Capitalist Farming in Brazil: an analysis of the strategies of accumulation on Large Holdings in the 1980s

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Abstract

This study is basically a discussion of the strategies of capital accumulation in large holdings in Brazilian agriculture, specifically in the State of Paraná. Despite the limits of economy of size and the physical constraints to expansion of capital towards land-based activities, large operations have been increased in agriculture, favoured by the conditions of access to land and its inherent market, by the characteristics of official policies and by the dynamics of specific activities, namely those linked to the external market. The analysis is particularly related to the 1980s, when the project of transforming the latifundio into rural enterprise, launched in the late 1960s, was at stake in an economic crisis which forced the government to withdraw from agriculture most of the financial benefits based on subsidised credit. As a consequence of this turning point, farmers' political organisations re-emerged to demand stable support from the state for an agriculture unable to face the crisis on its own. On the other hand, agricultural entrepreneurship showed itself to be largely specific, inasmuch as its income growth follows a very unstable process determined mainly by price variations of each commodity, by oscillations of the land market and by the returns provided by alternative investment in the urban economy. To a large extent, farming entrepreneurs, who represent agrarian capital, have, as part of their survival strategies, begun to loosen their links with land-based activities. Simultaneously, the conditions for
agriculture becoming a field of investment attractive to capital have emerged from economic interests over landownership itself, from the protection provided by the state, and finally from the profitable returns of specific activities, mainly those linked to external market and the agroindustrial complex.
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Abreviations

AGF  Federal Government's Acquisition - Aquisição do Governo Federal

CMN  National Monetary Council - Conselho Monetário Nacional

CNA  National Confederation of Agriculture - Confederação Nacional da Agricultura

CONTAG  National Confederation of Agricultural Workers - Confederação Nacional dos Trabalhadores Agrícolas

EGF  Federal Government's Loans - Empréstimo do Governo Federal

FAAB  Front of Brazilian Agriculture - Frente Ampla da Agropecuária

FOB  Free on Board

GATT  General Agreement on Tariffs and Trade

IAA  Sugar and Alcohol Institute - Instituto do Açúcar e do Alcool

IBC  Brazilian Institute of Coffee - Instituto Brasileiro do Café

IBRA  Brazilian Institute for Land Reform - Instituto Brasileiro de Reforma Agrária

ICM  Commodity Circulation Tax - Imposto de Circulação de Mercadorias

IGP  General Price Index - Índice Geral de Preços

IMF  International Monetary Fund

INDA  National Institute for Agricultural Development - Instituto Nacional de Desenvolvimento Agrícola

INPC  National Index of Retail Price - Índice Nacional de Preço ao Consumidor

IPP  Paid Price Index - Índice de Preços Pagos

IPR  Farmers' Price Index - Índice de Preços Recebidos

LBC  Central Bank Bill - Letras do Banco Central

OCB  Brazil's Cooperative Organisation - Organização das Cooperativas do Brasil

OOC  Official Budget for Credit Operations - Orçamento de Operações Oficiais de Crédito
ORTN Readjustable Bonus of National Treasury - Obrigações Reajustáveis do Tesouro Nacional

OTN National Treasury Bonus - Obrigações do Tesouro Nacional

SEPLAC Secretary of Protection for Cocoa Crop - Secretaria de Proteção da Lavoura Cacaueira

SNA National Agriculture Society - Sociedade Nacional da Agricultura

SNCR National System of Rural Credit - Sistema Nacional de Crédito Rural

SRB Brazilian Rural Society - Sociedade Rural Brasileira

UDR Ruralist Democratic Union - União Democrática Ruralista

VBC Basic Value of Cost - Valor Básico de Custeio
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Introduction

During the 1970s, most of the discussion about the agrarian question in Brazil was concentrated on the pace of the technical modernization, and hence on the impacts of this process on those groups not fully engaged in the project which, in the late 1960s, started a technological and economic transformation of the countryside. The main concern was thus to emphasize that agriculture was becoming an integrated part of the process of capital accumulation and to explain how small farms were subordinated to it. The latter became an important issue because this category of farm was lagging behind in the adoption of technical innovations, and because it did not incorporate the basic features of capitalist production. Therefore, the modernisation process, whose dynamics were centrally hinged on large scale enterprises and capitalist social relations, also embraced small farms based on family labour, whose main characteristics apparently were at odds with the new agricultural model. The main challenge was thus to reveal the means by which this group of farms survived and took part in the process of capital accumulation.

This discussion was a breakthrough in relation to the previously prevailing approach based on the functionalist principles, according to which agriculture was to play certain roles within the economic development of the country. The agrarian question thus started to be interpreted on the basis of the inherent contradictions of capital, and this new approach initially led social and economic research to neglect
intersectorial relations and to focus on the advance of capital in agriculture.

In recent years, however, the mainstream of the discussion on Brazilian agriculture has concentrated on the formation of the CAI (Agroindustrial Complex), causing many authors to shift their attention to the new dynamics imposed by the industrial sector on the farming sector. Moreover, according to this approach, agriculture has lost its own independent dynamics, becoming closely integrated in the agroindustrial complex and the general circulation of financial capital.

Notwithstanding this progress in the treatment of the agrarian question, investigation of the conditions and limits of capital accumulation in agriculture by the capitalist farmers themselves has been seriously neglected. In other words, what has been the role played by these farmers during the transformation of agriculture commanded by the agroindustrial complex? This study intends to bridge this gap by taking the large farmers as the main subject and focusing on their potential for accumulation as the central point for analysis. Furthermore, the main focus is on the strategies adopted by agrarian capital in order to survive in a period when the favourable conditions of the 1970s were drastically transformed by the general economic crisis of the 1980s.

Therefore, although the dynamics of the agroindustrial complex are central to the analysis of agricultural change in Brazil, the importance of investigating the internal aspects of the farm economy is recognised here. These questions are
related both to the changes that occurred in agricultural policy and market conditions, and to the political and economic attitudes of farmers in facing the severe economic crisis that undermined the modernization model established in the late 1960s. This model was based largely on subsidised credit and the involvement of the state in providing the main technological means to expand agricultural output and transform large holdings into rural enterprises.

Chapter 1 presents the main subject matter to be analyzed in the thesis, the methodology adopted and the empirical evidence used. The discussion focuses on the recent development of Brazilian agriculture, with emphasis on the economic crisis endured by farmers in the 1980s.

The starting point of this investigation is to assume that the process of capital accumulation in agriculture specifically requires that obstacles inherent to land-based activities be overcome and that external conditions supporting farm income be established. It is thus by dealing successfully with these principles that capital can be reproduced in farming business. This is the main point developed in Chapter 2 in which theoretical considerations are propounded. The issues related to the obstacles to agricultural production are raised in order to stress the reasons for the resilience of small holdings, but mainly in order to emphasize the strategies and the specificities of capitalist enterprises in expanding in, and towards, agriculture. Although capital is discouraged from concentrating on direct agricultural production due to such factors as lower returns than other
sectors, lack of economies of size, and climate and other natural obstacles, as well as by market instabilities, other parallel factors work to offset these disadvantageous conditions. The question thus involves the specificities of capitalist farming and the elements that allow enterprises to overcome these obstacles noted above, thereby undermining the alleged superiority of smaller farms.

In order to analyze this question, some characteristics of the reproduction of agrarian capital are set out. Firstly, large landownership is not just a reflection of capitalism and modern production. Historical conditions have exerted strong influence on the overwhelming technical transformation of agriculture experienced in recent decades. In other words, the way in which land was first occupied, is a pre-condition of the present pattern of landownership distribution. Secondly, the state has played a central role in determining the level of farmers' income by means of different forms of incentives in terms of subsidised credit, price guarantee, etc. Agricultural technology during this century has been closely nurtured by the establishment of agricultural policies, both in the developed and third world countries. Thirdly, the continued increase in the price of land and of other physical assets has become a central determinant of farmers' income and wealth. These oscillations have become a cornerstone in the process of social differentiation in agriculture by means of which large holdings tend to gain superiority over the smaller. Moreover, the variations in the value of assets are very intense and uneven, i.e. land prices might rise
excessively in one year only for all the gains to be lost in another. These three aspects give farming entrepreneurship a special meaning very much connected with factors located beyond or "outside" the cultivation of land itself. These aspects are also the main theoretical basis for the analysis of the recent development of Brazilian agriculture, and especially of the capitalist sector mainly identified with large farms.

Chapter 3 considers the question of access to land and other aspects of the history of Brazilian agriculture before the 1960s and the beginning of the modernisation process. This process is analyzed for the 1970s, when the face of the countryside was greatly changed. Specific emphasis is given to two main aspects: firstly the technical transformations were strongly supported by government in an artificial environment of economic stability, insofar as the costs of modern equipment and inputs were highly subsidised. Secondly, agricultural entrepreneurship was promoted as a special means to transform the old latifundio, and as a strategy to avoid major structural changes in the distribution of landownership. The objective of this chapter is thus not to provide a view of the modernization process in all its complexity, but to highlight these two aspects in order to contrast them with the changes which occurred in the 1980s.

A turning point in the implementation of agricultural policy occurred in the late 1970s, following the beginning of general economic crisis. The entire process of adjustment and adaptation of farmers to the new economic conditions, namely,
reduction of subsidies, reduction of credit allowances for investment, and instabilities in the external market, is the main theme of Chapter 4. Furthermore, the emergence of capitalist farmers' political mobilization in order to maintain favourable policies for agriculture and to fight against the Land Reform proposal which had been put aside for more than 15 years is analyzed. The main points discussed in this chapter are the high dependence of agricultural policy on general economic policy making, and the proposals put forward by farmers in a systematic campaign to achieve a free-market-type farm economy.

In order to assess the conditions of farming at a more specific level, this study concentrates on the State of Paraná, which is discussed in Chapter 5. A review of the historical conditions underlying the present pattern of landownership distribution is followed by an analysis of the various sectors of production within agriculture, together with measures of economic efficiency according to the different area size groups. In Chapter 6 the internal features of farm businesses are discussed by examining a sample of large holdings and the process of decision-making for agricultural investment. Finally, Chapter 7 contains an assessment of the profitability of farming, focusing on crop production and cattle ranching, but also stressing the investment alternatives farmers have pursued for survival.

In summary, this study aims to investigate the process of capital accumulation by large farms, especially those concentrating on crop production and cattle ranching. It
combines three main aspects: the changes enforced by the implementation of agricultural policies, political action by a newly-established farmers' organisation, and the economic structure of farming at the level of individual holdings. These three elements of discussion acquired a particular significance in the crisis of the 1980s, which created major challenges for the consolidation of capitalist entrepreneurship and organization in farming in Brazil.
Chapter 1

Aims, Hypotheses and Methodological Procedures

1.1- Aims

In 1986/87 the deepening of the Brazilian economic crisis triggered off a widespread social movement in agriculture, particularly in the Centre-South, against the existing official agricultural policies. The central aim of the organizations taking part in this massive protest was to keep the minimum prices at a profitable level, and thereby enable farmers to honour previous debts and to maintain a sufficiently high income to survive. This pressure on agricultural policy during the 1980s revolved around the question of the profitability of agricultural activities. In this period credit subsidies were drastically reduced, the official prices failed to keep pace with soaring production costs, the internal market was controlled by government for the sake of anti-inflationary measures, exports were less successful than in previous years, etc. The rural sector therefore was affected by depressive tendencies which were felt by the large and capitalized farmers as well as small farmers. This critical state in agriculture coincided with a reaction against the revival of land reform proposals supported by landless organizations and a commitment to legislate from the civilian government that took office in 1985.

This conjuncture, which undermined farming economic
stability raises two important questions about the elements that support the profitability of agriculture: why has government been so crucial in farming?; and why are large and capitalist farmers more successful in mobilising government's support for agriculture?; Concomitantly, a lack of research on the economic structure and the social and political organizations of large and capitalist farmers has come to light. Analysts of Brazilian agriculture concentrated during the 1970s on those social groups neglected by the modernization strategies, especially small farmers. Furthermore, large agrarian capital, deemed to be economically settled by virtue of its bigness and political clout within government, revealed its vulnerability during the crisis of the 1980s. These developments emphasised the need for analysis of its social base and the characteristics of its particular process of accumulation.

The central question of this investigation therefore concerns the process of capital accumulation on large farms. It is accepted that capitalist farming is not necessarily synonymous with large units, though in reality they are not significantly distinct from one another in the case of Brazilian agriculture. The point of departure in this analysis is that large holdings are a leading social category in the accumulation of capital in the rural sector for reasons not necessarily related to the production process. In other words, the insertion of agriculture into the general process of accumulation theoretically can occur without a corresponding concentration of capital and increase in size at the
production level. The capitalist system of production in agriculture thus does not require holdings to be large.

Any association between the large farm and capital accumulation will be discussed against the broad background of the general trends in agriculture, the orientation of state agricultural policies, and the procedures adopted by farmers themselves in running farm business. More specifically, the aim is to investigate the conditions for capital accumulation in agriculture in a period of general economic crisis in the 1980s, during which the parameters prevailing in the 1970s were redefined.

Such a discussion requires criteria to define capitalist farms so they can be singled out within the agricultural sector. This task can be rather elusive, however, because many criteria suggested for this purpose in the literature can also be observed for agriculture as a whole. It follows that capitalist enterprises either do not exist in this sector or can only be identified using more restrictive criteria than the classic measures, such as use of hired labour, use of machinery, sale of all or most of the output, profit orientation, high level of returns, as Rudra (1970) and Patnaik (1971) suggest. In the recent development of Brazilian agriculture, with the intense concentration of landownership, the formation of 'rural capitalist enterprise' has been regarded as evidence of capital mobility between sectors. Various authors have taken this to indicate the emergence of capitalist agriculture under assumptions of profit equalisation and proletarianisation of the rural labour

During the modernization process of the 1970s, a more complex social structure emerged, reinforcing the transformation of *latifundio* into "rural enterprise" but also engendering the formation of technified small and medium sized farms, mostly articulated with the external market. (Goodman, 1985). Family farming has become a central feature of modernized agriculture in recent years. Thus Kageyama and Bergamasco (1989) show that a family-based capitalist enterprises\(^1\) have an average size of 213 ha, against 144 ha in the capitalist enterprise category\(^2\). However, even in this category, 28.2% of labour used in 1980 came from the unpaid members of the family. Therefore, the capitalist development of agriculture has produced large units under social relations other than wage labour. Because of the specific characteristics of agriculture, mainly its free entry and competitive production system, it is virtually impossible to separate one social sector from another by reference to supposedly exclusive characteristics, even if farming sectors are different by some individual measures.

1.2- **Hypotheses**

The discussion of the overall conditions for capital accumulation in agriculture thus aims to delineate the basic

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\(^1\) Family-based capitalist enterprise is that which hires permanent workers outside the family, and also may contract temporary workers.

\(^2\) Defined as units which have an administrative worker, and hire labour without any family labour participation.
guidelines by means of which farms have grown in size and become enterprises. For this purpose, the following hypotheses will be examined:

A- Growth in farm size in agriculture is not dictated by productive or technical requirements alone, but is also the result of historical circumstances which first laid the foundations for today's prevailing pattern of landownership distribution.

B- Accumulation of capital in agriculture is a process largely sustained by the state policies and based on the internal valorisation of physical assets, mainly land. The support provided by the state is assumed to be only feasible within limits established by macro-economic policies. However, this process of accumulation tends to be more intense if there is articulation between farm and off-farm capitals. Moreover, those enterprises which manage to take part in the overall circulation of capital are more able to expand their business into agriculture, which in the end becomes the least important segment of the whole structure.

C- The above mechanisms and tendencies permit capitals in agriculture, to overcome the obstacles posed by the intrinsic characteristics of farming production.

D- The crisis faced by Brazilian agriculture in the 1980s reveals the ability of larger farmers to mobilize elements beyond the production structure itself in order to survive as components of capital in general.
1.3- Methodological Procedures

As mentioned above, this study addresses three major empirical issues, in Brazilian agriculture, with emphasis on the State of Paraná.

1.3.1- The Performance of Agricultural Production

The recent development of Brazilian agriculture is examined to provide an overview of the sector, with emphasis on the behaviour of markets and trends in output during the last two decades. This discussion focuses first on Brazilian agriculture as a whole before moving to the State of Paraná. Here, the question of farm size is investigated using the data from the censuses of 1970, 1975, 1980 and 1985. Paraná was chosen for this analysis in order to deal with a geographic space with a similar historical background and where regional differences are not too pronounced for comparison. The basic criterion for classifying farmers is farm size by area as it is the only feasible way to investigate farm organisation in order to combine landownership with a wide range of structural information.

The main aspects of Paraná's rural sector are the historical background and a comparative analysis of farm groups by size during the period of modernisation, in order to identify their main productive sectors and their technical and economic performance. The idea is to assess the level of efficiency of the various groups in complying technically with the dynamism established by the modernisation strategy. And
most importantly, to examine the level of profitability by investigating the amount and targets of investment, the composition of physical assets held, and the amount of gross profits.

1.3.2- Impact of Agricultural Policies on the Farm Economy

Given the market instabilities which occurred in the late 1970s and 1980s, the farm sector became more dependent on state policies, suggesting that rural enterprises were unlikely to endure the bleak economic conditions unaided. Under these circumstances, the impact of official policies on different farm groups became a focal point of investigation, given that it was no longer possible to provide the systematic support experienced in the 1970s, while the economic crisis severely restricted prospects for a self-sustaining farming sector. The analysis of state policies reviews the mainstream of the modernisation strategies in the late 1960s, the turning point in the late 1970s, and the main changes which occurred in the first half of the 1980s. The main purpose of this discussion is to show that agricultural policies are crucial for farmers' income, but are very dependent on the priorities established at the macroeconomic level.

The conflict between these two interests has been the basic factor behind the various redefinitions of agricultural policies, mainly rural credit. Within this process, farmers' organisations have played an important role in exerting pressure on government for continuous economic support. Here
again, it is important to recall the historical background of these organisations, mainly in terms of their relationship with the state. The basic sources of information for this purpose were statements by farmers' leaders, documents from their organisations, reports in newspapers and specialised periodicals, and interviews carried out in Paraná with presidents of trade unions and other organisations formed by large farmers.

1.3.3- Farm's Economic Structure and Business Operation

The analysis here turns to the internal characteristics of farm holdings in order to investigate the functioning of different sectors of rural business. The strategies adopted by farmers to maintain their income and their likelihood of success in each production activity are thus the core of this topic. The information examined in this section, was mostly collected in field research in Paraná in July 1990 and from official sources. These data are meant to complement the assessment of the individual holdings' historical evolution, the functioning of each sector of production, namely, crops and cattle ranching, the strategies of investment decision-making, and the estimates of profitability made by the farmers themselves.

The field research undertaken in Paraná was not intended to cover a statistically significant group of large farms, but to obtain sufficient information to provide a picture of farm operations and business strategies. Moreover, the information
collected was mainly qualitative, except in some cases in which it was possible to obtain data relating to costs and other quantitative items. It must be mentioned that poor farming management has prevented farmers keeping financial records, and because of recent high inflation in the country it has become difficult for them to recall their previous costs and income.

Overall, the proposal is to integrate political and economic factors in interpreting the features of capitalist farming led by large farmers in Brazilian agriculture in a period of crisis.
Chapter 2
The Movement of Capital Towards Agriculture

During this century, the existence of large holdings has resulted from three processes of concentration, historically established in capitalist agriculture. The first can be regarded as a historical legacy from feudalism and from systems of production predominant before the massive process of technological transformation, which began to occur in the early 1900s. The survival of large landownership thus became the founding stone for the existence of large scale production in agriculture and the constitution of a strong political interest group, based in the countryside, at the local and national levels. According to Mouzelis (1976) since the agrarian bourgeoisie can occupy the place of feudal landlords, the former can also keep its monopoly over land and secure an additional profit as a result of land proprietorship and land scarcity.

In this process of transition, landowners had to adapt to a more commercially oriented system or suffer the consequences of losing space in agriculture. In Great Britain, the traditional propertied class was disappearing as a result of the new era of technical and economic changes under way since the beginning of the nineteenth century or earlier.

"Taking a view of British agriculture...there is a silent revolution in progress...We are, unless I mistake, witnessing the gradual disappearance of the old landowning class."(The Hon E.F.L. Wood, in Sutherland,D.,1968, p.50).

The second process which underlies the existence of large
farms is a result by a movement of social differentiation inside agriculture. This has produced an endless re-creation and adaptation both of small and medium sized farms, under various systems of access to land, striving to survive in a deeply competitive environment, and of large farms seemingly settled on more stable economic grounds. However, this movement among farmers takes shape in each country according to the way in which agriculture becomes part of the whole circuit of capital. This process is also dictated by the availability of technology as a means of increasing scale and productivity, and the political decisions underpinning land distribution.

Despite the variety of trends in this process, it is the survival of the small family farm within the expansion of capitalist relations of production that has most stimulated academic debate. This social category has instead adapted itself to the requirements established by the dominant industrial capital for agriculture. This resilience has raised some challenging questions about the conditions of capital reproduction in agriculture. As Llambi (1988) asked,

"What are the general and necessary conditions which make possible investment by small capital in certain activities, while inhibiting large capital investors from these same areas?" (p.357).

Many answers are given to this question, highlighting the alleged superiority of small farmers on the grounds that their structural requirement is not for profit but only for family income. (Vergopoulos, 1978). On the same line, Nakano(1981) argues that the survival of family farm is a result of the destruction of the rate of profit and land rent by the
competition of agriculture with the oligopolist industrial sector. Therefore, the small family farm would be a category produced by the capitalist development of agriculture itself. However, other authors have added other elements to this approach by stressing the inability of capital to expand investment and accumulation, due to such obstacles as land scarcity and the biological components of production, therefore providing an opportunity to small farming. (Mann and Dickinson, 1978; Aidar and Junior, 1981).

A third movement of capital towards agriculture involves non-agricultural enterprises, which divert part of their financial assets to the countryside. The establishment of farm enterprises, by this process, expresses the trend according to which agriculture is becoming a branch of a capital with activities in various sectors. As a result of this process of integration, agriculture has lost its isolated position in which its connection with the rest of the economy was basically through trade relations, as farm economy has become part of the wider circuit of capital.

These three trends, and the large farms established by them have flowed into the main stream of agricultural business' viability, which is the central point for capital to reproduce itself. This question, however, has revolved around some factors underlying capital accumulation based on farm size and farming intensity, although these prospects can be rather overshadowed by constraints which in different ways make agriculture unattractive to capital. Some authors, on various assumptions, have stressed that capital is not
attracted to agriculture because of the higher profitability of other branches, namely, agroindustry and marketing sectors. (Mann and Dickinson, 1978; Contreras, 1977). Capital would thus tend to avoid sectors where the gap between production time and labour time is wide, and where the turnover of capital takes longer than that in industry.

"...those spheres of production characterised by a more or less rigid non-identity of production time and labour time are likely to prove unattractive to capital on a large scale and are thus left more or less in the hands of the petty producer". (Mann and Dickinson, 1978 p.473)

In other words, small farms survive insofar as capitalist investment is mainly driven away from agriculture. Agriculture thus would logically remain as an investment field reserved to small producers, especially in those areas where those constraints mentioned above are still strong. Moreover, the advance of capitalism in agriculture would stop at the farm gate, leaving the agricultural production process alongside the dominant capitalist forms of production as an anomaly explained by intrinsic features of capitalism. (Mann and Dickinson, 1978).

The question as to why so many small farmers have survived in an environment of increasing size and concentration can thus be answered in terms of those physical obstacles, although the reasons are to be found in the incapacity of the large ones, rather than the strength or superiority of the small ones. More precisely, the uncertainties caused by Nature - biological risks, weather changes - and by trade fluctuations and the longer turnover period of capital, are deemed to thwart the free movement of capital into
agriculture.

Furthermore, the obstacles to capitalist investment in agriculture derive from the fact that agricultural products are primarily destined for human consumption. They are also subject to a declining income-elasticity of demand, insofar as farmers' market is limited by people's physiological capacity for consumption. In addition, there is a systematic control over agricultural prices because they account for an important portion of urban workers' expenditures, and are thus a determinant element for wage level and also for industrial production costs. This point is closely associated with the incapacity of farmers themselves to set their prices, as a consequence of the imbalance between a competitive productive sector and oligopolist market structures. These are marked by industry's control over both its own inputs acquired from agriculture (raw material), and over the wide range of inputs and equipment supplied to the farming sector.

As agriculture becomes more commoditised, producers also are more affected by price oscillations, associated with successful harvests or crop failures. The market for agricultural commodities is more subject to instability when compared with industry in the long term. (Bell and Newby, 1974). Price instability is the major reason why producers in many countries have been campaigning for parity between agricultural and industrial prices in order to assure a minimum profitability. When their product is sold, the price is established by market conditions, which have...

"...no relation to the need of farmers for a price that would cover production costs and profits."
Indeed, those who established farm prices were concerned with profits for the purchaser, not the producer". (Fite.1981. p.31)

A final obstacle to the take over of farming production process by capital, extensively stressed by some authors, is land, both in respect to the tenure system and to land's role in the production system. Firstly, land is a non-produced means of production which

"...cannot easily be socially modified or manipulated as occurs in industry proper."(Mann and Dickinson, 1978, p.472)

Furthermore land supply is very limited, its marketing being marked by natural particularities, such as fertility, releve, and proximity to market, but mostly by the fact that it is a natural feature, and cannot be moved from one place to another at will. This aspect is central here since it determines the condition for investment in landed property, whether for expanding productive assets or otherwise.

"Because land is essentially fixed in quantity large farm operators cannot manufacture more land in the same way that an industrial firm can expand its operations by buying more machines". (Buttel and Youngberg,1982, p. 389).

Although this position of land has been minimized by land-saving technological innovations both in the biological and the mechanical fields, agricultural production process is still heavily dependent on the conditions of land. Therefore, farming has remained as a specific sector without following the pattern of industrial capital. As Goodman et al (1987) stressed, industry has still been unable to transform agriculture in its own image.

"The limitations of industrial appropriation can be seen in the failure to eliminate land as space in
the cultivation of field crops. In fact, the principal characteristic of agricultural mechanization - its mobility is dictated precisely by spatial extensiveness of land-based production".(p.24)

These structural obstacles to the industrialisation of agriculture make the question about the concentration of capital in the rural sector and about the competition between segments of different size, still unsolved. The following discussion provides some reflection about the relative superiority of large farms and limits of increasing returns to size.

2.1- Farm Production and the Limits to Size

During the last four decades farms have grown significantly in size as a result of capitalist competition in agriculture and the farmers' attempts to raise their level of income or, conversely, to avoid being left behind in bankruptcy or mere subsistence. The history of American agriculture shows how farmers have been trapped in the 'get big or get out' environment, in which economic efficiency and profit maximization have prevailed in determining the use of land.(Fite, G. 1981)

Nevertheless, as the pressure on farmers to increase efficiency has intensified, the historical debate about large and small farms still demonstrates that the route towards an efficient agriculture does not necessarily lie on larger holdings. Initiatives to settle producers through land reform
and settlement projects have illustrated the likelihood of a
revival of small farms within a general environment of
competition and increasing size.

On the assumption that capital accumulation in
agriculture is specific, the point of farm size here is
related to the factors that account for the efficiency and
profitability of farming in general, but in particular of
large farms, so as to compare with the small ones.

The competitiveness and efficiency of small holdings have
been debated since the time of the classical economists. Adam
Smith believed that small proprietors were the most
enthusiastic improvers, suggesting that they would be able to
survive as capitalism developed. Similarly, J. Stuart Mill
developed ideas according to which capitalist organisation in
agriculture should be based on small farmers.

"In the case of manufacturing he favoured the large
unit, but farming, he claimed, 'stands', in many
respects, on different grounds...Mill argued that
the division of labour brought little benefit in
agriculture, while the small farmer, who owned his
land or had permanent tenure, was highly
industrious."(Martin, 1981, p.27)

Likewise it was assumed by David(1984) that capital in
agriculture is reproduced without leading to a gobbling up of
small units by medium ones, of the latter by the large ones,
and then finally by the gigantic enterprises. (David,
E.,1984). These opinions must be viewed in the light of
technological advance before the end of the nineteenth
century, mostly related to the production process. In fact,
David's argument was based on a model case, in which he made
a technical comparison between a small and a large plot of
It is rather like an ideal situation, in which both the small and the large receive the same technology and instruments of production. If this were the case, the following remarks would make complete sense.

"Are there factors within the essential nature of agriculture itself, of its implements of labour, its process of labour, and its product, which under otherwise identical circumstances give the small proprietor a chance of competition with the large? To this question I answer: Yes!" (David, 1984 p.12)

Nevertheless, the larger farms have taken over smaller units in many sectors within agriculture and have been reinforced in various ways, in a trend contrary to that predicted in technical terms, or by the 'essential nature' alone. That investment in agriculture does not reward larger units to the same extent as in industry is one thing. It is another to believe that the small farmer can meet capitalist requirements of efficiency in production and marketing. In this sense Kautsky’s (1984) argument is based on more than the technical environment. The increasing costs and requirements of modern techniques, higher taxes, interest payments, and other outlays associated with commodity production, leave the small farmer in a worse situation than the large-scale producer. Therefore, the constraints of Nature in the production process are more likely to be offset by technical advances which are better implemented on the larger units.

From the above, large farms seem to be more responsive to the driving force of technological improvements, and even in facing the challenges imposed by natural risks and instabilities, although the small scale groups have not been swept away. There has been more exactly a variety of trends,
both reinforcing increased farm size in respect to some activities and discouraging it in others. Small units have also used modern techniques, which has allowed them to retain competitiveness. Therefore, any association of technology exclusively with large size has proved to be limited.

However, as a general trend, where there is profitability and the necessary technology to overcome possible obstacles, large farms are more likely to undermine the competitiveness of smaller units. Analyzing Indian agriculture, Ghose (1979) stresses that the superiority of peasant production is due to the backwardness of technology. As soon as the chemical inputs start to be used the larger units achieve greater efficiency and productivity.

"It seems fairly clear that technological progress involving the introduction of chemical fertilizers, labour-saving machinery (e.g. tractors) and modern irrigation equipment (e.g. tubewells) erode the basis of superiority of small-scale production. Indeed, such technological progress may introduce increasing returns to scale in agricultural production."

(p.42)

Working on a land reform proposal for less developed countries, Berry and Cline (1979) pointed out that the small holdings resulting from such a structural change would be successful up to the point at which the development of the country provided small farmers with a higher opportunity cost of labour. Beyond this point their special advantages would tend to disappear.

A great part of the American literature on agriculture underlines the historical importance of the family farm. The roots of American democracy lie in the settlement of small units during the last century, following Thomas Jefferson's
ideas of a balanced social structure in agriculture.

"Jefferson visualized a nation of small farmers working their own land." (Anderson, 1972, p.354) On this historical legacy, some authors have suggested that increasing size should be controlled by government, since there would therefore be a large benefit to society.

Along the same lines, Heady and Ball (1972) pointed out that farm size could be limited to that at which gains of scale would be achieved. This would be a basis for a more equitable land distribution and for preventing the expansion of very large farms. Moreover, the limited economy of size\(^3\) in agriculture would reinforce competitiveness of small farmers. However, this question must be examined in the light of internal and external influences on farm operation. Internally, economy of size can be regarded as unit cost reduction per unit of output as production increases. Externally, the question covers a wide range of factors that contribute to the relative strength of the large/small farm, such as official policy, economies in selling and buying larger quantities, land values, and so on. Therefore, the point under focus is whether farm size increases because

\(^3\)-Most of the studies use both economies of size and economies of scale. The distinction between the two is not important here, and hence it is not greatly emphasized in analyses of this question. Madden (1967) pointed out a difference between them, without going into detailed explanation: "the term scale is used many places in the literature when proportions of resources are held constant, as in Euler's theorem. However, there appears to be almost universal agreement among economists that in real life firms do not expand all resources and products in exactly equal proportions as the level of the firm's activity is increased... The term economies of size, means reductions in total cost per unit of production from changes in the quantity of resources employed by the firm or in the firm's output". (Madden, J.P. pg 1). So, the relevant point here is which size of farm appears to be more efficient in terms of the relation output/input. The terminology adopted here will be economies of size.
efficiency is higher in bigger units, or because of other factors. In other words, is growth in size necessary to achieve the most efficient production in agriculture? (Madden, 1967).

