themselves (38%) and their leaders (32%) had the strongest say in relation to project matters. A smaller group thought that ASSESOAR officials (11%), EMATER extensionists and ASSESOAR (13%) were the most influential elements on the project. Remarkably only 2% of the beneficiaries believed the MLSC was the most influential component. This shows that producers perceived that they were in control of project matters, and corroborates the importance of the role played by their leaders, as in negotiating successfully their demands at the MLSC. It largely conveyed their suggestions, as seen in project effectiveness and decision-making. Noticeably they believed the extensionists were less influential than themselves, which ratifies the subsidiary role that the extensionists played.

Nhundiaquara farmers suggested a reverse panorama compared with Vitória. More producers (75%) indicated that the MLSC and the extensionists had influence in the project than themselves and their leaders (40%). A significant group mentioned that the MLSC (50%) and the extensionists (32%) were
most influential on the project whilst a minor group saw themselves (13%) and their leaders (6%) as having the greatest influence. Thus, producers corroborated the observation that third parties were much more in control of the project than themselves, as the analysis of other dimensions has also suggested.

VIII.3.3 - NEW POWERS

Land

The land the beneficiaries of Vitoria and Nhundiaquara received empowered them considerably. It entitled them to receive benefits such as credit and technical assistance, and enabled them to farm, produce for their subsistence, have an income, and for most of them, their own house. It certainly contributed to the majority of farmers in Vitoria (98.9%) and Nhundiaquara (98.4%) believing that the simple fact of being in the project empowered them. This power, however, was not totally guaranteed as the land remained the property of the government. Vitoria producers were in a stronger position in terms of the amount of land they had, which was largely a result of their contribution to the land distribution criteria, as seen in the discussion on decision-making. They had sufficient land to provide for their subsistence, considering the size of the plots (between 20 and 30 ha) soil fertility and topography. However, 20% of them had their subsistence and income jeopardized because they had under 15 ha. At Nhundiaquara, more farmers (around 30% of members), had their power compromised by having insufficient land. They had between five and eight hectares which was only sufficient to cultivate
vegetables. However, they had no equipment or financial means to produce it. They needed at least 15 hectares to be able to farm subsistence crops to provide for the subsistence needs of one family. In contrast, another 15% of Nhundiaquara members had over 17 hectares, which empowered them more than the others.

Credit

Producers had access to credit on both projects, but as mentioned in the analysis of project effectiveness, it was not sufficient to meet their needs. Material and financial aid was also insufficient, in particular at the beginning, when most producers had nothing to rely on. During the first year of the projects, insufficient credit and credit delays caused producers to face hardship and difficulties, especially for acquiring equipment, machinery and agricultural inputs that would enable them to farm. This weakened producers considerably and especially at Vitória, as producers at Nhundiaquara received more aid. This situation demonstrates producers' lack of political power to ensure their rights to receive the benefits to which they were entitled under the national agrarian reform programme. In addition, the fact that they did not own their own plots considerably reduced their ability to obtain credit from private banks. The fact that official credit was distributed at Vitória equally, as seen in project effectiveness, strengthened their position. It enabled them to farm and provided them with the means to gain their subsistence, despite the fact that around 30% thought that it could have been more beneficial if individual preferences had prevailed over collective priorities. Vitória members also had
access to informal credit from ASSESOAR's revolving fund, which enabled them to build the brick ovens to produce charcoal, and helped them to increase their financial power. The fact that credit was not distributed equally at Nhundiaquara weakened the position of around one-third of producers.

Farming and Infrastructure

Members of Vitória were in a stronger position than those at Nhundiaquara in relation to producers' access to the means for their subsistence. They had more access to food staples and animal byproducts such as meat, milk and eggs, as a result of having a larger animal herd and farming a larger area with subsistence crops. Moreover, the farmed area, the animal herd and incomes were distributed much more homogeneously among beneficiaries than at Nhundiaquara, as seen in the sections about farming and equity on project effectiveness. Nevertheless the vegetable growers at Nhundiaquara, around 40% of members, were in a stronger position in terms of having their needs met, compared with their colleagues who cultivated only subsistence crops, and the majority of the Vitória producers. The income from commercial crops (89%) was considerably higher than that from subsistence crops (11%) (table XVIIIb). The fact that Nhundiaquara members had access to fish and fruits helped in the maintenance of the subsistence crop growers but was not sufficient to fully meet their needs.

The total value of all items assessed was considerably greater at Nhundiaquara (1,636 sacks of corn per family) than at Vitória (894 sacs of corn per family) (table XIXa and XIXb). The value of implements and tractors (63,637 sacks of corn) was nearly 2.5 times the value of Vitória's (25,679 sacks of corn)
and also had more home appliances and cars (tables XIXa and XIXb). Vitória producers, however, had better access to these components because they were distributed more equally. Groups owned around 42% of the value of the total implements and tractors (tables XXI) and allowed producers to share equipment that was essential for them to farm (tables XIIa and XIV). Vitória also was in a stronger position in terms of the value of its animal herd. The value of tractors and implements at Nhundiaquara totalled 60% of the value of all the components assessed and were concentrated on the hands of a minority. At Vitória 10 groups had mills, 42 producers had charcoal ovens, and producers had more access to barns because groups owned around 50% of the total. At Nundiaquara there was less access to barns because all of them were private.

At Nhundiaquara, beneficiaries were better off in relation to housing, due to the higher income of vegetable growers and the credit and material producers received for building houses. However, one family had no house and one-third of families had no appropriate fresh water. Farmers at Vitória had more problems in gaining access to public services, namely health care, secondary education and public transport, although the difference in terms of obtaining access was not significant between the two projects. More farmers at Vitória had access to electricity (97%) and roads (97%) than at Nhundiaquara (79%) and 85%), although more families were weakened by the bad state of roads and difficulties with public transport (50%) at Vitória. The general situation however demonstrates the significant political power of Vitória producers in obtaining benefits, considering that they started literally from scratch, whilst Nhundiaquara's enjoyed the existing infrastructure.
The income from crops per family was smaller at Vitória but at Nhundiaquara it was mainly in the hands of vegetable growers. Moreover, farming was developed more homogeneously at Vitória and members had incomes from their erva-mate tea fields, as well as their groups' timber and corn mills and charcoal ovens. It helped them to use the resources available (timber and erva-mate), which made up for their crop loses due to climatic problems during the first two years. In addition, they largely avoided the middleman, which allowed them to save up to 40\% on the purchase of inputs and the sale of their produce, through their associations.

Vitória members obtained more benefits through negotiations with authorities largely because they negotiated much more than Nhundiaquara members. More than 90\% of those that participated in negotiations were successful at Nhundiaquara and only 65\% at Vitória. Noticeably, more producers at Nhundiaquara (98\%) than at Vitória (80\%) believed that their situation was better at the project than before. At Vitória, remoteness, set backs in negotiations with the government, high expectations that they had initially about the benefits they could obtain, and the hope that their opinions would be listened to by the government influenced their opinion. At Nhundiaquara, it was influenced by producers' lack of expectations, political awareness, and passivity. They were grateful for the benefits they received.

VIII.4 - CONCLUSION

This chapter has demonstrated that at Vitória the objective capacity building was accomplished much better than
at Nhundiaquara. Vitória beneficiaries (women and men) had considerably more opportunities to develop operational and managerial capacities in relation to skills and knowledge of farming. They worked in group which allowed them to participate in meetings, play various types of roles, conduct economic enterprises, take actions and established linkages with like-minded organizations. This strengthened their leaders' representativeness and accountability, promoted group cohesion, solidarity and mutual trust and allowed new leaders to emerge. This also boosted members' self-sufficiency thus making them more independent from outside help, especially in terms of conducting farming and groups. At Nhundiaquara capacity building was weaker mainly because the opportunities for beneficiaries working in group and taking actions were scarce. They were very isolated from outside organizations and the women were largely excluded from group activities.

At Vitória producers were much more involved in direct actions than at Nhundiaquara. Before Vitória started they took part in the land invasion, encampment, demonstrations, negotiations and lobbying and during project implementation they were actively involved in negotiations. These mainly aimed at gaining access to benefits and influence project design and implementation. Beneficiaries (women and men) led the actions themselves and ASSESIOAR extensionists and like-minded organizations supported them. Negotiations through groups, especially the associations and the central commission, were relevant in terms of their number, producers involved and topics addressed. In contrast, Nhundiaquara members played no relevant role in the mobilization that preceded the project. During project implementation, the negotiations with
authorities were the most important actions that producers took, but only some of them participated. Negotiations and lobby through the community group were important but involved only 16 families and were short-lived. EMATER field extensionists led all negotiations and women were largely excluded from actions except in community groups.

At Vitória beneficiaries were considerably more empowered than at Nhundiaquara. ASSESOAR was in favour of producers controlling Vitória and they had significant opportunities to raise their political awareness and strength, mainly by participating in actions, working in groups and establishing connections with like-minded movements and organizations. This allowed them to overcome remoteness and the government opposition, and have considerable influence on project matters, which ensured a fairly egalitarian distribution of benefits. As a consequence, beneficiaries enjoyed considerable powers in terms of land, credit, farming, assets, equipment and access to social services. At Nhundiaquara EMATER was primarily concerned with controlling the project. The chances for producers raising their political awareness and strength were scarce which jeopardized their influence on project matters. As a result benefits were not distributed homogeneously among project members and half of them had their powers jeopardized, although Nhundiaquara enjoyed more powers than Vitória in terms of the total value of equipment and the quality of assets.
VIII.5 - MAIN FINDINGS ON PARTICIPATION

This section summarizes the main conclusions of the empirical study, related to the dimensions of participation promoted by ASSESOAR and EMATER, respectively on Vitória da União and Nhundiaquara projects.

(A) FINDINGS RELATED TO ALL DIMENSIONS OF PARTICIPATION: It was found that at Vitória the objectives and the intensities of participation were better accomplished and the instruments of participation provided more support to producer participation than at Nhundiaquara. At Vitória ASSESOAR promoted all dimensions of participation, particularly the most complex ones, such as empowerment, direct action and group activity. In contrast, at Nhundiaquara, EMATER encouraged only the simplest dimensions of participation, such as project efficiency and cost-sharing and rather obstructed the most complex ones. The dimensions of participation were shown to be associated to one another. For example, promoting information-sharing contributed to building producers' capacity and to empowering them. Project effectiveness was enhanced by producer participation in decision-making and consultation. Groups and extensionists provided support to all intensities and objectives although groups demonstrated to have greater potential than extensionists.

(B) EXTENSIONISTS: It was found that the extensionists' background, ideology, attitude to producer participation and commitment to producers' needs influenced their ability to promote participation. ASSESOAR extensionists promoted more participation partly because they were in favour of agrarian reform, familiar with the small farmers's situation and
committed to their cause. Extensionists facilitated producers meeting their needs by listening to them, allowing them to discuss their ideas, searching for alternatives and encouraging them to take action. Farming and economic enterprises at Vitória were strengthened as a result of ASSESOAR extensionists searching for economic alternatives, supporting producers' mobilizations and negotiations and encouraging them to speak freely about their interests and needs, and exchanging ideas with their peers. The subsistence and incomes of the Nhundiaquara members were jeopardized in part because EMATER forced its extensionists to disregard producers' ideas and needs, and simply teach agricultural technology and control their performance.

Producer control of the project allowed extensionists to promote the participation of all beneficiaries and focus on the needs of the latter, whereas extension agency control made extensionists enforce the implementation of their own priorities. EMATER compromised producer participation at Nhundiaquara partly because it forced extensionists to implement its plan and disregarded the situation of the beneficiaries. In addition, the extensionists restrained participation and jeopardized the producers' situation by providing technical assistance according to its own plan. ASSESOAR extensionists promoted participation more successfully by providing advice, raising awareness, and searching for alternative solutions according to producers' demands.

EMATER field extensionists demonstrated that they were sensitive to producers' needs, willing to meet their demands and to promote participation, whereas senior extensionists remained largely detached and biased against beneficiary
participation. At Nhundiaquara, EMATER senior extensionists were concerned only with implementing their official plan whilst local extensionists struggled to meet producers' priorities. Vitória showed that extensionists encouraged women to participate and take responsibilities in actions and economic enterprises equally with men enhanced participation and benefited producers. In contrast, Nhundiaquara showed that extensionists addressing women basically as home-keepers and child bearers jeopardized the participation as well as the situation of the members. ASSESOAR extensionists raised producers' political awareness and encouraged them to take action, contributing to their empowerment and participation in decision-making. Nhundiaquara beneficiaries were prevented from taking part in decision-making in part because their political awareness was weak, so that they were passive and unwilling to take action.

(C) PRODUCER GROUPS: Groups were confirmed as the instrument that has the greatest potential for promoting both the objectives and intensities of participation. However, it depends largely on the extension agency's attitude and on the degree of producer control. Vitória showed that ASSESOAR encouraged producers to be in control of their groups, allowing them to support capacity-building, project effectiveness, and to take action. It boosted groups' ability to support mobilizations, negotiations, help beneficiaries to deal with the media, trade their produce, purchase inputs and equipment, participate in decision-making, set up corn mills and collective farms, keep animals, and promote educational, cultural and leisure activities. EMATER restricted the role of groups simply to facilitate technical assistance from above,
allocate credit and reduce investment in machinery, and this compromised their contribution to participation and project implementation. Groups were more dynamic when they addressed all types of beneficiary needs. Vitória's community remained active especially when benefits were halted and producers faced hardship, as a result of encouraging social, educational, religious, political and economic activities. It helped beneficiaries to deal with all types of issues, such as the administration of the associations, community school, health posts and to get involved in meetings and negotiations. Group activities, particularly meetings, were scarce, at Nhundiaquara, largely because they were simply concerned with the divert transfer of agricultural technology.

Vitória showed that groups encouraged beneficiaries to establish links among themselves and with other groups and like-minded organizations and movements, and in turn, it strengthened ties among members. A coordinating and representative group, the central commission, which comprised representatives of all groups in the project, proved very effective in this regard. The participation of women in groups, especially playing leading roles, increased producer control. Vitória showed that groups and links allowed producers to reach more advantageous markets and avoid the middleman. Lack of group activity allowed Nhundiaquara beneficiaries to be subjected to the middleman. Operating in group boosted democracy, solidarity and mutual trust. It also helped Vitória beneficiaries to develop political awareness, build friendship ties and identify common needs and goals.

Lack of group activities favoured authoritarianism, inequality, ignorance, individualism and isolation.
Nhundiaquara showed that when group members elected their own representatives, this was insufficient to promote producer control. Vitória demonstrated that beneficiaries were largely in control of their groups because they could debate and vote, identify problems, establish priorities, groups' objectives, roles and activities as well as electing their representatives. Groups contributed to developing leaders' representativeness and accountability and also encouraged new leaders to emerge. EMATER's restrictions on groups actions hindered their development and favoured weak leaders. Vitória showed that common needs and interests encouraged producers to operate in groups. Economic differences among members at Nhundiaquara constrained their ability to operate in groups.