Much research, using different approaches and sources of evidence, has concentrated on the correlation between output and cost of production. In general, analyses are carried out on statistical models, mostly formulated in abstract terms, which do not capture the whole complexity of this issue, insofar as it is usually assumed that all farms possess the same structure, except for area of their land. This assumption ignores aspects such as level of input utilization, quality of land, family work force, etc, which differ between regions, groups of farms, and between individual farms of equal size. However, despite this restrictive assumption and the narrow basis of the empirical information used, the unanimous conclusion is that economies of size are an unimportant factor in explaining the superiority of large farms vis-à-vis medium and small ones. Beyond a certain limit, absolute profit is only increased by raising production at the same level of costs, as is shown by the well known unit cost/output envelope curve, "L"-shaped in the long run.

Recalling previous studies on this issue, Madden (1967) estimated that 1 to 2 men was the limit of size economies in

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The meaning of efficiency here is that of a higher profit ratio. Nonetheless it is important to point out other meanings related to society’s welfare, in terms of cheaper food, wider protection of the environment, more effective land use, etc. In order to recall all these grounds, Raup (1972) states: "Given the levels of efficiency that can be achieved on moderate-sized farms in American agriculture, the question of farm size expansion is largely irrelevant on agrotechnical grounds. It is highly relevant on social, political, and, in the broadest sense, cultural grounds." (pg 16)
crop production on a modern, fully mechanized holding, which means an area of 640 acres. For beef production the limit is given by feedlots whose size is sufficient for 1,500- to 5,000- head, beyond which unimportant economies of size equivalent to $1 to $2 per head were obtained. Srivastava, et al, (1973) using a similar approach in a study of Indian agriculture stressed that there are no increasing returns associated with scale as farm size rises⁵. This limitation could strengthen the argument in favour of the superiority of small family farm, since the technical advances in agriculture have allowed farms to achieve most of economy of size with family labourforce only. (Nakano,1982)

Beside methodological considerations, which have attracted great attention in most of the literature related to this issue (Krause and Kyle, 1970), the most important issue in this debate concerns the reasons why economic gains associated with scale are so restricted. One reason is related to the pressure on management to deal with more widespread operations, which would raise this particular cost steeply. The small unit is thus favoured by the reduction in management cost per unit. (Jensen,1984). However, the difficulties in communications which emerge when the production process of a firm is scattered over a larger area can be overcome by new technology allowing large units to be more easily operated.

On the other hand, it is likely that specialization brings some advantages to large units as management costs

⁵ Hall and Le Veen (1978) stressed that modest sized farms can achieve a major part of the possible cost savings associated with size. Likewise, Jensen (1984), focusing on the trend towards larger farms in Saskatchewan, Canada, pointed out that the bigger the farm, the less efficient it is.
including those of dealing with different activities can be reduced. This line of argument is followed by Renborg (1969), who pointed out that

"business-economic forces also exert powerful pressure upon individual enterprises to engage more and more in specialization."(p.219).

As a consequence of the limits of economies of size, agriculture is bound to possess a structural heterogeneity under which farms of various degrees of efficiency and size can survive. If there were an optimal size, competition would select it as the most viable one, simultaneously pushing those below it out of production (Boussard, 1986). In reality, farms are always moving towards this size, without achieving it, because of prevailing barriers which prevent them from concentrating more capital at the production level. Conversely, there is a dynamic process of adjustment, moulded by natural influences and by attempts to overcome them.

"Without economies of scale, there are no incentives to the homogenisation of farm sizes. Thus, the heterogeneity of farm sizes derives straightforwardly from the specificity of the agricultural production function." (Boussard, 1986, p.532/33)

Therefore, the search for economies of size fails to provide reasons for greater farm size, indeed driving the search towards other activities outside the immediate internal production process. This outcome, together with the survival of small farms in a capitalist agriculture, tends to support the assumption that agriculture is a sector where investments are easily discouraged by the constraints pointed out above.
2.2- The Conditions for Reproduction of Agrarian Capital

If capitalist enterprises are deterred from expanding in agriculture, how can the development of business based on big rural holdings be explained? Why does capital enter this "backward sector", if the existing conditions within it are unfavourable? Between 1974 and 1985 in the United States those farms with sales of more than US$500,000 increased their share in the total value of sales from 25.2% to 32.2%. Conversely, the medium-size family farms, with sales between US$40,000 and US$249,999, decreased their importance in the total value of sales from 46% to 41% in the same period, and the corresponding decrease for small family farms (US$10,000 - US$39,999) was from 13.6% to 7.5% accordingly (Guither and Halcrow, 1988). Buttel (1983) presents similar figures, also for the United States, according to which, in 1978 the large farms (with sales in excess of US$200,000 annually), which represented only 3.3% of all the farms, sold 44.2% of the gross agricultural output. Furthermore, family farms in U.S.A seem to be undergoing a trend towards a differentiation accompanied by the disappearance of medium-sized farms, thereby reinforcing the two extremes of small part-time operators and large groups. There is thus evidence to suggest that capitalism in agriculture is developing in big farms, in a steady process of concentration.

"Over the 120 years since the civil war, there has been emergence of an essentially capitalist agriculture. There have been periods of surplus production and declining profit, technological changes and the substitution of capital for labor, and consolidation of capital into larger
enterprises" (Goss et al, 1980, p.95).

Although it is beyond dispute that concentration of capital occurs in agriculture, some aspects of this process need to be noted here. First, the distinction must be made between the widespread trend in which agriculture is absorbed as part of capitalist society, transforming this sector into another field of capital accumulation, and the transformation of internal social relations into capitalist social relations. In other words, farming has been effectively influenced by the requirements of capital accumulation in general, which does not mean that the proletarianisation of the workforce and centralization of capital have to be widely reproduced.

To a large extent, hired labour has been a basic criterion to identify capitalist farms in contrast to those holdings operated mainly by family workers. According to Mottura and Pugliese (1981), proletarianization is a 'natural consequence' of capitalist agriculture. Although this criterion has been an empirical adaptation of Marx's Theory of Value, there is not much agreement among authors about the number of workers required for a farm to be identified as capitalist. Ghorayshi (1986) reviewed points of view which vary in the implementation of this concept in terms of both the amount of hired work and the methodological procedure adopted to muster empirical evidence. He himself stuck to Marx's definition of five or more hired workers as the number necessary to characterize a capitalist farm. However, his own evidence from Canadian agriculture seems to contradict this option, as
"Defining capitalist units as those hiring five or more person years of labor means that 0.4 per cent of Canadian farms in 1971 and 0.7 per cent of farms in 1981 were capitalist. Although as a proportion of all farms this is small, they accounted for 8.2 per cent of all farms sales in 1971 and 9.6 per cent in 1981." (p. 151)

Moreover, Ghorayshi (1986) found that this criterion does not agree with the trends in the scale of production,

"as of all Canadian farms hiring any labor in 1981, 34.2 per cent were small in scale, 52.1 per cent were medium sized and 13.7 per cent were large scale operations". (p.153)

Therefore, the conditions of capital reproduction in agriculture have been shown to be specific, somehow defying the predictions according to which widespread proletarianisation, free competition of capital between this sector and others, equal profitability, etc, would dominate. The reproduction of proletarians is not a precondition for capitalist enterprises to be recognised as such in agriculture, because at the very first signs of mechanical innovations, labour can start fleeing to cities. Therefore, for agriculture alone, the reproduction of capital is not necessarily the reproduction of wage labourers.

Furthermore, the process of mechanization has brought about a reduction in manpower needs, which allows many successful farmers to cope with production by using only family labour force. This is a "contradiction" of agricultural development, since the process of technological innovation is largely followed by a tendency to expel the workforce. Moreover, the existence of proletarians alone is not in itself sufficient for farmers to become a capitalist enterprise. It is rather the retention of surplus and its permanent
reinvestment and accumulation which promotes farmers to the status of capitalists (Patnaik, 1971).

On the other hand a basic feature which has made agriculture attractive to investment and able to generate profitability is that land, previously regarded as a natural constraint, has been transformed into an instrument of accumulation. The thorough commoditisation of agriculture and its subsequent integration into the market have transformed all instruments of production into marketable assets. Land, however, retains some features that make it a different commodity: it is natural; it exists in a limited quantity; it has no mobility; its fertility varies according to locality; its price oscillates, according to the revenue expected from its use and from its speculative value. Land prices are thus based not only on the rents generated by its productive use but also by its transformation into a speculative asset, thereby becoming a source of wealth for those who own it.

"...if we probe hard within this diversity (of land ownership) we can begin to spot a central guiding feature in the behaviour of all economic agents, regardless of exactly who they are and what their immediate interests dictate: this is the increasing tendency to treat the land as a pure financial asset. Herein lies the clue to both the form and the mechanics of the transition to the purely capitalist form of private property in land." (Harvey D., 1982, p.347)

This survival of landed property within capitalist society reflects, above all, how land has been included as part of capital accumulation process. It thereby releases itself from the limits of exclusively agricultural landownership, gradually replacing this by a wider range of
interests including the search for rewards derived from the oscillations of land prices, and for protection against periodic instabilities. Under these new circumstances, land has thus become an instrument of capital valorisation and a shelter or "hedge" in times of risk from high inflation rates, rather than an element whose cost must be subtracted from the total profit, as might be conceived by those who identify land tenure as a factor that inhibits capital from advancing into agricultural production. Furthermore, the obstacles raised by the land ownership to entry into farming are not caused by the diversion of resources from the production process, but by the competition in land market itself.

"...land price increases themselves, heightened by competition from institutions and the like (looking for hedges against inflation, balancing portfolios, etc.), make both the expansion of individual holdings and the entry of new owner-occupiers increasingly difficult." (Massey and Catalano, 1978, p.104).

Therefore, land increasingly gains independence from its production base because of its valorisation and of its keeping pace with the fluctuation of financial assets values, thus attracting investors from agriculture and other sectors alike.

"It's possible in this way to understand the real movement of large capital in Brazilian agriculture, and specifically its strategy of diversifying its assets towards the land market." (Delgado, 1985, p.203).

Therefore, the contradiction embodied in landed property under capitalism is transferred from the countryside to the circuit of capital at the level of the economy, thus losing its isolation and its previous particular identity. Correspondingly, the wealth obtained from landownership can
increase not only as a result of better agricultural commodity prices but also because of changes in the financial system or in the more closely related land market. Brinkman (1986) emphasizes the fundamental role played by capital appreciation and depreciation in the financial returns to agriculture and in its viability. Referring to the losses caused by different factors (from natural effects to the instability in commodity prices and even in land prices), he adds that

"it will take many years of profitable farming to make up these losses, but large capital appreciation could recapture the losses in a single year". (p.131)

It is important to point out that although the price of land is constantly in appreciation, there is a risk of falling prices. Even so, this does not seem to reduce the incentives for purchasing bigger plots, not only because of the production requirements, but also for future possible land value appreciation. In the United States, agricultural land prices tripled during the 1960s and 1970s, attracting new buyers to the scene, mainly for tax shelter purposes. (Madden, 1978).

Although the variation of asset values plays an important part in the process of accumulation by large farmers, functioning as an element that reinforces economic interests among different sectors, there remains a question concerning the profitability of farming as a sector of production. A key point is that gross profit, and the use of the total revenue of a firm are the basic measures of efficiency and the necessary grounds for further expansion. In other words, the driving force for growth in size is the "higher total profit,
rather than lower average cost." (Madden, 1967-p.55). Farmers thus tend to orientate their business according to their total income, instead of other criteria, such as the ratio of profit to total costs or the physical assets.

Secondly, large farms are superior in buying and selling economies, since they can avoid the middlemen, and hence obtain a better price for a larger lots of more homogenous product, as well as lower prices for inputs purchased in large quantities. (Garcia et al, 1982).

A third factor explaining farm profitability and, moreover, increasing size, is the role played by larger farmers within the state, these farmers exerting influence over official policies. That is, if growth in size is not achievable by economies of size, it can be patronised by government. (Jensen, 1984). Rather than for any inherent economic reasons related to improving efficiency, the question is to increase income, no matter whether part of it comes from the government. Using the concept of profit maximization, that is, the value of marginal product equated to variable input costs, Mahmood and Maki (1979) conclude that the advantages obtained by large farms hinge on previous public policy decisions, rather than on "inherent characteristic of size". (p.67). For Latin American countries, De Janvry (1981) emphasizes the appropriation of the 'institutional rent' by large holdings in the context of their control over public policies and privileged access to subsidies. Likewise the superiority of large farms in sugar-cane production in Brazilian agriculture arises from the
pecuniary advantages provided by official policies, these advantages being distributed unequally among farmers, and rewarding the larger ones disproportionately. (Manoel, 1986).

This has been a worldwide characteristic of the state action in agriculture, as the lion's share of subsidies, price support and other benefits, goes to the bigger farmers. The reasons vary extensively according to how agricultural policies are conceived and implemented. As they are set up indiscriminately, their benefits tend to be distributed among farmers in accordance with the structural differentiation of their holdings. This occurs, for example, with general price support programmes, where large farms, responsible for the major part of the overall agricultural output, receive most of the funds, as the case of the United States demonstrates. Credit policies for technological improvements have also mostly benefitted larger units inasmuch as these units have more readily adopted such new techniques. The vast literature evaluating Brazilian government policies towards agriculture during the modernization period in the 1970s also indicates how large property was the main beneficiary of credit, support price, and technological incentive policies.

A summary of the factors underlying the movement of capital in agriculture can be found in Stanton's (1978) analysis of the question why large enterprises survive with a low return. His answer is based on three points: a) since greater output volume means higher net income, farmers tend to produce more in order to boost total revenue; b) there is an appreciation in the value of real estate, which confers a
major importance to land prices; c) being larger is a condition for controlling more resources, taking part in a politically influential group and thus enjoying easier access to the sources of financial capital, and political status in the community. The answer thus seems to be predominantly provided by exogenous factors rather than elements endogenous to the production process.

2.3-The Role of the State in Agriculture's Capitalization

Government policies have been a central component of farming because it has provided producers with credit, price, and related market protection measures, technological innovations, landownership regulations, and so on. Agriculture and the state have been deeply involved with each other for different reasons, which have driven farmers to seek protection for their income in such a way that the development of agriculture has become decisively attached to government policy.

State intervention in agricultural business has been founded on three 'structural' aspects, namely, those intrinsic to farming activity, both in terms of the biological process and of the lack of monopoly power in price determination; those related to the insertion of agriculture in the overall process of accumulation; and those resulting

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6 Some authors set out a wide range of reasons for state intervention. See Johnson (1958) and Hill (1984).
from political action, marked mainly by farmers' political lobbies.

The first aspect constitutes what has been called the 'special case' and underlines the difficulties experienced by farmers in obtaining the same level of profitability as in other sectors. On the one hand, since the production system is bound to be influenced by uncertainties, as stressed above, government is forced to provide both technical assistance and economic compensation programmes by means of price policies and crop insurance coverage. On the other hand, farming activity is bound to face economic instabilities caused by the way the agricultural markets are organised. Firstly the large number of producing units precludes any monopolistic control over prices and costs, whereas beyond the farm gate farmers often are confronted by oligopolistic buyers and suppliers. Consequently, for the capital engaged in agricultural production system, state intervention is expected to make up for farmers' lack of control over prices and costs.

The second aspect is accounted for by the requirements of accumulation at the level of the economy, of which agricultural policy is an inherent part. The paths followed by agriculture in terms of landownership distribution and the mix of productive activities, reflect the priorities adopted by the state for economic development at large. For example the incentives to export production in Less Developed Countries, responding to the needs of foreign currency to solve problems of balance of payment and foreign debt, have been at the core of the state intervention in agriculture. Inflationary
problems have caused the state to pursue agricultural policies formulated to meet the requirements of a macroeconomic equilibrium. Likewise, the mounting demand for foodstuffs, as urbanisation increases, has been met by different strategies enforced by the state towards agriculture, ranging from stimulating small-scale production to importing cheap products. (De Janvry, 1981). These two extreme situations suggest how the industrial pattern of growth determines agricultural production by stressing the priorities to be pursued by the state.

The third aspect to take into account in order to explain the features of agricultural policies is the influence of the farm lobby. The protection of farming activities, assuring them profitable prices and cost subsidies, provided by government, has been, in large measure a result of political pressure on the state by farmers' organisations. This political strength stems both from the electoral front, and from the direct intervention of the farming lobby in the process of policy formation. The great decline in the rural population, as in Europe after WWII and as an inexorable trend in industrialised countries, has not limited that power to apply political pressure. (Pennock, 1959; Howarth, 1969). Furthermore, rural organisations have been able to parade farmers' failures, and to threaten governments with more effective action, as the history of American agriculture shows. (Fite, 1981; Tweeten, 1979) In addition, farmers have set up lobbies to intervene in the decision-making process to exert political influence in the elaboration of agricultural
Hayami (1988) calls the coalition formed by cooperatives, the Japanese Ministry of Agriculture and the ruling party the 'iron triangle' whose action has blocked "...any move to reduce institutional rent, even in the cases where such reforms match the interests of farmers themselves". (p. 72)

Although there is common ground in most capitalist countries in terms of farmers' political action to secure institutional rent, the features of these social movements are more clearly understood if one looks at specific realities, within the development experienced by specific countries.

To a certain extent farmers are led to produce within a distorted system, insofar as the struggles for official support have generated an artificially stable environment, as the case of European Community shows, which raises prices above market levels. (Wilkinson, 1983). On the other hand, although official support often is defended on social grounds, in most countries price support has conferred greater benefits on large units.

"Hence, it may be impossible to separate conditions that favour development of agriculture from those that encourage larger farmers." (Heady, 1983, p. 25)

A similar assessment applies to the EEC community, in which "the richest quarter of farmers received about threequarters of CAP's subsidy." (Guardian, 1988, p. 31). Bell and Newby (1974) also revealed figures according to which 5% of the farmers in Britain were receiving 55% of the subsidies since 1955.

In general terms, whatever the method of intervention the state has always been striving to reconcile the needs of low
prices for the consumers and rising prices for profitable farming. As a result of this incompatible aims, compensation to farmers by government has become a crucial factor to protect income in agriculture.

2.4-The Identification of Large Enterprise in Agriculture

Although the discussion above threw some light on the obstacles to the formation of large agricultural enterprises, and the survival of small family farms, it was devoted mainly to the strategies adopted by capital to overcome those obstacles and with the possible advantages enjoyed by large operations. The question now is to consider the definition of large capitalist farms and their dynamism. This has generated much empirical research using such indicators as farm size, marketed surplus, number of workers, productivity, and so on. Nikolitch (1969) defined the largest farms as those with annual sales of $100,000 or more, whereas those regarded as large farms had sales of between $20,000 and $99,999. The majority of studies however have focused on class differentiation, emphasizing the importance of hired workers as the central feature of capitalist enterprises, in contrast to family farming, or peasant economy in some cases, in which little or no workforce is contracted on a permanent basis.

Searching for a different typology, Whatmore et al (1987) have constructed four ideal types to characterize farm businesses in England. These are: (i) marginal, closed enterprises, run by family labour on a small scale at the
fringe of the market; (ii) **transitional, dependent enterprises**, managed by individual capitals with occasional hired workers, and requiring more capital and land to remain viable; (iii) **integrated enterprises**, more articulated with the market and other sectors and not reliant on the family labour force; (iv) **subsumed enterprises**, which have been taken over by corporate, non-farming enterprises, which have agriculture as a subsidiary interest. Their approach is based on the movement of capital located in industrial and financial sectors towards agriculture and its permanent effort to subordinate the labour process.

Goss et al. (1980) reproduced the typology developed by Rodefeld (1979) in which the family farm is placed at the bottom of the social scale and the industrial type at the top, and in between the 'larger than family farm' which also includes tenants.

A common feature of the approaches above is the definition of hired work force as the factor present more intensively in the segments regarded as "the most dynamic", or capitalist. This characteristic is also dominant in the debate about capitalist farm in India, although other criteria are also taken into consideration. Rudra (1970), analyzing agriculture in the Punjab, selected five features related to capitalist enterprises to look for in large holdings.

"a) a capitalist farmer will tend to cultivate his land himself rather than give it out on lease; b) he would tend to use hired labour in a much greater proportion than family labour; c) he would tend to use farm machinery; d) he would be market-oriented; ie, he would tend to market an important share of his produce; and e) he would be profit-minded; ie, he would tend to so organise his production as to
yield a high rate of return on his investments"(p.A-85)

His analysis of these variables presupposed that they would be associated with each other in such a way as to establish a pattern characteristic of a capitalist unit. The absence of this association between the variables would suggest that capitalist farms did not exist in agriculture.

In a fierce critique of Rudra's approach, Patnaik (1971) stressed the significance of the historical process in assessing the emergence of capitalist farmers in India,

"...albeit operating with varying intensity of an expanding market and enhanced profitability of agricultural production".(p.A-123)

In the end it was concluded that the capitalist group would be identified by a higher than the average level in respect to the following items: value of cash wages (and cash outlays generally) per acre; ratio of sales to value of output; value of modern capital equipment per acre; value of profit per acre; value of output per acre; value of modern capital equipment per unit wage outlay; value of output per unit wage outlay. Furthermore, the crucial criterion in this classification hinges centrally on hired workers as the basic source of profit. Thorner (1969) also joined this debate after having defined capitalist farms by two criteria: hired labour producing commodities for sale in the market for profit; and reinvestment of the final profit in ever enlarging operations. At the end he reflected:

"But we were never able to devise a method for ascertaining which big, medium or small holders, or which households with specified number of hired workers, were actually functioning as capitalists." (p.A-211).
However, some questions raised by Thorner (1969) are noteworthy: what are the sources of income that permit farmers to increase land size? Is this investment an outlet for profits obtained inside the production structure? Or is it a flow of money coming from outside? Although some of the criteria above are useful for classifying farms, they do not provide the elements required to assess how the agricultural process of accumulation operates. Such an assessment should also include such factors as land prices; state policy; activities outside agriculture which might either prevent small farmers from being expelled (such as temporary wage employment) or permit larger farmers to increase the inflow of money from other branches of the same capital; manipulation of resources between production activities within a particular enterprise; etc.

The definition of agrarian capital must be such as to detect a social category, but also to depict economic behaviour, which characterizes the agents associated with this group of farmers. In other words, the key question concerns the definition of entrepreneurship in agriculture in terms of the strategies adopted to run farming business, and which must also take the specificities of this sector into consideration.

Entrepreneurship in farming, can be characterised by the following aspects:
- capacity to adopt recent technological innovations produced by industry.
- assessment of information related to comparative price/cost relations, to comparative returns between
farming activities and alternative investments.
-ability to take part in the market for physical assets, especially in the land market, so as to take advantage of price oscillations.
-management aiming at income maximization.
-risks inherent to agricultural business are not incurred, but rather taken on government policies.

Furthermore, many large-scale farming operations can be under the management of firms with multisectoral interests whose aims are dictated by the requirement of the dominant non-farming business. Here, agriculture becomes only an additional area of investment, to be sustained by the whole enterprise. In this case those features of farming entrepreneurship noted previously are overshadowed by the decisions made in the interest of the whole capital.

These aspects underline the dynamics of capitalist farming, stressing that their complexity stretches beyond the essential manipulation of production tools. It is the capacity of taking part in the general circuit of capital that gives large farm the strength to survive as capitalist enterprise. Therefore, the superiority of the large holdings over the small can only be assessed by taking into account the factors which broaden their source of income towards a wide range of investment alternatives. The more trapped agrarian capital is inside agricultural production requirements, the more vulnerable it becomes. Although large holdings derive significantly from historical processes, their survival in recent period has become largely dependent on the aspects
itemised above.
Chapter 3

Agricultural Development and the Modernization Process in Brazil

3.1-Historical Backgrounds

In different ways, throughout Brazilian history, large property has been at the centre of Brazilian agriculture, from the sesmarias concessions to the present big enterprises established during the modernisation period in the late 1960s and afterwards. Therefore, large farms have been at the centre of capitalist agriculture in Brazil, amid a highly distorted land distribution. Before 1822, landownership was the privilege of a minority closely attached to the Portuguese rulers and of those who, having undertaken some important job for the crown, received grants of land as a reward. In 1850 the government promulgated the Land Law, according to which land could be acquired only through purchase. This gave the better off more opportunities to enlarge their existing holdings, and established the basic condition for the creation of a land market. Even so, many units were built up outside the main areas already under cultivation, as unclaimed land was occupied in small plots by squatters - posseiros.

The new legislation therefore was far from being effective, for it was almost impossible for any official body at that time to control land occupation, given the great area to be kept under surveillance. (Salum Jr. 1982). However, the new law became an instrument to protect the already uneven land distribution and to prevent those interested in having land from occupying it.
"The sesmaria, in Brazilian case, became the dynamic centre of the economy in the colonial period. The large property which replaced the sesmaria, consolidated by the Land Law of 1850, in fact blocked the access to land by those who had small plots, or none, and revealed the absolute control of the latifundio's political power." (Aidar and Junior, op. cit, p.35)

From the end of the colonial period to the 1930s, Brazilian agrarian society was vertically divided between two sectors, which, although distinct in terms of their economic activities, were intrinsically articulated with each other by their social relations, and the prevailing landownership regime. Land was accessible to a large majority only by means other than purchase, that is, tenancy, occupation, residence (morador, and colonato), sharecrop, etc.

The dynamic export sector, mostly growing coffee and sugarcane in large estates, was the economic base of the dominant agrarian capital, and hence the economic mainstay of the country. On the other hand, there was a sector of staple food production, both on the fringes of these commercial activities and inside the coffee and sugarcane fazendas, where people were completely dependent on the landowner, for housing, food and work. The large holdings constituted the so-called latifundio, that were in complete control over agricultural society as an extension of the authority exercised inside their holdings. An important feature of this divided but also integrated society was that the social relations of production were only partially monetised, insofar as the supply of goods to the workers was provided by the landowners, who kept them outside the mainstream of trading relations, and which worked as a mechanism of exploitation of
labour, together with low wages. (Brandao, 1976). This situation prevailed in both coffee and sugarcane areas, in the south and northeast, respectively, though with regional specificities in terms of the social and economic relationship between workers and landowners, as well as the requirements imposed by each crop.

In the 1930s, the hitherto dominant rural-based oligarchy started to lose power following the Great Depression, which led to the industry taking over as the dynamic growth sector via the import substitution programme. The international crisis lowered coffee prices, driving this sector either to diversify production or to move to new and more fertile areas. In the old producing regions, the formerly successful coffee holdings started to experience declining yields, which drove them either to sell or to shift towards staplefood production for an internal market enlarged by the industrialization process.

"A fairly generalized process of diversification of rural activities was under way. The coffee crisis, urbanization, incipient industrialization, expansion of the government bureaucracy, and the consequent growth of the internal market opened up new opportunities for rural production to be diversified."

(Ianni, 1984, p.35)

Although the diversification experienced by agriculture had occurred in the wake of the difficulties faced by the coffee business in a recessive external market, the state still maintained a protective policy that guaranteed prices

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7- Sugarcane production, in the Northeast, underwent a similar crisis, though this was relieved by an internalisation of its market, concentrated in the Centre South. As producers in the latter region were more efficient, the new competitors from the Northeast were subsidised by the government in order that they might take part in the domestic market.
and consequently production levels. After the 1930s, there were special policies for coffee, sugarcane, and cocoa, with specific institutions such as IBC, IAA and SEPLAC, respectively\(^8\), organized to look after farmers' interests. Therefore the bulk of state action towards agriculture was concerned with the sectors of large farmers devoted to these activities, whereas the sector as a whole did not have a generally-conceived policy. (Delgado, 1985) It is important to stress that agriculture occupied a crucial position in order to transfer resources to the emerging industrial sector within the import substitution programme.

Therefore, the attitude of the state towards export activities, the most profitable sector in agriculture, still resulted largely from the domination of the policies by the landed oligarchy. The support of government was provided mainly by credit allowances up to a limit established by a percentage of the expected yield, either by manipulating the exchange rate or by purchasing and storing products to control the level of supply, thereby aiming at stable prices. In the case of sugarcane there was a great deal of pressure on the state to subsidise higher prices to Northeastern producers. Although the state was, to a large measure, an extension of the export oligarchy's realm, the latter's political power, from the 1930s to the 1960s, was progressively shared with the industrial bourgeoisie. It must be pointed out that the social

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\(^8\)-IBC - Instituto Brasileiro do Café (Brazilian Institute of Coffee); SEPLAC - Secretaria de Proteção da Lavoura Cacaueira (Secretary of Protection for Cocoa Crop); IAA - Instituto do Açúcar e do Álcool (Sugar and Alcohol Institute). These organisations were ruled by the State but under the control of producers, and were special instruments to plan and control the level of production and prices of each of the crops concerned.
and economic origins of the industrial sector are to be found in the coffee complex, mostly the trading segment. (Silva, 1976).

The important aspect, however, is that the large farm had retained an overriding position in agriculture. Indeed it is the original basis for today's prevailing concentration of landownership. Guimarães (1968) pointed out that the agrarian bourgeoisie, a new version of the old latifundio, emerged in the thirties, following the collapse of coffee prices in the international economic crisis. As the economy started to become more reliant on the internal market, and the integration of hitherto isolated areas reinforced the dominant role of the industrial sector, agrarian society came into the spotlight in the 1960s when many observers emphatically linked the food shortage crisis to the inflexible land distribution. Nevertheless, the old latifundio, without undergoing significant changes, and in alliance with more enterprising groups, not only survived, but became the chief social agent in the process of technical change which occurred after 1960.

3.2- The Modernisation Process

The early 1960s constitute a milestone in agricultural development, for both the pattern of landownership and the road it was following were placed in question. A great slump in the domestic food supply, as well as a widespread social mobilisation against the latifundio and in favour of land reform, fuelled the discussion of the existing agricultural
development model and brought it to a cross-roads. The backwardness of this sector could thus be overcome by giving priority to either a massive land reform accompanied by technical innovations, which would reduce the degree of concentration of landownership, and increase food supply or, alternatively, by an intensive process of modernisation to increase productivity without touching the landownership. One of the main arguments for the first option was the possibility of widening the internal market for the newly-implanted industrial sector, which held some attraction for the urban bourgeoisie. (Kageyama and Silva) The second road was the way to preserve the status quo, in respect to access to land thereby permitting technical progress within the old latifundia, in order to increase agricultural output.

After the military coup in 1964, the reformist option was defeated, and the rural social movements of landless workers, such as sharecroppers, tenants, etc, were fiercely repressed by the authoritarian state. Conversely, the large estates, in the form either of the old latifundio or of the existing rural enterprise provided the social matrix for the development of agriculture. This unequal structure became the chief social beneficiary of the technical changes to be introduced in the 1970s.

A major political outcome of this transition was the formation of a tripartite pact consisting of the agrarian bourgeoisie, the industrial bourgeoisie associated with the international sector of capital, and the military state. This social and political alliance guaranteed the economic success
of the strategy based on modernisation, and on the rejection of the land reform trajectory for agriculture. In other words, the previous highly concentrated landownership structure was retained within the new model, which was epitomised by the official aim of transforming the *latifundio* into the 'rural enterprise', this transformation becoming the background for the so-called 'conservative modernisation'. Although support for the land reform project survived within the dominant bloc\(^9\), this programme was finally eliminated in the late 1960s. Therefore, the strategy for agriculture in the wake of the industrialization process was one that...