(C) PROJECT EFFICIENCY: Producers who perceived the project as being part of their own goals and taking part in decision-making boosted their cooperation and commitment. Vitória beneficiaries were willing to cooperate with its implementation largely because they could introduce their ideas and saw that it could help agrarian reform, which they identified with. This motivated them to implement farming and other economic enterprises. In contrast, Nhundiaquara beneficiaries were discouraged from cooperating since they saw the project primarily as an enterprise of the government and had their own initiatives repressed. Learning was promoted by communication among peers, in group activities, and playing roles such as the management and operation of economic enterprises. Economic enterprises, particularly collective ones, proved useful for reducing operational costs and increasing incomes for it enabled producers to share equipment and maximize the use of their labour. Beneficiaries' farming
and processing activities, and incomes boosted local business and also created new jobs for local populations both in the project and locally. The participation of beneficiaries in local politics, namely in the trade union, political party, and Church stimulated local politics and democracy.

(D) COST-SHARING: Insufficient relief and credit, and credit delays compromised cost-sharing. Lack of financial support made beneficiaries of both projects confront hardships which prevented them from farming and complying with cost-sharing requirements. Nhundiaquara showed that relying only on farming jeopardized beneficiaries' ability to comply with cost-sharing, whereas Vitória showed that processing alternatives favoured the use of local resources (such as 'erva-mate' tea, timber and wood) and increased producers' ability to cope with cost-sharing. Actions, mobilizations and negotiations facilitated cost-sharing because it allowed farmers to obtain benefits, which enabled them to implement farming and other economic enterprises. Producers' actions, especially negotiations with the government, promoted beneficiaries' understanding about cost-sharing requirements. This helped cost-sharing by encouraging producers to develop alternative sources of income. Simply transferring information through extensionists and government officials was insufficient to motivate beneficiaries to take the initiative to raise incomes.

Cost-sharing was also favoured by representative and accountable leaders who stood up for producers' interests and negotiated with the government for beneficiaries to repay credit according to their ability. In contrast, Nhundiaquara showed that leaders who simply backed the government harmed cost recovery because it simply helped to exclude default cases.
from the project. Equity among producers and equal distribution of benefits helped cost-sharing. A fair distribution of benefits among the members of Vitória helped them to implement farming and economic enterprises, and have incomes. At Nhundiaquara, unequal distribution of resources and benefits compromised cost-sharing because it limited the ability of most producers to farm.

(E) PROJECT EFFECTIVENESS: Relief, particularly during the first year and in the event of crop losses, proved fundamental to beneficiaries' subsistence. Providing beneficiaries with appropriate credit and delivering it on time was important. Insufficient or delayed relief and credit caused hardship, forcing producers to rechannel it from farming to food, preventing them from farming, building houses, pigsties and barns. Vitória demonstrated that planting subsistence crops and keeping animals helped producers' subsistence more than commercial crops. It provided them with a food supply and they depended less on financial means as a result. In contrast, Nhundiaquara showed that relying primarily on commercial crops jeopardized producers subsistence requirements because the project became dependent on the income of these crops. Incomes were compromised by low production and exploitation by the middleman. Economic enterprises and the use of local resources were important for increasing incomes. Using local resources were useful for boosting incomes, as Vitória did with its timber mills and erva-mate processing, and to provide a food supply, as Nhundiaquara beneficiaries enjoyed native fruits, crops and fish. Agricultural technology based on hand-operated and animal traction machinery and indigenous seeds proved more effective. Nhundiaquara proved that use of
expensive inputs such as motor-propelled machinery, high-yield seeds, chemical fertilizers and pesticides restricted producers' ability to farm. Producers faced hardship, poor soil, lack of technical assistance, and trading with the middleman. The use of indigenous technology fostered the use of producers' knowledge, which was useful to overcoming the lack of inputs, a hostile environment and lack of technical assistance. Lack of technical assistance jeopardized farming when producers used either indigenous or chemical based technology.

Beneficiary actions, especially mobilizations and negotiations were important for them in obtaining resources and services such as credit, technical assistance, roads, schools, and health care. Vitória showed that actions were more relevant when the project was remote and government was not sympathetic to producers' situation. Vitória showed that consultation and participation in decision-making allowed the introduction of changes that made the project more effective in terms of meeting beneficiary needs and promoting the equitable distribution of benefits, resources and services. In contrast, Nhundiaquara demonstrated that when extensionists monopolize decision-making, do not consulting producers and repress their initiatives, farmer needs and interests are neglected, thus reinforcing economic inequalities.

Equity among project members also depended on the type of crops, economic activities, participation in groups and performance of groups. Producers who grew commercial crops obtained higher incomes, and so did those who joined processing enterprises. Those who took part in the associations gained support to operate in advantageous markets, share equipment and
count on the knowledge and labour of their peers. Those who took part in associations that went bankrupt and were subjected to the middleman, had their incomes jeopardized. The impact of beneficiaries' transactions in the local shops, and participation in the local trade union, party politics, and Church was effective for helping to remove local populations' prejudice and integrate them into the local community. In contrast, Nhundiaquara suggested that a lack of income and participation in local politics perpetuated social barriers and prevented integration.

(F) CAPACITY-BUILDING: Producers' knowledge and skills were promoted by their exchanging information with extensionists and their peers by taking actions and playing active roles on their plots and in their groups. Vitória beneficiaries were better off because they took part in considerably more group activities and actions. These included the municipal commissions, land occupation, encampment, demonstrations and negotiations. Beneficiaries who took on responsibilities in groups and economic enterprises helped developed managerial and operational skills such as coordination and accountancy. Nhundiaquara demonstrated that restricting groups' scope simply to facilitate control and enforce agricultural technology hindered the development of beneficiary knowledge and skills.

The actions producers took at Vitória and links they established between their groups and with like-minded organizations and movements contributed to establishing common goals and building ties, which boosted solidarity, mutual trust, democracy and group cohesion. This process was strengthened by their political awareness and, in turn,
contributed raising it. It helped producers establish priorities and formulate a plan, which prepared them for negotiating with the government and participating in decision-making. It promoted representative and accountable leaders and the emergence of new ones. Vitória beneficiaries were aware of the role their leaders should play, which facilitated choosing and monitoring them. In contrast, a lack of links and actions at Nhundiaquara prevented beneficiaries from building ties and establishing common goals, which jeopardized solidarity, democracy, group cohesion as well as political awareness. It prevented producers from preparing a plan for the project which contributed to jeopardizing their participation in decision-making.

Leaders' representativeness depended on their ability to respond to producers' most tangible needs. At Vitória, the leaders' representativeness was compromised when they failed to make the government allocate credit, services and extensionists. The practice of group democracy allowed beneficiaries to elect leaders to meet new demands related to coordination of economic activities such as the management of corn and timber mills. In contrast, the lack of action, solidarity and democracy permitted weak leaders to linger on at Nhundiaquara. Women participating actively and playing leading roles enhanced leaders' representativeness. Women made groups more active and focused, and they were also representative leaders. A coordinating body comprising group representatives proved useful for promoting coordination, establishing links, and negotiating with government. However, coordinating bodies allowed leaders to form an elite, detached from beneficiaries, who centralized information and decision-making. The
involvement of leaders in trade unions and political parties diverted them from serving beneficiary interests, as occurred at Vitória. This project demonstrated that when women participate equally with men, it strengthens producers' actions, helps coordination and the management of economic endeavour. Nhundiaquara's groups and actions were frail in part because women were left to play only secondary roles.

Actions, economic enterprises and links to like-minded parties allowed producers to be more independent of external help. At Vitória, such activities helped beneficiaries to implement farming and economic activities, and operate in advantageous markets, which boosted their incomes. In contrast, Nhundiaquara showed that lack of actions, links and economic enterprises compromised their incomes and made them dependent on external assistance. The use of indigenous technology and inputs promoted producers' independence from external help, particularly technical assistance, whereas chemical-based technology made producers more independent. Allowing producers to use their knowledge about farming made them less dependent on official support. At Vitória, producers who used their own knowledge or that their peers found farming easier. At Nhundiaquara, farming was jeopardized in part because producers were forced to disregard their own knowledge and apply that of the extensionists. Developing economic enterprises in groups helped producers develop managerial skills, which increased their self-sufficiency. Nhundiaquara restricted group activities and prevented beneficiaries developing such skills thus strengthening their dependence on external help.

Equity and solidarity among beneficiaries made them more independent. The fact that members of Vitória had similar needs
and interests helped them establish common goals and work in groups. It enabled them to share equipment and machinery, maximize labour, take action, and obtain benefits which favoured the implementation of farming and setting up economic enterprises. At Nhundiaquara, the unequal economic situation created diverse beneficiary needs which, in part, compromised solidarity and mutual trust, and prevented them from working together, therefore jeopardizing their farming and the development of alternative sources of income. Vitória demonstrated that producer control over the project helped their independence by allowing them to introduce changes in the project plan which increased their incomes. However, EMATER controlled the project and hindered producers' initiatives to introduce changes, which jeopardized their incomes. Insufficient relief and credit made producers more dependent on official help because it obstructed the implementation of farming. Credit allocated in groups contributed to making beneficiaries independent because it favoured the development of economic enterprises.

(G) EMPOWERMENT: The attitude of extension agents in relation to participation influenced beneficiaries' power. ASSESOAR empowered the members of Vitória by encouraging them to be in control, take initiatives and actions, and raise their awareness. EMATER hindered the power of Nhundiaquara producers by retaining control and obstructing their initiatives to take action and make changes in official project plan. Direct actions, links and political awareness boosted beneficiaries' political power. The land occupation, organization of the encampment, demonstrations and negotiations, and links to the Church, trade unions, political parties and the landless
movement enabled the Vitória farmers to stand for themselves and for their interests and confront the power of the large landowners and that of the government. Nhundiaquara showed that relying on the government's good will was not sufficient to obtain political power. Political power enabled producers to obtain benefits. Vitória showed that it was important for beneficiaries to overcome their disadvantageous situation related to remoteness and the opposition from the government and landowners, and obtain credit and social services. Moreover, it enabled beneficiaries to challenge the government's control and participate in decision-making, which boosted group organization, economic enterprises and incomes. It contributed to Vitória achieving greater equity because producers influenced the distribution of benefits such as land and credit. At Nhundiaquara, lack of producer political power allowed EMATER extensionists to implement the official plan and allocate credit according to their own criteria, which exacerbated inequalities among beneficiaries.

Political awareness and links to political parties and factions also weakened beneficiaries. Vitória beneficiaries who participated in opposition party activities reduced their power to negotiate with an authoritarian government that cut benefits. It jeopardized other powers, especially related to their ability to obtain credit, tools, seeds and fertilizers. Likewise producers focused too narrowly on their rights and on the agrarian reform campaign. Despite having the power to negotiate, they inflamed conflict and compromised negotiations with government by criticising official policies and the government administration. In contrast, Nhundiaquara showed that lack of political awareness weakened beneficiary political
power by making them passive and unwilling to take action or establish outside links.

(G) INFORMATION-SHARING AND CONSULTATION: Informal mechanisms of information were more effective for informing beneficiaries than formal ones. Representative and accountable leaders at Vitória, who took part in the projects' official coordination commission and in negotiations with the government, provided producers with complete and up-to-date information about the project plan, benefits and cost-sharing rules. A combination of formal and informal mechanisms enhanced information-sharing, especially related to agricultural technology. At Vitória, producers had access to useful and abundant information about agricultural technology by exchanging ideas in groups with their peers, taking part in negotiations and mobilizations and in extensionists' talks. They learned from one another about appropriate technology for their situation. Nhundiaquara received insufficient technical information because they relied simply on extensionists. Extensionists were insufficient and absorbed in bureaucratic work. Leaders and groups were effective mechanisms of consultation. Extensionists and government officials were aware of the needs and interests of Vitória members by consulting leaders at the project's official commission and in group meetings. Vitória showed that freedom to speak in extensionists' and leaders' meetings and visits helped beneficiaries exchange information and extensionists to learn about their needs. Nhundiaquara clearly showed that authoritarianism obstructed information-sharing and consultation between producers and extensionists.
DECISION-MAKING AND DIRECT ACTION: Decision-making was facilitated by democracy, solidarity and political awareness. Debating and voting in groups allowed producers to make decisions related to most of the issues that concerned them at Vitória. EMATER obstructed discussions and hindered producer participation in decision-making at Nhundiaquara. Only those who had the means to implement their own ideas made decisions related to their farming needs, while others were forced to follow EMATER's plans. Better off farmers managed to purchase tractors and equipment by obtaining credit from private banks. Producers' ability to take action depended on the attitude of extensionists, group organization and leaders, outside links and political awareness. Links with like-minded organizations enabled producers to make decisions related to project design and implementation. The support of like-minded organizations contributed to empowering Vitória beneficiaries to intervene in all project components and in the planning. Nhundiaquara's were able to make decisions related mainly to their farming as a result of their isolation.

Vitória demonstrated that beneficiary actions were motivated by extensionists' encouragement, political awareness and links to like minded organizations, producers' group cohesion and representative leaders. In contrast, direct actions were hindered at Nhundiaquara by EMATER restrictions on producers' initiatives and groups' scope, weak group organization, totalitarian leaders and lack of producers' political awareness. The participation of women, especially when playing leading roles, boosted actions. Actions at Vitória were led by both women and men and part of the negotiations at Nhundiaquara were carried out by women. The different types of
action were appropriate for various situations. The land invasion was useful for drawing the attention of government to the problem. The encampment allowed producers to continue putting pressure on the government and set up the project. Demonstrations were useful for attracting public attention and attaining political power. Negotiations were useful for persuading the authorities to deliver benefits and services and establish links.

These findings largely corroborate the general conclusion that the dimensions of participation were compromised when participation was fostered mainly as a means to facilitate the implementation of a government project, as EMATER operated. It was largely in tune with the diffusion of innovations paradigm and the traditional community development approach. In contrast, the dimensions of participation were strengthened when fostered as an end, that is accomplishing the various objectives, intensities and instruments of participation, especially the most complex ones. This was in tune with the community participation approach and ASSESAR carried it out. The implications of this outcome and the other results of both projects for extension policies are discussed in the following final chapter.

VIII.6 - MAJOR CONCLUSIONS

The study showed that Vitória farmers attained the means of subsistence better than at Nhundiaquara. Vitória's were favoured as a result of producing primarily subsistence crops: beans, rice, corn and manioc, and animals: chickens, pigs, cows and oxen. It provided them with a food supply and extra income.
Animal byproducts were most useful during the first two years when farming was being implemented and they lost most of their crops. Nhundiaquara members, however, did not prioritize animal production and only 40% of them grew subsistence crops. The livelihoods of the majority depended mainly on the income from commercial crops.

At Vitória, farmers used animal traction and hand-operated equipment and shared part of the machinery needed through their associations and community groups, which allowed all producers access. At Nhundiaquara they used mechanization which was considerably more expensive, and only around 40% of them shared it through their association, which deprived many farmers of access to essential equipment. They used improved seeds and chemical fertilizers and pesticides and were not familiar with commercial crops or the type of technology that EMATER forced them to use. Vitória members used primarily indigenous technology and seeds that were cheaper and required fewer chemicals. Its members were familiar with the crops they planted, and the extensionists encouraged them to use their traditional knowledge and skills and to learn from their peers. It helped them overcome the lack of technical assistance and reduce running costs. Vitória beneficiaries farmed around 60% of the land that EMATER had planned, compared with only around 50% at Nhundiaquara.