"...advocated technological change in Brazilian agriculture without any government intervention in the ownership structure, but with credit policies and other incentives, aiming to transform the idle *latifundio* into large capitalist enterprise." (Delgado, N. 1989)

The period spanning the mid 1960s to the late 1970s marked a huge transformation in all aspects of rural life. The production process was the focus of a technological package incorporating machinery and equipment, agri-chemicals and technical management procedures, taking agriculture to a new level of integration with upstream, domestically-established agro-industry. In contrast with previous years, when modern inputs such as those mentioned above were largely imported, the period after the mid-1960s was characterised by an

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\(^9\) - The military President Castello Branco still kept the IBRA (Brazilian Institute for Land Reform) as a body separate from the INDA (National Institute for Agricultural Development) as part of the official intention to carry out a Land Reform programme based on the Land Statute (Estatuto da Terra). However, this attempt did not progress after a new president had taken office, when those institutes were merged to form the INCRA (National Institute for Colonisation and Land Reform), thus submerging land reform in the question of colonisation and the development of agriculture at large, during the years of military presidents still to hold office in the 1970s. (see Gomes da Silva, 1987)
accelerated process of import substitution, now directly affecting the agricultural sector. The percentage of domestic production in the total supply of NPK increased from 19.0% in 1970 to 46.7% in 1980. (Delgado, 1989). Similarly, the number of tractors used by farmers rose from 61,345 in 1960 to 545,205 in 1980. (IBGE, 1960 and 1980). Therefore agriculture and industry became much more tightly linked with each other.

As part of the same transformation, the late 1960s and early 1970s saw the construction of another industrial link, namely, raw material processing, which became largely dominated by multinational capital, as were most of the agricultural machinery and inputs industries. The tentacles of this industrial segment have covered areas characterized by widely differing scale and patterns of economic organization of production. In some cases, such as tomatoes, poultry, tobacco etc, in which small units are predominant, industry has taken control of virtually all aspects of production, largely reducing the farmer to a supervisory role, although still exposed to production risks. In other cases the processing industry is more remote from agriculture, having only commercial links with farmers, as can seen in the case of soybean, wheat, sugarcane, orange, coffee, etc., which are the main crops grown by large farmers.

The modernisation process was extensively analyzed in the 1970s in terms of the technical transformation caused both by high-yielding varieties and more efficient machinery and inputs. Despite the consequent increase of agricultural output, frequently highlighted by official sources, the
imbalance between crops, regions and social groups within the overall strategy for the countryside, came to the fore, overshadowing these achievements. Firstly, many observers treated modernisation as a process that inaugurated a new relationship between agriculture and industry, driving the former to a thorough commoditisation. In short, this process accelerated the capitalization of the rural sector. (Fleischfresser, 1988; Silva, 1981). However, technical innovation together with landownership concentration produced adverse social consequences, in particular the intense migration of rural population. (Martine, 1989). Furthermore, the lack of access to those technical changes by small farmers also became the focus of attention in many assessments of the modernisation process. Hence, the incorporation of small producers in a model deeply marked by technological transformation, raised many issues concerning the fate of this social category, mostly by bringing the forgotten land reform proposals back towards the centre of discussion.

Moreover, the constitution of an agroindustrial sector articulated with the financial system, has forced the discussion to concentrate on the integration of capitals, in which...

"...agriculture has been converted into a branch of the industrial production, which buys input and sells raw material to other industrial branches. Therefore, one cannot speak of a general dynamism of agriculture or the agricultural sector because a great part of the activities of this sector is integrated within the matrix of inter-industrial relations, and now there are several dynamics related to each of these complexes. (Martine, 1989, p.17).

In a similar approach, Delgado (1985) stressed the
central role played by financial capital in bringing agriculture into the general circuit of capital by means of the transformation of land into financial asset. This is also the focus of Kageyama et al (1987) for whom agriculture has become only one segment of the overall agroindustrial complex, whose strategies dominate land based activities. Moreover, performing as capital in general, the state is the factor that welds the various sections of this complex together.

Many researchers have examined the transformations that occurred in social relations of production during the 1970s. The increase in proletarianisation was broadly interpreted as a sign that capitalism was emerging in the countryside during this period. After non-wage social relations were broken up, the category of temporary daily workers became more visible, since these workers lived in urban areas, and were temporarily hired for agricultural tasks. (Fundação IPARDES, 1978).

The process of modernisation was, therefore, a milestone in the development of agriculture, in terms of a technological breakthrough and of changes in the relations of production. However, despite the analytical advances achieved in the interpretation of agriculture's integration into the agroindustrial complex, the accumulation of agrarian capital has been neglected. The present study, however, takes the promotion of a entrepreneurial social category, chiefly based on large holdings as the central aspect of the process of modernisation of agriculture. This category sustained its process of accumulation by three principal means: (i) a credit policy and incentives that channelled resources towards
agriculture under favourable conditions, financing an overarching technical and economic transformation; (ii) a profitable external market that paid off investments on "modern" crops such as soybean, sugarcane, etc, and cattle ranching; and (iii) sales of land. All these three factors were mostly conjunctural\textsuperscript{10}, and functioned as the mainstay of capital reproduction, thus underpinning the growing importance of large farming within the prevailing model.

In the 1960s, the state was heavily committed to an accelerated industrialisation process, within which the upstream and downstream industrial sectors for agriculture were created. The fertilizer industry was largely established after the Target Plan (1956/61) which resulted, between 1967 and 1973, in 20 new industrial units. The same happened in the fine agri-chemicals sector (herbicides, insecticides and the like), and agricultural equipment, both under control of multinational capital. Although mechanisation had started in the 1920s, supplied by imports, domestic production began to gain momentum only during the 1960s, under the import substitution strategy.(Kageyama, et al, 1987).

Against this background of state promotion of plans for industrialisation, the main focus of its intervention in agriculture was to stimulate the use of the new inputs and means of production. Using credit policy as its main instrument the state broadened the internal market for agro-

\textsuperscript{10} – By this I mean that they were aspects which occurred or produced during that specific period, and which accounted for a flow of capital towards agriculture. Therefore the so called industrialisation of agriculture derived from incentives largely generated outside the agriculture itself. The meaning of this interpretation becomes clearer in the examination of the crisis of the 1980s, when these three factors were the ones mostly involved.
industry, since the concession of loans typically was closely tied to the use of modern inputs. In 1965, the SNCR (National Rural Credit System) was established as part of a sweeping monetary reform, which subordinated rural credit to management of the Monetary Budget. Rural credit was determined largely by the volume of current deposits in the banking system which became the major source for agricultural loans. Since the banks were obliged to lend a given percentage of these deposits to agriculture, and as the low inflation rate did not stimulate the public to search for a better return on their deposits, the amount available for rural credit was large. (Munhoz, 1982).

Nevertheless, as inflation rose in the second half of the 1970s, monetary emissions became more important in financing productive agricultural investment, despite the inflationary consequences. Agricultural credit policy thus became one of the causes of inflation, whose acceleration raised the level of subsidy still further, given the practice of pre-fixing the interest rate. The incompatibility between macroeconomic targets and the credit policy for agriculture, the latter excessively supported by a monetary expansion, created a defective structure which was bound to collapse as soon as the inflation problem started to erode the government finances, as will be discussed in the next section.

The new credit policy enabled farmers to become more closely integrated within the agro-industrial system by buying modern inputs and equipment, using resources provided at a subsidised interest rate by official banks, such as Banco do
Brasil, as well as private bank networks. These institutional rents became the driving force behind the transformation of agriculture.

Table 1: Amount of Total Agricultural Credit, in nominal values, Average Real Interest Rate and Ratio of Subsidy to Total Rural Income, Brazil, 1970-80

<table>
<thead>
<tr>
<th>Years</th>
<th>Rural Credit Cr$millions</th>
<th>Average Real Int.Rate</th>
<th>Av.Subsidy to Rural Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>12326</td>
<td>-3.04</td>
<td>2.2</td>
</tr>
<tr>
<td>1971</td>
<td>17556</td>
<td>-3.04</td>
<td>2.2</td>
</tr>
<tr>
<td>1972</td>
<td>24438</td>
<td>-3.04</td>
<td>2.4</td>
</tr>
<tr>
<td>1973</td>
<td>36682</td>
<td>-3.04</td>
<td>3.6</td>
</tr>
<tr>
<td>1974</td>
<td>62918</td>
<td>-10.78</td>
<td>10.4</td>
</tr>
<tr>
<td>1975</td>
<td>105088</td>
<td>-10.78</td>
<td>12.9</td>
</tr>
<tr>
<td>1976</td>
<td>159011</td>
<td>-19.65</td>
<td>22.7</td>
</tr>
<tr>
<td>1977</td>
<td>227286</td>
<td>-22.78</td>
<td>21.9</td>
</tr>
<tr>
<td>1978</td>
<td>298223</td>
<td>-16.69</td>
<td>15.5</td>
</tr>
<tr>
<td>1979</td>
<td>494070</td>
<td>-30.98</td>
<td>35.3</td>
</tr>
<tr>
<td>1980</td>
<td>791822</td>
<td>-30.98</td>
<td>19.5</td>
</tr>
</tbody>
</table>

Source: CFP, Sayad, 1982 (p. 82)

The importance of credit as a lever of technical change, as shown in the Table 1, increased sharply until 1975 and then declined throughout the rest of the decade. The rising loan values during the first half of the 1970s mirror the importance of credit policy in a period when technological modernisation was occurring throughout agriculture. However, the main characteristic of credit policy was the level of high subsidy which underpinned farmers' positions as buyers and as
financial operators, although the industries producing inputs and machinery became the major beneficiaries of this policy. A crucial condition for the development of these markets was that farmers were obliged to purchase and apply these modern inputs in technically recommended quantities. The largest fraction of credit was that allocated for current operating loans (custeio), which were closely linked to specific industrial inputs.

The proportion of credit allocated for investment purposes fell after 1976, when the demand for machinery and equipment had, apparently, dropped as farms were already well mechanised. However, it is more likely that this fall reflects the unstable profitability in the export sector, coupled with a slight rise in financial costs. On the other hand, this decline heralded a reversal in the trend during the later 1970s/early 1980s as is discussed specifically below. The data on inflation and interest rates, which reveal the subsidy level, are a clear indication of the importance of the state in sustaining capital accumulation in agriculture. Rather than a simple source of finance, this policy set the pattern of transformation in agriculture, in terms of its profitability. Furthermore, the state became the necessary link between agriculture and the overall financial system, breaking up the former locally-based financial agents.

As a consequence of this integration with the financial market farmers started to become aware of alternative outlet for their own money. The concession of credit by the government, in support of technical improvement, liberated the
farmers' own capital to search for more profitable investments. Sayad (1984) estimated that this diversion was of 30% of the total loan contracted, on the average. The bigger the holding, the higher was the diversion. Moreover, long-term investments provided a higher return. In other words, the risk in the production sphere was borne by state, or society at large.

This policy is the economic expression of the alliance, forged by an authoritarian regime, between the agrarian and the industrial fractions of the national bourgeoisie. In the rural social environment, the beneficiaries of agricultural credit policy, which represented to the main overall strategy of agricultural development after 1964, were mainly the larger holdings. Kageyama et al (1987) go even further, pointing out that the state channelled capital into agriculture in such a way as to create an artificial rural economy, out of touch with free market forces. In the cattle ranching and reforestation sectors, for example, fiscal and credit incentives represented 70% of the estimated total investment in 549 projects before 1977. The purchase of fertilizers and lime (calcareo) carried 40% subsidy, until 1975, with no interest and a grace period of 3 years without any repayment of principal. Munhoz (1982) estimates that the subsidy (transfers) amounted to 53% of the total of official and private credit to agriculture, or CR$ 301.3 billion in 1980.

The Brazilian Finance Minister in 1989, talking about the rural credit policies of the 1970s, said:

"I think we threw money out of the window. There was an enormous waste. We helped in the building of
large fortunes in this country and made generations of bureaucrats culturally conditioned to an easy official financing system." (Gazeta Mercantil, 1989).

On the other hand, in contrast to these remarks, the legislation establishing the rural credit system indicated that the main goals of the program were to

"...stimulate the increase in rural investments; to finance the costs and the selling of agricultural commodities; and to strengthen farmers, especially the small and medium-sized ones; and to make the introduction of rational procedures in farming easier." (Sayad, 1984, p. 94).

In practice, the operation of the credit system drifted far from these aims by privileging large farmers, as well as export crops, mainly cultivated by the former and widely integrated with the CAI structure. The concentration of credit on larger units is well known. In 1975, for example, holdings between 10 and 100 hectares had a ratio of loan value to production value of 0.19, whereas for those between 1000 and 10000 hectares the ratio was 0.42. (Sayad, 1984) These figures shed light on the main issue of this study, as the larger units expected to become agricultural enterprises have actually taken the bigger share of the benefits conferred by state on agriculture.

Credit policy just followed the mainstream of the agriculture/industry relationship, thereby becoming a crucial instrument in the success of the modernisation project, whereas the large group of small farmers mostly dedicated to staplefood production was neglected. This emphasis of credit policy also reduced the importance of minimum price policy, which became merely a reference point for farmers' decisions, and was seldom applied in practice. The insurance policy,
PROAGRO, mostly adopted as a mechanism to protect and ensure repayment of bank loans used in risky agricultural production, is also worth mentioning. This policy thus became a buffer that made farming loans attractive to the banks. Only from the early 1980s onwards were the farmers' own resources used to cover operational expenses also protected by this policy.

Within the framework of agricultural policy, the CEDULA G mechanism attracted non-farming capital to establish large units in the rural sector. This device became a lavish source of incentives since it allowed tax exemptions for the capital invested in agriculture. According to Perosa Junior (1982), the liability of the tax payer in the urban sector was about 30% higher than that of the rural one, thus making it attractive to those not operating in farming activities to set up business in order to transfer tax liability to the rural branch.

Coupled with credit policy, the government sought to develop new techniques, adapt imported methods and accelerate their diffusion. The Brazilian System of Technical Assistance was set up in the early 1970s as was the National Agricultural Research institution - Embrapa, whose main function was to adapt imported germplasm to local environmental conditions and to produce and improve new varieties in order to achieve better productivity.

The emphasis on technical innovation and the integration of agriculture with industry was not accompanied by any deliberate policy of structural reform. On the contrary, land ownership problems were dealt with basically by accelerating
settlement in frontier areas. Therefore an agrarian reform programme was replaced by colonisation, shifting the structural issue of land distribution to marginal areas. Farmers and rural workers who did not survive within the ever-rising technological threshold joined the population flow to different official settlement projects.

The second mainstay of capitalist farming in the 1970s was the reinforcement of the external market, which became more profitable in comparison with the prices of staple food in the domestic market. Therefore the economic results of the modernisation process were more extensively appropriated by the export sector. Specifically, the production activities which attracted large capitals were both the traditional ones, such as coffee and sugarcane, and modern crops, such as soybean, orange, and to a less extent cattle ranching.

Another aspect of those agricultural policies and the closer integration between capitals, was that land assumed central importance as a financial asset, becoming a guarantee for financial operations with the official credit allowances, and a source of speculative earnings. In other words, the land market was greatly broadened.

"The concrete ways by which capitalist land ownership was implanted, converted land into a financial title. Land consolidated its position (...) as a financial asset and nowadays competes with assets from the stock market, gold, etc, for use by big capital, capital in general, and agrarian capital". (Silva, 1984. p.42)

The upswing in the land market was, however, a result of the subsidised credit, which improved farmers' equity position, thereby stimulating pressure on land purchases.
Moreover, land effectively became a resting place for surplus capital, either from farmers’ accounts or resources drawn from the official credit system. Land thus became a easy target for farmers investment decisions, regarding the excessive availability of resources and prospective instability in the commodity market. Landownership was a prerequisite for farmers to receive credit at subsidised interest rates and have access to official incentives, and thus stimulated the acquisition of land by those already in possession of large holdings, as well as those from other businesses. In other words, landownership became a stepping stone to obtaining official incentives. Land became a valuable financial asset and store of wealth pending its realisation. The expansion of infrastructure, which brought many regions of the country, such as the State of Paraná in the 1970s, into a closer contact with the market centre, reinforced the rise of land values, thus pushing upwards its differential rent. In this sense the latifundio was rewarded twice, by receiving resources at negative interest rates, and from the inflation of land values. (Nakano, 1982). In the areas already under cultivation the successful agricultural model caused land prices to soar, driving small farmers to sell their properties, thereby realising their land value, and making acquisition of larger plots in frontier areas more feasible.

Land became an additional alternative for investment, attracting capital from all over society. These various interests - landowners, industrial capital, the state - in agriculture either on the productive front or through land
speculation, became very closed allied in a "pact" that preserved the unbalanced land distribution. This alliance swept aside social pressure for reforms, and inaugurated a new production system on the foundations of an old agrarian society, lending meaning to the dominant "conservative" aspect of the modernisation process. That is to say,

"a strategy to resolve the agrarian question while retaining the latifundio-dominated agrarian structure." (Goodman, 1986, p. 19).

After those years of change in the face of agriculture that strategy came under the spotlight in a thorough evaluation of the achievements of the modernisation process. Here, the question is not only whether its benefits were socially equitable, but whether the central goals of transforming the large holdings into rural enterprises were accomplished. This, however, can only be assessed by investigating the conditions of capital reproduction in agriculture during the 1980s, when modernised holdings faced the challenge of keeping up the level of technical innovation and productivity without the official support available previously.
Chapter 4
Agricultural Policies in Disarray in the 1980s: setting up new rules

The late 1970s/early 1980s was a turning point in recent agricultural history, as the previous trends in terms of state economic policies and the seemingly settled modernisation process were strongly reversed. By and large, this reversal reflects the changes occurring in the Brazilian economy, whose growth rate decreased from 8.7% a year between 1971 and 1979 to 3.2% during the period of 1980-1988. (Delgado, 1989). As the crisis deepened, two major problems signalled the end of the "miracle era" and undermined the attempts to overcome a prospective recession: the increasing foreign debt which exceeded US$ 80 billions in 1980, and skyrocketing inflation, which was 100% a year in 1980 rising to 223% in 1987, after it had peaked at 400% in 1985. The second oil shock in 1979 and the subsequent rise of American interest rates were other factors that fuelled the slow-down in Brazilian economic performance.

Under the pressure of such a severe crisis, the 1970s' modernisation strategies for agriculture began to change, with significant repercussions on agrarian society. A concomitant reshaping of the agricultural policies thus became inevitable, as part of the attempt to contain public expenditure and to service the debt. As a result a new set of rules was designed to fit into the changing framework of macro-economic policies. Nevertheless, the shifts introduced in agricultural policies were strongly influenced by a wide range of interests either
inactive or repressed in the modernization period. For example, those of large and middle farmers, who had been taking the lion's share of the credit subsidies and other state benefits, and those of landless and small farmers who had been living on the edge of the agricultural boom.

In order to analyze the situation in the 1980s I shall consider the performance of the agricultural production, changes in agricultural policy, the government's attitude towards agriculture, and the revival of the social movement in the countryside. The period under consideration can be divided into two different stages, from 1980 to 1985, and from 1985 to 1988, due to changes in economic policies introduced by the Cruzado Plan in 1986. The question to be answered here concerns the impacts of the shifts in agricultural policies on the process of accumulation in the sector, and the backlash which occurred among the capitalist farmers through their politically revitalised organisations.

4.1.- The Performance of Agriculture in the 1980s

Brazilian agricultural growth achieved unprecedented levels in the course of the 1980s, despite the crisis permeating the overall economy. The average growth rate of the primary sector between 1980 and 1988 peaked 4.2%, whereas the industry's was 2.0% and that of the economy as a whole 3.2%. This means a reversion of the pattern existing in the 1970s, when the figures were 8.7%, 4.3% and 9.4% respectively. It also indicates an overall decline in the level of production from the 1970s to the 1980s. (Delgado, 1989). A comparison
between agriculture and industry in a year-to-year basis shows that the former had rates of growth higher than the latter during the whole period. Only in 1966 and 1984 did agriculture have a performance inferior to that of the industry. (Table 2).

<table>
<thead>
<tr>
<th>year</th>
<th>TOTAL</th>
<th>AGRICULT.</th>
<th>INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>9.1</td>
<td>9.6</td>
<td>9.2</td>
</tr>
<tr>
<td>1981</td>
<td>-3.1</td>
<td>8.2</td>
<td>-9.2</td>
</tr>
<tr>
<td>1982</td>
<td>1.1</td>
<td>0.4</td>
<td>-0.1</td>
</tr>
<tr>
<td>1983</td>
<td>-2.8</td>
<td>-0.3</td>
<td>-6.6</td>
</tr>
<tr>
<td>1984</td>
<td>5.7</td>
<td>3.0</td>
<td>6.1</td>
</tr>
<tr>
<td>1985</td>
<td>8.4</td>
<td>10.1</td>
<td>9.0</td>
</tr>
<tr>
<td>1986</td>
<td>8.0</td>
<td>-7.8</td>
<td>12.1</td>
</tr>
<tr>
<td>1987</td>
<td>2.9</td>
<td>14.0</td>
<td>0.2</td>
</tr>
<tr>
<td>1988</td>
<td>-0.1</td>
<td>0.5</td>
<td>-2.6</td>
</tr>
<tr>
<td>Average</td>
<td>3.2</td>
<td>4.2</td>
<td>2.0</td>
</tr>
</tbody>
</table>

*Source: Delgado, (1989)*

Except for certain years, when agriculture underwent severe climatic problems, causing crop failures, the rate of growth was higher than in the rest of the economy. Taking 1975=100, the internal product for agriculture rose to 128 in 1980, declining to 126 in 1985 (Silva, 1988a).

However, this pattern of development was very unbalanced among the groups of activities if the demands for increased food supply, for higher export earnings to offset the damaging foreign debt and for substitution of external supply of oil by sugarcane production, are taken into account. Production of domestic crops per capita (rice, beans, corn, manioc and potato) declined by -1.94% a year, whereas export crops (cotton, peanuts, cocoa, tobacco, orange, soybean and coffee)
increased at a rate of 2.53%, and sugarcane (raw material for alcohol production) at a rate of 7.84%, from 1977 to 1984. (Homem de Mello, 1985, p.14). These output per capita figures reveal the negative trend of staplefood production which is all the more pronounced because of the intensive growth of urban population, mostly caused by the massive rural-urban migration. In ten years Brazil became a predominantly urban country, with the percentage of population in the cities increasing from 30% in 1970 to more than 60% in 1980. In other words, millions of people changed from the position of producers to that of consumers.

Comparing the groups of crops, export production, except for peanuts, a minor crop, and coffee, increased, as did wheat and maize, reflecting the industrial demand for raw material. By contrast, staple food crops such as beans, rice, manioc, and potato, showed low or negative growth rates of 1%, 3%, -0.8% and -0.7%, respectively. (Table 3)
Table 3: Average Growth Rate According to Groups of Crops
Brazil, 1978/86

<table>
<thead>
<tr>
<th>Crops</th>
<th>Av.Rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staple food</td>
<td></td>
</tr>
<tr>
<td>rice</td>
<td>3.0</td>
</tr>
<tr>
<td>maize</td>
<td>4.3</td>
</tr>
<tr>
<td>beans</td>
<td>1.0</td>
</tr>
<tr>
<td>wheat</td>
<td>5.8</td>
</tr>
<tr>
<td>manioc</td>
<td>-0.8</td>
</tr>
<tr>
<td>potato</td>
<td>-0.7</td>
</tr>
<tr>
<td>Exporting</td>
<td></td>
</tr>
<tr>
<td>cotton</td>
<td>9.2</td>
</tr>
<tr>
<td>coffee</td>
<td>0.8</td>
</tr>
<tr>
<td>soybean</td>
<td>5.3</td>
</tr>
<tr>
<td>cocoa</td>
<td>4.7</td>
</tr>
<tr>
<td>peanuts</td>
<td>-6.6</td>
</tr>
<tr>
<td>orange</td>
<td>6.4</td>
</tr>
<tr>
<td>sugarcane</td>
<td>9.6</td>
</tr>
</tbody>
</table>

Source: IPEA(1987)

However, the central question, despite this negative trend in food production, is more one of purchasing power and effective demand than shortage of supply only. The minimum wage, in real terms, in 1984 was 34% below that of 1977. In 1980, 33.3% of the population earned only one minimum wage, and 69.4% survived with two (Homem de Mello, 1985). This is an indication that one explanation for the equilibrium between supply and demand after the food crisis in 1979, is the compression of demand; that is, an increasing number of impoverished and malnourished people.

The composition of agricultural output for the external market has not changed significantly in comparison with the 1970s. During the early 1980s the international market was the way out for the most modernised segment of farmers, who increased the volume of exports, attempting to keep up the
level of income, despite falling world prices. From 1980 to 1985, the index of prices for agricultural exports fell by 34.5% whereas the quantum exported actually increased by 34.1%. (Table 4).

Table 4: Price and Quantity Evolution Index of Exporting Agricultural Commodities, Brazil, 1980/85

<table>
<thead>
<tr>
<th>years</th>
<th>PRICES</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>total primary process</td>
<td>total primary process</td>
</tr>
<tr>
<td>1980</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>1981</td>
<td>85.9</td>
<td>84.8</td>
</tr>
<tr>
<td>1982</td>
<td>77.1</td>
<td>78.6</td>
</tr>
<tr>
<td>1983</td>
<td>77.2</td>
<td>79.3</td>
</tr>
<tr>
<td>1984</td>
<td>85.2</td>
<td>82.2</td>
</tr>
<tr>
<td>1985</td>
<td>75.5</td>
<td>71.0</td>
</tr>
</tbody>
</table>

Source: IPEA(1987)

Moreover, government intervention in foreign exchange policy rewarded exporters by undervaluing the local currency, pursuing this strategy by maxi-devaluations as in 1979 and 1983, when the cruzeiro was devalued by 30%, and subsequent minidevaluation measures. Moreover, the export sector also was well rewarded by the recovery of international market prices, when the dollar lost strength and demand recovered. The percentage of the net balance (exports - imports) on agricultural trade to the interest paid as debt service varied from 45.5% in 1982, to 78.4% in 1984. (IPEA, 1987). This is explained both by the increase in export volume, and by a reduction in the imports of capital goods and inputs for the agricultural sector.
After several difficult years, the external market recovered in 1984, with increases in export volume which, coupled with higher prices, brought in higher foreign currency revenues. In the following year, however, bad weather resulted in a loss of 43% of bean production, 34% of cotton, 28% of maize, and 19% of soybean. Secondly, world prices fell generally, reducing export earnings, despite the increase in the export volume. Nevertheless, government helped the export sector by either manipulating the quantity exported to meet delivery of contracts already negotiated, or providing an internal guaranteed price. In the case of sugarcane, for example export subsidies increased, in an attempt to avoid prices sagging even further. (Buainain and Filho, 1986)

The increase seen in the area devoted to sugarcane is a clear indication of the results achieved by the official incentives to promote alcohol production as an alternative to the national demand for oil. This is one of the most protected sectors in Brazilian agriculture, which includes even those areas with low productivity located in the Northeastern region. Between 1978 and 1986 sugarcane production rose by 9.6% per year, the highest for all crops. Between 1983 and 1986, alcohol (as fuel) production increased at an average rate of 10.92% per year, whereas sugar production declined by 6.06%. (Ipea, 1987)

In this sense, the central features of agriculture did not change when compared with the 1970s, but rather the swing towards the international market was reinforced by the comparatively low return provided by staplefood production,
mostly as a consequence of the low level of wages.

Therefore as a consequence of greater specialisation in export activities, producers have managed to keep up their level of income, despite some price instability, as in 1986, when the share of agricultural commodities in total exports fell from 30.4% in 1985 to 27.2% in 1986. Furthermore, as we shall see, this episode inflated public expenditures as minimum prices were then higher than market levels, obliging the government to buy up larger volumes of products than anticipated.

Despite the profitable external market behaving as a life line for the entrepreneurial group of farmers, the pace of technical innovations within agriculture was not maintained at the same rate as before. The use of inputs declined steadily bringing about a crisis for the agrichemicals producers, and machinery manufacturers. This was reversed only in 1984, when prices in the international market recovered. Before 1984 the downward trend caused a deep crisis in the industrial sector, which reduced sales during that five-year period. The purchases of tractors sagged after 1980, recovering only as a result of a good harvest in 1984 and also of the advantageous financial conditions engendered by the Cruzado plan.
Table 5 - Number of Tractors Sold in Brazil, 1980/1986

<table>
<thead>
<tr>
<th>Year</th>
<th>Tractors Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>65708</td>
</tr>
<tr>
<td>1981</td>
<td>43889</td>
</tr>
<tr>
<td>1982</td>
<td>35710</td>
</tr>
<tr>
<td>1983</td>
<td>25876</td>
</tr>
<tr>
<td>1984</td>
<td>48437</td>
</tr>
<tr>
<td>1985</td>
<td>47214</td>
</tr>
<tr>
<td>1986</td>
<td>58687</td>
</tr>
</tbody>
</table>

Source: Anfavea, Gazeta Mercantil, 30/07/1987

However, the Census of 1985 indicates that the percentage of holdings with tractors increased from 7.0% in 1980 to 7.2% in 1985, with the number of tractors rising from 545 thous. to 652 thous. in the same period.

4.2- Changes in Agricultural Policy in the early 1980s: preserving farmers' income

The early 1980s saw the last gasp of the 20-year old military dictatorship, whose ability to tackle the economic problems had been completely eroded. With high inflation and a slow-down in the economic growth, one of the government’s main objectives in agriculture was to formulate policies that could avoid aggravating both economic instability and the decline in the modernisation trajectory. Notably, the so-called "priority to agriculture" campaign launched in 1979, accompanied by state propaganda that the government’s intention was to fill the people’s plate. This campaign indicated that agricultural production was conceived as a crucial instrument to alleviate the consequences of a recession, already creeping into Brazilian economy since the late 1970s. Moreover, the policies for agriculture aimed to
reduce the pressure on food prices in the urban areas, thereby controlling inflation rates, increasing exports, and reducing the dependence on oil imports through the alcohol program. Despite government claims about increase in the agricultural output, this trend did not prevent inflation and the other problems becoming even worse.

The agricultural sector in turn became deeply affected by both a slump in the international prices, and a recession in the domestic market after 1980, which depressed farmers' income, causing the cost-price squeeze to tighten despite the relatively stable and even decreasing, prices of some inputs. Furthermore, the farm economy was severely struck by changes in the policies that had prevailed in the 1970s, namely, the reduction of credit subsidies in response to the requirements established by the general economic policies of controlling inflation and also curbing the budgetary overspending.

After more than a decade of advantageous and low nominal interest rates averaging 15% and of intense mechanisation coupled with rising yields, the decline in government support effectively challenged the maturity of capitalist agriculture. Capital accumulation in this sector started thus to require more careful investigation, insofar as its former dynamism rooted in the state's policies became untenable. The remark

11. It must be mentioned that prices of machinery and related equipment were rising in the period.

12. There is some debate on this point arising from the support government gave to the new born agroindustry in the 1970s by imposing limits to exporting unprocessed commodities. Meanwhile, processing was encouraged by a wide range of export controls and quotas that forced agricultural producers to deliver unprocessed agricultural products to domestic processing industries at prices considerably below world levels." (Goldin and Rezende, 1990, p.27) Furthermore, these authors stressed that the widely accepted evidence
by the Minister of Agriculture that "the farmer will have to 
mak e profit by higher productivity" (O Indicador Rural, 1982, 
p.3) expressed the official goal to have an agriculture 
efficient enough to survive without depending on lavish 
government subsidies. This strategy however collided head-on 
with macro-economic policy targets which required agriculture 
to act as a stabilizing factor by supplying the domestic 
market at non inflationary prices and alleviating the foreign 
debt burden. As a result agriculture's role in the early 
stages of the 1980s' crisis became more one of stabilization 
than of growth.

"Given the importance of the primary sector for the 
establishment of a basic price in the system 
(economy), wages determined by the cost of food and 
clothing, and foreign exchange generation, it can be 
clearly seen that stability is the focus to which 
the aggregate policy turns, this policy defining a 
growth pattern in this sector." (Mendonça de Barros, 
1979, p.9).

Nevertheless, such a strategy threatened to undermine the 
existing economic structure of the capitalist agriculture if 
the state relinquished its previous role of conveying 
resources to support capital reproduction in farming. This led 
some analysts to argue that profitability of capitalist 
enterprise in agriculture became limited (Aidar, 1984). In 
other words, the process of accumulation in agriculture has 
proved to be broadly dependent on a flow of resources from 
outside, more crucially from the state, whose main objectives 
have been to combine the viability of capital in that sector

that agriculture was highly benefitted by official subsidies must be confronted to overvalued exchange 
rates. "Preliminary calculations nevertheless suggest that the massive credit subsidy failed fully to offset 
the burden imposed on the agricultural sector by overvalued exchange rates, taxes and tariff protection for 
manufactured inputs." (p.34)
with macro economic stability in the same framework.

A first change in agricultural policies occurred in 1980, when total credit fell by 4.3% in real terms – from Cz$6,041 billion in 1979 to Cz$5,784 billion in 1980, indicating a turning point in the upward trend. Simultaneously, as noted above policy was geared towards staple food production under the so-called "agricultural priority" strategy, whose aim was to keep food prices at low levels. Additionally, there was an attempt by government to promote an increase in food supply by directing greater credit to smaller units. Moreover, government introduced the VBC\(^\text{13}\) as an instrument to define the amount of money for short term loans (operational credit) to be lent to producers. This was intended to be a fairer way of distributing credit between holdings, as well as relating interest rates more closely to the rate of inflation and the amount of available resources.

With higher levels of inflation, mainly after 1979, real interest rates for agricultural borrowers declined, which fuelled strong criticism of the subsidies enjoyed by the sector. Therefore, the aim of the revised norms of rural credit policy was to increase interest rates which reached 35% in 1981 for operating loans and investment, thereby affecting a central aspect of capitalization in agriculture. It must be mentioned that, despite this rise, real interest rate was still advantageous, given a rate of inflation of more than

\(^{13}\) The Basic Value of Cost, or the part of production cost to be financed by official credit, was introduced in May 1979. Until then, the level of operating credit was based on the minimum prices, the amount of credit being established by an index of productivity per hectare times the minimum price for the crop in question.
100% in 1980 and increasing in the following years. However, the increase in interest rate, which intensified after 1979, occurred in different steps according to farm size, the region and type of credit, tending to reduce the resources channelled to rural credit, particularly in loans to medium and big producers. Table 6 below shows that the share of mini and small farmers in the distribution of rural credit increased until 1984, as a response to that policy. Nevertheless, the level of concentration of credit in large farmers was maintained, becoming even more intense in the following years.

Table 6: Distribution of Rural Credit among Size Categories of Farmers, in Brazil - in % of Number of Contracts and Value of Credit - 1980/1988

<table>
<thead>
<tr>
<th>year</th>
<th>mini/small</th>
<th>medium</th>
<th>large</th>
<th>others</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cont.</td>
<td>val.</td>
<td>cont.</td>
<td>val.</td>
<td>cont.</td>
</tr>
<tr>
<td>1980</td>
<td>79.3</td>
<td>24.4</td>
<td>15.4</td>
<td>24.4</td>
<td>5.1</td>
</tr>
<tr>
<td>1981</td>
<td>84.4</td>
<td>30.3</td>
<td>11.6</td>
<td>25.3</td>
<td>3.0</td>
</tr>
<tr>
<td>1982</td>
<td>85.9</td>
<td>35.8</td>
<td>11.5</td>
<td>27.5</td>
<td>2.3</td>
</tr>
<tr>
<td>1983</td>
<td>88.3</td>
<td>36.9</td>
<td>9.6</td>
<td>28.4</td>
<td>1.7</td>
</tr>
<tr>
<td>1984</td>
<td>85.6</td>
<td>38.2</td>
<td>10.8</td>
<td>23.2</td>
<td>3.3</td>
</tr>
<tr>
<td>1985</td>
<td>81.1</td>
<td>26.5</td>
<td>14.3</td>
<td>27.2</td>
<td>4.6</td>
</tr>
<tr>
<td>1986</td>
<td>77.1</td>
<td>24.1</td>
<td>17.0</td>
<td>25.7</td>
<td>5.7</td>
</tr>
<tr>
<td>1987</td>
<td>76.3</td>
<td>18.9</td>
<td>16.5</td>
<td>23.8</td>
<td>6.7</td>
</tr>
<tr>
<td>1988</td>
<td>72.8</td>
<td>17.7</td>
<td>18.6</td>
<td>25.2</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Source: Banco do Brasil/ Relatório Anual de Crédito Rural

In 1981, the policymakers decided that the rural credit for small and mini farmers would fully cover the limit of their VBC. Producers regarded as medium-sized started having
their credit allowances reduced to 80% of the VBC, and large holdings had theirs reduced to only 60%. In order to offset this reduction, the medium and large units were encouraged to resort to the private banking system (both official and private banks) to obtain credit under the conditions prevailing in the market. In an attempt to overcome the reluctance of private banks to lend to agriculture (because the return is lower than in other sectors) the government decided in 1981 to increase compulsory lending by commercial banks. The amount these banks had to allocate to rural credit was raised from 15% to 25% of their current account deposits, although this did not make up for the losses in the total supply of rural credit available to agriculture (Munhoz, 1982). It is worth stressing that after the introduction of such measures, large holdings increased their share of credit supplied by the Banco do Brasil, as shown in Table 6.

These changes reflected an attempt to reshape the rural credit system to correct widely-criticized distortions—mainly the concentration of benefits in few hands—and to reestablish the balance between credit allocations and available resources. However, inflation thwarted these plans and forced the government to go even further in its policy of cutting the rural credit subsidy. Indeed, maintenance of the 

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14. Agricultural credit was based on three main sources: a percentage of the deposits in current accounts held by commercial and official banks, transferred to the Central Bank. In the period of low inflation the withdrawal of money by the general public from the banks did not prevent the system conveying these resources to agriculture at a very low cost. When inflation increased, much of the public money was deposited in accounts the paid interest. The second source is the emission of money by the Central Bank, which exerts a high pressure on inflation and is resorted to in order to make up the deficit in government finances. The third source, also inflationary, is provided by the issue of government bonds as a means both to restore the level of the State’s finances and to mop up the liquidity in the economy. Nevertheless, this policy also is inflationary, because of the high interest paid on such bonds to make them tradeable.
level of credit became increasingly difficult as inflation eroded the real value of interest payments and principal. The credit policy became untenable as the increasing outflow of resources had to be covered by expanding the monetary base, that is, by diverting resources from the Monetary Budget.

It is worth stressing that commercial lending - the most important source of rural credit - was linked to the volume of accounts held by the various bank networks. As inflation rose, the public attempted to protect its assets, transferring funds to different accounts (mainly deposit accounts) which would yield interest. In order to maintain the same flow of resources towards agriculture, the Banco do Brasil (The Bank of Brazil) which operates as a commercial enterprise as well as dealing with the bulk of official credit resources for agriculture and other activities, was supplied with funds from the Central Bank (Banco Central), through an account named the "Movement Account" (Conta Movimento) whose resources came from the expansion of the monetary base. The evolution of credit composition shows a tendency for the part generated by the general public to decrease - from 71.6% in 1971 to 52.9% in 1981 after it had peaked 91.7% in 1974 - as a result of the reduction in the resources deposited in current accounts in general. Conversely, the share financed by expansion of the monetary base and government domestic indebtedness rose from 28.4% to 47.1%, respectively. (Sayad, 1984).

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15 After the new constitution was voted by the Congress in 1988, the Conta Movimento, which was an inflationary device, was replaced by the OOOC (Orçamento de Operações Oficiais de Crédito - Official Budget for Credit Operations), and later by the Caderneta de Poupança Rural - Rural Deposit Account. Venturelli, 1990.
In 1982 the financial cost of rural credit to producers increased again to 70% of the INPC\textsuperscript{16} variation during 6 months, plus 5% of interest p.a. In 1983, Resolution 827 of the Central Bank raised monetary correction on rural loans to 85% of ORTN, plus 3% of interest p.a.

In 1983 economic policy strongly reflected the approach of orthodox monetarism as dictated by the IMF\textsuperscript{17}, whose first request was that government should drastically reduce all subsidy concessions, including those to agriculture\textsuperscript{18}. Moreover the credit restrictions were imposed as part of aggregate demand control, following the assumption that the economy was overheating and recessive measures ought to be adopted. This approach also strongly emphasised that subsidies of any kind were inflationary and, therefore, were bound to jeopardise anti-inflationary policies. Thus the backbone of the successful agriculture in the 1970s suffered a second blow in 1983, which also affected those price-administered products, namely, sugar and wheat. This was a way, according to the monetarist recipe, of tackling the inflation problem. This recipe includes higher interest rates for credit and a reduction in the money supply, the latter falling by 39% in real terms between 1983 and 1984.\textsuperscript{(Gazeta Mercantil, 1989).}

During this period, policies were enforced under the grip of a monetarist approach, which discouraged most economic agents

\textsuperscript{16} National index used as measure of inflation rate

\textsuperscript{17} International Monetary Fund

\textsuperscript{18} In 1984 the National Monetary Council (Conselho Monetario Nacional) authorised a higher increase for Marketing Credit, than for Operating and Investment credits.
from productive investment, because interest rates were too high.

For those engaged in exporting crops there was an extra compensation through the exchange rate mechanism, which rewarded them in 1983 with a devaluation of the Cruzeiro (the Brazilian Currency) by 30% against the dollar. Although this devaluation benefitted those owning foreign currency by dealing with exports or otherwise, it may not have been sufficient to offset the disadvantageous conditions of agricultural commodities in the market, in terms of the overtaxation on exports of raw material and also the trends of the international prices, which declined by 34% from 1980 to 1985.

Nevertheless, the main change in farm income in the early 1980s was that agriculture could no longer continue to depend on the existing credit system, which provoked an intense debate on agricultural policies. The system was attacked both by those seeking to put government finance on a sounder footing via tighter monetary policy, by those demanding a fairer system of state intervention, insofar as credit policy was marked by a distorted distribution of resources in terms of both producers, rural activities and regions, and still by farmers themselves who saw the decline of a crucial source of income.

A central focus of the debate in the early 1980s concerned the efficacy of the credit system in achieving its main goals. Firstly, it was meant to be an instrument to boost agricultural output, mostly of staple foods. Secondly, it had
been conceived to support mainly small farmers, insofar as they lacked economic strength of their own compared to larger holdings. In the early 1980s it became clear that neither of those goals had been achieved. With 1970=100, the value of operating credit increased by 515% until 1985, whereas the value of production rose by only 275% and the quantum produced by 190%. The distribution among producers proved to be highly concentrated in large units, in a trend opposite to that set out by the law no. 4829 which created the credit system. (Fagundes, 1986)

However, the impact of the subsequent changes in agricultural policy was rather more differentiated among the social groups. In large measure the more articulated farmers were with the agroindustrial complex, the more susceptible they became to a heavier financial burden. On the other hand, small units, left out of the mainstream of technological innovations and not targeted by credit policy, might not have been caught by the rise in interest rates. Yet many small farmers who had sought to adopt the prevailing model ended in bankruptcy with losses of property. Medium-sized holdings (which vary throughout the country) were struck more intensely by the problem of not being able to keep pace with the technological requirements in the prevailing situation of higher interest rate and depressed commodity markets. This group of producers can be broadly characterized as being mostly dependent on farm income, with few opportunities for diversification, making them more vulnerable to such a crisis. The large units, in turn, certainly experienced the same
difficulties imposed by the overall economic crisis, but here we can advance the hypothesis that there were additional factors beyond the production structure, as discussed below in chapter 7, which have kept this kind of producer afloat.

Taking the whole of agriculture, the aspect to stress is that costs of production rose as the source of credit shifted from the public sector towards private banks and, with higher interest increased, farmers' finances were eroded even further. Since official credit was also becoming very expensive, interest payments as a proportion of production costs increased and in 1985 reached up to 50% in S. Paulo State. (Folha de S.Paulo -1985).

The debate engendered by these circumstances had two main currents. On one hand there were arguments that despite those distortions, credit subsidies were not peculiar only to agriculture. Munhoz(1982) pointed out that the share of this sector was only 36% of Cr$169.1 billion, the total subsidy channelled to the economy as a whole in 1977. In 1978 the share of agriculture in the total of Cr$252.5 billion remained the same. Therefore it is argued that the urban economy enjoyed tax relief and other financial incentives whose amount was superior to those conveyed to agriculture through subsidised credit (Munhoz, 1982).

On the other hand, as the credit policy became more difficult to administer, suggestions for change focused on the solutions to the post-harvest problems involving price and other market-based measures, and also support for investment. The state was thus expected to provide a minimum price policy
to attenuate market fluctuations in order to compensate for the inevitable upward trend observed in real interest rates both from official and private credit sources. A policy of investment in infrastructure, research, education and extension was also sought from the state. Others advocated subsidies for the manufacturers of machinery and the producers of agrochemicals in order to reduce their prices to be paid by farmers. On the same line of thought, Sayad (1984) pointed out that,

"the minimum price seems to be a more suitable instrument for stimulating agricultural production, being also more efficient than subsidised interest policy, and not being subject to unfair distribution problems such as that of rural credit benefits" (Sayad, 1984, p.112).

Therefore all the problems of resource misallocation, the diversion of credit to other uses, and its excessive concentration in larger units, were expected to be avoided by price policy, which could protect farmers' income to the extent of their production capacity. Speculative financial operations by means of either farmers' own income or borrowed resources thus became part of farming economic affairs. Moreover, the negative effects of inflation on agriculture could also be avoided, it was argued, by guaranteeing the sector prices in line with general price trends. This scheme was expected to benefit producers of food stuff for the domestic market more extensively, since those devoted to export activities were covered by exchange devaluations.  

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19 As minister of Planning in 1985, Joao Sayad pointed out that the investments in agriculture were going to be free of inflationary risks. Furthermore, he said, that in the case of staplefood production (beans, manioc, potato, etc.) "inflation represents...an extremely high financial risk. And this risk would be reduced as long as the government clearly set out beforehand that it would update minimum prices to guarantee low
Furthermore, it was symptomatic of the debate that some ministers who earlier had supported the 15-year credit policy, now stressed that price policy was the best mechanism for supporting agriculture. The powerful Minister of Planning, Delfim Neto, in 1983, during the last military government stated that

"the greatest incentive to the producer is advantageous prices" (O Indicador Rural, 1983, p.6).

The Minister of Agriculture had no option but to join the new approach to the policy for the sector:

"for agriculture it is important that the price policy should be maintained, in order to compensate for any increase in the production cost". (O Indicador Rural, 1983, p.6).

Agriculture experienced a severe shortage of resources as the availability of credit declined, the level of investment being the most affected (Table 7).

inflationary risks and high remuneration to farmers." (Sayad, 1985)
Table 7: Value of Credit Contracted by Agriculture in Brazil, 1969/87, (Ncz$ million) March 1986 values

<table>
<thead>
<tr>
<th>Years</th>
<th>Operating Credit</th>
<th>Investment Credit</th>
<th>Marketing Credit</th>
<th>Total Credit</th>
</tr>
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<tbody>
<tr>
<td>1969</td>
<td>21.7</td>
<td>13.1</td>
<td>11.9</td>
<td>46.7</td>
</tr>
<tr>
<td>1970</td>
<td>24.8</td>
<td>15.1</td>
<td>15.7</td>
<td>55.6</td>
</tr>
<tr>
<td>1971</td>
<td>28.0</td>
<td>18.9</td>
<td>17.3</td>
<td>64.2</td>
</tr>
<tr>
<td>1972</td>
<td>33.2</td>
<td>26.3</td>
<td>20.1</td>
<td>79.7</td>
</tr>
<tr>
<td>1973</td>
<td>48.0</td>
<td>37.2</td>
<td>27.2</td>
<td>112.4</td>
</tr>
<tr>
<td>1974</td>
<td>62.6</td>
<td>42.1</td>
<td>34.3</td>
<td>139.0</td>
</tr>
<tr>
<td>1975</td>
<td>89.0</td>
<td>63.4</td>
<td>50.6</td>
<td>203.0</td>
</tr>
<tr>
<td>1976</td>
<td>87.7</td>
<td>67.4</td>
<td>52.8</td>
<td>207.9</td>
</tr>
<tr>
<td>1977</td>
<td>87.7</td>
<td>45.0</td>
<td>52.8</td>
<td>185.5</td>
</tr>
<tr>
<td>1978</td>
<td>90.0</td>
<td>47.1</td>
<td>51.6</td>
<td>188.7</td>
</tr>
<tr>
<td>1979</td>
<td>118.2</td>
<td>58.7</td>
<td>58.1</td>
<td>235.1</td>
</tr>
<tr>
<td>1980</td>
<td>127.2</td>
<td>42.2</td>
<td>55.4</td>
<td>224.8</td>
</tr>
<tr>
<td>1981</td>
<td>114.3</td>
<td>30.1</td>
<td>50.5</td>
<td>195.0</td>
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<td>1982</td>
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<td>1983</td>
<td>88.6</td>
<td>23.8</td>
<td>30.1</td>
<td>142.5</td>
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<tr>
<td>1984</td>
<td>61.4</td>
<td>10.7</td>
<td>15.0</td>
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<td>16.1</td>
<td>19.8</td>
<td>124.1</td>
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<tr>
<td>1986</td>
<td>103.6</td>
<td>59.3</td>
<td>22.2</td>
<td>185.1</td>
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<tr>
<td>1987</td>
<td>102.4</td>
<td>25.0</td>
<td>18.6</td>
<td>145.9</td>
</tr>
</tbody>
</table>

Source: Central Bank, Goldin and Rezende (1990)

After a steady increase in credit allowances during the whole of the 1970s, the decline from 1979-80 onwards is visible for all three categories of credit. It is also clear that the credit for investment plummeted more steeply and constantly in the 1980s until 1986, when the Cruzado Plan introduced new incentives for production growth, as discussed below. (Figure 1)

4.2.1.- Conflicts between Price Policy and Inflation

In 1981, the indexation of minimum prices started to be linked to the prospective rate of inflation, instead of being post-indexed as had prevailed before. In 1984 these prices began to be adjusted up to the peak of the harvest for which
it had been established, instead of being frozen for the whole period after the crops had been sown. This measure also aimed at rewarding soybean growers, inasmuch as the international price had slumped, and their financial costs had soared sharply. This meant that minimum price policy began to play a more active role in farming life, instead of being just a reference for the minimum level of farmers' remuneration, as had been the case in the 1970s. It also implied that government had to assume a greater role in the trading of rural commodities, allocating more resources to marketing
credit and commodity purchase under the EGF system than in previous periods. In 1985, the quantity of soybean acquired by government through the AGF programme was 10.7% of production, the first time that a significant proportion had been taken up by the state since 1980. The purchase level of other crops is also noteworthy: rice 16.6%; beans 21.5%; maize 14.2%. Therefore government became an important buyer, setting the price level and supporting the income level in agriculture in a different way.

Nevertheless, beyond the decision by the state to provide agriculture with higher minimum prices, and beyond its position as the main buyer, a major consequence was that it imposed a straitjacket on this sector derived from the macroeconomic policies. In other words, the government's own strategy for controlling inflation could not be sacrificed by establishing prices to meet farmers' requirements of accumulation. In this sense, the policymakers of the new government in 1985 determined a maximum price in order to keep agriculture in tune with the overall anti-inflationary measures.

"This maximum price will work as an indicator, as a trigger for government intervention in the market. The intention thus is to set up rules of

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20. "Emprestimo do Governo Federal": government loans taken by farmers to store their harvest as they wait for better prices in the market. If the prices do not exceed the government minimum price there is the option of converting these loans into the AGF - "Aquisição do Governo Federal" - the acquisition of the product by government. Under these circumstances of higher interest rates good minimum prices became vital for farmers to achieve profitability in their business.

21. The allowances for Sugarcane/Alcohol increased by 57% in 1984, compared with 1983, and for wheat was 10.2%, whereas the loans for Coffee, in special funds and programs, increased 144% and the amount for EGF and AGF increased 126.5% and 130.8% respectively.
intervention, following the minimum prices, and setting up maximum prices in line with the level of consumption of the population." (Ryff, T. in an interview with O Indicador Rural, Dec. 1985, p. 6)

The demise of subsidised credit and the rise of price policies as the main tools of agricultural policy created new conditions of accumulation for agrarian capital and new problems for government. The changes introduced in the credit policies affected capitalist farmers firstly by forcing them into the general financial market for credit as the cocooned agricultural financing system was partially broken. Secondly, the possibility that farmers could operate in the financial markets by diverting low-interest loans to take advantage of high speculative returns, was drastically reduced as the private banks became the main source of credit to farm. Therefore, in large measure, the constraints to agrarian capital accumulation emerged more visibly than under the protection of subsidies. The high inflation in the period added further strains to the relation between agricultural and industrial prices, as inputs and machinery became relatively more expensive as agricultural commodities lagged behind.

The execution of the new policy heralded additional difficulties for the government budget, however, since inflation started to erode the funds allocated to finance farming production and buy up surpluses. Moreover, to bridge the gap between low prices for consumers, for the sake of fighting inflation, and an acceptable level of income on the

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22. Silva (1988b) stressed that this was a transformation of the particular credit in agriculture into financial credit, making agriculture lose its capacity to develop itself at the margin of the overall financial structure.
farmers' side, government had to increase its financial support. The bigger the gap to be covered the more inflationary this policy became. Therefore a crucial issue facing policymakers in 1985, and even today, was how to find sufficient resources to execute credit programmes and minimum price\textsuperscript{23}.

4.2.2 - Agricultural Policy at the Cross Roads after 1985

This recent period is marked by great differences in all aspects of agriculture, both in terms of state intervention and structural change. First, the short lived Cruzado Plan (Plano Cruzado) introduced in February, 1986, set out a new approach to inflation and related problems. The strategy was based on the de-indexation of all prices, in a thorough monetary reform coupled with incentives for economic growth and a price freeze. Unable to hold to its zero inflation target and avoid budget deficits, the government increased public tariffs and relaxed the price freeze in the Plano Cruzado II of December, 1986, which was only an adjusted version of its predecessor and doomed to failure. Plano Bresser announced in July 1987 was the next attempt to curb inflation, using basically the same procedures adopted in 1986 - a price freeze and budget control. The negative results were

\textsuperscript{23}An additional burden on government finances was represented by the execution of insurance policy PROAGRO, whose aim has been to exempt farmers from the payment of financial debts as well as to recover the share of their own resources invested in production, in periods when harvests fail. Like the rural credit, the amount of subsidy in this policy has been very high. Precise figures about the deficit position of this programme, and also of the changes introduced over the 1980s, both in terms of the level of coverage and the taxes payable, can be seen in Verde(1988).
evident already in December 1987 - high inflation and a public deficit of 5.5% of GDP in that year. (Goldin and Rezende, 1990).

Secondly, widespread political liberalization, coupled with more vigorous rural social movements, intensified popular pressures on the government. These included, on the one hand, demands for land reform, which led to the elaboration of a National Land Reform Plan with provision for land expropriation and, on the other hand, pressures for a more durable agricultural policy. The latter was demanded primarily by the large landholders' organizations, as analyzed separately below.

The basic rules by which government was going to administer agricultural policy changed thoroughly in 1985. The previous trend towards a price oriented policy gave way to a return to massive credit concessions as the Cruzado Plan had temporarily curbed high inflation. Under the new management of the economy, growth was again on the agenda, which for agriculture meant that investment, at a very low level, was to be stimulated.

Furthermore, cheap food as a vital component in the general process of accumulation remained an important objective, as one can see in the proposals of the Targets Plan (Plano de Metas)24 for agriculture, launched in July 1986:

"For the agricultural sector, the objective of economic policy is that of expanding significantly the internal food supply on a stable basis, in such a way as to produce a reduction in the cost of food

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24-This plan was elaborated to specify in detail the targets of growth for the economy according to its principal sectors.
and permit a growth in public purchasing power". (Gazeta Mercantil, 1986, p.6)

The new policies, recognising the deep distortions prevailing in the credit system, established that loans should be directed preferentially to small holdings, as well as to those engaged in staple food production. The VBC was increased from 80% to 100% for small- and middle-sized units for all crops, except soybean and 'mamona'. In the case of most staple foods, namely priority crops in the table below large units were also given 100% of VBC, in order to reinforce the domestic food supply.
Table 8: Percentage of VBC to be Financed by Operating Credit, for Crop and Farm Size

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<td><strong>Priority Crops</strong></td>
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<tr>
<td>Irrig. Rice</td>
<td></td>
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<tr>
<td>Mini/Small</td>
<td>80</td>
<td>80</td>
<td>100</td>
<td>100</td>
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<tr>
<td>Medium</td>
<td>60</td>
<td>80</td>
<td>100</td>
<td>100</td>
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<tr>
<td>Large</td>
<td>60</td>
<td>80</td>
<td>80</td>
<td>80</td>
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<tr>
<td>Dry Rice</td>
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<tr>
<td>Mini/Small</td>
<td>80</td>
<td>100</td>
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<tr>
<td>Medium</td>
<td>60</td>
<td>90</td>
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<tr>
<td>Large</td>
<td>60</td>
<td>80</td>
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<tr>
<td>Beans</td>
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<tr>
<td>Mini/Small</td>
<td>80</td>
<td>100</td>
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<tr>
<td>Medium</td>
<td>60</td>
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<tr>
<td>Mini/Small</td>
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<td>100</td>
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<tr>
<td>Medium</td>
<td>60</td>
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<tr>
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<td>80</td>
<td>90</td>
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<tr>
<td>Maize</td>
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<tr>
<td>Mini/Small</td>
<td>80</td>
<td>100</td>
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<tr>
<td>Medium</td>
<td>60</td>
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<tr>
<td>Large</td>
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<td>80</td>
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<tr>
<td>Medium</td>
<td>60</td>
<td>90</td>
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<td>Large</td>
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<td>60</td>
<td>100</td>
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<td>Medium</td>
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<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Medium</td>
<td>40</td>
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<tr>
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<td>Large</td>
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</table>

Source: CFP, Fagundes, M.H., 1988

In addition, a new system of adjusting prices was established, indexing them to the cost of production; that is,
to the IPP, the index of prices paid by farmers. At the other end, the readjustment of interest rates on the credit contracts was based on the IPR, the index of prices received by farmers. They could use the LBC (Central Bank Bonus) rate as a measure to repay their debts, if this rate were lower. This mechanism only lasted for a short time, May to July/1987, when it was replaced by the OTN, a general device used for indexing all assets, including prices paid and interest rates in agriculture.

These measures were therefore adopted in order to restore farmers' capacity to invest in production and to sustain the food supply at a price level controlled by government. To a large extent, this inherently paradoxical project hinged on the level of inflation, since producers would seek to increase their prices accordingly, as a measure of self-defense. With lower inflation as the main priority in the plans to stabilise the economy, the government intervened in the internal market by importing food, mainly rice and maize, and suspending exports to avoid any domestic shortage of supply. Once inflation began to rise again, however, the whole strategy for agriculture crumbled in the daily effort to control the prices of basic items, mainly food. This situation cornered the Ministry of Agriculture, as the profitability on the farming side came into conflict, once more, with the need to keep prices down. On the other hand there was not much room left for private traders to operate in the agricultural market, for government ended up acquiring a great part of the harvest.

Since retail prices in 1986 were frozen during the
Cruzado Plan, many enterprises, in order to avoid the restraint of selling products at a regulated price, channelled their commodities into the black market. Farmers had nowhere to go to find inputs and equipment other than the emerging uncontrolled sellers, thus paying an extra price, which certainly was not reflected in the IPP index. It is worth stressing that the level of investment having been very low for more than five years, farmers' demand for equipment suddenly increased, because the low inflation diverted resources away from the financial market to productive investments, mostly from March to November/1986, when prices were frozen.

As farmers were, in that period, rewarded with favourable interest rates of 10% a year, there was a run on resources, causing increases of 21% in the volume of operating credit, 12% in marketing credit, and 225% in investment loans. Nevertheless, as the government lost control of the situation, inflation accelerated to 65.17% in 1986, rising to nearly 200% in 1987 (Fagundes, 1988). In March 1987 a reduction in the interest rate for investment from 10% to 6% a year was introduced for all regions in the country, except for the North and Northeast. In these regions the rates had been 3% for mini and small farmers, 6% for medium-sized ones, and 8% for large ones, which were reduced to a flat rate of 3% a year for all farm sizes. Operating credit remained under the same conditions as those prevailing before. Nevertheless, in July 1987, the distinctions between regions were eliminated, the rates becoming 7% for mini and small, and 9% for medium-sized
and large farms throughout the country. In July 1987 a rate of 7% was introduced for all farm size and regions in the same month for investment credit, after having been 3%, 6%, and 8% (for small, medium and large farms, respectively) in the North and Northeast, and 10% in the other regions, until February/87, and 3%(North and Northeast) and 6% for the rest of the country after March/87.

The advantage of having borrowed money at these interest rates was enormous since, according to the legislation, interest on investment credit could only be updated at 6-monthly intervals. Subsequently, however, this adjustment accounted for an unexpected increase in financial costs on the production side. Many farmers who had taken advantage of the golden opportunity of low financial costs went bankrupt as the interest rates increased again. However, for those who had borrowed money for investment a system of monetary correction was set up on 28 February, 1987, according to which

"the rate should be that of private banks for 180 days, with a rebate of 10% for contracts of up to Cz$ 200 thousand on that date, or 50% of the total index for loans of more than Cz$ 200 thousand. In the case of no payment until 30/06/1987, they would have an additional extension of 18 months, at a rate under 100% of the index". (Fagundes, 1986, p.9)

In order to offset the losses caused by this rise in costs, minimum prices were raised, consequently making government the main buyer of many commodities, exactly as it had been before 1985. The impact was also negative, as there were insufficient resources to face such an unexpectedly large burden, which led the state to pay farmers by instalments, mainly for wheat purchases, causing further erosion of
farmers' income levels.

Under these conditions the problem of shortage of public resources to finance agriculture still remained. Since the official source of credit had increasingly been inflationary, private banks had their compulsory loans\(^{25}\) to agriculture doubled to 20% for small banks, 40% for medium and 60% for big. Beyond this limit set by the official requirements, agriculture could not compete with industry and other sectors for resources, insofar as returns from the latter were higher. The very logic of financial capital leads banks to invest money where there is more certainty of a higher return.

"...the private banks lend not their own money, but that of their customers', to whom they are committed to provide this safeguard of a good credit policy. Thus the rural sector does not return the same amount of money as it requires". (Vianna, P., Director of Banco Economico, interview to O Indicador Rural, may/1987, p.10).

A "Green Deposit" Account\(^{26}\) (Caderneta Verde) was another measure adopted in an attempt to guarantee the supply of resources for agricultural credit. On this point, it was alleged that in previous years, bank deposits made by customers in rural areas were channelled into the saving system, which worked more closely to meet the needs of house construction in urban areas. The proposal of a rural-based deposit account was thus to keep these resources for agriculture. Nevertheless, as soon as inflation accelerated again, this system became less effective since farmers were

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\(^{25}\) Private banks were obliged by the Central Bank to lend a percentage of their deposits on current account to farmers, which was not as inflationary as using the resources from the budget.

\(^{26}\) In fact the introduction of a Green Deposit Account had already been discussed in July 1985.
not supposed to pay the same interest rate as was paid to the customers who had deposited their money in the "green account" as a protection against high inflation. Therefore, even with a higher interest rate, the problem of financing agriculture persisted. In 1988, according to the National Budget (Orçamento da União), agriculture was allocated resources from the Green Deposit Account (Caderneta Verde), from the Bank of Brazil, from the compulsory loans by private banks, and from the Budget itself as policymakers admitted that some crops could receive subsidized credit. Nevertheless, farmers every year experience difficulty in obtaining the resources they need to buy inputs and to pay for other production items. The shortage of resources for rural activities is far from being solved, which has stimulated farmers' organisations to demand a self-sustaining financing structure in agriculture, in an attempt to retain and earmark its own resources through Green Accounts and the Credit Cooperatives.