All plots at Vitória were sufficiently large for planting subsistence crops, whereas at Nhundiaquara around 20% of the plots were too small for cultivating this type of crop to maintain a family. Commercial crops contributed more to producers' income than subsistence crops. Vitória's commercial crop producers, 50% of the total, attained over 40% of their
income from crops, plus their income from subsistence crops. Around 60% of members at Nhundiaquara grew commercial crops and these attained around 90% of their income from crops. Most of this was concentrated in a smaller group (around 40%), especially tenant farmers, who had the means of acquiring or hiring expensive machinery and purchasing chemicals and improved seeds.

The income from crops on both projects reached only around one-third of what EMATER anticipated, due to low productivity and production. The total crop income at Vitória was planned to be 30% lower than at Nhundiaquara but it ended up being quite similar. Members of the former developed effective alternative sources of income, namely the corn and timber mills and the charcoal ovens. This was suggested by ASSESOAR extensionists and enabled them to increase the value of their produce and profit from local resources. Despite its remoteness, most of Vitória's members increased their gains by up to 30% from selling their produce and purchasing fertilizers and equipment in more advantageous markets. It helped them to make up for the crop losses. In contrast, all but six members at Nhundiaquara had their income reduced by up to 40% since they were obliged to sell their produce to the middleman. Thus, fewer producers (30%) than at Nhundiaquara (40%) were in arrears with their credit payments.

On both projects, relief and credit were insufficient and often delayed. This forced producers to divert credit from investing in farming to their own immediate subsistence. This was critical during the first two years, when producers lacked assets and had to begin farming, but the situation was worse at Nhundiaquara, due mainly to the type of farming that EMATER
enforced. Moreover, the EMATER extensionist was biased in the allocation of part of the credit, and not necessarily in favour of the poorest members. Only the tenant farmers could obtain credit from private banks. In contrast, at Vitória credit was distributed fairly equally according to producers' own priorities. In addition, beneficiaries obtained credit from private banks to set up their mills and from ASSESVAR's revolving fund to build the charcoal ovens.

The access that producers obtained to public services was similar on both projects. Literally all children above six years of age were attending school, all families had access to health care, all but one at Nhundiaquara had a house, and the majority had access to electricity, public transport and roads. The quality of the houses, barns, and pigsties was, in general, better and the equipment and machinery worth over five times more at Nhundiaquara. However it was accrued largely by the better-off minority, whereas at Vitória it was more equally distributed. The situation with regard to home appliances was fairly similar on both projects, except that Nhundiaquara had more TV sets and Vitória had more radios. However, Vitória progressed faster in this respect, as initially, it was considerably worse off.

The fact that Vitória beneficiaries acquired more effective means of subsistence, and distributed resources and benefits more equally contributed to making them more self-sufficient than the majority at Nhundiaquara. Moreover, they had considerably more opportunities to develop the knowledge and skills of both women and men. They could exchange ideas with their peers and extensionists in their actions before and after the project was established, in meetings and in playing
operational and managerial roles in their collective enterprises. This included the organization of the municipal commissions of the landless, the land invasion, encampment, mobilizations, negotiations, 13 community groups and 12 associations, and the setting up of 42 charcoal ovens and 11 mills. It helped them to formulate their own project plan related to farming and a group organization strategy, although this was incomplete. They had a representative central commission, established links between their groups and with like-minded organizations and movements, and participated in the local politics in the trade union and political party. It helped coordination and democracy in the administration of their groups and in their actions, and in the development of solidarity and mutual trust.

This allowed them to take action, permitted representative and accountable leaders to emerge, avoid the middleman, and negotiate time for default cases to sort out their debts. Their participation and their deals in the local shops helped them overcome the rejection of the local community. This meant that beneficiaries at Vitória depended less than at Nhundiaquara on external support. However, this in itself was insufficient to prevent misappropriation of the assets of one association, the mismanagement of another association or low production and productivity.

The self-sufficiency of the majority of members at Nhundiaquara was jeopardized due mainly to difficulties with farming, there being only one source of income and no mechanisms for avoiding the middleman. Moreover the local association, which was intended to enable them to have access to better markets, failed totally. Beneficiary negotiations
were rare, seldom carried out in groups and were normally led by extensionists. Only a few farmers played administrative roles in their associations and the community group and vegetable garden were short-lived. They received information from EMATER extensionists and government officials related only to project rules and agricultural technology, which was not sufficient to develop their skills and knowledge or solidarity, mutual trust, cooperation and coordination. Moreover this was jeopardized by EMATER's senior extensionists' repression of producers' initiatives when they tried to organize or take any action, the bankruptcy of one association, lack of participation in the administration of the local association, and inequality among members. Democracy was barely exercised and producers' political awareness was frail. As a result, they established no relevant links amongst themselves or with like-minded organizations. These facts favoured the election of unaccountable and non-representative leaders, and contributed to 11 families not being given the opportunity to recover from their debts and being expelled from the project. It also made producers heavily dependent on external help. Lack of participation in the trade union, party politics and Church, and low income compromised the integration of the majority.

Farmers at Vitória were more empowered than at Nhundiaquara. This was in part a result of beneficiaries attaining better levels of subsistence and self-sufficiency. The acquisition of political power was fundamental. Land invasions and mobilizations, their participation and links to the MST, Church, trade unions, Workers Party and political factions, and having a central commission, were all critical. Their political awareness grew as a result and was facilitated
by ASSESOAR extensionists. They were stimulated by learning about their condition of landlessness and alternative solutions to their problems. It created a countervailing power to that of the government and landowners, and forced the government to set up the project. It enabled beneficiaries to obtain access to social services, electricity and roads, and to overcome Vitória's remoteness. Access to credit and technical assistance was facilitated by the support of EMATER, the Paraná Agricultural Secretary, and the National Agrarian Reform Programme (PNRA).

At Vitória political power and the support of extensionists from ASSESOAR and EMATER allowed beneficiaries to have considerable influence on project design and implementation. It enabled them to introduce their own project plan and develop farming and group organization and economic enterprises according to their own needs and interests. This was vital in allowing them to obtain the means of subsistence, alternative incomes, and to allocate credit equitably, although collective priorities overrode individual ones. The gains from changes that they introduced outnumbered their mistakes. The latter included losing cows, which died as they had no pasture, having no staff for the health posts or community schools, and choosing not to have a secondary school on the project. Their power, however, was jeopardized, in part, as a result of their links with an opposition political party, the underestimation of their gains and an authoritarian central government. This provoked conflicts with the government, which then cut benefits and endangered their subsistence and financial power.

The power of Nhundiaquara farmers was unequally distributed. A small group (around 30%), was considerably
empowered whereas the majority was largely powerless. This was
due partly to unequal attainment of the means of subsistence
and distribution of resources and benefits. Beneficiaries
depended on the PNRA and the Paraná government's good-will from
the beginning and members' political power remained
insignificant. The negotiations they took part in and the
information they received were insufficient to raise their
political awareness. They established no relevant links, had no
leaders to adequately represent their interests, and took no
action. This jeopardized their influence on the project and
their ability to negotiate, and considerably limited their
group organization, the development of economic enterprises,
farming and incomes.

ASSESOAR demonstrated that was more prepared to promote
participation than EMATER, and the conventional features
associated with government and non-government sectors (chapter
III) were largely confirmed. ASSESOAR was on the side of the
beneficiaries, committed to their cause and needs, and open to
their demands. EMATER, in contrast, was concerned chiefly with
technology transfer and largely suppressed producers' influence. ASSESOAR encouraged both women and men at Vitória to
enjoy the benefits of all dimensions of participation,
especially the more pro-active varieties, such as political
empowerment and direct action. In contrast, EMATER supported
only the participation of men, and even then simply as a means
of informing producers and monitoring cost-recovery, while
inhibiting producers' actions, participation in decision-making
and the attainment of political power. However, EMATER was
induced to be more participatory when it operated alongside
ASSESOAR at Vitória.
CHAPTER IX
POLICY IMPLICATIONS AND RECOMMENDATIONS

This chapter discusses the implications of the findings for agricultural extension policies for small farmers and agrarian reform in Brazil. There are also some suggestions for further research.

IX.1 - POLICY IMPLICATIONS

This section suggests extension policies for Brazil based on the findings of the two case studies of Vitória da União and Nhundiaquara projects. The current situation of the agricultural extension service and agrarian reform, and the economic, institutional and political context of Brazil are considered. Case studies and policy lessons from other countries are also referred to accordingly. Two main objectives are pursued: (1) making extension responsive to the needs and interests of resource-poor farmers, and (2) promoting their participation in development. The following issues are considered: (a) extension administration; (b) participation in official policies; (c) development of skills and knowledge; (d) implementation of income-generating alternatives, and (e) generation and diffusion of appropriate technology.

This study suggested that extension can respond more effectively to producers' demands when the extension
administration is small, controlled mainly by its members, and committed to producers' interests and needs, such as ASSESOAR's at Vitória. In contrast, EMATER showed that a large, hierarchical, bureaucratic and centralized administration, controlled by the government and its senior officers, and committed solely to macro-economic goals, largely ignored beneficiaries' requests. Governments particularly of developing countries have dismantled their official extension services and support non-government organizations motivated by this type of evidence.

However, radical shifts from government to non-government extension organizations have been demonstrably inappropriate. The case of Latin America shows that this process distorted the very features that make NGOs more efficient than government in providing extension services. It forced NGOs to expand their bureaucracy, centralize decision-making, and commit themselves to government policies instead of to the needs of the poor. Moreover, terminating governmental extension organizations has left many farmers without any assistance whatsoever. This experience has motivated many countries such as Chile, Bolivia and Peru to adopt a less radical approach with the aim of harmonizing the action of the two sectors (Bebbington, 1993).

Such a complementary approach would be more appropriate to meeting the demands of family farmers and agrarian reform beneficiaries in Brazil. It would allow reform to build upon existing organizations (EMATERs, NGOs and profit-oriented
organizations) and to avoid discontinuity. EMATERs, despite declining during the 1990s, still enjoy the bulk of extension resources in the country, in terms of funding, personnel and logistics. They are present in most municipalities, especially in the South and Southeast regions, and in general their extensionists are experienced. In 1998, the Inter-American Development Bank's study group concluded that the implementation of Paraná's 12 Meses Programme, and the Extensão 2000 in Rio Grande do Sul, would depend on the involvement of EMATER extensionists. EMATER was largely responsible for the success of these projects in their first year (SEAB, 1998). Moreover, EMATERs pressed the government to allocate resources to the extension service. Terminating EMATERs would cause drastic reductions in extension funding. Public services have already been cut as a result of the budgetary crisis and economic adjustment. Elsewhere, such events have left producers without technical assistance in various parts of Mexico, Colombia and Peru (Stiefel et al, 1994).

However, EMATER's technical and administrative capacity and coverage has deteriorated considerably lately, especially in the North and Northeast, where the majority of the subsistence farmers live. Its policies also has hardly changed in relation to their clientele, type of technology and extension methodology. The lobbying of EMATERs, both through their National Association (ASBRAER) and the extensionists' Federation (FASER), largely overlooked the changes which
EMATER needs to make to meet the needs of small farmers. They were also very vulnerable to the demands of large landowners and commercial farmers. In addition the alternatives adopted for increasing its autonomy, such as in the state of Minas, have proved controversial. It produced an elite of extensionists paid by farmers themselves, who were not subjected to government cuts, whilst larger landowners continued to demand free assistance from the government.

The non-governmental sector is quite insufficient to meet the total demand. INCRA's LUMIAR project suggested that sustainability, autonomy in relation to the government, and training and supervision of extensionists, require special attention (INCRA, June 1998). ASSESOAR's effectiveness was a consequence of various decades of institution-building, legitimacy among producers, and links to producer organizations and social movements.

The profit-oriented organizations are an option for the provision of extension services. They have demonstrated the ability to match technical assistance services and consultancy to the demands of their clients in countries such as Britain and Holland (Bell, July 1997). However in Brazil, this alternative would suit only one group of farmers. This comprises around one million commercial farmers, the 500,000 family farmers that operate in the market, who could probably afford to pay for technical assistance, and another 600,000 family farmers who according to the FAO (1998), are likely to participate in the market in the future. Therefore, unless
subsidies are applied, it would leave unassisted around 3.9 million or according to more optimistic prospects, perhaps 3.4 million farmers, which is more or less the potential clientele of agrarian reform. Currently profit-oriented organizations assist less than 10% of the existing five million farmers, and comprise basically export and industrial crop producers.

Collaboration between the government and non-government sectors would help to develop NGOs' technical and institutional capacity, whilst preserving their qualities and autonomy, allowing official extension services to meet the needs of small farmers. ASSESJÁR and EMATER, working together, allowed beneficiaries to count on ASSESJÁR's autonomy and commitment to their needs and interests, secure EMATER's resources and defy its top-down administration. The CONTAG National Workshop proposal also supports the notion that both sectors should complement one another. That means using on EMATERs' resources whilst tapping the advantages of the non-governmental sector and securing the participation of producers, their organizations and movements in their administration, as occurred at Vitoria.

Both sectors should play to their strengths. EMATER could support the training of extensionists, provide consultancy work, coordinate extension action, and monitor the work of extension organizations on behalf of the government. They were successful in supporting the development of cooperatives during the 1960s and 1970s, although the priority then was to increase the provision of storage infrastructure,
credit and agricultural inputs as well as to provide technical assistance. In Latin America generally the two sectors have operated jointly in activities such as problem-diagnosis, research and experimentation, field days and workshops showing that such partnership can help to improve research and extension services (Bebbington, 1993). However, efforts should be made to diminish conflicts between the two sectors and producers themselves, motivated by ideology, mistrust and competition, which has intensified as a result of economic adjustment.

Currently, EMATERs, NGOs, rural development projects, local governments, public and private organizations compete for government support, and often address the same clientele. NGOs negotiate funding directly with the Ministry of Agriculture, which diverted it from EMATERs. Rural development projects operated according to their own plans. The EMATERs are forced to help large landowners who are more organized and seldom politically divided. As happened at Nhundiaquara, EMATERs continue to demobilize small farmers by promising that they will be assisted, instead of encouraging them to take direct action to change their situation. The MST provide no support for the CONTAG Workshop's proposal. The landless farmers are interested in having EMATER extensionists assisting agrarian reform beneficiaries. They intend to develop its own extension services, mainly because they do not operate together with CONTAG and consider to have their own priorities to negotiate with the government. Family farmers
and beneficiaries of agrarian reform projects have struggled separately for PRONAF and PROCERA credit.

Fostering alliances among small farmers, civil servants, government officials and EMATER and NGO extensionists could increase solidarity. It was seen at Vitoria and in various areas in Brazil and abroad, such as in the state of Ceará with the government health campaign (Tendler, 1994), and in Asia, Africa and Latin America (Evans, 1996). It could be facilitated by NGOs, producers and government by identifying common needs and interests and building a common agenda. It would pave the way for establishing new alliances involving these and other sectors. Such cooperation could also help agrarian reform, as happened in the early 1960s and late 1980s (see chapter I), and in other countries such as Nicaragua and Mexico (Stiefel et al, 1994).