In general terms, for nearly 10 years farmers have found themselves caught up in macro-economic strategies to stabilise the economy as a whole, in ways which have limited the capacity to accumulate capital in agriculture, squeezed between high costs and stable prices. Agriculture thus reverted back to the situation of 1984, in which internationally marketed commodities were the most profitable alternative for farmers, as the domestic market again was affected by price control. In December 1986, new regulations were promulgated to prevent state intervention from depressing internal prices, more specifically in the market for rice,
beans, maize, soybean and cotton, the main crops in the country. Prices were allowed to fluctuate within a certain limit, beyond which the state would step in, selling its stocks, following the idea of minimum and maximum prices. On the other hand, a more flexible system of tariffs was adopted for exports and imports, concomitant with a commitment that price fluctuations in the external market would not be internalized.

The changes in agricultural policies, therefore, reflected government's difficulties of reconciling agricultural priorities with its general economic policies, designed primarily according to the needs of industrial capital accumulation. In other words, state intervention was undertaken to preserve the status quo generated by the process of accumulation in general.

For the agrarian capital, the approach to economic policy implied that accumulation would be feasible only within limited margins, established by the way food supply was controlled in the domestic market and the measures adopted to stimulate exports. What most characterized the agricultural policies after 1985 was the attempt to restore the investment capacity of farmers and the subsequent retreat from the concession of cheap credit as rising prices at the farm gate and the inflation control policies became incompatible, generating great uncertainty for farming. Both policies strained state finances and limited farmers' prospective capital gains from the productive process.

On the other hand, agricultural policies are a result not
only of policymakers' decisions, but also an expression of opposing interests in the development of agriculture. In order to better understand the making of agricultural policy in the 1980s as the crisis unfolded, we must examine the role played by farmers' organisations as they reacted to each step taken by government and fought for a new framework of regulation.

4.3-The Role of Farmers' Organisations in Agricultural Policy

Following the analysis of agricultural policies, this section will discuss the very effective political pressure exerted by farmer organisations which, hitherto had acted through the policymakers' offices, far from the public eye. After the first changes in the agricultural policy had been introduced in the early 1980s, these farming interests burst onto the public political scene to stake their claim within the newly liberalizing environment in Brazilian society.

This was a very new aspect in agriculture, for overt political action had been a terrain largely reserved for the social movements acting politically on behalf of those excluded from the "economic miracle" of the 1970s, and those demanding to be released from the grip of the military dictatorship. The literature on social movements in the countryside has commonly focused on the interests of peasants and farm workers. Only recently has the political action undertaken by the dominant class in agriculture been approached by those who analyze the agrarian question.

As the main purpose in this work concerns the capitalist sector of Brazilian agriculture, this section will focus on
the organizations that express the social and political objectives of this sector. There are 207 organisations including those set up to defend interests located in specific activities, mainly livestock, such as cattle ranching, pig farming, etc.; those linked to marketing activities; those in the input and equipment industry; and those covering the whole range of economic interests in agriculture as a sector. All of them are established at both national and local levels, according to the area in which the activity occurs and the political and administrative conditions for attracting members. They are also differentiated in terms of whether the activity they represent is mainly adopted by small or large farmers. Therefore it is clear that agricultural policy decisions are bound to be under pressure from a wide variety of demands and interest groups.

The social organisations of entrepreneurs in agriculture started to be established more widely early this century, many of them in the coffee business to defend their interests in the market and influence government decisions. As the Brazilian economy was largely based on coffee production until the process of industrialization by import substitution, the agriculturalists had a greater influence on the state. After the 1930s the urban industrial capital emerged as the most important economic sector, and its political representation overshadowed agricultural interests. However the latter still continued to play an important role in decisions about

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27 - A complete list of all the organisations, according to activities and the region where they act is given in Moraes, P. G. "Algumas Observações para o Estudo das Classes Dominantes na Agropecuaria Brasileira", in "Reforma Agraria", Abra, no.2, Aug./Nov.-1987.
agricultural policy, as the events in the 1960s clearly show.28

During the process of modernization after the late 1960s there were only limited conflicts between the state and the agrarian bourgeoisie, as the agricultural policies were generally in line with the interests of the latter. Moreover, these policies were in large measure a result of the influences exerted by large farmers in order to modernize the latifundia. Since 1965 the CNA29 had been the main channel of political pressure on agricultural policies, and was very close to the policymaking. (Sorj, 1980) Moreover,

"The CNA takes a place in most of the official commissions which deal with agriculture, and represents the Government in various international bodies, such as ALALC, FAO and the ILO". (Sorj, 1980 p.77)

A second important organisation is the SRB30 which, though connected to a specific activity, had easy access to the official boards and voiced opinions on all issues of the

28- It is well known there was a fierce opposition by some organisations, representing the latifundists, to the law for land reform. The Land Statute (Estatuto da Terra) enacted by the military government, in 1964, though containing the principles for land reform, ended up being a law of rural development, tailor made to the large landholders interests. An extensive analysis of this process can be seen in Bruno, R. (1987).

29- National Confederation of Agriculture (CNA; Confederacao Nacional da Agricultura) is a society legally established by government as a trade union of the landowners, incorporating all the corresponding federations set up in the States, and the trade unions in towns. Many of these local organisations had already been established as a spontaneous manifestation of landholders' interests. In Sao Paulo, for instance, the one which became the CNA branch had been set up in 1942, as a society linked to cattle ranchers' interests. (Moraes, 1987). The existence of the CNA is largely rooted in an imposition by the State to create a body, in opposition to the CONTAG National Confederation of Agricultural Workers (Confederação dos Trabalhadores na Agricultura). As such the CNA has embodied the formal representation of agriculture as it functions as the link between the government and the farmers.

30- Brazilian Rural Society (Sociedade Rural Brasileira), inaugurated in 1919, as a means of organising coffee agriculturalists in Sao Paulo, began to sprawl to Paraná afterwards. Only in the seventies, it moved to the cattle ranching activity, as it became more modernized in its procedures and organisation (Silva, J.G., 1987). It is worth noting that according to Moraes (op.cit) the SRB since its beginning had been an organisation based upon cattle ranching activities.
agrarian question. The SRB is deemed to be a less traditional society than the CNA in its interventions and advocacy. A third very important political organisation for the capitalist agriculture is the OCB\textsuperscript{31}, whose access to political decisions was based on the fact that cooperativism in Brazilian agriculture began to enter the era of agribusiness. From being the mere assemblers of products, some cooperatives, in the southern States, started to compete with the multinational capitals in agroindustrial food and fibre processing. Moreover, the OCB, backed by its branches in each State of the country, have been in permanent contact with the official bodies responsible for the elaboration of agricultural policies. The last organisation to be mentioned is the SNA\textsuperscript{32}, which is not connected with a specific economic activity as it has functioned more precisely as an academy for the whole of agriculture.

A common feature of all four societies during the modernization period was the close relationship with the government in all agricultural matters. There was no mass mobilisation, nor pressure, for the problems were solved in

\textsuperscript{31}- Brazil's Cooperative Organisation (Organisa\c{c}ao das Cooperativas do Brasil). This is the national body for all the agricultural cooperatives, which have an intermediate organisation set up at the State level. It was created in 1969 as an national expression of the growth of the cooperativist movement in the country. Its main concern is the cooperative organisations' requirements in terms of receiving support from the government for their process of implantation during the seventies. The cooperatives became an important instrument for the government in its modernisation policies, a great deal of economic support being conveyed to the former through warehouses and credit facilities for their infrastructure and for their membership in the windfall of the credit policy. The government controlled the cooperativism to such an extent that, after the late 1970s, all new cooperatives needed official approval, which began to be conceded after an assessment of their economic viability. Many units set up in response to local social demand gave way to others imposed from above.

\textsuperscript{32}- National Agriculture Society (Sociedade Nacional da Agricultura). It was created in 1918 with the object of studying and collaborating in the solutions for problems faced by farmers and to provide legal advice.
the Minister’s room, with no need for political articulation or representation in other spheres, such as the Congress. Therefore, as there was no public discussion of these questions whatsoever, these organisations were scarcely in the spotlight of academic analysis or of the society at large.

As the equilibrium produced by the modernising policies started to falter in the early 1980s, the first signs of a different attitude could be detected among those organisations. They started moving the core of their political activity from Brasilia (Brazil’s capital) to their own base and to an environment more exposed to the public opinion. One of the first reactions against the decision taken by government in 1982 to withdraw subsidies, was voiced by the then-president of the SRB in asking for compensatory measures. The same protest came from a director of the FARSUL, (the branch of CNA in R.G. do Sul), regretting the decisions taken by the National Monetary Council, CMN, and recollecting the golden days of 15% interest rates on loans. Others threatened that there would be a forthcoming shortage of food.

During the first half of the 1980s, the dissatisfaction voiced by farmers about the directions of agricultural policies followed this tune, without a more articulated proposal or effective political action. However, by 1984, the collapse of the previous form of representation became inevitable, as the government renewed its intentions to eliminate subsidies and agriculture was struck harder by soaring costs of production. Farmers realised that they did not have an efficient mechanism of representation and that
they were bound to lose the benefits of a subsidized agriculture. The emptiness of the formal representation procedures then became clear. This is how the ex-Minister of Agriculture, Alisson Paulinelli\textsuperscript{33}, expressed his feeling:

"Agriculture is without political strength, fragmented and disorganised. An internal organisation is necessary, as with the ongoing political changes only the strong and structured entities will be listened to." (O Indicador Rural, 1984, p.3)

The route towards a more representative and politically strong organisation drove the leaders to mobilise their own public and farmers in general in an attempt to restore the missing link. However, this was a tall order for an organisation mostly linked to its public through the formality of the membership form. As the economic situation became worse, this body could not muster and channel the emerging protest into massive pressure for changes in the agricultural policy. This was the moment when a much wider spectrum of organisations, such as the SRB, OCB and all those State-based branches, came to the fore in filling the gap left by the weakened CNA, making clear that the negotiations within four walls were proving to be rather ineffective. Concomitantly demands changed from regret to the submission of proposals for a new policy. Boasting about agriculture's technical development and claiming that producers were now more mature and professional, the president of OCB pointed out that this performance caused

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\textsuperscript{33} This is symptomatic of the fact that he was going to run for the presidency of the CNA in 1985, nearly six months later. After a long and silent period of no competition for the leadership of this organisation the then-forthcoming election meant that something different was happening in farmers' representation.
"the appearance of a new leadership in Brazilian agriculture, which is cropping up throughout the country, in cooperatives, trade unions that are much stronger, efficient and technically prepared to make demand. Nowadays we are in the position not of begging but of offering alternatives." (Rodrigues, R. in O Indicador Rural, dec.1984,p.11- emphasis added)

The new fact in the mid 1980s was that this gestation of a more systematically elaborated proposal was underway. However, this process gathered speed as the organisations abandoned their isolated struggles for the creation of the FAAB - Front of Brazilian Agriculture (Frente Ampla da Agropecuaria Brasileira), which became the voice of capitalist farmers in particular, and agriculture at large, being composed of the SRB, the CNA, the SNA, the OCB(34). In a process in which agricultural policy was being engulfed by the difficulties experienced by the economy, farmers were urged to demand that government pay attention to their needs by staging massive protests against the hardship caused by the failure of the Cruzado Plan, and by making suggestions for a new agricultural policy. Nonetheless, when the FAAB came into being, in June 1986, the Cruzado Plan was still forging ahead and a detailed plan for agriculture, the Green Package (Pacote Verde) was on the way, to be published in August 1986. Even so, the stability of high minimum prices until the beginning of the harvest was not assured, nor was the whole mechanism of credit concessions at a low interest rate.

34. It is interesting that the CONTAG was also invited to take part in the FAAB, this invitation making clear that the latter was attempting to absorb those groups more committed to the land reform programme and historically distant from the central control of the FAAB’s components. Therefore a united front would imply that small farmers could seat at the same table to discuss the ‘agricultural questions’, leaving aside the differences in their political priorities, mostly concerning land reform.
The emergence of FAAB, however, was not only a consequence of the overall dissatisfaction towards the agricultural policy. It emerged as an important counterpart to the growing movement for land reform which had already received an apparent political endorsement from the government that had taken office in 1985\textsuperscript{35}. The National Land Reform Programme was launched in May 1986, one month before the foundation of the FAAB. Nevertheless, under great pressure from the large landowners, the government did not commit itself to immediate execution of its programme. It preferred to try to create an atmosphere in agriculture in which the thorny points provoked by the issue of land reform could be dealt with without radicalism, which seemed to be the nature of the conflict between the Land Reform defenders and the extremist UDR\textsuperscript{36}. This role was filled by the FAAB, responding to a strategic manoeuvre by government as it strove to keep its promises without going very far in realising them. In fact, there was a commitment between FAAB and UDR in which the former was to negotiate over land issues with government, while the latter performed the so-called dirty work, of confronting landless groups and leading radical armed resistance in the countryside to undermine the execution of the Land Reform Programme.

\textsuperscript{35}This was confirmed by the President of the Federation of Agriculture in Paraná.

\textsuperscript{36}Ruralist Democratic Union (Uniao Democrata Ruralista). This organisation, originally based in Goias state and supported by cattle ranchers, came into existence only to fight against the implementation of the land reform programme. Its action however extended towards the struggle for changes in the agricultural policy and for correction in the day to day official measures concerning credit payments, price settlement, and so on, as a means to obtain legitimacy and the support it was searching for its primary objective: to prevent the land reform from been implemented and emphasize the fight for private property. An analysis of UDR can be found in Bruno, Regina(1987) and Silva(1989).
Rather than discuss this spectrum of issues I shall concentrate on the relationship between the farmers' organisations and agricultural policy. By the end of 1986, when the Cruzado plan collapsed, the FAAB had attained wide influence on the rural social movement, mainly because producers had seen their level of profitability increasingly undermined by high financial costs and by the attempts of government to maintain the retail prices freeze. However, it must be stressed that the political action undertaken by the leaders did not reach the ordinary farmer whose affiliation to the organisations was only formal, without any politically significant involvement. Most of the local "trade unions" were joined by farmers because of the medical assistance they provided. Even so, taking the example of the trade union of Guarapuava–Paraná State, the local representative estimates that of 6 thousand farmers, 3,072 are members and only between 500 and 600 take an active part by attending meetings and paying the annual fee. This is a picture that can be extrapolated to most of the Brazilian agriculture.

The action against the government policy was led by the FAAB as the recognised instrument of struggle by a large number of producers, including even the small ones. FAAB

37– The attempts by government to increase meat supply by pressing cattle ranchers to sell the product at a previously agreed price are well known. But a measure regarded as more harmful to farmers' business was the import of rice and maize to a extent that ended up causing problems of storage as the 1987 harvest was underway.

38– There is a legal requirement according to which those farmers that employ a certain number of workers must be affiliated to the local employers' "trade union" which is linked to the Federation and then to the CNA. This aspect of the law includes many small farms in this category, though in reality they might well be closer to the workers' economic standard of living. After the new constitution the requirement that farmers had to
also attempted to attract workers and small farmers from CONTAG in a manoeuvre to blur all the class differentiations within agriculture at a moment when land reform was due to be enforced by government. However, as far as agricultural policies are concerned, the FAAB became the main representative body for farmers' demands as the contradictions between the ineffectiveness of formal representation and the crisis triggered by the foundering Cruzado Plan became more evident.

This situation provided FAAB with the opportunity to take advantage of the widespread dissatisfaction observed in a disorganised social structure. The rally of farmers in August 1984, in Porto Alegre, called "O Grito do Campo" (The Cry of the Countryside) in which even CONTAG took part, demonstrated that there was an effervescence that could be appropriated and channelled by a politically efficient organisation. These two moves were part of a process which revealed the ineffectiveness of the existing representation through the "trade unions".39

Simultaneously, at a national level, former Minister of Agriculture, Alysson Paulinelli challenged the weakened president of the CNA, Flavio Brito, in an attempt to restore

39- It is important to stress that despite that momentous cry, the farmers' political representation in the day-to-day life was deeply divided. The cooperatives have taken over the economic demands, for they have accumulated the necessary infrastructure and technical knowledge, whereas the local unions lag behind without any background to face negotiations about agricultural policy on behalf of their members. Furthermore, the split between these two representations has pulled them apart, a relationship utterly opposite to that observed between the national leaders.
the relationship between its social base and the formal leadership. After a two-round election\(^4\) the then president conceded defeat, losing a position held since 1964, in a period when his main task had been to "take part in official representations and social functions held by the military governments." (Silva, 1989, p. 28). The change in leadership brought about by this election, meant that the missing link could be restored, as can be seen from the newly-elected president's statement:

"I have two immediate problems to deal with: to restore the organisation financially and politically... I want to avoid what has happened in the last 20 years ... The organisation needs to regain its own respectability... The CNA needs to take over its role as representative of the employers' class". (Gazeta Mercantil, 11/12/1987)

These events occurred concomitantly with two major processes experienced by farmers' organisations. Firstly, public protests\(^6\) and threats to halt production became old words in the struggle for higher prices and a long-term agricultural policy. Secondly, the unity represented by various organisations in the FAAB developed towards the foundation in 1987 of the "Agricultural Parliamentary Front" (Frente Parlamentar da Agropecuaria). The front's main

\(^4\) The result of the elections in June 1985, was a draw as the vote of the Federacao do Espirito Santo was eliminated by the electoral justice. In the second round, December 1987, the president did not take part, in a clear demonstration that his reign was over.

\(^6\) In Feb. 1987, 30,000 farmers went to Brasilia, for the first time, to protest against the policies. This manifestation was mainly organised by the FAAB, and demanded a rescue operation for farmers struck by an declining level of income, resulting from ever-rising costs. The main demands were "... limitation of imports; call of the instalments of AGF (Federal Government Acquisitions); improvements in warehouse capacity; authorization for rice stocked to be exported; use of IPP to update commodity prices, including exports; liberalization of retail prices; setting up a subsidy of 50% of IPR variation; elimination of monetary updating on the loans for 12 months or longer; other specific measures, according to different activities; etc." (De Paula, N. 1987, p.5).
objective was to represent the "farmers interests" in the newly-elected Congress, which was charged to formulate a new constitution, which was expected to include new legislation regulating agricultural policy. This was another new facet of farmers' political action as the Congress became the most important body of decision-making, thus replacing the previous secrecy of the ministers' offices. The president of the OCB emphasized the need for action in the Congress as the place where farmers ought to direct their demands.

"In my opinion, it is more than ever important that agricultural interests take up the existing political space, especially that of the National Congress. It is the Congress' responsibility, representing the whole of society, to take the lead in the formulation of an agricultural policy". (O Indicador Rural, Brasilia, June, 1986, in Silva, 1989, p.11).

However, despite the rise of all these new bodies, farmers' organisations continued to support the minister of agriculture in their attempts to press their demands\textsuperscript{42}. The farming lobby thus became a new means of acting politically in order to support the activity of FAAB, which still led the pool of organisations acting on behalf of agricultural interests\textsuperscript{43}.

\textsuperscript{42}- Emphasizing the priorities given to industry in the definition of economic policies, farmers' leadership focused on the lack of power of the ministry of agriculture. Flavio T. Menezes, president of SRB, pointed out that there was only one means of eliminating the privileges given to urban sector: more power to the minister of agriculture. "While the ministry of agriculture is second-rate ministry without power of decision in the federal councils, we shall not have an effective agricultural policy". (O Indicador Rural, dec. 1984)

\textsuperscript{43}-The number of Congressmen elected in 1986 and committed to working for those interests was high, which demonstrated two facts: 1) the rural organisations had worked very effectively to achieve such a representation; 2) as land ownership was becoming also an urban business, the agrarian question became a matter of more than land-based capital. Besides, landownership is very common among politicians.
4.3.1.- Farmers' Proposals for Agricultural Policy

After dealing with the mechanisms farmers had adopted through their various organisations and strategies, we turn now to analyze their demands and proposals in the 1980s. During the first half of the 1980s, as we have seen, the farmers' reaction to official measures was basically one of protest. After 1985, during a more agitated period, the lack of control over agricultural policies became more visible, as the FAAB struggled to prevent the growth in importance of the land reform programme. The position articulated by the FAAB was that land reform should be only one element of an overall agricultural policy. This position soon became an issue in the discussion between the capitalists-cum-landowners and the wide social grouping pressing for structural changes in the countryside.

In the short-term, however, farmers' demands were more concerned to oppose the government's agricultural policy decisions. The main concern behind this attitude was to avoid the consequences of the imminent failure of the Cruzado Plan. The relevant points can be classified as follows:

- the main question was to establish minimum price policy as the basic mechanism for offsetting the soaring production costs, taking into account the fact that government was bound to buy the bulk of two harvests. The IPP and IPR indices became important for farmers in their attempt to avoid possible losses resulting from the imbalance between controlled prices and rising costs.
- as the internal market was under tighter government control, freer access to the external market was regarded as an alternative means to maintain the level of rural income.
- the reindexation of interest rates for those who had contracted loans when the rates were at 3%, was eroding many farmers' income, and farmers therefore demanded that it be eliminated.
- apart from the increase of interest rates, the amount of resources for agriculture also became insufficient. A conflict between the bankers and the government indicated that agriculture was losing ground as a profitable alternative to the financial market.

All these demands were supported by the organisations' own statistical data and by a more detailed analysis with which they prepared themselves for discussions with the policymakers. This move towards more sophisticated pressure meant that farmers' leaders were no longer content simply to lament the way policies had been handled, but were beginning to offer their own assessment of the whole economy and their own proposals for measures to be taken. Therefore, beyond purely conjunctural claims, they mustered arguments and principles to demand more effective regulation for agriculture. This can be described as the long-term character of their demands.

In the light of the critical period in 1986/87, when the existing agricultural policy became completely ineffective, the first step taken by farmers' organisations was to contend
that agriculture needed a permanent policy, in which the sector would not be negatively affected by the administration of the urban economy. This demand revealed two general principles, which can be detected between the lines of their argument.

The first one is a widespread ruralist view, in opposition to the urban interests (industry and banks), that the development of the Brazilian economy in the last four decades has largely benefited the industrial sector, financed by rural resources. Although this is demonstrated by Brazilian economic history, when agriculture shouldered the burden of taxation and an adverse exchange policy to finance the expansion of the new industrial sector, this "stylized fact" was presented as if the society could pay agriculture back. This prompted the misconceived argument that although agriculture now is responsible for 12% of the National Gross Product it should be rewarded with a higher volume of resources.

There is thus a structural question underlying the real situation of agriculture vis-a-vis the sectors which provide farmers with their market, revealing the irreversible loss of agriculture's influence and power in the economy. The only way to achieve influence and power is to turn their weapons towards the state, emphasising the idea that priority given to control of inflation can damage the rural sector. Therefore the apparently naive assumption that urban society has taken

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44. At the conference of the Frente Ampla da Agropecuaria Mineira, five thousand farmers stressed emphatically that in recent decades there has been a transfer of profits from the countryside to the city, "subsidizing the Brazilian industrial park".(O Indicador Rural, 2a. quinz., Dec. 1986 - pg2)
advantage of the agricultural sector\(^5\), functions as an argument that reinforces the major strategy of their struggle. In political terms the aim was to achieve a bigger clout in official decision making by mobilising more support for the minister of agriculture\(^6\) and creating a more effective and widespread organisation of farmers throughout the country. In economic terms, this involves achieving easier access to financial resources for farming activities, as well as overcoming agriculture unattractiveness to private banks. In more recent years, farmers' organisations, mainly OCB have been struggling to obtain permission from government to allow cooperatives to operate in the credit system. The basic argument is that as the resources derived from the urban financial sector and from official sources do not suffice, agriculture should create its own internal source of credit\(^7\).

In turn, the emphatic support given by the cooperatives for this apparent solution for the question of how to finance agriculture, can be explained by the attractiveness of the financial market as the less risky sector in the economy. In

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\(^5\)- The president of the Cooperatives Organisation in Paraná declared that one of the basic points for orientating an Agricultural Policy would be the guarantee of fair prices. 'The society, which consumes staplefood, should subsidize the cost of production in agriculture, in order for these products to be at a sufficient levels of supply and of quality desired'.(O Indicador Rural, op cit)

\(^6\)- It became important for farmers' organisations that the Minister of Agriculture should commit himself to working more effectively for the policies the sector needed, thus leaving aside any possible commitment to the smouldering land reform programme. The statement of the president of SRB, Flavio Telles, that the previous Minister of Agriculture, Pedro Simon, was ideologically biased because of his emphasis on the landownership question assigned to the work of Embrapa, is in contrast to the appeal to the farming public to support the incoming minister, Iris Rezende, by the president of FAAB.

\(^7\)-Based on the same assumption that agriculture had conveyed resources to the industrial sector for more than forty years and blaming the financial sector for this extraction, the President of the OCB, Roberto Rodrigues pointed out that "the idea nowadays is to reverse this process - instead of agriculture providing the industrial sector with resources, they must be kept within agriculture's boundaries, through its cooperative's rural credit system."(O Indicador Rural, July, 1987, pg10)
their wide process of diversification towards commercial and agroindustrial activities, the cooperatives are drawn in the financial sector by the prospect of its profitability.

The second principle present in farmers' demands concerns state's role as a key supporter of farming profitability. The assumption is that insofar as farming activities are more risky than other occupations, protection should be provided by government to compensate for the existing constraints on profits. This shows awareness of the fact that agriculture is still a competitive sector within an oligopolistic environment which, it is argued, justifies extra systematic help. This argument is not new, as Johnson (1958) pointed out about American agriculture:

"...since farmers cannot organise themselves to obtain similar monopoly powers, the government should provide the necessary assistance to permit the farmers to create that power." (p.127)

Therefore government is expected to act as a partner at times when the market cannot provide the planned return. Besides the rescue operations claimed by various sectors within agriculture, there are demands that state protect agriculture from situations of instability. Countless proposals were addressed to government demanding stabilisation of the market and a guarantee that farming should be profitable. This leads to arguments by politicians as well as

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48 After the difficulties caused by the failure of the Cruzado Plan farmers' leaders demanded resources for a general recuperation of the whole of agriculture. To clear the debt of this sector, more than Cz$100 billion would be needed, according to the president of FAAB. In Paraná all organisations, including those of small farmers, asked for funding to save agriculture and a moratorium for all those affected by interest rate increases. In coffee production, which is basically on large units, 53 (fifty three) cooperatives demanded financial support of Cz$1.5 billion from the government, and another Cz$3 billion for operating credit, for three years at interest rates based on the IPR.
farmers' leaders that prices should be guaranteed at levels sufficiently high to provide a reasonable rate of return\textsuperscript{49}. The logical next step in this direction would be to establish the government as the main buyer of agricultural production. Without going to these lengths, however, farmers' organisations began to realise that the solution to this puzzle lay in increasing urban real wages as a way of supporting consumer demand. This became a very systematic item in their campaign for price liberalisation in agriculture, the organisations changing their tune, as they had previously been speaking out against the tendency for policies to protect the urban economy. Therefore, as the control of inflation became a stumbling block to higher farm prices, farmers' organisations claimed that higher wages and a more equitable income distribution were needed to ensure higher profits in the farming sector\textsuperscript{50}.

On the other hand, as farmers' organisations gathered momentum in terms of a large representation in the Congress\textsuperscript{51}, and some public mobilisation in the countryside, they started to concentrate on a more important project: The Agricultural Law. This law was expected to provide a once-and-for-all regulation of farming activities, potentially freeing

\textsuperscript{49}- Demanding a price that would make up the production costs and profit margin, the President of a Cooperative in Paraná recalled the Land Statute (art.85) as a legal instrument to reinforce his argument.

\textsuperscript{50}- The newspaper O Indicador Rural, specializing in agricultural matters, and functioning as a spokesman of the capitalist farmers, drew a common line between the ideas of Luis C. Bresser Pereira, then the Economy's minister-to-be, and the flags held by the FAAB: "being of this opinion, the Minister is, at least in theory, in tune with the flag of FAAB, which defends a better income distribution, with increases in wages, in order to make the increase of agricultural production viable". (O Indicador Rural, 30, Aug.1987, pg94).

\textsuperscript{51}- Which allowed them to defeat the Land Reform Programme, under consideration by the new elected Congress.
agriculture from the instability of the market and the administration of general macro-economic policies. In order to have all their concerns included in the law all the organisations affiliated to the FAAB, plus the radical UDR, prepared a proposal to be defended in the Congress by the members of the Agricultural Parliamentary Front.

Nevertheless their proposal was far from being able to cope with the breadth of the questions which concern agriculture. Rather it concentrated on the mechanisms that would provide farmers with security and freedom of access to the market, both external and domestic. This matter was treated in great detail, leaving aside all other aspects such as credit, education, landownership, etc. More exactly, the central feature of the proposal was that no restrictions should be imposed on the marketing of agricultural commodities. The social composition of the sector was not part of their concerns, as all commercial units should be treated equally, thus ending the categorisation of farming holdings by their size. Therefore, for the parliamentary front the main objectives of agricultural policy should be,

"the development of a free agricultural market, with wide opportunity of participation, which provides its components with equal treatment to generate conditions for competition at all levels". (Frente Ampla da Agropecuária, 4o. Draft of Project of Agricultural Law, 1988)

In short, liberalization of the market, as a result of the government's withdrawal, was the central aim of the farmers' proposal. This was largely inspired by the conditions experienced in 1986 and 1987, when the need to keep a grip on prices led the government to prohibit exports, increase
imports, freeze retail prices, etc., which restricted agricultural markets. Therefore the proposal recommended that:
- abuses of economic power should be controlled;
- control on prices at the wholesale and the retail market levels should be lifted;
- the external market should be freed, with all restrictions on export commodities and import inputs prohibited;
- any public activity related to the agricultural market, which private enterprise could perform should be eliminated. Moreover, the state-owned infrastructure should be transferred to private hands;
- viability of marketing operations by private enterprises should be protected by government;
- definition of prices by government should be clear and known by all those operating in agricultural market.

Nevertheless, there are some contradictions within these principles. Simultaneous with these requests for freedom, there are some points in their proposal which express the need for continued state support. Thus the first item above conveys the idea that market liberalization is expected to occur within an environment of perfect competition, without monopolistic practices and other "distortions" of the free-market game supporters want to play. To protect farmers against those threatening aspects of the market the state is called upon to enforce regulatory measures. Therefore the move towards independence is only possible if it is linked to state action, which in some aspects goes further than simple
regulation. A clear example is export liberalization. If any other policy decisions concerning the economy as a whole leads to an overvaluation of the local currency, farmers claim they should receive compensation. Likewise, a subsidy is expected if prices are decreased as the result of artificial measures taken by the external competitors as a result of subsidy or "dumping". (Frente Ampla da Agropecuária, 1988)

On the other hand, purchases of harvest surpluses and market regulation by government should be established for the sake of farmers' profitability in a free market agriculture, with state intervention limited to keeping reserve and emergency stocks as mechanisms to control exaggerated price oscillations. Furthermore, although government intervention in the distribution of commodities is to be reduced, concomitantly it is supposed to protect private interests from the hazards of the agricultural market. The question is, therefore, not only one of setting up regulations, but also of taking steps to protect farmers' income. The so-called "structural deficiency", should be offset by mechanisms that would provide the farmers with credit resources and a stable level of income.

Another aspect of the farmers' proposal worth mentioning concerns the fact that agriculture is thought to be a sector which should be administered apart from the rest of the economy. It was suggested that a National Agricultural Council be set to decide upon farming matters under the authority of
the Minister of Agriculture who would thereby exercise a more powerful influence within the government decision structure. The significance of this suggestion is the implication that agriculture cannot survive without official support nor set itself free from general macro-control of the economy. This is the dual meaning of the crucial role of state in agriculture: on the one hand, the paradoxical need for assistance without interference by the state in the market, and on the other the importance of thrusting agricultural interests into the decision-making process, by having a stronger ministry of agriculture and widening the influence of their lobby. Moreover, farmers' organisations are bound to deal with the increasing importance of commodity organisations set up to demand policies for specific products, which suggests that the specialised agricultural lobbies will takeover the umbrella-like general political representation performed by the organisations discussed here.