The current decentralization and democratization trend could facilitate this process by taking extension administration to small producers. It could be helped by the municipal commissions of PRONAF and official rural development projects, and other decentralized public services such as health and education. PRONAF commissions, which exist in over 30% of the municipalities in the country, could be used to implement a broader development policy which included extension.

Coordination among the organizations involved would be required. There are many local commissions created for different purposes which operate isolated from one another
thus, dispersing efforts and limiting impact. EMATERs, NGOs, MST agrarian cooperatives, Church Land Commission, rural cooperatives, municipal agricultural departments operate mostly according to their own individual plans. A representative body, rather like Vitória's central commission, could favour solidarity and diminish competition by harmonizing the various policy instruments such as PROCERA, PRONAF, Land Bank, rural development projects, and social funds and services, such as SENAR and CEBRAE, according to producers' needs and interests. The representativeness of its members and links with local groups should be ensured to prevent leaders centralizing information and forming elite groups, as Vitória demonstrated.

At regional level, it would be facilitated by unifying the existing regional commissions of PRONAF and PROCERA and rural development projects. These have allowed some degree of beneficiary participation in policy-making and resource allocation. This could be consolidated by being given a greater scope such as formulating agrarian reform and family farming policies, by harmonizing local demands and government plans through regional development plans. Moreover, a regional commission, such as Rural Development Commission, linked to local commissions could be effective in identifying priority areas and beneficiaries for agrarian reform projects, credit benefits and technical assistance. It should comprise small farmers and representatives of the government and organizations and movements, such as trade unions,
cooperatives, mayors' associations, non-government organizations, such as ASSESOAR, RURECO in Paraná, CETAP in Rio Grande do Sul, and CONTACAP in the Northeast.

At national level, coordination and harmonization of regional demands and government plans could be ensured by a representative commission, similar to CONATER, proposed by CONTAG's National Workshop. It could comprise producer representatives such as CONTAG, CUT - Rural Departments, Rural Women's Movement, MST, Church Land Commission (CPT), along with extensionists and government officials. It should address agrarian reform and family farming policies, instead of simply agricultural extension. It would have a greater impact on producers and appeal more to their organizations. Such a coordinated system would help to build consensus among the various players in the rural sector. It would also force the government, namely the Ministério do Desenvolvimento Agrário - (MDA) and the Ministry of Agriculture to deal more democratically with small farmers and facilitate the allocation of resources.

Such a system, however, should not discredit either the organizations or the mobilizations and movements under producer control. They should be seen as a fundamental mechanism for promoting democracy and the participation of the poor in official policies. Vitória producers took part in decision-making largely as a result of men and women participating in their community groups, associations, local trade unions, political parties, movement of the landless,
establishing links with like-minded organizations, and having representative and accountable leaders. Agrarian reform has largely been accelerated by democracy and the action of the landless movement (MST), Church, political parties and factions and trade unions. Similar conditions were present in the 1950s and early 1960s in the Ligas Camponesas, and during the inception of the First National Agrarian Reform Plan in the 1980s (chapter I).

Over the last fifteen years, the democratization process and the actions of the movement led by the MST, Church and CONTAG, which include the landless camps and marches, land invasions, and Gritos da Terra, were vital for the allocation of over 17 million hectares of land and credit worth US$ 2,0 billion to agrarian reform and family farming. Within a broader context, the revolution in China, in the late 1940s, showed the relevance of producers participating actively in local cadres for bringing about a national policy of agrarian reform. In the case of Mexico (1930), Bolivia (1952), and Nicaragua (1979), producer organizations, encouraged by national policies, were also decisive for achieving agrarian reform, although their nature and relationship with the government differed in each case (Stiefel et al, 1994). In contrast, authoritarianism and repression of democratic organizations and movements obstructed agrarian reform for over three decades in Brazil.

Supporting the development of local groups and organizations should be a priority. These include savings
groups, technology generation groups, mothers and youth groups, associations, small cooperatives, collective processing and farming activities. Vitória demonstrated that this can significantly strengthen the development of producers' knowledge and skills, the participation of women, and the emergence of accountable and representative leaders. Moreover, it also demonstrated that these types of groups helped leaders to stick to the needs of their members instead of being absorbed by the demands of organizations such as trade unions, political parties and MST. Producers need to be prepared to take control of their groups and both men and women to play leading roles. Extension should avoid being paternalistic and restricting producer groups and organizations' scope, which can hinder their power, and should not foster them simply as mechanisms to implement preconceived policies and programmes from above, as EMATER did at Nhundiaquara. Despite the good intentions of the Peruvian government to promote agrarian reform through cooperatives, its top-down intervention compromised both producers' power and the sustainability of agrarian reform (Stiefel et al, 1994).

NGOs would be best placed to support producer actions and groups, as Vitória demonstrated. In general, they are autonomous in relation to the government, committed to small producers' needs and interests, and freer to raise producers' awareness about their situation and alternative solutions. They are also used to do advocacy work, and support self-help
initiatives and grass-roots democracy, which can facilitate producers to take part in actions and establish links with like-minded organizations, and obtain political power. EMATER is suited to helping producers learn about the state apparatus so that they can negotiate more effectively, as did its extensionists at Vitória and Nhundiaquara.

Ideally, EMATER's administration should decentralize decision-making to their local offices. This would increase the autonomy of local extensionists, who can better understand producers' priorities, and diminish the control of senior officers at regional and central offices, who in general are beyond the reach of producers, as both Nhundiaquara and Vitória projects showed. It would also force EMATER to comply with the policies formulated by local commissions. PRONAF and the rural development projects's commissions, in Paraná and Rio Grande do Sul, confirmed the fact that it forced EMATER to focus on local demands. It would also reduce the relevance of the bureaucracy and professional careers, which trap most professionals and prevent them from focusing on producers' needs (Chambers, 1983, 1989). Similarly to the learning process approach employed in the Philippines, EMATER could prize field staff-producer relationships and choose supervisors by their ability to understand the needs and aspirations of the poor and address their problems (Chambers, 1997, Korten, 1984).

The management system that EMATER is implementing in Paraná, based on process and field demands rather than on
central planning, could favour decentralization and other EMATERs should consider adopting such an approach (EMATER, 1998). The exhortation of EMATER's officials in Rio Grande do Sul to its extensionists to listen to producers and value their organizations should also be followed by other EMATERs (ASCAR-RS, September 1999). However, the state of Santa Catarina's policy of simply transferring the logistics and field personnel from EMATER to local governments should be avoided. EPAGRI, another EMATER, had to be created there to prevent producers from being left without an extension service. In general, municipal administrations lack either vision or technical capacity in relation to extension (EPAGRI, 1994).

The research findings suggest that extension needs to emphasise economic alternatives to increase income, strengthen producers' livelihoods and facilitate cost-recovery. Collective enterprises in particular should be emphasised as these can allow producers to share resources and maximize labour-use. Scholars and practitioners have suggested that creating economic alternatives in the countryside is a secure strategy to help reduce rural-urban migration and landownership concentration. A FAO study (1992) suggested that around 20% of the total income of Brazil's agrarian reform beneficiaries originated from economic enterprises such as processing and craft work. It also noted that around 60% of the economic gains achieved by agrarian reform beneficiaries were lost to the middleman. Extension should help producers
access more advantageous markets, as Vitória showed, by linking local groups to cooperatives and associations.

Processing enterprises have an immense potential to boost incomes, as Vitória showed well. They can enable farmers to maximize their family labour and add value to their produce and local resources. Programmes such as the PROVE from the Federal District government, could help small farmers to implement them. PROVE helped thousands of resource-poor families to implement processing enterprises, either privately or collectively, and to operate successfully in a competitive market, over the last five years and it enjoyed the support of EMATER. PROVE also emphasised the role of women as entrepreneurs and leaders (SEAG-DF, 1996). Similarly the recently implemented Paraná Farmers' Factory programme aims to set up 2,000 small processing plants over four years and to create 32,000 new jobs, involving 170,000 families (SEAB, 1999). However, these initiatives would be more effective if they were linked to producers' organizations and movements, such as CONTAG, MST and the Church.

Producer mobilizations and negotiations as well as appropriate technical information are important for enabling small farmers to implement this type of enterprise. Unlike many developed countries, such as France and Italy, public health laws in Brazil have prevented resource-poor farmers from processing and operating in the market freely. In Paraná in 1999, small farmers failed to persuade politicians and the government to change the law, largely because they lacked
political power. The existence of strong and representative bodies at local, regional and national level, mentioned above, could certainly help this purpose. CEPAGRO, a non-government organization that operates in Santa Catarina, helped small farmers to change the law and implement small scale industries by providing precious technical information which is normally under the control of multinationals. Today, over a 1,000 small processing plants are operating regularly in that state, when only two years ago the existing plants were totally illegal.

Financial resources should be allocated equitably and according to producers' needs. This study has showed that lack of funding compromised their productive activities and thus their self-sufficiency. It has also suggested that allocating resources according to producers' priorities was critical. A coordinated system with the participation of beneficiaries such as the representatives commissions at local, regional and national levels, with decision-making power related to the selection of beneficiaries and allocation of credit benefits could facilitate this process. Moreover, alternative credit organizations should be encouraged to overcome the inefficiencies of private banks. BASER, for example, is a credit cooperative system that comprises eleven cooperatives, adapted to the needs of small farmers and increasing the capacity of the credit distribution system. BASER has operated for three years in the Southwest of Paraná, and effectively delivered PRONAF credit to around 500 resource-poor families.
It took out large loans and broke them down and distributed small amounts to farmers individually (BASER, 1999; CUT, 2000).

BASER also provided other types of credit to suit the particular needs of small farmers, such as revolving funds and short-term loans for investments in new equipment, infrastructure for farming, dairy, and processing activities. It showed that managers and officials of small local credit cooperatives know their members well, and can make decisions based on producers’ needs, which includes lending money to women, whereas managers of private banks must rely primarily on bureaucratic criteria. Credit cooperatives that operate jointly with large production cooperatives could be more helpful if they did not operate like banks (ATI, October 1997). Such enterprises, however, require monitoring and government control, as they are prone to misappropriation of funds and mismanagement, as happened at both Vitória and Nhundiaquara. The provision of outside training and consultancy is also important as they often employ members or their relatives, who in general are not experienced (ATI, October 1997). EMATER provided BASER with consultancy advice with positive results.

Extension needs to provide agrarian reform beneficiaries and family farmers with technical assistance, which Nhundiaquara and Vitória showed was critical. The FAO (1998) suggested that lack of technical assistance was one of the 10 major constraints on the development of agrarian reform projects in Brazil. However, extension should avoid simply
transferring technological packages from research. It should inform producers about agricultural research results and help to adapt them to their situation. It should also encourage them to use their knowledge, as in general they confront diverse farming systems, poor land and hardship. Vitória proved that indigenous technology and resources were fundamental to farming in these conditions.

This process could be assisted by an alternative agricultural research system that would stress informal linkages to involve farmers in research, experimentation and diffusion. Vitória showed that producers learned more about technology through informal mechanisms such as leaders and group meetings rather than through extensionists. FASE's appropriate technology network, that has operated for over 20 years in Brazil, has also showed that such enterprise can provide an option to the chemical-based technology that EMBRAPA and EMATER have prioritised over the last thirty years. FASE has promoted research and experimentation with producers, created banks of indigenous seeds, and communicated the results to producers and extensionists (FASE, October 1989). However, it has had a limited impact as the scheme involved only the non-governmental sector, funding was extremely limited, and official extension and research institutions were largely indifferent.

A larger scheme that could cope with the demands of family farmers and agrarian reform beneficiaries in Brazil, could be developed by linking non-governmental, private and
official organizations involved in research and diffusion. Such a network would include non-governmental organizations, agrarian cooperatives of the MST, trade unions, women's groups and movements, rural cooperatives technical departments, and other producer organizations, as well as EMATERs, EMBRAPA and universities. The successful economic enterprises and farming implemented at Vitória were supported largely by ASSESOAR extensionists, and links with other NGOs, research organizations and farmers. It would help to bring pressure to bear upon the official agricultural research system to address the needs of resource-poor farmers, and contribute to its sustainability by aggregating the resources of the government. It could promote solutions in various critical areas, such as the bricks created by the University of Londrina in Paraná. It simplifies building procedures and requires significantly less cement, which allowed agrarian reform beneficiaries themselves to build their own houses and to build them more cheaply (EMATER, October 1999).

The participation of the government in such an enterprise would be hindered by the large landowners lobby, by the scientists' and extensionists' biases against indigenous technology, and by the lack of solidarity and trust among producers. It could be facilitated, however, by raising the awareness of the producers, the general public and the authorities about the relevance of family farmers and agrarian reform, and the dangers of chemical-based technology or genetic modified foods. Lately, such awareness has increased
considerably in Brazil as in other developing countries. EMBRAPA and EMATERs have recently focused on subsistence crop production systems and pest management techniques. The government of Rio Grande do Sul has banned the genetically modified seeds altogether. EMATER in Paraná introduced a technology network programme that centres on local resources and producers' problems. It encourages producers, extensionists and scientists to do on-farm research and experimentation in various ecological regions of the state. It could have a greater impact if linked with other extension and producer organizations.

Producer control of agricultural research and extension services would also help to diminish professional biases, as ASSESOAR showed. EMATER extensionists, who were accountable to the government at Vitória, contributed to exacerbating professional biases against producer knowledge. The concept of the farmer extensionist, male or female, is another option. It would encourage the extension service to value small farmers' knowledge and increase trust and solidarity between extensionists and small producers. The farmer-to-farmer extension movement that emerged in Central America, like the experience at Vitória, demonstrated that farmers were very effective in communicating their knowledge and experience to their peers and in increasing production, as well as in influencing the national agricultural research system (NARS) (Scarborough et al, 1997). The MST is also promoting research and diffusion in agrarian reform projects by encouraging
producers to exchange information and experimentation, which has been demonstrably effective (FAO, August 1998).

Although the MST's agrarian cooperatives, NGOs, small associations and CONTAG, are dispersed, they should be seen as cornerstones for the implementation of such an alternative research system. Rural cooperatives would need to be persuaded to embrace the notion of indigenous technology. They should be supported to develop initiatives such as that of the National Association of Vietnamese Gardeners (VACVINA), a membership NGO operating since 1986, in various parts of Vietnam. It enabled producers to do research, experimentation and diffusion with their peers. Extensionists and scientists countrywide, while producers diffused the technical information they received through training and workshops and accumulated by their own experience. It was integrated with universities and research organizations, which ensured that they received updated information continuously. In 1997, despite not being supported by the government, the programme had 160,000 members (Scarborough et al, 1997). Small farmers should also be supported to implement alternatives such as the National Agricultural Research Project (NARP) in India. This encouraged farmers and extensionists to work together in multi-disciplinary teams for over five years to identify potential and limitations by region and design alternative technology solutions (Chambers, 1989).

The field schools, initially developed in Asia by NGOs, and already present in Brazil, mainly in the State of
Pernambuco, Paraná and Santa Catarina (as rural family houses), are another example to be embraced\(^1\). They combine scientific education, research, experimentation, exchange of ideas and analysis, and emphasise participatory methods, with men, women and youth playing leading roles in training, research, experimentation and diffusion (Scarborough et al, 1997). It has proved to be useful for adjusting training to farming activities, and to link scientific and indigenous knowledge in field activities (Kingsley et al, 1997). Governments could support this approach, as in the case of Paraná to make the training of small farmers more effective. These initiatives could help facilitate linking both government and producer organizations in the research and diffusion process. It would also help them to build a common agenda by identifying problems and alternative solutions.

Special attention should be given to the integration of extensionists from various organizations. Vitória showed that EMATER extensionists were more supportive of producers' interests and needs, and believed that women should participate equally with men, when operating alongside ASSESOR. Extensionists being subjected to representative commissions' policies and plans could help to diminish conflicts motivated by differences related to individual

\(^1\)There are 83 Family Rural Houses in the country which involve directly around 3,000 youth and it is estimated that involve indirectly approximately 250,000 people. It is expected that in the next two years this type of initiative will involve around 100,000 people in Brazil (MDA/INCRA (c), October 2000).
background, ideology and attitudes. Similarly, joint training programmes promoted within a network that would comprise government and non-government organizations could help this process. Initiatives such as those of the Inter-American Institute for Agricultural Cooperation (IICA) and the FAO programme to train extensionists in participatory methods, diagnosis, appropriate technology and gender could be useful. Government cuts and lack of awareness of the need to invest in training could, however, be major barriers, as IICA's experience in Ceará showed (IICA, 1998). The FAO could also be more effective by involving extensionists of EMATER in its training programme.

Extension services should encourage small farmers to use the media. It should support organizations such as CONTAG and the MST to produce TV and radio programmes. This would help to spread awareness and encourage solidarity between small farmers and the general population. It helped Vitória beneficiaries and their colleagues to convince people in general about the fairness of their plea, and the authorities to implement agrarian reform. The coverage of the Grito da Terra campaigns and the MST marches by the media increased people's critical awareness about their demands and situation, which contributed significantly to creating a favourable environment for government to set up both PRONAF and PROCERA. It also helped to show the value of women as activists and leaders. EMATERs could use their TV and radio programmes and printed material to discuss the situation of the poor and
present alternative solutions. In Paraná, it could use its satellite dish network, that reaches literally all EMATER municipal offices. However, it would need to overcome resistance by some elements in the government, some extensionists and the landowners' lobby.

IX.2 - RECOMMENDATIONS FOR FURTHER RESEARCH

This section suggests topics for further research with a view to making agricultural extension in Brasil more participatory.

(A) Government and Non-Government Collaboration

This study underlined the importance of government and non-government sectors working together. However, most NGOs fear losing their independence by being submitted to government goals, which has often happened in various countries. The manner in which non-government organizations can collaborate with the public sector without being used simply as an instrument to diffuse social unrest and weaken the actions of the poor, is another controversy that needs to be better understood. Cost-recovery strategies, which government extension organizations have also adopted, and are referred to in this study, could help extension sustainability and perhaps its autonomy. However, the LUMIAR programme demonstrated that this is a complex matter. There are various questions that remain unanswered related to producers' ability
to pay for technical assistance and the producers' rights to have free or subsidised access. It can also lead the extension service to work just for those farmers that can pay.

It is not clear how non-government organizations can be supported by governments whilst maintaining their links with trade unions, political parties and factions, the church, and social movements. LUMIAR was not successful in simply substituting these links by cooperating with the government. Differences of ideology and professional practice poses another serious barrier to collaboration. The alternatives suggested in this study concerning joint training, research and diffusion, would certainly benefit from research on the nature of the existing competition and antagonisms and possible areas of consensus.

(B) Generation of Appropriate Technology

This study confirmed the fact that both producers' knowledge and formal technical information were essential for small scale farming. It also confirmed what has already been widely suggested, that modern technology based on chemicals, high-yielding seeds and heavy machinery, is largely inadequate for their needs. The shortcomings of a lack of producer participation in technology generation and diffusion were also underlined. These findings would be improved upon by further study on participatory strategies for extension and research which could allow producers, extensionists and researchers to jointly generate and diffuse appropriate technology.
The technology network suggested in this study illustrates the lack of mechanisms that could make the official agricultural research system focus more on the needs of the small farmer. It requires identifying barriers that research organizations confront in order to incorporate such a policy, as well as alternative mechanisms that can facilitate changing their priorities in favour of this clientele. Field schools, despite being recognised as useful instrument for allowing producers to participate in research, experimentation and diffusion, still require further study about their impact on agricultural practices, small farmer incomes and sustainability. Moreover, the manner in which the official extension and research services can incorporate participatory methods is still obscure. Similarly, the methods used by the MST which involve producers in experimentation and diffusion, and their impact on agrarian reform projects, have been largely ignored by academics, extensionists and scientists.

(C) Group Potential

The research findings confirmed the immense potential of groups for promoting participation. Nevertheless, further investigation is needed to help extension fully promote farmer involvement. Despite extensionists' best intentions, they are usually highly paternalistic and manipulative, including those from the non-governmental sector. Research could help to meet the challenge of extensionists by raising awareness without transferring their values to producers. Producers are often
persuaded by extensionists to adopt ideas whose implications they are not yet prepared to understand. This study suggested that building producer capacity and promoting empowerment can prevent ideas being imposed from outside. It would be interesting to know more about alternative methods to avoid farmers being manipulated or patronized during the initial process of intervention, when they are in need and not organized and thus, in no position to challenging the power and authority of the extension service.

It is particularly important to learn more about the skills and knowledge for mobilization and lobbying that producers require to negotiate with government and other sectors. It would be particularly important for them to participate in municipal commissions such as PRONAF, where they have to deal with politicians and authorities. It would also be useful to reduce conflict and build consensus and alliances, between producers, their organizations and movements or with social groups in the urban sector.

The research findings suggested that economic enterprises such as food processing are fundamental for increasing incomes. The knowledge and the skills required to develop different economic enterprises needs to be further investigated. It would help to fill the gap between producers' needs and the training and education provided by extension. This study stressed the benefits of collective enterprises, especially to increase incomes (as the MST has emphasised). However it would be beneficial to investigate the rationale
behind farmers' individualism, the appropriateness of individual enterprises, and the ideal balance between them. Research on the elements involved in the replication of successful economic enterprises would also enhance the chances of increasing producer incomes.

(D) Using Extensionists' Potential

Although it was suggested that a more appropriate role for extensionists was that of a facilitator or animator, the conditions that allow them to play this role still need clarification. They are often forced to follow the extension agencies' priorities instead of being guided by producers' needs. Extension services provided by producer organizations such as associations, cooperatives, trade unions and social movements also put pressure on extensionists to operate according to their own interests, as governments normally do. Non-government extension organizations often subordinate extensionists to the objectives of their officials and leaders, who can also have different views, interests and needs from those of the beneficiaries. The LUMIAR project showed that extensionists were often not free to express their views.

The extensionists' individual attitudes, ideology, training and experience was shown to influence their ability to promote participation. However, knowing more about these factors and others such as the fear of being made redundant, or their motivations derived from holding positions in the
extension bureaucracy, would help in the training and selection of extensionists. As is widely known, colleges have proved to be adequate in training extensionists in modern technology but not in preparing them to promote producers' participation in development. Knowing more about the knowledge extensionists lack in this area will help to introduce modifications in the formal and informal teaching of extension.
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INTERVIEWS

EMATER EXTENSIONISTS

(Vitória)

Gilmar Pinto da Costa - He began to work for EMATER in 1984. He was indicated by the beneficiaries and worked at Vitória for three years.

(Nhundiaquara)

Haroldo de Carvalho - He began to work for EMATER in 1988, and assisted occasionally the Nhundiaquara project.

José Rogério da Costa Lopes - He began to work for EMATER as an extensionist in 1984. He worked for six months at Vitória da União and after that he was transferred to Nhundiaquara were he worked for three years.

Marinalda Aparecida Costa - She began to work for EMATER in 1981. She worked full time for three years at Nhundiaquara.

Sérgio Luiz Lissa. He began to work for EMATER in 1982. He occasionally assisted Nhundiaquara members.

ASSESOAR Extensionists

Ari de Davi - He began to work for ASSESOAR in 1986. His work in the project consisted of experiments with appropriate seeds.

Beatriz Ribeiro de Castro - She began to work for ASSESOAR in 1989. She had worked for IAPAR for three years. Her work was related to alternative technology and supervising the experimental fields in the project.

Christophe Kanaut de Lannoy - He began to work for ASSESOAR in 1983. He participated actively in the mobilization for the land occupation and has assisted Vitória since it was set up.

Marcelo Apel - He began to work for ASSESOAR in 1984. He participated actively in the mobilization for the land occupation, and the landless farmers movement in the South-West region. He assisted the members of Vitória from the start.

PROJECT MEMBERS

(Vitória)

Antonio Ribas - He was an important leader of the movement from the beginning of the organization of the municipal commissions. He was the second president of the Central Rural Association.

Arno Hauer - He was an important leader during the mobilization for the land occupation. He also played an important role in the design of the project plan, for his leadership and
knowledge. At the time of the survey he was one the most prosperous farmers in the project.

Cézar Tonelli - He was an important leader in the project, and active in party politics. He ran for mayor for the workers party (PT).

Lourdes Terezinha da Rocha - She was the most important womanleader in the project and participated in the land occupation confronting the landowner's gunmen. In her community she was the leader, and in the 1989 local elections she ran for councillor for the workers party (PT).

Otalivio Veira Ferreira (Formiga) - He is a small farmer, but also a trained agricultural technician. He had been one of the most important leaders of the landless farmers movement in the South-West region. He was initially one of the main leaders of the movement of Vitória da União, and also one of the most important leaders of the project. After the inception of Vitória he spent two years (1988-89) coordinating the technical department of ASSESOAR.

Valdair Sotti - He was elected the president of the local rural workers trade union, was one of the leading members at the local workers party.

(Nhundiaquara)

Aelson Rodrigues - He was a member of the project who substituted one of the eleven farmers excluded from Nhundiaquara.

Belizario - He was the President of the Rural Workers Trade Union of Antonina. He was an important leader during the organization of landless farmers before the inception of Nhundiaquara and during the first two years.

Edson Cardoso - He was the first president of the Nhundiaquara rural association. At the time of the survey, he was organizing a campaign to create the rural workers trade union of Morretes.

AUTHORITIES

Claus Germer - He was the Secretary of Agriculture of the State of Paraná from March 1983 to August 1986. He was an Agronomist, Consultant of the Church Land Commission (CPT), lecturer in economy in the Federal University of Paraná. He was a member of the PMDB (Brazilian Democratic Movement Party) during the election campaign for state government.

Derci Frigo - He was a member of the 'Paraná's Secretary of the Church Land Commission of Paraná' since 1979.
APPENDIX I - FARMERS' QUESTIONNAIRE

Nr. [.........]

Name:...................................................
Age: ....  Sex: [] Male  [] Female
Ethnic group: .....................
Origin (region): ...............\n
Does earlier regions' characteristics match with project's area characteristics?
[ ] Yes  [ ] No

Basic differences: ....................................

<table>
<thead>
<tr>
<th>Name</th>
<th>Sex</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

Family Members: .........................  ....  .....  

Literate: [ ] Yes  [ ] No  Years in School: .....  

Membership - Before - Today  
Trade Union  [ ] -  [ ]  
Cooperative  [ ] -  [ ]  
Political Party  [ ] -  [ ]  
Club(s)......  [ ] -  [ ]  
Church Groups  [ ] -  [ ]  
Group(s).......  [ ] -  [ ]  
Others:........................................

Was assisted by extension before?
[ ] Governmental  [ ] Non- Governmental  [ ] None

How long: .... years  
What projects: ........................................

Comment: ........................................

Professional Background:  
[ ] Farmer  [ ] Worker  [ ] other: .....................
Are you cultivating any new crop in the project?
[ ] All  [ ] Some  [ ] None
What is new for you?

(FARM)
Area (individual): Before:...... ha.  Today:...... ha
Ownership: (B) - [ ] Owner  [ ] Tenant  [ ] Sharecroper
[ ] Illegal  [ ] Others:.............
(T) - [ ] Owner  [ ] Tenant  [ ] Sharecroper
[ ] Illegal  [ ] Others:.............
Collective Area: [ ] YES : ....... ha.
[ ] NO.

Crops (B)  Yields (Kg,sc/ha) - Subsistence % - Market %

Crops(T-ind) Yields (Kg,sc/ha) - Subsistence % - Market %

Crops (T-Collective)

Animals (B)  Nr.  Subsistence Nr. - Market Nr.

Animals (T-ind) Nr.  Subsistence Nr. - Market Nr.

Collective(T)

Allowances: (B) Crz$ ............  (A) Crz$ .............
Credit Access:
(B) [ ] NO.
[ ] YES. What for: .......... Crz$: .......... 
(T) (Individual) [ ] NO
[ ] YES. What for: .......... Crz$ .......... 
Expenditures - Monthly (B) Crz$ .......... 
   Monthly (T) Crz$ .......... 
   (B) - Purpose -.................... Crz$ .......... 
   (T) - Purpose -.................... Crz$ .......... 
Family Labour - (B) - Nr. of persons ..... 
   - (T) - Nr. Of persons ..... 
Outside project Labour - (B) - Nr. ..... 
   - (T) - Nr. ..... 
Labour income - (B) Crz$ .......... 
   (T) Crz$ .......... 
Equipment: (B) - Nr. Description 
   ................................
   ................................
   (T - ind) .... ........................
   ................................
(Collective) .... ........................
   ................................
Animals for work (B) .... ........................
   ................................
Animals for work (T-ind) .... ........................
Collective .... ........................
Buildings (B) .... ........................
   ................................
Buildings (T) .... ........................
(Individual) .... ........................
   ................................
Collective .... ........................

- Do you think you were better off before [ ] or today [ ]?
Why? ..........................................
..................................................................
Do you have a house? (B) [ ] Yes [ ] No
(T) [ ] Yes [ ] No

If Yes:
Ownership: (B) [ ] Rent [ ] Owner [ ] Others
(T) [ ] Rent [ ] Owner [ ] Others

Distance from the town:......km.

Material: (B) ............. (T)...........

Nr. of rooms: (B)............. (T)...........

Toilet
[ ] Inside [ ] outside [ ] not at all

How do you classify your house today?
[ ] Better [ ] About the same [ ] Worst

Furniture:
(B) (T)
[ ] [ ] ..........................................................
[ ] [ ] ..........................................................
[ ] [ ] ..........................................................

Home Appliances - [ ] Before and [ ] Today
[ ] [ ] Radio [ ] [ ] TV [ ] [ ] Fridge [ ] [ ] gas cooker [ ]
[ ] wood cooker [ ] [ ] Bicycle [ ] [ ] Others ...........

(Public Services)
[ ] [ ] Electricity [ ] [ ] Roads [ ] [ ] Public Transport
[ ] [ ] School

(Health)
Farmer and Family diseases
[ ] More [ ] About the same [ ] Less

Access to doctor - [ ] [ ] Yes [ ] [ ] No
Access to dentist - [ ] [ ] Yes [ ] [ ] No

Comment ......................................................

(Clothing)
Today you buy [ ] more [ ] about the same [ ] less

Comment......................................................

Leisure: [ ] [ ] Sports [ ] [ ] Trips [ ] [ ] Community
activities. Specify:...........................................
[ ] [ ] others:..............................................