4.4.– State as a Safety Net for Farming: can Liberalization be a guideline for agricultural policy?

The moves of farmers' organisations towards formulating proposals for agricultural policy and the state intervention in the economy at large shed light on the contours of the possible new rules for agriculture. It is quite clear that pressure exerted by farmers' leaders on agricultural policy decision-making is marked by the contradictory demand for market liberalisation, which tries to avoid state intervention on the one hand, but demands its protection on the other. As
Silva (1988b) pointed out,

"The same people who publicly complain against state intervention, privately always prove to ask for greater incentives and support from governments for their activities". (p. 244)

This half-way liberalizing assumption, however, just reflects the incapacity of farmers' leaders to grasp the complex issues created by state economic policies in a period of severe crisis. Furthermore it reflects the limited power of farmers' organisations to interfere in the direction of macroeconomic policies, highly synchronised with the pace and requirements of the process of accumulation in general, and in which agriculture is only a small integral part. Nevertheless, the state has found itself cornered by three factors with direct repercussion on agricultural business, namely, international market instability, the shortage of resources for credit, mainly investment, and buoyant, high inflation. It is in this context of economic crisis that the state is urged to re-establish the parameters of capital accumulation in agriculture, which certainly will not be achieved simply by measures of market liberalization.

On the international front, agricultural commodities have experienced great instability in the 1980s, caused by the world-wide disarray in the agricultural model established in the post-war under American hegemony.

"The crisis of the 1980s thus marks the end of the post-war cycle of agroindustrial accumulation and the structures of regulation which sustained its internationalisation throughout the OECD countries and, via the Green Revolution, to selected sectors of Third World agriculture." (Goodman and Redclift, 1989, p. 4/5)

Therefore, the international crisis of agriculture is not
a conjunctural combination of negative events, but a consequence of structural trends in the world economy. Moreover, it is a reverberation of domestic circumstances of overproduction and incapacity of states to stop complying with demands for subsidies\(^{53}\) and price support policies, which have undermined all the attempts to introduce a free market resting on comparative advantages. As a result, agriculture in America and EEC countries has been fostered by the state, both by keeping up the internal price levels and, more recently, by set-aside programmes which represent a compromise between sustaining the process of accumulation in the farm economy and holding an advantageous position in the international market. Simultaneously with an enormous build up in feed grain stocks\(^{54}\) farmers experienced fluctuating and declining prices in the 1980s, in contrast to the stability that prevailed in the early 1970s and the post-war years. Furthermore, the dominant American position in international trade has been threatened by more intense competition from new Third World producers\(^{55}\).

The Third World countries, in turn, have become crucially

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\(^{53}\) According to The Economist (Oct. 1988) the direct cost to the taxpayer has been "around $40 billion a year in America; about the same in Japan; down to $30 billion in the EEC after recent farm reforms. The indirect costs of higher food prices and inefficient production in the protected regions are bigger. A recent OECD estimate of the total cost to its member countries is $220 billion a year" (p. 15).

\(^{54}\) According to Buttel (1989) the American carry-over stocks of wheat and feed grain commodities "rose from 30 million metric tons in 1975 to 80 million tons in 1980, and to 140 million tons in 1983". (p. 57) After a reduction in 1983-84 the stockpiles peaked 150 million metric tons in 1986 again. In Europe the often-mentioned mountains of grains and sea of wine are measured in Cottrell (1987) as being 17 million tonnes of grain, over one million of dried milk powder, 1.5 million tonnes of butter, 520 thousand tonnes of beef and 15 million hectolitres of red wine. (p. 16)

\(^{55}\) After 1980 Argentina and Paraguay became also important suppliers of soybean to the international market.
dependent on export revenues due to the increasing external debt, which has been fuelled by balance of payment deficits. (Buttel, 1989). On the external front, however, this crucial reliance on exports has been jeopardized by the inefficacy of international regulatory institutions, such as GATT, whose principles of comparative advantage and free competition have been defied by protectionist attitudes adopted by the USA and EEC countries mainly. (Tubiana, 1989).

Within this environment of dwindling demand and lower prices, Brazilian farmers, mostly those devoted to soybean, are bound to seek protective compensation from the state, either in terms of profitable internal prices or specific measures such as the elimination of ICM (Commodity Circulation Tax) on exports and a more favourable exchange policy. In this respect, the solution for problems of capital accumulation in agriculture is bound up with the volatile trends of the international market, which requires the state to act as a buffer to alleviate, in a systematic fashion, downward price movements.

Internally, a crucial determinant of farmers' ability to achieve a sustainable level of capital accumulation is to find a solution to how to finance the production process. As Dias and Barros (1986) suggest, the level of interest rates should be such as to allow for the recomposition of the lenders' funds and yet also give farmers an acceptable level of profitability. If farmers are to avoid some of the constraints of state control over the credit system, they must develop their own financing capacity, which has been possible only for
those large farmers whose income flow has expanded beyond the confines of farming. The recovery of official funds to be channelled to agriculture is thus the mainstay for farmers, in general. In short, state policies for agriculture are highly dependent on the solution of macroeconomic problems, mainly inflation, given its direct influence on the level of interest rates and on the damaging exchange relations between prices paid and prices received by farmers.\textsuperscript{55}

On the other hand, low level of food supply, combined with low levels of income of the urban population, have prevailed, requiring government intervention to prevent the real value of wages from deteriorating. Therefore, the question becomes more one of fitting agricultural policies within the global decision-making process, than of liberalising prices for the sake of farmers' profit.

The state has been, and will be, called upon as a vital partner in the farm process of accumulation, either by channelling credit resources at interest rates lower than those in the market, as in the 1970s, or by guaranteeing stable markets for agricultural commodities.

The loss of strength of the modernisation strategy stemmed from the incapability of the state to control divergent processes in the economy, emphasising the necessity

\textsuperscript{55} The combination of these two sides of State in a period of crisis recalls De Janvry's discussion on approaches to analyzing State food policy. The first side of this question corresponds to the Capital Logic Approach which "...explains the need for and the behaviour of the state in terms of the economic and political needs of capital to ensure both sustained economic growth and reproduction of the social relations of capital". (De Janvry, 1983, pg192) The second side is related to what he names The Instrumentalist or Class-Political Analysis of the State whose key is "to define how different competing interest groups are organized, the extent of their economic and political power, and their ability to gain control of particular aspects of policymaking in defense of their own advantages." (p.191)
of a new set of regulations for agriculture. The ensuing crisis of the 1980s has highlighted the weakness of this sector and the inevitability of a new strategy to restore its capacity to produce. From a wider perspective, however, elaboration of a new legislation for agriculture is deeply rooted in two overall conditions: the shift from an authoritarian society to a democratic one, which made political agents more active and their demands more freely expressed; and a deep economic crisis that has affected state capability to administer the overall process of accumulation in the economy, including agriculture. Therefore the social and economic disarticulation that undermines the grip of state on the economy, triggers off a general process of negotiation in which social groups will keep up the demand for preserving privileges or a status quo that holds the state as a vital ally.

"The truth is that in such a way the sector (agriculture) became used to the official presence, that a great part of rural class saw its withdrawal with discomfort and concern. It defends the credit subsidy, a remunerative minimum price, official purchases and stocks, control over input prices, and even confiscation of foreign currency, as desirable instruments to strengthen the sector." (Veiga, 1988, p.169)

The demands expressed in the farmers' proposal for an agricultural law reflected an attempt to break away from the state's attempts to solve the contradictions between stable prices and accumulation prospects in agriculture and, concomitantly, to preserve as far as possible previously favourable policies. Furthermore, the version of agricultural law voted in the Congress had to cope with farmers' main
demands about marketing procedures to protect private initiative, and also the social question in agriculture, far beyond the reach of the FAAB's proposal. The small farmer was identified as deserving special treatment by certain policies, such as credit and minimum prices.

Nevertheless, a crucial aspect not raised by the farmers' organisations nor by the policy-makers themselves is the internal structure of farming business, especially large farmers' sources of income. Most of the discussion about the elaboration of agriculture policy is related to the successes and failures of specific harvests as well as to the changes introduced in the credit policy. The dynamics of agrarian capital, however, are largely differentiated among the various groups and stretch far beyond the short-term prospects, as analyzed in the following chapters.
5.1. - Some Historical Aspects

The importance of stressing the historical process of settlement in Paraná lies in the fact that much of the present pattern of wealth and land distribution is deeply rooted in the way that settlement occurred. In other words, the recent period of great technological innovation cannot be considered as the only factor responsible for the features of capitalist transformation of agriculture and its broad social differentiation, for many of these derived from the settlement process. Therefore, the appropriation of this wide and still mostly unoccupied geographic space provides a crucial background to the present distribution of wealth among the farms.

In order to unveil this process Paraná must be divided into three great regions: the East, which was first occupied in the 1700s, and the 1800s; the North, towards which the forward march of the "front" of coffee production was directed from the 1930s onwards, and the West, which received most of the peasant migration from Rio Grande do Sul after the 1940s. (map 1)
Map 1

Paraná State
Great Regions

North
West
East

BRAZIL
Paraná
The East is the region where, in the 1770s, the first settlements in Paraná occurred, when those who had applied for a royal land grant or "sesmaria" were able to set up very large holdings, between 10,000 and 20,000 ha in the region nowadays named "old Paraná". (Westphalen, C. et al, in Fleischfresser, 1988). The main activities were horse and cattle trading, and later the exploitation of natural reserves of the herbal tea, *erva mate*. In recent years part of the less fertile areas of this region have been settled by small farmers who have striven to make their livelihood basically by producing foodstuffs. Another part of the Centre-South region has followed the mainstream of modern agriculture with large areas devoted to capital intensive soybean and wheat production. A third sub-region has attracted public tax relief funds to reforestation projects, in close connection with paper and cellulose industry.

The North is generally divided into three sub-regions, the Old North, where the first coffee plantations were established; the New North (*Norte Novo*), surrounding the city of Londrina, which is historically the centre of this settlement process; and the Very New North (*Norte Novíssimo*), mostly marked by extensive livestock production. After the 1940s Northern Paraná was economically occupied by the moving "front" of coffee production searching for more fertile areas. These were settled by land companies (*Companhia de Terras do Paraná* and *Companhia Ferroviaria Sao Paulo-Paraná*), which undertook the entire process of colonization on lands
previously owned by British companies\textsuperscript{57}, as well as on lands acquired from the state at nominal prices. All these enterprises appropriated founders' rent through land sales. Despite the widespread conviction that the holdings in the North were mainly small because of the type of colonisation undertaken by the land companies\textsuperscript{58}, many large units\textsuperscript{59} were set up either by the companies, or simply by settlers occupying a plot of land on their own initiative.

In the West, the occupation was mainly devoted to extractive activities, firstly \textit{erva mate} and then in the 1900s, lumber. The main attraction for a long period was the vast forest of native Paraná pine trees or \textit{Araucaria Angustifolia}, whose exploitation was largely stimulated by the economic growth experienced by the whole economy in the post-war period. Many sawmills were installed in the area to process the lumber, moving to new areas as the local reserves were consumed. Therefore the value of the land was very much determined by the prospects of exploiting its reserves. Big companies were also in charge of settling newcomers to the region, though the companies' land ownership was the result of a grant from the Paraná government. In exchange for railway construction and the infrastructure necessary in the region to

\textsuperscript{57}- The interests of British enterprises were related to growing cotton to supply British industry with raw material when their previous sources were becoming unavailable, though there are also indications that a colonisation project was being elaborated. (Tomazi, N.D., 1989)

\textsuperscript{58}- Which were also responsible for setting up the basic infrastructure of many towns in the north of Paraná.

\textsuperscript{59}- According to Ipardes, (1989) "many landowners acquired large areas, initially leasing them to people, called \textit{formadores}, to plant areas to coffee, through a six-year contract covering the time of growth of coffee trees. At that time the \textit{formador} had the right to sell the first crop." (pg4)
improve the trade links with the rest of the country, a subsidiary of the American firm "Brazil Railway Company", received a land grant of more than 1 million ha in the West in the 1920s. After the nationalisation of those companies, the vast areas previously owned by them were acquired by local entrepreneurs who were interested in the exploitation of lumber, but who also took charge of colonisation projects.

In the late 1940s and early 1950s, many farmers coming from the southern State of Rio Grande do Sul purchased large areas in the region, mostly because of the very attractive lumber business, and because the forthcoming massive migration would push the land prices higher. In various ways, the local economy developed largely on the basis of the rush to occupy land and to cut down trees. That is, it was shaped by a group of people making money from selling lumber from their own land, or buying the timber reserves of established settlers at a low price (usually as part of land sale), or selling land under colonisation programmes established in agreement with the State government.

Needless to say, all sorts of violent conflicts occurred during this period, because of a very corrupt government, including those in charge of official agencies who took advantage of their position to benefit the interests of those involved in the lumber business. Mellos (1988) names the latter madeireira-colonizadora, which indicates that the sawmills' owners and those arranging the settlements, were the same individuals. Since the woods were the main source of

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60. For more details, see Mellos, E.C.(1988); Padis, P.C(1981)
wealth, there were many pressures on the incoming landholders to allow the *madeireira-colonizadora* to exploit the lumber on these properties after the sale of land.

The important point to emphasize from the above is that the distribution of landownership and the accumulation of wealth were basically determined with a low level of investment and work on land. For many landowners, the initial cost of purchase was close to zero. At a later stage those who settled relatively small plots survived through the period of large technical transformations by intensifying the production of soybean and wheat. However, the dominant group which emerged from the lumber business in the early sixties had already consolidated its strong economic position for the following years.

"In the late 1970s, when capitalist production relations were intensified through the development of soybean and wheat production, the capital accumulated in the sawmill-colonisation activities had infiltrated into other regional economic sectors, such as commerce in general, transforming industry and even agriculture". (Mellos, 1988, p.103)

Therefore the initial conditions of land occupation set the framework of competition within agriculture, as western Paraná became integrated in the world food system in the post-WWII period under the aegis of the newly-installed agroindustrial structure. Land conflicts occurred throughout Paraná, denying the pervasive idea that the colonization of the State was based on small holdings. To a large extent these fierce conflicts resulted in the acquisition of large areas by powerful local landowners who, utilising private militias, spread terror among small farmers (*colonos*).
This plunder of the land, called "grilagem", was used to extend the existing private holdings, resulting in nearly 6 million ha being distributed among 20 large units, most of them in the North. (Westphalen, 1968). There is other evidence of large holdings being established in the northeast of Paraná during the first occupation of land for coffee plantations which, as soils became depleted, moved westwards to more productive areas where a project of colonisation had been established by private companies. Although the colonization was supposed to be based on small plots, those coffee growers who had been in the coffee business in São Paulo had accumulated enough wealth to buy up large plots of land. (IPARDES, 1976)

The countryside of Paraná had still not yet been completely occupied when the first waves of modernisation started to be felt in the 1970s. Until the 1960s the rural population had increased as a result of the inflow of migrants to occupy the remaining frontier areas. After 1970 this movement was reversed, as nearly 1.2 million people migrated from a highly transformed agriculture, either to the new frontier, in Mato Grosso, Rondonia, and the northern States, or to the urban areas, mostly in the industrialized State of São Paulo.

As modernization swept the whole of Brazilian agriculture, the social and economic framework was utterly transformed. In different ways, farmers began to undermine the established economic structure, as they became integrated into the mainstream of the agroindustrial model set up in the late
Likewise the local communities lost their isolation and were integrated more closely into society, as the expanding network of roads and communications built in the early 1970s made the local economies part of the national market.

In the north of Paraná, the production system turned from coffee to non-traditional crops, namely, soybean and wheat, as well as pasture for cattle. The fazendas which continued growing coffee altered the system of cultivation, eliminating the inter-row production of rice, beans, and maize, as well as those groups of small sharecroppers growing these crops. This "internal peasantry" was largely transformed into a new social category, the boía fria, or casual wage labourer, who was forced to live off the farms and mainly on the outskirts of surrounding cities. Therefore agricultural labourers were transferred from within the farms to the urban areas in a process of labour market unification, the relationship between farmers and labourers being reduced to the labour time only. These circumstances were widely regarded by some authors as heralding the arrival of capitalist relations within the agricultural production process.

This change was coupled with the fact that most medium-sized holdings, operated on the basis of family labour, fully adopted the modernisation package, following the same track as that taken by large capitalised holdings. At the other end of the social structure, there is a large group of small farmers

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61. In the early 1960s the Federal Government launched a programme to eradicate part of the coffee plantations, paying the producers to uproot their bushes, in order to prevent an increase in stocks. Some years later a plan for coffee renovation was introduced, aiming to modernise the production system and increase productivity.
struggling to survive as foodstuff producers, as these crops were not targeted by the strategy adopted under the modernisation programmes.

In the West, the former small family agriculture was swept along in the wave of technical innovations as producers took advantage of the boom in the world soybean market in the early 70s. However, this trade improvement triggered an intense amalgamation of holdings, mostly in the more readily mechanised areas of flat land, pushing unsuccessful small farmers out to frontier regions in Paraná, as well as in other States.

In the east and south regions, a type of dichotomy survived through the 1970s. In important respects big holdings kept their previous dominant position just by shifting into the technologically-modern crops - soybean, wheat - as well as to cattle and forestry. Large areas of planted forest are concentrated in this region, supplying the recently-established paper and cellulose industry. At the other extreme, a scattered peasant structure has vegetated almost at the margin of the overall technical transformation. It was only in the late 1970s that a new official project, PRORURAL, attempted without much success to bring those small farmers into closer contact with the market environment. A similar situation prevails in the central part of the State, despite recent changes in economic conditions.

In the following section attention will focus on this internal differentiation in order to depict the development of a modern agriculture in Paraná. We will also examine the
impact of the subsequent crisis and the strategies of accumulation followed by capitalist farmers during this process. Paraná is a very important State in Brazilian agriculture and in 1985 it accounted for 61% of wheat production, 26% of maize, 24% of soybean, 20% of beans, 4% of sugarcane, 15% of coffee and 36% of cotton.

5.2. Agriculture in Paraná in the 1970s: large farms during the modernisation process

The main objective of this section is to assess some structural features of agriculture in Paraná, according to farm size groups, by analyzing the data available in the Agricultural Censuses of 1970, 1975, 1980 and 1985. These four sources allow us to investigate the main results of the modernisation project set up at national level.

Since 1970, technological change in agriculture has been accompanied by a rising concentration of land ownership, as shown by the Gini index for Paraná for 1975, 1980 and 1985, which moved from 0.719 to 0.733 and then 0.754, respectively. The national index was 0.850, 0.853 and 0.854 for the same years (Mueller, 1987). Although many small farmers have been able to keep pace with the modernisation process, a large group has been pushed out of the production system and into urban labour markets, or into the frontier zones in an attempt to recover their previous status. On the other hand, large holdings extended their importance, largely reflecting the priorities set out in national agricultural policy.
Table 9: Land Distribution in Paraná- 1960/70/75/80/85-in %-

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<td>7.4</td>
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* - the percentages of this group are 0.026% in 1960, 0.012 in 1970, 0.020 in 1975, 0.020 in 1980 and 0.019 in 1985, not reaching 0.1 in round figures.

Although farms are classified by size\(^2\), it is possible to see how land distribution has changed in the last three decades. The holdings with an area below 20 ha in 1960 represented 58.3% of the total number of units, but occupied only 12.5% of the area. After a relatively important increase in numbers and area during the 1960s, attaining 76.2% of the area in 1970, this size group slumped to 71.1%, after a recovery of small holdings, mainly non-owners, in the early 1980s. It is also clear that holdings below 100 ha showed a

\(^2\) The data used here were produced by IBGE (Brazilian Geography and Statistics Institute) whose criteria classify farms as administrative units, regardless of the fact that a single farmer can own more than one. Therefore the concentration tendency is minimized as it does not measure actual land ownership. Nevertheless this is the only general source of data available for analyzing land distribution in Brazil. Taking a different approach, and using a special tabulation of the same IBGE data, Silva (1984) worked out a classification of farmers according to the value of production, instead of total area. The basic unit of classification was the minimum wage for 1975, Cr$5,770.00. The result for Paraná is that among 7 groups, the largest ones with a production value of more than Cr$576,950.00 constitute 0.81% of the total number of units, occupy 16.56% of total area and account for 30.29% of the production value. It appears that to a large extent the concentration of production mirrors the same unbalanced structure in the production system as that shown by the classification according to area size.
steady decrease during the whole period, including the first five years of the 1980s, whereas those above experienced an expansion of area. Holdings of more than 1,000 ha, only 0.3% of the total number of holdings, occupied 22.6% of total area in 198563.

In terms of production value, farms under 50 ha, despite their decline during the 1970s, still accounted for 48 percent of the total. Conversely, large farms in the size groups above 500 ha represented only 15% of the total output value in 1980. Moreover, it was in the holdings between 50 ha and 500 ha, and to a lesser extent 1000 ha, that agricultural production increased during the period. The crisis of the 1980s seems to have intensified the trends of the distributive aspects of agriculture insofar as those farms smaller than 50 ha continued to reduce their share in the total production value in 1985.

63-All the aspects discussed in this topic will be based on a classification which aggregates the groups below 50 ha in only one. This procedure is adopted to avoid a more detailed segmentation of the category of small holdings which is not important for this study.
On the other hand, social categories other than the owner-occupier became less important during the 1970s, when holdings held by tenants and sharecroppers decreased by about a 100 thousand in Paraná. This shift was indeed the main source of migration and the main reason for the reduction of farm numbers during the 1970s. In 1980, those who worked on their own land occupied 89% of the area in the State as a whole, decreasing slightly to 87.5% in 1985. However, the categories of non-proprietors still have some importance in agricultural production, especially among holdings smaller than 20 ha. In this group of farms, tenants, sharecroppers and squatters in 1980 occupied 9.8%, 15.7% and 8.1% of the total area, respectively. In 1985, this picture did not change,
despite an increase in the importance of the categories of non
proprietor in the group of farms under 20 ha, in which tenants
increased to 10.6%, sharecroppers to 16.3%, squatters to 8.3%.

Aggregating the groups of holdings into three major
segments, it is possible to discern the following trends.
Firstly, the share in total area of the group of farms of less
than 50 ha, declined from 41.4% in 1970 to 30.9% in 1985,
whereas in terms of production value there was a decrease from
61.3% in 1970 to 48.1% in 1985. The pace of decrease in total
area was followed by total production value, indicating that
the level of land exploitation in this group of farms was
maintained.(Figure 2). This trend is also an indication of the
process of landownership concentration in which small holdings
gradually lost importance.

Secondly, in the upper size group, of farms between 50
and 500 ha, there is a converging trend as the gap between
area and production, very wide in 1970, gradually narrows,
indicating more intensive use of the land, in the following
years. This upward evolution of both land holding and
production value indicates that this medium-sized type of
farming increased its importance in Paraná.(Figure 3).

Thirdly the group of more than 500 ha, reveals an
opposite trend, in comparison with the other two segments, as
the gap between area and production value widened during the
period, not only because the share of total area rises, but
also because the contribution to the agricultural production
value is stable. (Figure 4)

This condensed classification of farm size in these
groups demonstrates the incongruous pattern of development in agriculture, in which the larger the holding, the less intensive the land use. However, there are other aspects concerning the groups of farms, which will be detected in a more detailed classification in the analysis to follow. Each of these three groups contains various subgroups with specific characteristics and trends, between which one cannot draw a dividing line to describe farms above 500 ha as large farms, or those between 50 ha and 500 ha, as medium sized farms. Therefore the analysis has to focus on a more detailed grouping in order to identify the specific behaviour patterns within the whole range of farm size.

In order to investigate the trends in the different
social groups of farm size, more exactly those of large holdings, during the years of modernisation and crisis in agriculture, the following aspects will be taken into account.

a-The Range of Production Activities;
b-The Pace of Technological Change;
c-Composition of Investment and Physical Assets;
d-The Final Economic Results.

The purpose is to provide a profile of the farmers' economic structure by analyzing their priorities in terms of production, the level of innovation adopted, the level of complexity of their physical assets, which reflects their particular historical accumulation, and their economic
performance in terms of investment and profitability. The discussion to follow will, moreover, compare different size groups so as to reveal the various dynamics and varying economic results in agriculture

a- The Range of Production Activities

Land utilisation differs according to farm size, delineating the various sectors within agriculture. Those holdings in the group of less than 100 ha devote most of their area to crops, whereas planted or natural forest predominates

---

64 - Farm classification will be revised in order to aggregate holdings of up to 50 ha which constitute a specific group characterised by a loss of area to the bigger units in a wide competitive environment. They are therefore beyond the scope of this work, as are also those working as non proprietors. In preliminary terms holdings from 50 ha to more than 5000 ha make up a group of enterprises, despite their internal differences, which supposedly obtain the advantages of economic size.
in holdings above 500 ha, and pasture in holdings between 100 and 1000 ha. This broad division is established by detecting the highest percentage area of each activity in relation to the total area, among the size groups. (Table 11).
Table 11: Land Utilisation in Paraná, on Total Area Size Groups, expressed as Percentage of Total Area, 1970/75/80/85

<table>
<thead>
<tr>
<th>Land Use and Year</th>
<th>Area Size Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50- 100- 200- 500- 1000- 2000- &gt; Total</td>
</tr>
<tr>
<td></td>
<td>&lt; 50 100 200 500 1000 2000 5000 5000</td>
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<tr>
<td>Crop</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>56.2 25.8 20.7 16.7 13.2 9.6 5.9 1.9 32.3</td>
</tr>
<tr>
<td>1975</td>
<td>60.3 37.9 32.5 26.3 19.1 13.2 10.3 9.1 36.0</td>
</tr>
<tr>
<td>1980</td>
<td>61.8 43.3 36.8 27.9 20.3 16.5 11.1 10.8 37.1</td>
</tr>
<tr>
<td>1985</td>
<td>60.9 43.5 36.6 27.1 19.8 14.6 12.0 5.0 36.0</td>
</tr>
<tr>
<td>Pasture</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>16.6 29.3 36.8 45.1 50.6 54.3 48.8 24.7 30.8</td>
</tr>
<tr>
<td>1975</td>
<td>16.5 27.4 35.6 44.9 51.0 51.6 51.6 20.4 31.9</td>
</tr>
<tr>
<td>1980</td>
<td>18.0 29.4 38.2 47.8 52.7 51.8 45.1 14.4 33.7</td>
</tr>
<tr>
<td>1985</td>
<td>20.0 32.0 41.3 50.5 55.7 53.1 43.7 13.1 35.7</td>
</tr>
<tr>
<td>P1.Forest</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>0.3 0.5 0.8 1.3 1.7 2.2 3.8 8.3 1.4</td>
</tr>
<tr>
<td>1975</td>
<td>0.4 0.6 0.8 1.2 2.2 3.6 4.9 18.5 2.6</td>
</tr>
<tr>
<td>1980</td>
<td>0.6 1.0 1.2 2.1 3.6 5.7 11.3 20.9 3.8</td>
</tr>
<tr>
<td>1985</td>
<td>0.9 1.3 1.5 2.6 4.1 7.3 12.2 31.2 5.1</td>
</tr>
<tr>
<td>Nat.Forest</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>9.6 14.7 14.6 15.8 18.9 20.3 28.7 48.4 16.2</td>
</tr>
<tr>
<td>1975</td>
<td>5.9 9.9 10.2 11.0 14.5 17.0 21.3 38.1 12.5</td>
</tr>
<tr>
<td>1980</td>
<td>5.3 8.7 9.3 10.9 13.7 14.8 22.7 38.1 12.0</td>
</tr>
<tr>
<td>1985</td>
<td>5.8 8.7 9.1 10.7 12.3 16.4 22.1 37.7 12.2</td>
</tr>
<tr>
<td>Idle Land</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>12.8 25.3 23.2 17.7 12.2 9.7 8.3 11.7 15.1</td>
</tr>
<tr>
<td>1975</td>
<td>10.0 18.9 16.6 12.9 10.2 10.9 8.6 8.5 11.9</td>
</tr>
<tr>
<td>1980</td>
<td>7.8 12.8 10.4 7.5 6.0 6.4 4.3 6.6 7.9</td>
</tr>
<tr>
<td>1985</td>
<td>6.9 10.3 7.7 5.4 4.4 4.0 3.8 3.0 6.1</td>
</tr>
</tbody>
</table>

Farmers, therefore, are divided into specific branches of production delineating clear economic sectors in agriculture, overlapping with those identified by classification based on total area alone. The analysis of the trends shown in the Table 11 will focus on each activity separately, thus underlining the features of the groups of holdings. In terms of crop production, for example, it is clear that crops alone in the group of < 50 ha occupy more than 50% of the total area, although they also occupy a substantial area in the groups up to 200 ha. Furthermore it can be observed that after an upswing in the 1970s, when even the larger groups had expanded crop area, the first half of the 1980s saw a decline in the relative importance of crop area, reflecting the crisis which enveloped agriculture, as discussed in a previous chapter.

The trend observed in the crop area in Table 11 can be explained by the fact that the core of modern agriculture was concentrated largely in the groups of smaller farms, just as livestock and reforestation occupy the higher percentages of total group area on larger farms. Nevertheless, in the > 100 ha groups the importance of crop area within the total group area increased after the golden years of modernisation, which included a profitable international market. However, the crops in which the larger farms specialized are those considered to be the "vehicles" of the modernisation process, notably soybean and wheat. These crops were at the centre of the new relationship between industry and agriculture, which attracted
the mass of resources transferred to the sector. In addition, their cultivation spread into the most fertile areas of Paraná, displacing the traditional staples, such as beans and rice, and advancing into previously unoccupied frontier areas.

The importance of the area of modern crops in the total exploited group area (Table 12) rose in the groups < 100 ha, mainly in the group of < 50 ha, where it continued to rise even during the crisis of the early 1980s. In the other groups, with the exception of the 50 - 100 ha, there is an increasing trend during the 1970s, when these crops were highly profitable. This is followed by a decline, even in absolute terms, from 1980 and 1985, when large farmers reduced the importance of modern crops, presumably because they preferred alternative types of land utilisation.

---

65 From 1975 to 1980 the share of rural credit accruing to soybean was between 30% and 34%.
Table 12: Area of Modern Crops*, ha, and as Percentage of Total Exploited Group Area**, Paraná

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>ha %</td>
<td>ha %</td>
<td>ha %</td>
<td>ha %</td>
<td>ha %</td>
</tr>
<tr>
<td>&lt; 50</td>
<td>940236 21</td>
<td>1670930 39</td>
<td>1726804 41</td>
<td>1872370 44</td>
</tr>
<tr>
<td>50 - 100</td>
<td>111105 13</td>
<td>426132 38</td>
<td>617386 48</td>
<td>690238 50</td>
</tr>
<tr>
<td>100 - 200</td>
<td>95422 12</td>
<td>394296 36</td>
<td>588395 45</td>
<td>628288 44</td>
</tr>
<tr>
<td>200 - 500</td>
<td>119030 11</td>
<td>456918 30</td>
<td>616591 33</td>
<td>637629 31</td>
</tr>
<tr>
<td>500 - 1000</td>
<td>69122 10</td>
<td>213197 22</td>
<td>291441 24</td>
<td>291333 21</td>
</tr>
<tr>
<td>1000 - 2000</td>
<td>47865 8</td>
<td>109220 13</td>
<td>193667 19</td>
<td>141521 13</td>
</tr>
<tr>
<td>2000 - 5000</td>
<td>23198 4</td>
<td>73167 10</td>
<td>92355 11</td>
<td>95023 12</td>
</tr>
<tr>
<td>&gt; 5000</td>
<td>3943 1</td>
<td>25167 5</td>
<td>27399 5</td>
<td>18711 3</td>
</tr>
<tr>
<td>Total</td>
<td>1409921 15</td>
<td>3369027 31</td>
<td>4154038 34</td>
<td>4375113 34</td>
</tr>
</tbody>
</table>

* - Modern Crops: soybean, wheat, cotton, coffee, sugarcane
** - Exploited area: crops + planted pasture + natural pasture + planted forest.

In the case of staplefood crops (Table 13), it is clear that, despite the decline of their importance in the group of < 50 ha, those traditional crops still occupy the bulk of the exploited area. It is also seen that the larger the group area, the less the importance of these crops. However, it is interesting the increase in absolute terms on the larger holdings coupled with a decrease in the group of < 50 ha. This reflects a process of landownership concentration in which arable land in the hands of farmers occupying holdings below 50 ha has diminished. Moreover, the increase relative to the exploited area occurred more intensely after 1980, reflecting the fact that the government was stimulating staplefood production much more than in previous years, as well as the
instability of the export sector.


<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>ha</td>
<td>%</td>
<td>ha</td>
<td>%</td>
<td>ha</td>
</tr>
<tr>
<td>&lt; 50</td>
<td>2941013</td>
<td>66</td>
<td>2349792</td>
<td>56</td>
</tr>
<tr>
<td>50 - 100</td>
<td>280646</td>
<td>32</td>
<td>286066</td>
<td>26</td>
</tr>
<tr>
<td>100 - 200</td>
<td>155647</td>
<td>20</td>
<td>171330</td>
<td>16</td>
</tr>
<tr>
<td>200 - 500</td>
<td>129326</td>
<td>12</td>
<td>155074</td>
<td>10</td>
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<tr>
<td>500 - 1000</td>
<td>49023</td>
<td>7</td>
<td>61919</td>
<td>6</td>
</tr>
<tr>
<td>1000 - 2000</td>
<td>24048</td>
<td>4</td>
<td>37310</td>
<td>4</td>
</tr>
<tr>
<td>2000 - 5000</td>
<td>18498</td>
<td>3</td>
<td>22517</td>
<td>3</td>
</tr>
<tr>
<td>&gt; 5000</td>
<td>5001</td>
<td>2</td>
<td>10862</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>3603202</td>
<td>38</td>
<td>3094870</td>
<td>28</td>
</tr>
</tbody>
</table>

*— Staple Crops: Rice, Beans, Maize, Potato

However, for holdings of > 2000 ha, the modernisation process meant specialization in two activities, namely, cattle ranching and forestry, which were outside the mainstream of agricultural technical change, as regards the agroindustrial system.

During the 1970s, holdings devoted to reforestation became the beneficiaries of federal tax incentives established to guarantee stable supplies of raw material to the newly-created paper and cellulose industry. The major benefits of this policy were thus obtained by big enterprises which were linked to wood processing and downstream products, and which have retained ownership of large areas as the necessary source
of raw material. This close association between larger units and forestry, as demonstrated by the percentage increase in the >5000 ha group, not surprisingly is seen most clearly in the "Forest District" delineated by the State government in order to establish the boundaries within which financial incentives for reforestation could be given to landowners. This region covers all the Eastern part of Paraná, the South, part of the Centre-South and part of the West.

Although cattle ranching is an activity found on most holdings in all size groups, those of 500-2000 ha and particularly those of 200-500 ha have a higher percentage of land under pasture, occupying about 50% of the total group area. In general, after 1980, there was a move in all groups towards an increase in pasture area, a trend contrary to that observed in crop area, reflecting to some extent the investment priorities of farmers.

Therefore, during the period of agricultural modernisation, the groups of large farmers, in terms of area, were most attracted to activities, such as cattle ranching, forestry and certain crops (soybean, wheat, sugarcane, etc) all of which, concentrated in different size groups, became the core of capital accumulation in agriculture. Furthermore, these activities constituted specific economic fields, thus conferring a multi-sided character on agrarian capital.

b- The Pace of Technological Change

In terms of the degree of technological modernization, the number of tractors provides a useful indicator, since it
is the chief item of agricultural equipment. The distribution of tractors among farm size groups reveals a striking concentration on those of < 100 ha, which, between the four census-years, contained 62% of the total. Table 8 indicates both that the number of tractors was higher in smaller farm groups, and that the ratio of exploited area per tractor was higher on holdings between 50 ha and 200 ha. In short, despite the fact that larger farmers might have owned more powerful machines, the intensity of land exploitation is higher on the smaller units. As these groups accounted for the larger part of the crop area and were the main focus of the modernization process, the area per tractor was lower.

Insofar as forest and livestock activities do not require as much equipment as crop production, larger farmers tend to use fewer tractors relative to the exploited area. Therefore, the use of machinery as an expression of technology adoption is more pronounced in the smaller holdings, mostly in the groups between 50 ha and 200 ha. It is worthwhile noting that the group of 50-100 ha presents the smallest area per unit of tractor in the four census years, followed by that of 100 - 200 ha.
Table 14: Number of Tractors and Ratio of Exploited Area
Tractor, in ha - Paraná, 1970/75/80/85

<table>
<thead>
<tr>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no. of trac.</td>
<td>ex. area p/trac.</td>
<td>no. of trac.</td>
<td>ex. area p/trac.</td>
</tr>
<tr>
<td>&lt; 50</td>
<td>9026</td>
<td>455.2</td>
<td>22066</td>
<td>175.0</td>
</tr>
<tr>
<td>50 - 100</td>
<td>2694</td>
<td>255.5</td>
<td>9249</td>
<td>101.7</td>
</tr>
<tr>
<td>100 - 200</td>
<td>2153</td>
<td>278.9</td>
<td>7445</td>
<td>122.6</td>
</tr>
<tr>
<td>200 - 500</td>
<td>2247</td>
<td>369.8</td>
<td>7325</td>
<td>171.0</td>
</tr>
<tr>
<td>500 - 1000</td>
<td>1109</td>
<td>455.2</td>
<td>3084</td>
<td>247.8</td>
</tr>
<tr>
<td>1000 - 2000</td>
<td>765</td>
<td>510.3</td>
<td>1762</td>
<td>347.1</td>
</tr>
<tr>
<td>2000 - 5000</td>
<td>465</td>
<td>730.1</td>
<td>1070</td>
<td>489.8</td>
</tr>
<tr>
<td>&gt; 5000</td>
<td>164</td>
<td>984.1</td>
<td>465</td>
<td>1007.0</td>
</tr>
<tr>
<td>n. sp.</td>
<td>1</td>
<td>-</td>
<td>32</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>18619</td>
<td>409.5</td>
<td>52498</td>
<td>188.0</td>
</tr>
</tbody>
</table>


It is also apparent that the main increase in the number of tractors occurred between 1970 and 1975, the "golden period" of cheap and plentiful credit coupled with high prices in the international soybean market. In 1973, the FOB price of soybean in Brazil was US$ 276.66, 120% higher than in 1972. After a subsequent period of decline, it returned to the 1972 level in 1977. Following the downward trend in the 1980s there is a reduction in the exploited area per tractor in the < 50 group, coupled with an increase in the number of tractors. The situation appears to be the reverse in the larger groups, with an increase in the average area per tractor, and a smaller increase in the number of tractors. These trends clearly
indicate the difficulties of investing in agriculture in this period, and hence the reduction in the official credit allowances for investment.

A second aspect of technological modernization concerns the use of fertilizers, although the information available refers only to the number of holdings in which farmers applied either chemical or organic fertilizer without specifying quantities. The important point here is that in 1970 farms using fertilizer as a percentage of the total number of farms was higher as the total area of holdings increased. In 1980 this picture was reversed as the highest percentage was detected among holdings whose area was between 50 – 200 ha in a trend which started before 1975. On the other hand, the percentage of fertilizer users to total number of holdings in the smaller groups increased to a level higher than in the larger groups, completely reversing the picture detected in 1970 and 1975. Furthermore, in a period when agriculture faced a serious credit crisis coupled with higher financial costs, the number of fertilizer users in absolute and relative terms increased in the groups of medium and small farms. This perhaps reflects the lower level of interest rates for small farmers following the changes introduced in the agricultural policy in the early 1980s. Regardless of this fact, the trends detected in Table 15 support the supposition that the process of technical advance became more concentrated in the group of small and medium sized farms.
Table 15: Number of Holdings with Information about Use of Fertilizers*, and Percentage to the Total no. of Holdings - Paraná, 1970/75/80/85

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no. hold</td>
<td>no. hold total(%)</td>
<td>no. hold</td>
<td>no. hold total(%)</td>
</tr>
<tr>
<td>&lt; 50</td>
<td>7316</td>
<td>14.2</td>
<td>11222</td>
<td>25.8</td>
</tr>
<tr>
<td>50-100</td>
<td>4376</td>
<td>19.2</td>
<td>10840</td>
<td>44.9</td>
</tr>
<tr>
<td>100-200</td>
<td>2180</td>
<td>22.2</td>
<td>5216</td>
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<td>200-500</td>
<td>1470</td>
<td>25.4</td>
<td>3137</td>
<td>45.5</td>
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<td>500-1000</td>
<td>470</td>
<td>30.3</td>
<td>876</td>
<td>45.2</td>
</tr>
<tr>
<td>1000-2000</td>
<td>251</td>
<td>38.5</td>
<td>394</td>
<td>44.5</td>
</tr>
<tr>
<td>2000-5000</td>
<td>118</td>
<td>35.4</td>
<td>182</td>
<td>50.0</td>
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<td>&gt; 5000</td>
<td>26</td>
<td>39.4</td>
<td>40</td>
<td>40.0</td>
</tr>
<tr>
<td>Total</td>
<td>82059</td>
<td>14.8</td>
<td>131909</td>
<td>27.6</td>
</tr>
</tbody>
</table>


* - chemical and organic

c- Investment and Physical Asset Composition

The degree of farmers' economic viability in the process of modernisation during the 1970s will be measured here by their levels of investment, the nature of their physical assets, and the behaviour of income in that period. The 1970s was the period when farmers most expanded their equipment as well as their physical assets, as a consequence of all the favourable economic conditions already mentioned. Nevertheless, this expansion varies according to each farm size group, revealing that increasing size did not lead to a superiority of the larger holdings in terms of their internal
structure. Investment per holding rose with farm size, as might be expected. However, it is revealing that the level of investment per hectare of exploited area was highest for holdings of up to 200 ha among all groups. That is, those groups in which crop activities predominated most closely approximated the whole technological package established by the industrial sector, which required a more continuous flow of investment resources.

Table 16: Investment per holding* and per ha of Exploited Area, in Paraná,—in Cr$— of 1980 - 1970/75/80/85

<table>
<thead>
<tr>
<th>Area groups</th>
<th>Invest. per holding</th>
<th>Invest. per expl. area</th>
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<td>2526.36</td>
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<td>&gt; 5000</td>
<td>1323.96</td>
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</tbody>
</table>


Nevertheless, despite the superiority of the medium sized and even small farms in terms of investment per hectare, it is important to stress that these differences are explained by the requirements of each activity farmers are involved with.
In other words, farmers' strategy is mainly determined by the nature of their specialized production activity, which can establish different levels of required investment resources. Even so, it is noticeable that after 1980, as might be predicted, there was a slump in the amount of investment, both per holding and per ha of exploited area, demonstrating the concrete effects of the general economic crisis and, more particularly, the reduction in allowances for investment credit. This reduction occurred in most groups, despite some differences in intensity, and even some increase in the group of 1000-2000 ha..

The differing priorities of farmers' investment were associated with the requirements of each sector of production activity, as can be seen in Table 17. Moreover, the intensity of investment in each of the asset categories coincided with the specific circumstances prevailing at periods in the recent development of agriculture. The beginning of the modernisation process is symbolized by 1970, when the first stages of technical innovation and the economic boom occurred. The peak of this process came in 1975, when all the conditions of capital accumulation in agriculture were favourable, in terms of both market return and official incentives. In this year the ratio of credit to agricultural net product reached 1.08 rising 0.55 in 1970, and then declining to 0.54 in 1980. (Sayad, 1984). 1980 represented the turning point in the overall trend of transformation in agriculture, after which deterioration set in, as already discussed in Chapter 4. The downward trend of the 1980s continued in 1985, following five
years of unstable international prices and declining government incentives. These different phases experienced by the agricultural sector thus can be detected in the census data.

Table 17: Investment Composition, Paraná-1970/75/80/85-in %

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<td>8.6</td>
<td>10.7</td>
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<td>3.7</td>
<td>4.3</td>
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<td>6.6</td>
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<td>44.1</td>
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<td>10.4</td>
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<td>1.8</td>
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<td>23.3</td>
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<tr>
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<td>7.5</td>
<td>6.9</td>
<td>7.9</td>
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<tr>
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<td>12.0</td>
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<td>13.7</td>
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<tr>
<td>perm. crops</td>
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<td>2.9</td>
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<td>13.1</td>
<td>18.7</td>
<td>25.0</td>
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<tr>
<td>machinery</td>
<td>30.4</td>
<td>36.9</td>
<td>33.8</td>
<td>27.1</td>
</tr>
<tr>
<td>total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>


Obs: instal.= installations; per. crops= permanent crops, including coffee, fruit trees, and forest.
There is a clear distinction between farm size groups, in terms of investment asset categories, despite some common behaviour in relation to some items. In order to identify the trends of the Table 17, I will focus on each of the items of investment, pointing out the differences between the groups.

The first item, Land, absorbed a large portion, 26% on average, of all investment undertaken during the period, with few differences among the groups, especially those of less than 1000 ha. In 1970, when there was still much unoccupied frontier land in Paraná, the acquisition of land was the main investment undertaken, mainly by smaller groups. In 1975, land purchase was reduced somewhat in most groups, supposedly due to a rampant increase of investment in other assets related to the structure of production, let alone the fact that land prices were inflated by the boom in agriculture. Land as an investment asset recovered slightly in 1980, exactly at a moment when farming was facing the first difficulties caused by agricultural policy reform and market instability. On the other hand, these circumstances reflect the different trend that was underway in Paraná at the end of the 1970s, when the modernisation process started to slow down. As an outcome of the "fat years" in the soybean business, the purchase of land once more became a top priority, at least for those farmers who supposedly did not possess sufficient land to expand their production. Despite the striking decline in 1980 and an equally striking increase in 1985, the position of land in comparison with other investment assets in 1985 in the groups larger than 2000 ha remained at the same level as that of
previous years. Although the recessive economic conditions favoured investment in the financial market, land still attracted investors. In general terms, land is regarded as an important target for investment by farmers, regardless of the size of their holdings, following the precept that it is a crucial financial reserve.

The second item, Houses, is clearly more important in the group < 50 ha, due to the financial constraints on other investments, and also the priority of providing a home for the family, which is particularly important at a time when a large number of farmers were still starting up in business.

Installations, in 1970, followed the same trend as Houses, with higher investment percentages in the smaller groups. However, in the later years, the requirement of a more mechanised agriculture for better storage facilities and for all the internal infrastructure was reflected in higher levels of investment in such items on larger holdings.

Perennial or permanent crops, such as coffee, fruit trees and forest, are clearly concentrated in the larger groups, especially those with over 5000 ha. This pattern prevailed during the entire period, despite the big decline from 57.3% in 1980 to 27.1% in 1985 in this group.

Animals, which include cattle, poultry, pigs, and other livestock were an investment target in 1970 and 1975 for large holdings, excluding those of the group > 5000 ha. As another outcome of the difficulties faced by arable agriculture in the late 1970s, all groups by 1980 had increased their investment in animal husbandry, including holdings under 50 ha. Despite
the decrease in 1985 the share of investment in livestock did not fall to the 1975's level.

Investment in machinery absorbed the bulk of most farmers' resources in the 1970s, mainly in 1975, when agricultural mechanisation reached its peak. In 1980 investment in machinery fell in all groups, reflecting not only the decline in resources available for investment in general, but also a slowdown in farmers' needs for machinery after their heavy investment in the previous years. On the other hand, the recovery in 1985 suggests that the equipment acquired in the 1970s needed to be replaced. Once more, reflecting specialization of farmers by activity, investment in machinery was a higher priority for the groups between 50 ha and 1000 ha in 1975, because of the higher profitability of crop production at that particular time.

The different trends in the three large groups of holdings therefore mirror the different investment priorities of the farmers, according to the leading sector in which the agrarian capital has been concentrated. That is, modern crops - mainly soybean and wheat -, livestock, and forestry. Accordingly there are differences in the percentage investment composition in respect to husbandry, whose specific types require a specific asset structure. The crop sector, for instance, demands periodic replacement of machines and equipment, which is therefore more capital-intensive than cattle ranching and forestry. This partially explains why the smaller farms show a higher level of investment per ha of exploited area, since cattle ranching is a far more extensive
activity. However, this does not mean that smaller holdings are more efficient or more dynamic, just because the level of investment per ha is higher. These circumstances reveal that the resource needs of the crop sector are dictated by its increasingly close articulation with the upstream industrial structure.

We now turn to consider the composition of the existing assets in the period under consideration in this discussion. Following the above analysis of investment, the physical assets reported in the censuses can be seen as the result of farmers' previous investment decisions, thus indicating the nature of their wealth. (Table 18)

Land clearly is overwhelmingly the most significant item of farmers' physical assets, regardless of the area size group. This is particularly evident in 1975 when the importance of land for all farmers increased from 53.6% in 1970 to 72.2% in 1975, which can be attributed to the profitable returns in the soybean business. An opposite trend occurred in 1980 and 1985, without however making land less important than the other assets.
### Table 18: Composition of Farmers' Physical Assets, in Paraná, in % - 1970/75/80/85

<table>
<thead>
<tr>
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</thead>
<tbody>
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<td></td>
<td>&lt; 50</td>
<td>100</td>
<td>200</td>
<td>500</td>
<td>1000</td>
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<tr>
<td>land</td>
<td>51.2</td>
<td>55.0</td>
<td>55.8</td>
<td>56.9</td>
<td>58.3</td>
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<tr>
<td>instal.</td>
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<td>10.3</td>
<td>8.6</td>
<td>7.3</td>
</tr>
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<td>per.crop</td>
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<td>12.9</td>
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<td>16.3</td>
<td>15.4</td>
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<td>12.9</td>
<td>13.3</td>
<td>14.9</td>
</tr>
<tr>
<td>machinery</td>
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<td>7.6</td>
<td>6.4</td>
<td>4.9</td>
<td>4.1</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

|                  | < 50 | 100 | 200 | 500 | 1000 | 2000 | 5000 | > 5000 | Total |
|                  | 71.9 | 72.8 | 73.5 | 75.6 | 75.9 | 75.8 | 64.4 | 56.6 | 72.2 |
| instal.          | 11.7 | 8.4  | 6.9  | 6.0  | 5.5  | 5.5  | 3.8  | 2.5  | 8.2  |
| per.crop         | 5.9  | 4.2  | 4.9  | 5.3  | 5.9  | 6.9  | 21.3 | 36.1 | 7.8  |
| livestock        | 4.9  | 5.4  | 6.4  | 7.3  | 8.6  | 8.8  | 8.3  | 2.7  | 6.2  |
| machinery        | 5.6  | 9.2  | 8.3  | 5.8  | 4.1  | 3.0  | 2.2  | 2.1  | 5.6  |
| Total            | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

|                  | < 50 | 100 | 200 | 500 | 1000 | 2000 | 5000 | > 5000 | Total |
|                  | 68.2 | 70.1 | 70.8 | 72.3 | 68.1 | 69.8 | 70.6 | 65.5 | 69.4 |
| instal.          | 12.1 | 8.6  | 7.3  | 6.3  | 5.8  | 6.1  | 4.4  | 3.1  | 8.8  |
| per.crop         | 7.2  | 5.2  | 5.3  | 5.1  | 9.4  | 6.4  | 8.0  | 24.7 | 7.1  |
| livestock        | 6.8  | 7.5  | 9.0  | 11.0 | 12.9 | 13.9 | 14.4 | 4.4  | 9.0  |
| machinery        | 5.7  | 8.6  | 7.6  | 5.3  | 3.8  | 3.8  | 2.6  | 2.3  | 5.7  |
| Total            | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

|                  | < 50 | 100 | 200 | 500 | 1000 | 2000 | 5000 | > 5000 | Total |
|                  | 69.8 | 71.6 | 73.4 | 73.4 | 74.3 | 74.8 | 75.4 | 50.1 | 71.3 |
| instal.          | 11.7 | 8.4  | 7.0  | 7.2  | 6.2  | 6.5  | 4.8  | 4.1  | 8.6  |
| per.crop         | 6.5  | 3.4  | 3.4  | 4.8  | 5.3  | 7.1  | 7.4  | 41.6 | 6.8  |
| livestock        | 5.1  | 6.0  | 8.0  | 8.7  | 9.9  | 8.3  | 8.4  | 2.6  | 6.8  |
| machinery        | 7.0  | 10.6 | 8.3  | 5.9  | 4.2  | 3.3  | 4.1  | 1.6  | 6.5  |
| Total            | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |


*obs:* - the item installations also includes farmers' houses
- the item permanent crop includes coffee, fruit trees and forests.

The predominant importance of land in 1970 mirrors the large area of coffee, mainly in the north of Paraná which, together with forests, accounted for nearly 20% of farmers' total physical assets. These are the two main activities included among perennial farm crops in Table 18. As annual
crops became the chief activities in agriculture after 1970, these replaced coffee bushes, which also were severely affected by the frost of 1975. Concomitantly, the good prospects in soybean production stimulated farmers to extend their crop area to uncultivated land, mainly under natural forest. These two changes account for the reduction in the percentage of perennial crops after 1970 shown in Table 18. Nevertheless, incentives for reforestation started in the 1970s which, together with large forest reserves held by a few holdings, accounts for the continued high percentage of permanent crop in those groups above 2000 ha.

Installations tend to be more important the smaller the holding since, in small farms, the farmers’ house and his storage buildings are the most important asset after land. Cattle is another asset whose importance is greater in certain groups, as shown in the investment data, despite some reduction in the percentages in 1975 and again in 1985.

Finally, machinery followed the same course as the other items of farmers’ physical assets, except land. It is of greater importance in the groups between 50 ha and 200 ha, than in the larger ones.

d- The Final Economic Results

Following this analysis of investment and asset composition, it is worthwhile evaluating the economic achievements of each of farm size group. A first measure - average total value of physical assets per ha - reveals the magnitude of accumulation attained by farmers belonging to
each size group.

-Table 19: Farmers’ Physical Assets per ha of Total Area in Paraná -Cr$1000/in Cr$ of 1980*- 1970/75/80/85

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<td>99.63</td>
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<td>&gt; 5000</td>
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<td>48.50</td>
<td>39.01</td>
<td>82.09</td>
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<td>Total</td>
<td>29.22</td>
<td>88.12</td>
<td>100.78</td>
<td>155.95</td>
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</table>

*values corrected by the IGP - Fundação Get. Vargas

The first striking point of Table 19 is the steadily increasing real value of physical assets for agriculture as a whole, despite the difficulties in the late 1970s and early 1980s, emphasizing that a process of wealth accumulation was occurring in all groups. When size groups are compared, the ratio of real physical asset value declines as size increases.

An additional criterion to evaluate economic performance - net income obtained by farmers at the end of each census year - only confirms the performance depicted above.
-Table 20: Gross Profit* per ha of Total Group Area (Cr$ 1000 of 1980**), and Gross Income/Expenditure Ratio*** - Paraná, 1975/80/85****

<table>
<thead>
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<th>Area Groups</th>
<th>Gross Profit/ha</th>
<th>Ratio</th>
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<td>50 - 100</td>
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<tr>
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<tr>
<td>2000 - 5000</td>
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<td>1.82</td>
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<tr>
<td>&gt; 5000</td>
<td>0.61</td>
<td>1.45</td>
</tr>
<tr>
<td>Total</td>
<td>6.41</td>
<td>4.88</td>
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</table>

* - Difference between Total Income and Total Expenses
** - Values corrected by IGP, Fundação Get. Vargas
*** - Total Income/Total Expenses
**** - The 1970's Census did not collect this information

The average rate of gross profit per hectare provides a measure of farming efficiency in the exploitation of land, indicating that in general there was a decline between 1970 and 1975, although in 1985 helped by a good harvest there was a recovery, which seems to have benefited all groups. A comparison between size groups reveals that smaller farms have a higher average gross profit rate than the bigger ones. The 1975 result for the group 500 - 1000 ha is probably due to errors in the original data, as it is wholly at odds with the general tendency.

The second measure in Table 20 is the gross income/expenditure, which shows, first, that the economic
performance of agriculture as a whole declined and, secondly, that the performance of smaller groups matches or even exceeds that of the larger ones, at the exception of > 5000 in 1985. According to these measures, larger holdings do not exhibit a higher standard of efficiency, thus highlighting a central question in this investigation. If the smaller farm groups are economically more efficient, why have the larger establishments gained strength, in respect to land distribution, whereas the smaller ones have experienced difficulties in surviving as such? At this aggregate level of analysis the answer to this puzzling question can be found in the Table 21.

-Table 21: Gross Profit per Holding in Paraná - Cr$1000 - Cr$ of 1980 - 1975/80/85

<table>
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<th>Area Groups</th>
<th>1975</th>
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<td>659.10</td>
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<td>1548.79</td>
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<td>8061.93</td>
<td>2295.76</td>
<td>3476.48</td>
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<td>6566.48</td>
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<td>12317.80</td>
<td>27493.11</td>
<td>43213.37</td>
</tr>
<tr>
<td>Total</td>
<td>210.89</td>
<td>180.65</td>
<td>216.49</td>
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</tbody>
</table>


The first point to emphasize is that gross profits in absolute terms is what matters for farmers when they assess
the profitability of their business at the end of the year. Total gross profit, after deduction of the current expenses, indicates to farmers whether there is a positive/negative surplus to be worked out, from which any debts will be cleared on investments made, or otherwise. This simple assessment is therefore the main basis for farmers' decisions and one which gives a fair measure of different degrees of economic success. Contrary to the other measures, gross profit per holding clearly increased with size, thus revealing the superior economic power of larger groups.

The above analysis is intended to give a general overview of the prevailing features of agriculture in Paraná during the period of intense technological modernisation. We have shown that the preconditions for land concentration had already been largely established before the 1970s, during the initial process of economic occupation of Paraná. Therefore, the uneven land distribution system was an important legacy from previous periods when waves of migrants headed for Paraná from other regions. The economic boom caused by entry into the international soybean market simply reinforced the prevailing structural imbalance in landownership distribution.

The characterization of the economic structure of farming provides a dividing line between the three major agricultural sectors whose dynamics are determined by features specific to each activity, namely, crops, cattle ranching and forestry. Although the analysis was based on the area size groups, thereby preventing a more detailed investigation of these sectors, it is reasonably clear that their technical and
economic requirements are different from each other. These particularities have a great influence on the levels of mechanisation, investment, and composition of physical assets, which may suggest that the economic performance of large groups is less dynamic. However, farming profitability is only part of the wider process of farming capital reproduction. In this sense, any assessment of this process must be based on total income and on the manipulation of the specific businesses within as well as without agriculture. Furthermore, the capacity of farmers to transform agrarian capital into an integral part of the whole process of accumulation is a key factor to understand those dynamics as seen in the following chapters.
Chapter 6
The Operation of Farm Business

The analysis developed in this section is mostly based on field research carried out in July, 1990 with 21 farmers in three different regions of Paraná: Campos de Guarapuava, Extremo-Oeste Paranaense and Campo Mourao, and Norte Novo de Londrina, which present three respective different patterns of agricultural development. (Map 2)

(i) **Campos de Guarapuava**: this is a vast area of flat land, called fields (**campos**), where the poor quality of the soil accounts for lower crop yields. A large area has been occupied by cattle ranching as the most profitable activity, for large holdings, although there is also some staplefood production by small-holdings and a recent expansion of soybean.

(ii) **Extremo-Oeste Paranaense and Campo Mourão**: this region is at the heart of the most important area of soybean and wheat, where the largest cooperatives for these two crops are headquartered.

(iii) **Norte Novo de Londrina**: this region is localized at the North of Paraná, where coffee production had for many years occupied the bulk of agricultural land, which nowadays is devoted to soybean, as well as cattle ranching.

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66 - The existing type of soil in the region requires a great deal of investment in lime (**calcareo**), to reduce the soil acidity in order to boost agricultural yields. This extra expenditure has been a factor that reduces farmers' competitiveness with other regions.
Paraná State
Homogeneous Micro-Regions

1- Curitiba
2- Litoral Paranaense
3- Alto Ribeira
4- Alto Rio Negro
5- Campos da Lapa
6- Campos de Ponta Grossa
7- Campos de Jaguariaíva
8- São Mateus do Sul
9- Colonial de Irati
10- Alto Ivaí
11- Norte Velho de Venceslau Braz
12- Norte Velho de Jacarezinho
13- Algodoeira de Assai
14- Norte Novo de Londrina
15- Norte Novo de Maringá
16- Norte Novíssimo de Paranavaí
17- Norte Novo de Apucarana
18- Norte Novíssimo de Umuarama
*19- Campo Mourão
20- Pitanga
*21- Extremo-Oeste Paranaense
22- Sudoeste Paranaense
*23- Campos de Guaraupava
24- Médio Iguazu

* - regions of field research
The main objective of the survey was to gather information about large farms, in order to delineate a profile of their business structure. Bearing in mind the distribution of farming activities among different social groups and their internal complexities, the analysis in this section turns to the internal dynamism of the farm economy. We will examine the reproduction of capital at the farm level by focusing on three aspects: the historical process of farm formation; the grounds for investment decisions on agricultural production; and the economic dynamism of farming.

6.1-The Historical Origins of Farming Enterprises

The group of farmers interviewed fall into three main categories according to their origins and the subsequent development of their business.

a) Agriculturally-Based Capital

This category includes those farmers whose first occupation was in agriculture in their own region, and whose wealth was built on the economic results achieved in farming business. These establishments follow two patterns, either specialising exclusively in farming, or channelling their capital towards new investments in land related projects or even outside agriculture. The fortunes so accumulated either broadened their existing agricultural production activities or were invested in urban sectors.

This category is illustrated by the behaviour of some
very successful coffee growers in the north of Paraná. Those who reinvested their capital in agriculture have basically concentrated in the purchase of large areas in Paraná and, more significantly, in the States of Mato Grosso, Goiás, other States in the north of Brazil, and even in Paraguay, where land prices are cheaper and vast areas, lumped in one holding, can be bought. For example the owner of a large enterprise in the north of Paraná had moved to the region in the late 1960s attracted by the profitable business of coffee, despite the enforced official rationalisation plan to control the supply of that commodity. After an initial acquisition of 1050 ha, his landownership expanded to more than 20 thousand ha, plus more than 6 thousand ha scattered elsewhere. Similarly, there are many large farmers whose capital was founded on farming establishments, some of them even small at the start but increasing in size in the following years.
Table 22: Accumulated Area of each Farm from the Year of Establishment to 1990, and Area Owned in States Other than Paraná, in 1990, in ha.

<table>
<thead>
<tr>
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<tbody>
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<td>18752</td>
<td>20446</td>
<td>20446</td>
</tr>
</tbody>
</table>

Source: Field Research in Paraná, Jun. 1990

b) Lumber-Agricultural Capital

The origin of capital in this category was based on the exploitation of large areas of forest, taking advantage of the lumber cycle when the natural reserves were under depletion. The ownership of large areas of land came as a windfall in the following boom of modernized soybean production providing the basis for further accumulation. Some of these modernized farmers previously engaged in lumber business still run sawmills, managing an economic complex that also comprises other activities, such as seed production, and even some commercial trading embracing rural and urban sectors alike. This complex has thus become the outcome of an outflow of
capital from the agrarian sphere towards other economic sectors. This category finds its main expression in the west region where the last remaining natural forests are still fuelling the lumber trade.

c) Off-Farming Based Capital

The third type of agrarian capital formation identified in Paraná is found outside farming activities, although most of the enterprises are closely connected with agriculture. Significant examples include agronomic engineers, who were a central element in the execution of the agricultural modernisation programme in the 1970s, working either for the official organisations in diffusing new technologies, or for private companies selling newly-launched inputs. Initially, many of them began as tenants, even exploiting small areas, and turned subsequently into landowners of large plots, which became well-established agricultural enterprises. Another source of off-farm landownership arises from the purchase of land as an investment asset and a hedge against inflation. It is very common in the small country towns for dentists and doctors also to become very well-established farmers, usually running large holdings. Moreover, small industrialists and traders have also diverted part of their financial resources to agriculture, causing the social basis of agrarian capital to be closely intertwined with other social groups inserted in the urban economy. The emergence of this interest group became more evident during the 1970s, when the international soybean market boom and the official modernisation incentives raised
the attractiveness of agriculture.