Do you think your group (Committee) is united?
[ ] Strongly [ ] Fairly [ ] Weakly [ ] Not at all
Do you think the project's members as a whole are united?
[ ] Strongly [ ] Fairly [ ] Weakly [ ] Not at all

Do you think your leader represents you properly?
[ ] Strongly [ ] Fairly [ ] Weakly [ ] Not at all

What is your opinion about your group's leader?
..............................................................................
..............................................................................
What is your opinion about project's officials?
..............................................................................
..............................................................................

Since you are taking part in the project have you have any contact(s) with an authority?
[ ] Yes [ ] No

If yes,
Who was the person(s)?
..............................................................................
Did you meet him or her (they) -
[ ] individually, [ ] in group [ ] Other:.................................
What was (were) the reason(s) for meeting:.........................
..............................................................................
Was the contact successful?
[ ] Totally [ ] Only in part [ ] Failed

Had you contacted this authority before?
[ ] Yes [ ] No

If you would need to contact again do you think he or she (they) would meet you again?
[ ] Yes [ ] No
Why?..............................................................................

Is there any person in particular that you would like to meet?
[ ] Yes [ ] No

If yes,
in the project - [ ] Officials [ ] Leaders [ ] Agent
[ ] Neighbours [ ] staff Others:.................................
Outside the project - [ ] Governmental authorities [ ] Farmers' representatives (Cooperative/Trade Union, etc) [ ] Others:

Do you think you gained strength by integrating this project? [ ] Yes [ ] No
Why? .................................................................................................................................
.................................................................................................................................
Have you taken part in any action as a result of the project? [ ] Yes [ ] No If yes,
[ ] Regularly [ ] Sometimes [ ] Rarely
Type of Actions: [ ] Demonstrations, [ ] Campaigns, [ ] Trade Union Meetings
[ ] Political Party, [ ] Community Group [ ] Radio Programs
[ ] Talk in Meetings [ ] Others ........................................................................
What type of roles did you play? ......................................................................................
.................................................................................................................................
Have you received any training [ ] Yes [ ] No If yes,
Title: .................................................................................................................................
Content: ..............................................................................................................................
Duration: ..................
Was it helpful? [ ] Yes [ ] No

Do you believe in the success of the project? [ ] Strongly [ ] Fairly [ ] Weakly [ ] Don't believe
Why? .................................................................................................................................

Are you and your peers prepared to carry on the project by your own? 
[ ] without any help [ ] With some help
[ ] With Comprehensive help [ ] Not at all
Why? ..................................................................................................................................
Which one of the following activities do you believe that you are able to do (Know)? and which one you know best?

[ ] [ ] Management of groups and associations
[ ] [ ] Organization of project members
[ ] [ ] Farming
[ ] [ ] Others: ............................................

What are the main changes that you think the project brought about in your life?
A: ..............................................................................................
..............................................................................................

Do you think that the project meet your needs?
[ ] totally [ ] Only a part [ ] A small part [ ] Not at all
What do You think should be planned differently?
A: ..............................................................................................
..............................................................................................

Are you getting enough to live...
[ ] Satisfactory [ ] Only to Survive [ ] Not enough to survive.
Comment: ..................................................................................

Has the speed and the achievements of the project been...
[ ] Above your expectations [ ] According to your expectations
[ ] Under your expectations [ ] Absolute failed

Do you think it could be better?
[ ] Yes [ ] No If yes, How..................................................

Do you thing the sponsors influence the project...
[ ] Strongly [ ] fairly [ ] weakly [ ] Not at All
Why?..........................................................................................

What do you think about the way wealth is distributed among farmers in general?
A: ..............................................................................................
..............................................................................................

Do you know who are the sponsors of the project?
[ ] Yes [ ] No
Why do you think they sponsor it?

A:  

Do you think the benefits of the project have been fairly distributed among the members of the project?

[ ] Yes and [ ] No

In relation to:  [ ] [ ] Land  [ ] [ ] Credit  [ ] [ ] farming inputs  [ ] [ ] machinery  [ ] [ ] housing  [ ] [ ] training  
[ ] [ ] Participation opportunities  
[ ] [ ] Others

Comment

Have you any suggestion to distribute the benefits more equally among project members?

[ ] Yes  [ ] NO

Suggestion:

What do you think the project is [ ] dependent on and [ ] Most?

[ ] [ ] Financial help  [ ] [ ] Credit  [ ] [ ] Farming inputs  
[ ] [ ] Farming technology  [ ] Not dependent

Comment:

[ ] [ ] External personnel

Comment

[ ] [ ] Internal Organization

Comment

[ ] [ ] Leadership

Comment

[ ] [ ] Political support

Comment

[ ] [ ] Others:  

Comment:

What do you think the project can perform [ ] and mostly well [ ] without any help?

[ ] Farming  [ ] Running  [ ] Management  [ ] Members Organization  
[ ] Evaluate  [ ] Others

Comment:
What contacts do you currently maintain motivated by project affairs? and Most?

[ ] [ ] Cooperative
Comment (Persons, dept, function) ..............................................

[ ] [ ] Trade Union
Comment .................................................................

[ ] [ ] County Council
Comment .................................................................

[ ] [ ] Governmental Organization
Comment .................................................................

[ ] [ ] Politicians
Comment .................................................................

[ ] [ ] others: ....................................................
Comment .................................................................

Who from outside do you think has influence upon the project?

[ ] Most [ ] Negative [ ] Positive?

[ ] Trade Union [ ] [ ] [ ]
Comment: (Reason, Person, function) ...............................

[ ] Cooperative [ ] [ ] [ ]
Comment .................................................................

[ ] Political Party [ ] [ ] [ ]
Comment .................................................................

[ ] County Council [ ] [ ] [ ]
Comment .................................................................

[ ] Government [ ] [ ] [ ]
Comment .................................................................

[ ] Others [ ] [ ] [ ]
Comment .................................................................

Why this is the most [reason(s)] ...............................
.................................................................

What do you think about your participation in the project?
...................................................................
Who do you think has influence upon the project? and Most?
From inside of the project -
[ ] [ ] Official [ ] [ ] Leader [ ] [ ] Extension agent
[ ] [ ] Project Members
[ ] [ ] Others:.............................

What is this influence?
A:..................................................................

What is the greater influence of all, upon the project?
[ ] From outside [ ] from inside [ ] No difference.

Where the farming technology comes from?
- Idea - [ ] Agent [ ] other farmers inside the project
  [ ] outside the project [... %]
  [ ] inside the project [.... %]
  [ ] your own
  [ ] other .............................................

- Techniques -[ ]Agent [ ] other farmers [ ] your own
  [ ] outside the project [.... %]
  [ ] inside the project [.... %]
  [ ] other.............................................

- Materials - [ ] inside project area [... %]
  [ ] outside project area [... %]
Comment.............................................

Do you consider you were familiar with the technology?
1 - [ ] Yes [ ] No
2 - [ ] Yes [ ] No

Were you allowed to use what you already knew?
1 - [ ] Yes [ ] No
2 - [ ] Yes [ ] No

Did you adopt the technology brought by the agent?
1 - [ ] All [ ] Only a part [ ] Not at all
2 - [ ] All [ ] Only a part [ ] No at all

414
Did you change anything?
[ ] Almost all  [ ] Some parts  [ ] Minor things
[ ] Nothing

Why? ..............................................................
..............................................................................
..............................................................................

In a meeting, does the extension agent
decide the topic?
[ ] Always  [ ] Sometimes  [ ] rarely  [ ] Not at all
-brings all the content?
[ ] Always  [ ] Sometimes  [ ] rarely  [ ] Not at all
-allow discussion?
[ ] Always  [ ] Sometimes  [ ] rarely  [ ] Not at all
-take your ideas into consideration?
[ ] Always  [ ] Sometimes  [ ] rarely  [ ] Not at all

Does the extension agent
[ ] Speak more than listen?  [ ] Equally speak and listen?
[ ] Listen more than speak?

In a visit does the extension agent
decide the topic?
[ ] Always  [ ] Sometimes  [ ] rarely  [ ] Not at all
-brings the content?
[ ] Always  [ ] Sometimes  [ ] rarely  [ ] Not at all
-take your ideas into consideration?
[ ] Always  [ ] Sometimes  [ ] rarely  [ ] Not at all

Does the extension agent ...
[ ] Speak more than listen?  [ ] Equally speak and listen?
[ ] Listen more than speak?

During meetings and visits do you feel free to say what you think?
[ ] Yes  [ ] No

Comment:............................................................
..............................................................................
Do you classify the extension agent as a ...
[ ] teacher  [ ] helper  [ ] organizer  [ ] leader  [ ] controller
Comment: .............................................................................
......................................................................................

Would you say that he or she is in the side of ...
[ ] Yours  [ ] The Extension agency  [ ] his own
[ ] someone else's ..........................................................
Comment: .............................................................................
......................................................................................

For you what is the most positive point in the project ?
A: .................................................................
......................................................................................

and the most negative point ?
A: .................................................................
......................................................................................
Appendix II - TABLES OF THE EMPIRICAL STUDY

Table I - Hectares of Farming Area: Planned and Farmed, and Percentage of the Area Farmed in Relation to the Plan by Crop and by Project.

<table>
<thead>
<tr>
<th>Type of Crops</th>
<th>VITÓRIA</th>
<th></th>
<th></th>
<th></th>
<th>NHUNDIAQUARA</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Planned</td>
<td>Farmed</td>
<td>($)</td>
<td>Planned</td>
<td>Farmed</td>
<td>($)</td>
<td>Farmed/Planned</td>
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<tr>
<td></td>
<td>(A)</td>
<td>(B)</td>
<td>(B/A)</td>
<td>(A)</td>
<td>(B)</td>
<td>(B/A)</td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td>900</td>
<td>509</td>
<td>57</td>
<td>100</td>
<td>40</td>
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<td></td>
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<tr>
<td>Beans</td>
<td>180</td>
<td>163</td>
<td>91</td>
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<tr>
<td>Rice</td>
<td>54</td>
<td>68</td>
<td>126</td>
<td>43</td>
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<td>63</td>
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<td>Soybean</td>
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<td>95</td>
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<td>-</td>
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<td>-</td>
<td>48</td>
<td>30</td>
<td>63</td>
<td></td>
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<tr>
<td>Banana</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>96</td>
<td>25</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,398</td>
<td>842</td>
<td>60</td>
<td>479</td>
<td>245</td>
<td>51</td>
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</table>

Table Ia - Hectares of Farming Area: Subsistence and Commercial Crops, Planned, Farmed and Percentage of Farmed Area in Relation to the Plan at Vitória.

<table>
<thead>
<tr>
<th>Type of Crops</th>
<th>Planned</th>
<th>%</th>
<th>Farmed</th>
<th>%</th>
<th>Farmed/Planned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsistence</td>
<td>1134</td>
<td>81</td>
<td>740</td>
<td>88</td>
<td>65</td>
</tr>
<tr>
<td>Commercial</td>
<td>264</td>
<td>19</td>
<td>102</td>
<td>12</td>
<td>38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1398</td>
<td>100</td>
<td>842</td>
<td>100</td>
<td>60</td>
</tr>
</tbody>
</table>

Table Ib - Hectares of Farming Area: Subsistence and Commercial Crops, Planned, Farmed and Percentage of Farmed Area in Relation to the Plan at Nhundiaquara.

<table>
<thead>
<tr>
<th>Type of Crops</th>
<th>Planned</th>
<th>%</th>
<th>Farmed</th>
<th>%</th>
<th>Farmed/Planned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsistence</td>
<td>227</td>
<td>47</td>
<td>127</td>
<td>49</td>
<td>56</td>
</tr>
<tr>
<td>Commercial</td>
<td>252</td>
<td>53</td>
<td>133</td>
<td>51</td>
<td>53</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>479</td>
<td>100</td>
<td>260</td>
<td>100</td>
<td>54</td>
</tr>
</tbody>
</table>
Table IIa - Number of Farmers: Planned and Actual and Percentage of Farmers Farming in Relation to the Plan by Crop and by Project.

<table>
<thead>
<tr>
<th>CROPS</th>
<th>VITÓRIA</th>
<th>NHUNDIAQUARA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Planned</td>
<td>(B) Actual</td>
</tr>
<tr>
<td>Corn</td>
<td>89</td>
<td>81</td>
</tr>
<tr>
<td>Beans</td>
<td>89</td>
<td>81</td>
</tr>
<tr>
<td>Rice</td>
<td>89</td>
<td>80</td>
</tr>
<tr>
<td>Manioc</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Soybean</td>
<td>60</td>
<td>46</td>
</tr>
<tr>
<td>Wheat</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>Gorget</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Runner-beans</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cucumber</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lay’s Finger</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Banana</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table IIb - Percentage of Farmers: Planned and Actual in Relation to the Total Number by Crop and by Project.

<table>
<thead>
<tr>
<th>CROPS</th>
<th>VITÓRIA</th>
<th>NHUNDIAQUARA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Planned</td>
<td>Actual</td>
</tr>
<tr>
<td>Corn</td>
<td>100</td>
<td>91</td>
</tr>
<tr>
<td>Beans</td>
<td>100</td>
<td>91</td>
</tr>
<tr>
<td>Rice</td>
<td>100</td>
<td>89</td>
</tr>
<tr>
<td>Manioc</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Soybean</td>
<td>67</td>
<td>52</td>
</tr>
<tr>
<td>Wheat</td>
<td>67</td>
<td>3.4</td>
</tr>
<tr>
<td>Gorget</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Runner-beans</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cucumber</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lay’s Finger</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Banana</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Table III - Crop Production: Planned and Produced, and Percentage Produced of the Plan by Project.

<table>
<thead>
<tr>
<th>CROPS</th>
<th>Vitória</th>
<th>Nhundiaquara</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Planned</td>
<td>(B) Produced</td>
</tr>
<tr>
<td>*Corn</td>
<td>41,000</td>
<td>15,281</td>
</tr>
<tr>
<td>*Beans</td>
<td>4,500</td>
<td>1,341</td>
</tr>
<tr>
<td>*Rice</td>
<td>1,242</td>
<td>1,211</td>
</tr>
<tr>
<td>**Manioc</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Soybean</td>
<td>5,040</td>
<td>2,071</td>
</tr>
<tr>
<td>*Wheat</td>
<td>2,688</td>
<td>102</td>
</tr>
<tr>
<td>** Gorget</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>** Runner-beans</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>** Cucumber</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>** Lady's Finger</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>** Banana</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

(*) sacks of 60 Kg, (**) boxes, (***) tons per ha

Table IV - Crop Productivity: Planned and Achieved, and Percentage in Relation to the Plan by Project.

<table>
<thead>
<tr>
<th>CROPS</th>
<th>Vitória</th>
<th>Nhundiaquara</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Planned</td>
<td>(B) Achieved</td>
</tr>
<tr>
<td>*Corn</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>*Beans</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>*Rice</td>
<td>23</td>
<td>16</td>
</tr>
<tr>
<td>**Manioc</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*Soybean</td>
<td>30</td>
<td>22</td>
</tr>
<tr>
<td>*Wheat</td>
<td>28</td>
<td>16</td>
</tr>
<tr>
<td>** Gorget</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>** Runner-beans</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>** Cucumber</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>** Lady's Finger</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>** Banana</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

(*) Sacks of 60 Kg, (**) Boxes, (***) tons per ha
Table V - Animal Herd: Number of Animals Planned and Actual Situation, and Percentage of Existing Animals in Relation to the Plan by Project.

<table>
<thead>
<tr>
<th>Type of Animal</th>
<th>VITÓRIA</th>
<th></th>
<th>NHUNDIAQUARA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Planned</td>
<td>(B) Actual</td>
<td>(B/A) (%)</td>
<td>(A) Planned</td>
</tr>
<tr>
<td>Cows</td>
<td>219</td>
<td>193</td>
<td>88</td>
<td>73</td>
</tr>
<tr>
<td>Young Cows</td>
<td>180</td>
<td>50</td>
<td>28</td>
<td>-</td>
</tr>
<tr>
<td>Oxen</td>
<td>72</td>
<td>128</td>
<td>178</td>
<td>-</td>
</tr>
<tr>
<td>Young Oxen</td>
<td>267</td>
<td>55</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>Horse</td>
<td>-</td>
<td>13</td>
<td>all</td>
<td>11</td>
</tr>
<tr>
<td>Chicken</td>
<td>14,000</td>
<td>5,204</td>
<td>37</td>
<td>1,700</td>
</tr>
<tr>
<td>Pigs</td>
<td>1,500</td>
<td>811*</td>
<td>54</td>
<td>270</td>
</tr>
</tbody>
</table>

(*) Groups owned 10 cows, 40 pigs and 4 young oxen.

Table VI - Number of Farmers that Owned Animals: Planned and Actual Situation, and Percentage Owned in Relation to the Plan by Project.

<table>
<thead>
<tr>
<th>Type of Animal</th>
<th>VITÓRIA</th>
<th></th>
<th>NHUNDIAQUARA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Planned</td>
<td>(B) Actual</td>
<td>(B/A) (%)</td>
<td>(A) Planned</td>
</tr>
<tr>
<td>Cows</td>
<td>89</td>
<td>74</td>
<td>83</td>
<td>63</td>
</tr>
<tr>
<td>Young Cows</td>
<td>-</td>
<td>30</td>
<td>all</td>
<td>-</td>
</tr>
<tr>
<td>Oxen</td>
<td>89</td>
<td>54</td>
<td>60</td>
<td>-</td>
</tr>
<tr>
<td>Young Oxen</td>
<td>89</td>
<td>26</td>
<td>29</td>
<td>-</td>
</tr>
<tr>
<td>Horse</td>
<td>-</td>
<td>13</td>
<td>all</td>
<td>11</td>
</tr>
<tr>
<td>Chicken</td>
<td>89</td>
<td>84</td>
<td>94</td>
<td>63</td>
</tr>
<tr>
<td>Pigs</td>
<td>89</td>
<td>80</td>
<td>90</td>
<td>63</td>
</tr>
</tbody>
</table>

Table VII - Animal Herd: Number of Animals and Before the Project, Net Increase, and Proportional Increase by Project.

<table>
<thead>
<tr>
<th>Type of Animal</th>
<th>VITÓRIA</th>
<th></th>
<th>NHUNDIAQUARA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Net Increase</td>
<td>Proportional Increase</td>
<td>Number</td>
</tr>
<tr>
<td></td>
<td>(A) Actual</td>
<td>(A-B)</td>
<td>(times)</td>
<td>(A) Actual</td>
</tr>
<tr>
<td>Cows</td>
<td>193</td>
<td>137</td>
<td>3.44</td>
<td>72</td>
</tr>
<tr>
<td>Young Cows</td>
<td>50</td>
<td>31</td>
<td>2.63</td>
<td>-</td>
</tr>
<tr>
<td>Oxen</td>
<td>128</td>
<td>104</td>
<td>42.7</td>
<td>4</td>
</tr>
<tr>
<td>Young Oxen</td>
<td>55</td>
<td>34</td>
<td>6.7</td>
<td>-</td>
</tr>
<tr>
<td>Horse</td>
<td>13</td>
<td>12</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Chicken</td>
<td>5,204</td>
<td>2,975</td>
<td>2.33</td>
<td>2,004</td>
</tr>
<tr>
<td>Pigs</td>
<td>811</td>
<td>313</td>
<td>1.6</td>
<td>140</td>
</tr>
</tbody>
</table>
Table VIII - Number of Essential Implements: Planned, Actual and Percentage of Farmers in Relation to the Plan at Vitória.

<table>
<thead>
<tr>
<th>Implements</th>
<th>(A) Planned</th>
<th>(B) Actual</th>
<th>(B/A) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plough</td>
<td>89</td>
<td>82</td>
<td>92</td>
</tr>
<tr>
<td>Sower</td>
<td>89</td>
<td>90</td>
<td>101</td>
</tr>
<tr>
<td>Sprayer</td>
<td>89</td>
<td>48</td>
<td>53</td>
</tr>
<tr>
<td>Drill</td>
<td>898</td>
<td>89</td>
<td>100</td>
</tr>
<tr>
<td>Cart</td>
<td>89</td>
<td>82</td>
<td>92</td>
</tr>
</tbody>
</table>

Table IX - Number of Implements Owned by Groups and Percentage in Relation to the Total at Vitória.

<table>
<thead>
<tr>
<th>Implements</th>
<th>(A) Total</th>
<th>(B) Group</th>
<th>(B/A) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Motor</td>
<td>22</td>
<td>9</td>
<td>40</td>
</tr>
<tr>
<td>Sprayer</td>
<td>48</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Sower</td>
<td>90</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Corn Crusher</td>
<td>29</td>
<td>20</td>
<td>70</td>
</tr>
<tr>
<td>Rice and wheat Husker</td>
<td>8</td>
<td>8</td>
<td>100</td>
</tr>
</tbody>
</table>

Table X - Number of Essential Implement, Planned, Actual and Percentage in Relation to the Plan at Nhundiaquara.

<table>
<thead>
<tr>
<th>Implements</th>
<th>(A) Planned</th>
<th>(B) Actual</th>
<th>(B/A) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro-Tractor</td>
<td>51</td>
<td>30</td>
<td>58</td>
</tr>
<tr>
<td>Trolley</td>
<td>45</td>
<td>21</td>
<td>47</td>
</tr>
<tr>
<td>Drill</td>
<td>51</td>
<td>26</td>
<td>51</td>
</tr>
<tr>
<td>Sprayer</td>
<td>24</td>
<td>13</td>
<td>54</td>
</tr>
<tr>
<td>Tractor</td>
<td>1</td>
<td>10</td>
<td>900</td>
</tr>
<tr>
<td>Drill</td>
<td>1</td>
<td>8</td>
<td>700</td>
</tr>
<tr>
<td>Plough</td>
<td>1</td>
<td>10</td>
<td>900</td>
</tr>
<tr>
<td>Electric Motor</td>
<td>1</td>
<td>12</td>
<td>1,100</td>
</tr>
</tbody>
</table>
Table XI - Number of Implements Owned by Groups, and Percentage of the Total at Nhundiaquara.

<table>
<thead>
<tr>
<th>Implements</th>
<th>(A) Total</th>
<th>(B) Group</th>
<th>(B/A) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor</td>
<td>10</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Drill</td>
<td>8</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Plough</td>
<td>10</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

Table XIIa - Number of Implements that Farmers Owned Before the Project, Actual Number, and Percentage Acquired in Relation to the Actual Number at Vitória.

<table>
<thead>
<tr>
<th>Implement</th>
<th>(A) Former</th>
<th>(B) Actual</th>
<th>(B/A) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plough</td>
<td>2</td>
<td>82</td>
<td>97</td>
</tr>
<tr>
<td>Sower</td>
<td>1</td>
<td>90</td>
<td>98</td>
</tr>
<tr>
<td>Sprayer</td>
<td>-</td>
<td>48</td>
<td>100</td>
</tr>
<tr>
<td>Drill</td>
<td>-</td>
<td>89</td>
<td>100</td>
</tr>
<tr>
<td>Cart</td>
<td>8</td>
<td>82</td>
<td>90</td>
</tr>
</tbody>
</table>

Table XIIb - Number of Implements that Farmers Owned Before the Project, Actual Number, and Percentage Acquired in Relation to the Actual Number at Nhundiaquara.

<table>
<thead>
<tr>
<th>Implements</th>
<th>(A) Former</th>
<th>(B) Actual</th>
<th>(B/A) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro-Tractor</td>
<td>10</td>
<td>30</td>
<td>66</td>
</tr>
<tr>
<td>Trolley</td>
<td>-</td>
<td>21</td>
<td>100</td>
</tr>
<tr>
<td>Drill</td>
<td>2</td>
<td>48</td>
<td>91</td>
</tr>
<tr>
<td>Plough</td>
<td>2</td>
<td>48</td>
<td>75</td>
</tr>
<tr>
<td>Sprayer</td>
<td>2</td>
<td>13</td>
<td>85</td>
</tr>
<tr>
<td>Tractor</td>
<td>2</td>
<td>10</td>
<td>80</td>
</tr>
<tr>
<td>Drill</td>
<td>2</td>
<td>10</td>
<td>80</td>
</tr>
</tbody>
</table>
Table XIII - Other Equipment: Number of Implements Planned, Actual, Before the Project, Net Increase, Implement Owned by Groups, and Percentage of Implements Owned by Groups in Relation to the Total at Nhundiaquara.

<table>
<thead>
<tr>
<th>Implements</th>
<th>(A) Planned</th>
<th>(B) Actual</th>
<th>(C) Former</th>
<th>(B-C) Increase</th>
<th>(D) Group</th>
<th>(D/B) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor</td>
<td>1</td>
<td>10</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Plough</td>
<td>1</td>
<td>10</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Drill</td>
<td>1</td>
<td>10</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Sprayer</td>
<td>45</td>
<td>13</td>
<td>2</td>
<td>11</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Irrigation System</td>
<td>-</td>
<td>8</td>
<td>2</td>
<td>6</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Chain Saw</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Car</td>
<td>-</td>
<td>6</td>
<td>2</td>
<td>9</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Van</td>
<td>-</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>-</td>
<td>0</td>
</tr>
</tbody>
</table>

Table XIV - Other Equipment: Number of Implements Planned, Actual, Before the Project, Net Increase, Implements Owned by Groups, and Percentage of Implement Owned by Groups in Relation to the Total at Vitória.

<table>
<thead>
<tr>
<th>Implements</th>
<th>(A) Planned</th>
<th>(B) Actual</th>
<th>(C) Before</th>
<th>(B-C) Increase</th>
<th>(D) Group</th>
<th>(D/B) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Plough</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Drill</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Chain Saw</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Car</td>
<td>-</td>
<td>4*</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Timber Mill Cutting Plant</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Electric Motor</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>10</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Rice and Wheat Husker Machine</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>8</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>Corn Crusher Machine</td>
<td>-</td>
<td>11</td>
<td>-</td>
<td>11</td>
<td>11</td>
<td>100</td>
</tr>
<tr>
<td>Barn</td>
<td>89</td>
<td>23</td>
<td>0</td>
<td>23</td>
<td>11</td>
<td>48</td>
</tr>
</tbody>
</table>

(*) One car belonged to one association
Table XV - Number of Houses and Assets: Panned and Achieved, and Percentage Achieved in Relation to the Plan by Project.

<table>
<thead>
<tr>
<th>Housing and Assets</th>
<th>VITORIA</th>
<th></th>
<th>NHUNDIAQUARA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Planned</td>
<td>(B) Actual</td>
<td>Achieved (%)</td>
<td>(A) Planned</td>
</tr>
<tr>
<td>House Owner</td>
<td>89</td>
<td>89</td>
<td>100</td>
<td>63</td>
</tr>
<tr>
<td>Extra House</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bath</td>
<td>-</td>
<td>68</td>
<td>76</td>
<td>-</td>
</tr>
<tr>
<td>Toilet</td>
<td>-</td>
<td>64</td>
<td>72</td>
<td>-</td>
</tr>
<tr>
<td>Brick</td>
<td>-</td>
<td>4</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Wooden</td>
<td>-</td>
<td>78</td>
<td>88</td>
<td>-</td>
</tr>
<tr>
<td>Huts</td>
<td>-</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Under 4 rooms</td>
<td>-</td>
<td>29</td>
<td>32</td>
<td>-</td>
</tr>
<tr>
<td>Barn</td>
<td>89</td>
<td>23</td>
<td>25</td>
<td>63</td>
</tr>
<tr>
<td>Pigsty</td>
<td>89</td>
<td>89</td>
<td>10</td>
<td>63</td>
</tr>
</tbody>
</table>

Table XVI - Number of Houses, Home Appliances, Buildings, and Number of Farmers that had Access to These Services by Project.

<table>
<thead>
<tr>
<th>Items</th>
<th>Vitória</th>
<th></th>
<th>Nhundiaquara</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Former</td>
<td>(B) Actual</td>
<td>(B-A) Increase</td>
<td>Proportional Increase (times)</td>
</tr>
<tr>
<td>Radio</td>
<td>41</td>
<td>78</td>
<td>37</td>
<td>1.9</td>
</tr>
<tr>
<td>TV</td>
<td>16</td>
<td>51</td>
<td>35</td>
<td>3.1</td>
</tr>
<tr>
<td>Fridge</td>
<td>19</td>
<td>51</td>
<td>32</td>
<td>2.6</td>
</tr>
<tr>
<td>Gas Cooker</td>
<td>24</td>
<td>47</td>
<td>23</td>
<td>1.9</td>
</tr>
<tr>
<td>House</td>
<td>54</td>
<td>89</td>
<td>35</td>
<td>1.6</td>
</tr>
<tr>
<td>Barn</td>
<td>0</td>
<td>23</td>
<td>23</td>
<td>All</td>
</tr>
<tr>
<td>Pigsty</td>
<td>0</td>
<td>89</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Electricity</td>
<td>31</td>
<td>86</td>
<td>55</td>
<td>2.7</td>
</tr>
<tr>
<td>Public Transport</td>
<td>51</td>
<td>64</td>
<td>13</td>
<td>1.2</td>
</tr>
<tr>
<td>Health Care</td>
<td>77</td>
<td>82</td>
<td>5</td>
<td>1.6</td>
</tr>
<tr>
<td>Road</td>
<td>80</td>
<td>87</td>
<td>7</td>
<td>1.1</td>
</tr>
</tbody>
</table>

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Table XVII - Percentage of Farmers that Owned a House, Assets and Home appliances, and Had Access to Services by Project.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Vitória (%)</th>
<th>Nhundiaquara (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio</td>
<td>88</td>
<td>76</td>
</tr>
<tr>
<td>TV</td>
<td>57</td>
<td>86</td>
</tr>
<tr>
<td>Fridge</td>
<td>57</td>
<td>59</td>
</tr>
<tr>
<td>Gas Cooker</td>
<td>53</td>
<td>85</td>
</tr>
<tr>
<td>Road</td>
<td>97</td>
<td>75</td>
</tr>
<tr>
<td>House</td>
<td>100</td>
<td>98.5</td>
</tr>
<tr>
<td>Pigsty</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Barn</td>
<td>100</td>
<td>32</td>
</tr>
<tr>
<td>Electricity</td>
<td>97</td>
<td>79</td>
</tr>
<tr>
<td>Public Transport</td>
<td>53</td>
<td>85</td>
</tr>
<tr>
<td>Health Care</td>
<td>86</td>
<td>95</td>
</tr>
</tbody>
</table>

Table XVIIIa - Total Income from Subsistence and Commercial Crops at Vitória

<table>
<thead>
<tr>
<th>CROPS</th>
<th>Planned</th>
<th>%</th>
<th>Achieved</th>
<th>%</th>
<th>Achieved/Planned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsistence</td>
<td>11,819</td>
<td>57</td>
<td>4,501</td>
<td>61</td>
<td>38</td>
</tr>
<tr>
<td>Commercial</td>
<td>9,024</td>
<td>43</td>
<td>2,878</td>
<td>39</td>
<td>32</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20,843</td>
<td>100</td>
<td>7,379</td>
<td>100</td>
<td>35</td>
</tr>
</tbody>
</table>

Table XVIIIb- Total Income from Subsistence and Commercial Crops at Nhundiaquara

<table>
<thead>
<tr>
<th>CROPS</th>
<th>Planned</th>
<th>%</th>
<th>Achieved</th>
<th>%</th>
<th>Achieved/Planned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsistence</td>
<td>4,832</td>
<td>16</td>
<td>837</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>Commercial</td>
<td>24,576</td>
<td>84</td>
<td>7,090</td>
<td>89</td>
<td>29</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29,408</td>
<td>100</td>
<td>7,927</td>
<td>100</td>
<td>27</td>
</tr>
</tbody>
</table>

Table XVIIIc - Percentage of Total Income from Subsistence and Commercial Crops at Vitória in relation to Nhundiaquara.

<table>
<thead>
<tr>
<th>CROPS</th>
<th>Planned</th>
<th>Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsistence</td>
<td>245</td>
<td>538</td>
</tr>
<tr>
<td>Commercial</td>
<td>37</td>
<td>41</td>
</tr>
<tr>
<td>TOTAL</td>
<td>70</td>
<td>93</td>
</tr>
</tbody>
</table>
Table XIXa - Value of Animal Herd, Equipment and Assets: Planned, Former, Achieved, Percentage of the Achieved From Planned, Increase and Percentage of Increase at Vitória.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Planned</th>
<th>Former</th>
<th>Actual</th>
<th>Actual/ Planned (%)</th>
<th>Increase</th>
<th>Proportional Increase (times)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Herd</td>
<td>36,376</td>
<td>9,221</td>
<td>24,541</td>
<td>67</td>
<td>15,320</td>
<td>2.66</td>
</tr>
<tr>
<td>Tractor</td>
<td>0</td>
<td>0</td>
<td>5,984</td>
<td>All</td>
<td>5,984</td>
<td>All</td>
</tr>
<tr>
<td>Implements</td>
<td>3,916</td>
<td>554</td>
<td>19,695</td>
<td>503</td>
<td>19,141</td>
<td>3.555</td>
</tr>
<tr>
<td>Cars</td>
<td>0</td>
<td>800</td>
<td>3,200</td>
<td>0</td>
<td>2,400</td>
<td>All</td>
</tr>
<tr>
<td>Home Appliances</td>
<td>6,230</td>
<td>7,640</td>
<td>19,960</td>
<td>320</td>
<td>12,320</td>
<td>2.61</td>
</tr>
<tr>
<td>TOTAL</td>
<td>46,522</td>
<td>18,215</td>
<td>79,609</td>
<td>158</td>
<td>55,165</td>
<td>4.03</td>
</tr>
</tbody>
</table>

Table XIXb - Value of Animal Herd, Equipment and Assets: Planned, Former, Achieved, Percentage of the Achieved From Planned, Increase and Percentage of Increase at Nhundiaquara.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Planned</th>
<th>Former</th>
<th>Actual</th>
<th>Actual/ Planned (%)</th>
<th>Increase</th>
<th>Proportional Increase (times)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Herd</td>
<td>7,333</td>
<td>3,171</td>
<td>6,112</td>
<td>83</td>
<td>2,941</td>
<td>1.93</td>
</tr>
<tr>
<td>Tractor</td>
<td>3,102</td>
<td>6,694</td>
<td>34,205</td>
<td>1,103</td>
<td>27,511</td>
<td>5.11</td>
</tr>
<tr>
<td>Implements</td>
<td>34,572</td>
<td>4,408</td>
<td>29,432</td>
<td>85</td>
<td>25,024</td>
<td>6.68</td>
</tr>
<tr>
<td>Cars</td>
<td>0</td>
<td>1,600</td>
<td>12,300</td>
<td>0</td>
<td>10,700</td>
<td>7.69</td>
</tr>
<tr>
<td>Home Appliances</td>
<td>4,410</td>
<td>10,840</td>
<td>21,060</td>
<td>478</td>
<td>10,220</td>
<td>1.94</td>
</tr>
<tr>
<td>TOTAL</td>
<td>49,417</td>
<td>26,713</td>
<td>103,109</td>
<td>209</td>
<td>76,396</td>
<td>3.86</td>
</tr>
</tbody>
</table>

Table XX - Proportion of the Value of Assets at Vitória in Relation to Nhundiaquara: Planned, Former, Achieved and Increase.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>PLANNED</th>
<th>FORMER</th>
<th>ACHIEVED</th>
<th>INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Herd</td>
<td>5.0</td>
<td>2.9</td>
<td>4.0</td>
<td>5.2</td>
</tr>
<tr>
<td>Tractor</td>
<td>0.0</td>
<td>0.0</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Equipment</td>
<td>0.1</td>
<td>0.1</td>
<td>0.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Cars</td>
<td>0.0</td>
<td>0.5</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Home Appliances</td>
<td>1.4</td>
<td>0.7</td>
<td>0.9</td>
<td>1.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.9</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
</tbody>
</table>
Table XXI - Value of the Animal Herd, Equipment and Assets Owned by Groups and Percentage of the Total by Project.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>VITÓRIA</th>
<th></th>
<th>NHUNDIQUARA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value</td>
<td>(%) / Total</td>
<td>Value</td>
<td>(%) / Total</td>
</tr>
<tr>
<td>Animal Herd</td>
<td>1,010</td>
<td>4</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Tractor</td>
<td>245</td>
<td>4</td>
<td>3,102</td>
<td>9</td>
</tr>
<tr>
<td>Implements</td>
<td>7,540</td>
<td>38</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Cars</td>
<td>800</td>
<td>25</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>9,595</td>
<td>13</td>
<td>3,102</td>
<td>3</td>
</tr>
</tbody>
</table>
### APPENDIX III - ESTIMATES OF THE VALUE OF ASSETS AND CROPS

Table I - Number of Animal Herd, Equipment and Assets by Project.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>VALUE INDEX (*)</th>
<th>VITÓRIA</th>
<th>NHUNDIAQUARA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Planned (A)</td>
<td>Former (B)</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------</td>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td>Cows</td>
<td>45</td>
<td>219</td>
<td>56</td>
</tr>
<tr>
<td>Young Cows</td>
<td>5</td>
<td>180</td>
<td>19</td>
</tr>
<tr>
<td>Oxen</td>
<td>30</td>
<td>72</td>
<td>3</td>
</tr>
<tr>
<td>Young Oxen</td>
<td>3</td>
<td>267</td>
<td>9</td>
</tr>
<tr>
<td>Horse</td>
<td>30</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Chicken</td>
<td>0.44</td>
<td>14,000</td>
<td>2,229</td>
</tr>
<tr>
<td>Animal Herd</td>
<td>11</td>
<td>1,500</td>
<td>498</td>
</tr>
<tr>
<td>Tractor</td>
<td>2,327</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plough</td>
<td>310</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Drill</td>
<td>465</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tractor with Implements</td>
<td>245</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Micro-Tractor</td>
<td>280</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plough</td>
<td>150</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Drill</td>
<td>150</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Trolley</td>
<td>80</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sprayer</td>
<td>120</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plough (Animal Traction)</td>
<td>15</td>
<td>89</td>
<td>2</td>
</tr>
<tr>
<td>Drill (Animal Traction)</td>
<td>15</td>
<td>89</td>
<td>0</td>
</tr>
<tr>
<td>Cart</td>
<td>45</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Sower (Manual)</td>
<td>4</td>
<td>89</td>
<td>1</td>
</tr>
<tr>
<td>Sprayer (Manual)</td>
<td>10</td>
<td>89</td>
<td>0</td>
</tr>
<tr>
<td>Electric Motor</td>
<td>82</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Corn Crusher</td>
<td>60</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rice and Wheat Husker</td>
<td>240</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chain Saw</td>
<td>160</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Irrigation System</td>
<td>384</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Timber Mill</td>
<td>1,200</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Equipment</td>
<td>40</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Car (old)</td>
<td>800</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Car (New)</td>
<td>1,800</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cars</td>
<td>900</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pigsty</td>
<td>70</td>
<td>89</td>
<td>0</td>
</tr>
<tr>
<td>Radio</td>
<td>10</td>
<td>0</td>
<td>41</td>
</tr>
<tr>
<td>TV</td>
<td>80</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>Fridge</td>
<td>250</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Home Appliances</td>
<td>50</td>
<td>0</td>
<td>24</td>
</tr>
</tbody>
</table>

(*) Based on the price of corn (sc 60 Kg) (SEAB, 1992)
Table II - Value of Animal Herd, Equipment and Assets by Project.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>VITÓRIA</th>
<th>NHUNDIAQUARA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Planned (IxA)</td>
<td>Former</td>
</tr>
<tr>
<td>Cows</td>
<td>9,855</td>
<td>2,520</td>
</tr>
<tr>
<td>Young Cows</td>
<td>900</td>
<td>95</td>
</tr>
<tr>
<td>Oxen</td>
<td>2,160</td>
<td>90</td>
</tr>
<tr>
<td>Young Oxen</td>
<td>801</td>
<td>27</td>
</tr>
<tr>
<td>Horse</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Chicken</td>
<td>6160</td>
<td>980</td>
</tr>
<tr>
<td>Animal Herd</td>
<td>16,500</td>
<td>5,478</td>
</tr>
<tr>
<td>Tractor</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plough</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Drill</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tractor with Implements</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Micro-Tractor</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plough</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Drill</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Trolley</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sprayer</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plough (Animal Traction)</td>
<td>1335</td>
<td>30</td>
</tr>
<tr>
<td>Drill (Animal Traction)</td>
<td>1335</td>
<td>0</td>
</tr>
<tr>
<td>Cart</td>
<td>0</td>
<td>360</td>
</tr>
<tr>
<td>Sower (Manual)</td>
<td>356</td>
<td>4</td>
</tr>
<tr>
<td>Sprayer (Manual)</td>
<td>890</td>
<td>0</td>
</tr>
<tr>
<td>Electric Motor</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Corn Crusher</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rice and Wheat Husker</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chain Saw</td>
<td>0</td>
<td>160</td>
</tr>
<tr>
<td>Irrigation System</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Timber Mill</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Equipment</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Car (old)</td>
<td>0</td>
<td>800</td>
</tr>
<tr>
<td>Car (New)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cars</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pigsty</td>
<td>6,230</td>
<td>0</td>
</tr>
<tr>
<td>Radio</td>
<td>0</td>
<td>410</td>
</tr>
<tr>
<td>TV</td>
<td>0</td>
<td>1,280</td>
</tr>
<tr>
<td>Fridge</td>
<td>0</td>
<td>4750</td>
</tr>
<tr>
<td>Home Appliances</td>
<td>0</td>
<td>1,200</td>
</tr>
<tr>
<td>TOTAL</td>
<td>46,522</td>
<td>8,994</td>
</tr>
</tbody>
</table>

(*) Items from Table I
Table III - Estimates of Income From Crops at Vitória.

<table>
<thead>
<tr>
<th>CROPS</th>
<th>Income Index (*)</th>
<th>CROP LAND</th>
<th>VALUE</th>
<th>PRODUCTIVITY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A)</td>
<td>(B) Planted (ha)</td>
<td>(C) Farmed (ha)</td>
<td>(E) Planned AxB</td>
<td>(F) Actual (sc/ha)</td>
</tr>
<tr>
<td>Corn</td>
<td>10.1</td>
<td>900</td>
<td>509</td>
<td>9,090</td>
<td>5140</td>
</tr>
<tr>
<td>Beans</td>
<td>13.3</td>
<td>180</td>
<td>163</td>
<td>2,394</td>
<td>2167</td>
</tr>
<tr>
<td>Rice</td>
<td>6.2</td>
<td>54</td>
<td>68</td>
<td>334</td>
<td>421</td>
</tr>
<tr>
<td>Soybean</td>
<td>40</td>
<td>168</td>
<td>95.13</td>
<td>6,720</td>
<td>3805</td>
</tr>
<tr>
<td>Wheat</td>
<td>24</td>
<td>96</td>
<td>6.37</td>
<td>2,304</td>
<td>153</td>
</tr>
<tr>
<td>Gorgett</td>
<td>39.6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Runner Beans</td>
<td>68</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cucumber</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lady's Finger</td>
<td>39.3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,398</td>
<td>842</td>
<td>20,843</td>
<td>11,688</td>
<td>-</td>
</tr>
</tbody>
</table>

(*) Based on the income of one hectare of cucumber which was set the value = 100 (SEAB, 1992)
(**) The actual income considering the average productivity per crop stated by project members
Table IV - Estimates of Income From Crops at Nhundiaquara

<table>
<thead>
<tr>
<th>CROPS</th>
<th>Income Index (*)</th>
<th>CROP LAND</th>
<th>VALUE</th>
<th>PRODUCTIVITY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(B) Planned (ha)</td>
<td>(C) Farmed (ha)</td>
<td>(E) Planned (AxB)</td>
<td>(F) Actual** (AxC)</td>
</tr>
<tr>
<td>Corn</td>
<td>10.1</td>
<td>100</td>
<td>40</td>
<td>1,010</td>
<td>404</td>
</tr>
<tr>
<td>Beans</td>
<td>13.3</td>
<td>21</td>
<td>33</td>
<td>279</td>
<td>438.9</td>
</tr>
<tr>
<td>Rice</td>
<td>6.2</td>
<td>43</td>
<td>39</td>
<td>266</td>
<td>241.8</td>
</tr>
<tr>
<td>Gorgett</td>
<td>39.6</td>
<td>54</td>
<td>25</td>
<td>2,138</td>
<td>990</td>
</tr>
<tr>
<td>Runner Beans</td>
<td>68</td>
<td>27</td>
<td>23</td>
<td>1,836</td>
<td>1,564</td>
</tr>
<tr>
<td>Cucumber</td>
<td>100</td>
<td>27</td>
<td>15</td>
<td>2,700</td>
<td>1,500</td>
</tr>
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<td>Lady's Finger</td>
<td>39.3</td>
<td>48</td>
<td>30</td>
<td>1,886</td>
<td>1,179</td>
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<tr>
<td>TOTAL</td>
<td>-</td>
<td>479</td>
<td>260</td>
<td>29,408</td>
<td>13,805</td>
</tr>
</tbody>
</table>

(*) Based on the income of one hectare of cucumber which was set the value = 100 (SEAB, 1992)
(**) The actual income considering the average productivity per crop stated by project members