Table 23: Year of Farming Settlement, Farmers' Previous Occupation and Condition of Access to Land of the 21 cases surveyed

<table>
<thead>
<tr>
<th>year</th>
<th>previous occupation</th>
<th>landownership condition</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1975 farmer</td>
<td>tenant</td>
</tr>
<tr>
<td>2</td>
<td>1985 student</td>
<td>family ownership</td>
</tr>
<tr>
<td>3</td>
<td>1977 agronomic eng.</td>
<td>tenant</td>
</tr>
<tr>
<td>4</td>
<td>1973 agronomic eng.</td>
<td>tenant</td>
</tr>
<tr>
<td>5</td>
<td>1975 dentist</td>
<td>family ownership</td>
</tr>
<tr>
<td>6</td>
<td>1968 cattle rancher</td>
<td>landowner</td>
</tr>
<tr>
<td>7</td>
<td>1951 farmer</td>
<td>landowner</td>
</tr>
<tr>
<td>8</td>
<td>1968 lumber trader</td>
<td>landowner</td>
</tr>
<tr>
<td>9</td>
<td>1950 lumber trader</td>
<td>landowner</td>
</tr>
<tr>
<td>10</td>
<td>1973 agronomic eng.</td>
<td>landowner</td>
</tr>
<tr>
<td>11</td>
<td>1977 agronomic eng.</td>
<td>tenant</td>
</tr>
<tr>
<td>12</td>
<td>1978 agronomic eng.</td>
<td>tenant</td>
</tr>
<tr>
<td>13</td>
<td>1963 student</td>
<td>landowner</td>
</tr>
<tr>
<td>14</td>
<td>1984 builder</td>
<td>landowner</td>
</tr>
<tr>
<td>15</td>
<td>1940 farmer</td>
<td>family ownership</td>
</tr>
<tr>
<td>16</td>
<td>1951 farmer</td>
<td>landowner</td>
</tr>
<tr>
<td>17</td>
<td>1976 lumber trader</td>
<td>landowner</td>
</tr>
<tr>
<td>18</td>
<td>1955 lumber trader</td>
<td>landowner</td>
</tr>
<tr>
<td>19</td>
<td>1957 student</td>
<td>landowner</td>
</tr>
<tr>
<td>20</td>
<td>1950 entrepreneur</td>
<td>landowner</td>
</tr>
<tr>
<td>21</td>
<td>1967 farmer</td>
<td>landowner</td>
</tr>
</tbody>
</table>

Source: Field Research, in Paraná, jun. 1990

6.2- The Attractiveness of Agricultural Production for Investment

This section considers the reasons why farmers started their businesses, and the factors influencing their decision to invest in land. Of those interviewed, many voiced the opinion that personal motivation was the chief factor that led them to become engaged in agriculture, thus revealing the lack of any rational ground for this economic decision. Such personal commitment to farming overrides careful consideration of alternative investments, without any rational assessment of
comparative profitability. "This is what I know how to do best", is a very common remark voiced by them, to explain their fondness of working on the land. Different types of farmers were found with this close attachment to land, from those who inherited their land to those who entered farming in the 1970s from other sectors.

For some farmers, their first investment in land-based activities was supported by estimates of prospective gains from a particular product, such as coffee before the 1960s, particularly in the North. The existence of forests was an obvious attraction for those already in the lumber business, mainly in the west regions of Paraná, as mentioned above. Beyond these specific and regional aspects, agriculture became attractive to investors, especially from outside farming, because of the tax relief through the Cedula 67, which had a widespread effect throughout Paraná as well as Brazil. Furthermore, mainly in the 1970s, agriculture was thought to provide a safe return on investment, because of government’s guarantees in terms of prices, subsidised credit, and crop insurance.

A third general attraction of agriculture was the role of land itself as a secure asset for investors, as a protection against inflation and future instabilities. As the price of land was still very low until the 1960s, it attracted many buyers both from the incoming flow of migrant farmers and from small and medium businessmen at large. For many of these

67 - This was a form used by farmers for their Income Tax, which exempted all expenditure on agriculture. Therefore many landowners were able to include expenditures realised in other than agricultural business in the form designated specifically for farmers, as a means of avoiding taxes.
buyers investment in land became a valuable mechanism of accumulation, because land prices in general keep pace with inflation and with the value of financial assets. The security offered by landownership for saving and accumulation of wealth is expressed by a large farmer, who pointed out that he has never seen anybody lose money with land.

These three major points of attraction have since lost their lustre with the instability caused by the crisis in the 1980s, when the profitability of agricultural production were brought into question more emphatically. Consequently, efficiency has become direct and immediate concern as soaring production costs threatened farm incomes. Therefore, investment in new equipment and yield-increasing inputs has become a key issue as farmers started to consider the need to improve economic efficiency to relieve cost pressures on their incomes. However, the returns produced by the financial market have also appealed to some producers as providing the best alternative for their capital, although this is not the case for all farmers.

Various investment alternatives have therefore been considered by farmers in their attempt to survive the 1980s' crisis. Each of them with its particular contradictory effects. Investment of their resources in the productive sphere can reduce farmers' costs per unit of output, but they are likely to face an erratic market for their final products and hence continued dependence on government support for profitable prices. Moreover, investment in technological innovation has been much more expensive since official
subsidies were greatly reduced. From this point of view, it would be more rational to avoid the insecurity of relying on productive activities by concentrating any excess of resources in the land market or even the financial market. However, the purchase of more land would require some additional minimum investment in machinery and equipment which, in specific circumstances, might put some farmers off.

The final result was that farmers tried to reach the most profitable combination between those investment alternatives to preserve their holdings. In other words, the reproduction of agrarian capital has been based on the financial market as a short term mechanism, on the oscillations of land prices, and on the productive exploitation of land as a means of preserving it as well as the equipment.

6.3-The Economic Dynamics of Farming: soybean and cattle- ranching

From the points developed above it is reasonably clear that investment decisions are taken by combining alternative targets according to the market circumstances. In this respect, cattle ranching and soybean appeared as the driving force behind agrarian capital accumulation. Due to their higher profitability these are therefore the activities with which large farmers are mostly engaged, although we must also mention importance of wheat, largely cultivated in rotation with soybean, as well as coffee, sugarcane and cotton.

Each of these two major activities has its own dynamics and its own specific markets, whose comparative returns are always under continuous assessment by farmers. Switching over
between soybean and cattle ranching is a subject of frequent discussion among farmers, together with all the implications of replacing equipment by livestock, and vice-versa. However, a process of diversification is now underway, as farmers make the transition from crop growing to cattle raising, most often by combining both activities. Furthermore, land prices fluctuations have themselves become an important source of capital gains, therefore attracting resources into this market, either as speculative investment or as a protective measure against instabilities. However, land price variation is tightly connected to the prospective returns yielded by the production process. As was observed in Guarapuava, Pr, the acquisition of land, mainly from small farmers, was a direct consequence of the good prices soybean farmers were receiving in Rio Grande do Sul, stimulating them to buy land in Paraná, where prices are relatively lower than in their own region.

Therefore, farming business is a composite of different sectors, each with specific characteristics in terms of demand, industrial processing, trading agents, internal production requirements, official policy, etc. The components of soybean business, in these terms, are not found in other crops nor in the livestock sector. Insofar as farmers deal with various sectors amalgamated under one administration, they are thus bound to be knowledgeable about different activities. The difficulties in controlling all the aspects of each of them, may undermine any process of diversification of activities by capitalist farmers. In reality most of them are more inclined to concentrate their capital and management
one or two more important activities, thereby becoming a specialist in one type of business whose features ultimately become more familiar to them.

Table 24: Main Activities Observed in each Farm Holding

<table>
<thead>
<tr>
<th>cases</th>
<th>ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-</td>
<td>potato and industrial processing</td>
</tr>
<tr>
<td>02-</td>
<td>cattle, soybean, forestry</td>
</tr>
<tr>
<td>03-</td>
<td>soybean, wheat</td>
</tr>
<tr>
<td>04-</td>
<td>cattle, soybean and maize</td>
</tr>
<tr>
<td>05-</td>
<td>cattle, soybean and maize</td>
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<td>06-</td>
<td>cattle, soybean and maize</td>
</tr>
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<td>07-</td>
<td>cattle, soybean and maize</td>
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<tr>
<td>08-</td>
<td>seed production, sawmill, agricultural trade, urban commerce</td>
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<td>seed production, sawmill, soybean</td>
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<td>11-</td>
<td>soybean, agriculture business consultant</td>
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<td>cattle, soybean</td>
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<td>13-</td>
<td>sawmill, cattle, soybean, seed</td>
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<td>14-</td>
<td>cattle, soybean</td>
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<td>soybean, cotton, maize, sugarcane, cattle</td>
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</tr>
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<td>19-</td>
<td>soybean, maize, cattle</td>
</tr>
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<td>20-</td>
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</tr>
<tr>
<td>21-</td>
<td>cattle, soybean, maize</td>
</tr>
</tbody>
</table>

Source: Field Research, Jun/1990

Those farmers involved in soybean cultivation built up a highly complex structure in terms of equipment, mainly during the 1970s, when that commodity reached high returns in the international market. However, farmers' achievements with this crop in the 1980s were more subject to the inherent instabilities of its market. In any given crop year, however, farmers' incomes are more vulnerable to adverse price fluctuations at harvest time. Those farmers able to delay the sales for a future period can be rewarded, if prices recover when supply in the domestic market declines.
The ability to operate in such a market, and the economic capacity to manipulate sales according to price oscillations, have become important tools for achieving a profitable position. Moreover, the availability of market information, and a correct interpretation of tendencies, therefore are crucial requirements for business success in the crop sector. In 1988, after 80% of the soybean harvest had been sold by the producers, pressed by their needs for debt settlement, there was a rise in price from Cz$176 to Cz$426, which benefited those farmers who had been able to hold their sales, but mainly the traders as well as the processing firms operating in this market, already in possession of sizable stocks.

On the other hand, this is a commodity deeply affected by the level of supply established internationally with the result that soybean farmers' operations must take into account both international prices and domestic production costs under conditions of accelerating internal inflation. This conflicting situation has led farmers to rely extensively on official policy as a compensatory or buffer element, as a means of equilibrating costs and gross profits. In recent years, farmers have emphatically demanded that their debts be denominated in terms of physical products as a means of avoiding the constant deterioration in the relationship between agricultural and industrial prices. In Paraná, farmers have proposed that even their financial debts should be settled by this criterion. Therefore, their loans would be estimated in number of sacks when the contracts were made, the same number prevailing for the debt repayments.
Farmers growing crops, exemplified here by soybean, are thus in a very cyclical business. The returns from each harvest are committed to repaying the loans contracted beforehand with banks thereby being able to obtain resources for the following year. Any remaining surplus can be allocated to different investment fronts, such as machinery innovation, property purchase, either rural or urban and the financial market. The latter appears to be the alternative with more liquidity, giving farmers flexibility between the two worlds. That is, preserving the real value of their wealth by short-term financial operations, before re-investing it in the production process for the following period, or even in other assets.

Cattle ranching on the other hand, is a completely different type of business which demands a specific organisation at the farm level, in terms of both technical procedures and marketing of the final product. Most interviewed farmers engaged in this activity stressed its great flexibility in terms of risk prevention and period for sale of mature animals.

This activity is deemed to give farmers more independence and also to be less demanding in terms of labour force. In comparison, dairy production requires 2 or 3 men per 100 heads, whereas cattle ranching on the average requires 1. The economic flexibility is an attractive aspect which confers a higher liquidity on cattle ranchers as sales can be undertaken at any time to cover unpredicted investment or other expenditure. Most of the costs are accounted for by initial
capital requirements, namely, fencing, pasture, buildings, etc., whereas the operational costs are very low, comprising medicines, salt and oats (as supplementary feed), and labour. As most of the herds are raised extensively, a good pasture is a key condition for better grazing and consequently better animals.

Cattle ranching is, however, largely affected by temporary shortages of meat, in the so-called supply cycles mainly in the winter time, when animals put on less weight because of inferior pastures. Nevertheless, a distinction must be made between the initial and second stages of animals' growth. The first stage (cria), which extends from the birth to not more than eight months, depends on the calves' feeding and whether it is a cross or a pure breed. After this starting period, animals are sold for fattening up or "termination" (terminação), and marketing, although it is very common for the two stages to be combined in many holdings. In the first stage animals can be sold as frequently as every two months, whereas the whole production period, from birth to their arrival at the slaughter house, is about two years.

However, the inflow of income is more frequent, since the batches of animals raised overlap with each other. The period of reconstitution of a herd is more concentrated between October and May when the market is more active, and when the adult animals reach their peak weight, and the calves complete their first stage of growth. It is also mostly during this period that males and females are kept together for reproduction. After June, prices typically are higher, but in
order to take advantage of them it is necessary to maintain the animal weight when pasture is poorer, requiring additional expenses on extra feed. A more efficacious, but also expensive measure would be intensive rearing, which would demand costly installations to obtain an animal of higher quality, and also a more constant supply of meat to the consumer. Nevertheless, this improvement in the final product would not be worthwhile because in Brazil the market is not segmented according to the technical procedures adopted in the production process. Therefore, there is no reward for a better final product, insofar as the quantity of meat affordable by urban population is too small, thus limiting any possibility of breaking the cattle cycle. Moreover, the area of land under pasture per head average is one hectare, since the land available to cattle is very large, and making intensive breeding unnecessary and economically unprofitable.

The operation of cattle ranching business is based on the high convertibility of cows into financial resources in order to satisfy any economic requirement. Cattle ranchers tend to be less dependent on official policies governing operating and investment credits, and therefore without heavy financial debts. On the other hand, the official control over retail prices can be dodged by the ranchers by keeping the herd grazing for a longer period\textsuperscript{68}, particularly if a large area is available. Nevertheless, there seems to be an equilibrium between a depressed demand for meat and a sector with a low

\textsuperscript{68}—The attempts by the government to maintain a regular meat supply, when the Cruzado Plan was enforced revealed the cattle ranchers' capacity to keep the animals at pasture, and to refuse sales because they did not accept prices at the level of CzS 180.00 per 15 kg.
level of technological improvement but also with a high level of profit. The economic pressure from the domestic market has not been sufficient to enhance the performance of this sector. The escape valve for cattle ranchers, as for the capitalist farmers, has been the international market, despite the fact that the bulk of exports are accounted for by industrialized meat.

The technological backwardness of this sector, however, has been responsible for the constant slump in the meat supply to the domestic market, shortages that could have been prevented, if all the available technological improvements had been adopted. There is still a big gap between cattle ranching and soybean production in terms of the technological performance achieved by the enterprises\(^6\). In Brazil the ratio of total head of cattle to the human population has been 0.9 for the last 40 years, which reflects the combination of a stable level of productivity with an ever-reducing purchasing power of the population. However, it must be mentioned that government has resorted to imports to keep up the level of supply domestically, especially when low productivity in the winter causes the level of supply to drop. Even so, the per-capita domestic availability of meat in the period from 1975-77 to 1982-84 reduced from 21.6 to 15.6 kg. in a ever-decreasing trend. Conversely, pork and chicken had a more stable evolution, mainly the latter, whose trend was constantly upwards, varying from 5.6 to 9.8 kg, whereas the former reduced from 9.2 to 7.7 kg. in the same

\(^6\) According to an interview with Maria L. Urban, technician from IPARDES, in Paraná.
period. (Secretaria de Agricultura e Abastecimento de São Paulo, 1985).

The points developed above suggest that the farm economy is a result of interests consolidated during the historical process of occupation. Furthermore, the picture of agricultural business, depicted above, for the two most important activities expresses the way each sector functions. The operation of farming business is a process of dealing with specific aspects of separate activities, which follows different trends each year. This is a central aspect of rural enterprises in the pursuit of profit at the production level. The reproduction of farming capital thus corresponds to the operation of a complex of businesses, although its sources of income and profit are not a straightforward result of successful harvests but of a wide range of investment alternatives as discussed in the following chapter.
Chapter 7
A Profile of Productive Structure and the Profitability of Farming Activities in the 1980s

An assessment of farmers' achievements in terms of profitability must take into consideration all the aspects stressed in the previous section in respect to diversified enterprises and their historical backgrounds. Furthermore, with the crisis of the 1980s and the widespread pressure on government to withdraw from the agricultural market, it became crucial to investigate farmers' economic performance at the production level. As discussed in chapter 4, this conjuncture of unfavourable circumstances provided a challenge for the enterprises established during the modernisation programme in the 1970s.

The promising development of Brazilian agriculture revealed by the output growth must be contrasted to the prospects of economic returns at the farming level. In other words, agriculture was not an island of prosperity surrounded by a general crisis, which confronted farmers with two major difficulties for the reproduction of their capital:

- the conditions for keeping up the level of investments were frustrated by the increase in interest rates associated with government's reduction of credit allowances, especially those for agricultural capital goods.
- the purchasing power of farmers' income declined steeply as a consequence of the rise in input prices.
Therefore, despite the achievements by agriculture as a whole, mainly by its export sectors, farmers were experiencing unfavourable production conditions. In order to discuss the elements which have undermined the profitability of farm production, and the strategies adopted by farmers to overcome them in Paraná where, by contrast to the country as a whole, some important crops in the 1980s remained stagnant. Table 25 shows this slowdown especially in soybean whose expansion appears to have peaked in Paraná, where output still has not recovered the level of 1980. (Figure 5) Most of its expansion has been concentrated in the State of Mato Grosso do Sul and the cerrado region, which has attracted farmers from Paraná and other south States.
Coffee showed a very unsteady evolution without reaching the position existing before 1975 when a severe frost eliminated almost its total area. In turn maize was static, whereas the production of staple foods, especially beans and rice declined significantly. The exceptions in the 1980s were the noticeable expansion of wheat and sugarcane, among the group of highly cultivated crops, and manioc and potato among the traditional staple food crops.
Table 25: Evolution of Crop Production 1980/1988 - in Paraná, 1980=100

<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td>Wheat</td>
<td>100</td>
<td>67.8</td>
<td>75.9</td>
<td>79.0</td>
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<td>195.5</td>
<td>217.7</td>
<td>240.9</td>
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<tr>
<td>Soybean</td>
<td>100</td>
<td>92.3</td>
<td>77.8</td>
<td>79.9</td>
<td>76.3</td>
<td>81.7</td>
<td>48.1</td>
<td>70.6</td>
<td>88.9</td>
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<tr>
<td>Sugarcane</td>
<td>100</td>
<td>103.8</td>
<td>153.4</td>
<td>217.1</td>
<td>189.3</td>
<td>234.2</td>
<td>236.2</td>
<td>267.6</td>
<td>274.3</td>
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<tr>
<td>Coffee</td>
<td>100</td>
<td>275.9</td>
<td>49.2</td>
<td>184.2</td>
<td>149.5</td>
<td>177.8</td>
<td>84.6</td>
<td>255.1</td>
<td>66.5</td>
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<td>100</td>
<td>103.5</td>
<td>131.6</td>
<td>123.9</td>
<td>109.0</td>
<td>184.4</td>
<td>136.8</td>
<td>126.8</td>
<td>160.8</td>
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<td>100</td>
<td>101.5</td>
<td>107.1</td>
<td>135.2</td>
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<td>106.2</td>
<td>79.2</td>
<td>139.8</td>
<td>100.8</td>
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<td>Manioc</td>
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<td>134.3</td>
<td>152.4</td>
<td>159.4</td>
<td>189.9</td>
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<td>108.1</td>
<td>46.3</td>
<td>84.7</td>
<td>95.4</td>
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<td>Potato</td>
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<td>114.7</td>
<td>81.0</td>
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<td>95.4</td>
<td>79.8</td>
<td>126.9</td>
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<td>Rice</td>
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<td>77.4</td>
<td>40.3</td>
<td>57.7</td>
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<td>94.3</td>
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<td>110.3</td>
<td>85.9</td>
<td>136.2</td>
<td>109.9</td>
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<td>105.2</td>
<td>118.9</td>
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<td>139.0</td>
<td>119.3</td>
<td>155.6</td>
<td>153.0</td>
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<tr>
<td>Cattle**</td>
<td>100</td>
<td>101.7</td>
<td>100.3</td>
<td>100.6</td>
<td>100.2</td>
<td>107.9</td>
<td>108.7</td>
<td>108.4</td>
<td>121.1</td>
</tr>
</tbody>
</table>

Source: Derai/Secretaria da Agricultura e do Abastecimento do Paraná.

** - preliminary figure

**- evolution of number of cows.

These exceptions, apart from potato, are exactly for products heavily supported by the government through specific programmes of price incentive and/or subsidised credit. Wheat is a crop with a high level of subsidy implicit in its guaranteed price, usually above the price of imports, in a market entirely dominated by government. This security provided by a policy which is supported by some influential industrial sectors, has become a strong attraction for this crop, despite its high vulnerability to severe winters. In recent years, farmers have found wheat cultivation a convenient business, for it can protect the soil in the winter and, in the case of the crop failure, producers are covered by
the official crop insurance which pays for the expenses incurred during the pre-harvest period. Any marketable salvage from the fields can be regarded as net profit.

Figure 6

Sugarcane has also been heavily supported by government as part of the alcohol programme for oil substitution, providing incentives to farmers for guaranteeing the supply of raw material. Its sharp upward trend during the 1980s, after the programme was launched, is outstanding among the other crops. Sugarcane for alcohol was

"the only rural credit programme in the country with a real increase of official resource allowances in the first half of the 1980s." (Delgado, N. 1989, p.36).

However, its cultivation is possible only in the north of Paraná, where the climate is more suitable. Similarly, manioc
was targeted by a special incentive programme for alcohol production, which again transformed this crop into a very attractive alternative for farmers, although the volume produced is still negligible in Paraná agriculture. (Figure 6) These divergent trends emphasise the importance of government support in underpinning the attractiveness of farming, especially of some crops, despite the difficulties caused by the general economic recession.

Beyond the slowdown in agricultural output, the critical circumstances in the rural sector were also indicated by the sluggishness in the sales of tractors and combine-harvesters, a trend already noted in Brazilian agriculture as a whole. Following the constant ill-defined agricultural policies, mainly in terms of credit for investment, farmers had little incentive to renew their machinery, although the good harvest in 1984 and the low interest rate provided by the Cruzado Plan had increased the sales as Table 26 shows.
Table 26: Number of Tractors and Combine-Harvesters sold in Paraná, and Evolution Index, 1980=100, 1970/87

<table>
<thead>
<tr>
<th>years</th>
<th>tractors</th>
<th>evol.index</th>
<th>comb.harv.</th>
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<td>3239</td>
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<td>1972</td>
<td>4429</td>
<td>58.2</td>
<td>943</td>
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<td>1973</td>
<td>5883</td>
<td>77.4</td>
<td>954</td>
<td>72.8</td>
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<td>1974</td>
<td>6858</td>
<td>90.2</td>
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<td>73.6</td>
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<td>1975</td>
<td>8638</td>
<td>113.6</td>
<td>967</td>
<td>73.8</td>
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<tr>
<td>1976</td>
<td>9509</td>
<td>125.1</td>
<td>1030</td>
<td>78.6</td>
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<td>1977</td>
<td>7242</td>
<td>95.2</td>
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<td>1978</td>
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<td>81.6</td>
<td>672</td>
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<td>1980</td>
<td>7604</td>
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<td>1311</td>
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<td>5660</td>
<td>74.4</td>
<td>1229</td>
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<td>69.8</td>
<td>1028</td>
<td>78.4</td>
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<td>47.8</td>
<td>831</td>
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<td>1465</td>
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<tr>
<td>1987</td>
<td>8454</td>
<td>111.2</td>
<td>1660</td>
<td>126.6</td>
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The conditions for investment in agriculture were substantially affected by the worsening of price relations between agricultural output and input prices; that is, the terms of trade or parity index between prices paid and prices received by farmers. The main crops, especially soybean, have undergone declining trends in relative prices, as a clear sign that farming lost strength in the 1980s, when inflation was also running ahead of agricultural prices adjustments. The only sector for which the ratio was always maintained a positive trend in the 1980s was livestock, whose terms of trade index remained above the 1977 base, although there is a downturn until 1982 before a positive trend (Table 27, Figure 7).
**Table 27: Parity Index between Paid and Received prices for Selected Activities in Paraná, 1978/87, 1977=100**

<table>
<thead>
<tr>
<th>years</th>
<th>cotton</th>
<th>soybean</th>
<th>wheat</th>
<th>coffee</th>
<th>livestock</th>
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<tr>
<td>1978</td>
<td>88</td>
<td>128</td>
<td>89</td>
<td>126</td>
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<td>1979</td>
<td>81</td>
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<td>1981</td>
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<td>1986</td>
<td>59</td>
<td>72</td>
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<td>147</td>
</tr>
<tr>
<td>1987</td>
<td>48</td>
<td>73</td>
<td>66</td>
<td>37</td>
<td>139</td>
</tr>
</tbody>
</table>

*Source: Deral/ Secretaria da Agricultura e do Abastecimento do Paraná*

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**Real Prices of Selected Crops**

*Paraná, 1980/89 (values=Sept. 88)*

![Graph showing real prices of selected crops](image)

*Figure 7*

The more successful condition of cattle business is very much in line with the greater possibility that ranchers
control the level of supply of cattle meat. The ratio of fattened to lean cows and calves, required to maintain the herd number was kept in the 1980s at the same level as that in 1978, which reflects the margin of profitability within which cattle ranching can be operated. (Figure 8).

---

**Figure 8**

**Cattle Prices, per Head, in Parana**

1978/88 - C$1000.00/head

- ◯ one year calf
- ▲ lean cow
- ○ fat cow


1978/88 - C$1000.00/head

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7.1- The Strategies for Profitable Farming

Under these overall conditions, farming became much more hazardous than it was during the golden period of modernisation in the 1970s. Consequently, once the pillars which supported farmers' profit started to crumble, the economic stability of the agricultural enterprises launched in the early 1970s was seriously threatened. This raises
questions about the strategies farmers have adopted to maintain their level of capital accumulation. As all the surrounding economic conditions were getting worse, what has kept farmers' economic structure in operation? How has farming business been operated to maintain the necessary profitability?

The starting point for dealing with these questions is to point out that farming business is run on a day-to-day basis, without any plan of viability being elaborated beforehand. In other words, farmers' decisions are taken according to short-term prospects, often without assessment of alternative investment opportunities. This precarious way of conducting business came to light during the 1980s, when the economic crisis combined with changes in agricultural policy encouraged farmers to be more rational in respect to their accounting methods and expenditure priorities, for they have been obliged to operate mostly with their own resources. Simultaneously, to a certain extent, they became more attracted to other sources of income outside farming.

The improvisation with which farmers handle their business came to light when their measures of assessing the level of profit was investigated. In the survey carried out in Paraná, three general procedures adopted by farmers to evaluate the economic state of their enterprises were detected. The first and most widely mentioned is the difference between income and total disbursement, or gross profit. This measures the holding's economic position at a given time, revealing the potential financial ability to
maintain the level of production and/or raise the level of investment. In order to avoid the disturbing effects of high inflation, farmers have begun to measure profit in terms of sacks of product. This practice, basically worked out in terms of farmers’ accountability, reveals their narrow approach towards their business, insofar as there is no comparative evaluation with other investment alternatives. Thus, farming profitability is something largely defined in its own terms, negating its insertion in the overall economy and reflecting the fact that farmers are still operating a specific business and not fully tuned with other sectors in terms of management.

The second measure used by farmers follows a broader approach as it takes into account the ratio of gross profit to capital as a whole, rather than just total revenue. Nevertheless, this more sophisticated method to evaluate profitability is only adopted by a restricted number of farmers, mostly those with larger holdings economically well established and technically better equipped.

The third measure comprises a variety of procedures, which differ according to the activity in which farmers are engaged.

a- Continuation of Farming: the possibility of ploughing the soil for another year crop indicates that the results achieved in the previous harvest have been positive. This appears to be the simplest way in which farmers assess the success of a harvest. A surplus, after all outstanding financial debts are cleared, enables them to start another farming year with all the necessary inputs guaranteed by
either renewed bank credit or by their own resources.

b- Investment Undertaken: farmers tend to assess their financial position by the investment of any surplus of their final income, either in farming related assets, such as machinery, storage facilities, land, etc, or in outside alternatives, such as flats, plot of land in urban areas, etc. They thus tend to assess their financial well-being by determining whether their assets have increased.

c- Activity Ratios: in more specific terms, farmers adopt measures of efficiency for their different activities in order to assess whether satisfactory results have been attained for each of them separately. In the case of crops, farmers use yields per hectare to assess their results, the yield varying according to the volume of input used. In July 1990 the threshold yield for soybean was 37 sacks (60 kg) per hectare, below which production was unprofitable. Since soaring input prices and financial costs have put added pressure on farming profitability, farmers have responded either by reducing costs or enhancing technical efficiency. Nonetheless, this control over production costs of any crop, is not a widespread practice among farmers, since they do not know what exactly their costs are. They are therefore more inclined to work out the average revenue per hectare under the prevailing final prices, in order to evaluate the chances of repaying any remaining debts and preparing land for the following period.

In the case of cattle ranching, the basic practice has been to restock the herd when the mature cows are taken to market. According to the cattle ranchers, each cow sold has to
yield a return high enough to buy between 1.5 and 2 unfattened cows, or 3 one-year calves to be reared. When this parameter cannot be maintained, cattle ranchers may resort to emergency measures, such as sales of more than the planned number of animals which includes "mother cows", such sales implying a slump in their business. Figure 3 shows that generally the ratios between the types of animals has been maintained during this decade.

In general, producers' failure to keep the measures described above at profitable levels does not necessarily mean temporary closure or bankruptcy. The periodic deficits detected by farmers' organisations and by official institutions in their calculations of production costs, are reduced or eliminated by farmers in the current administration of their different sources of income and investment options. Since there is no systematic accounting information produced by farmers themselves about their actual expenditure and the composition of their costs, any evaluation of their economic performance is based on information provided by their representative organisations and government institutes. However, since the variety of situations prevailing in agriculture is too complex, these evaluations are all too easily out of touch with farming practices and the farmers' income configuration. The cost calculations elaborated by OCEPAR\textsuperscript{70}, for example represent ideal farming units for different technological patterns, these units being supposed

\textsuperscript{70} - Cooperatives Organisation in Paraná -(Organisação das Cooperativas do Paraná) which has assumed a leading role in farmers' representation to government.
to cover all the diverse situations in each crop sector.

Furthermore, it has become politically important from these organisations' point of view to increase farmers' expenses higher in order to strengthen farmers' demands for a higher VBC in credit concessions, for example, thereby adding a political component to the definitions of cost levels. This has just broadened the lack of knowledge about farmers' situations in terms of their income sources and earnings, as well as the composition of their production costs.

Table 28 elaborated by the Secretary of Agriculture of Paraná, shows that the balance of costs for most crops is negative, in respect to both the prices received by farmers and the minimum price paid by government.
Table 28: Estimation of Production Costs for Selected Crops in Paraná, August/1990 - NCz$/ha - (new cruzados)

<table>
<thead>
<tr>
<th>Selected Crops</th>
<th>cotton</th>
<th>rice</th>
<th>beans</th>
<th>maize</th>
<th>soybean</th>
<th>wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1- maintenance(machines animals, buildings)</td>
<td>172.00</td>
<td>75.58</td>
<td>79.75</td>
<td>115.77</td>
<td>158.44</td>
<td>157.52</td>
</tr>
<tr>
<td>2- temporary workforce</td>
<td>580.00</td>
<td>178.76</td>
<td>168.95</td>
<td>184.00</td>
<td>39.90</td>
<td>9.05</td>
</tr>
<tr>
<td>3- seeds</td>
<td>79.43</td>
<td>57.00</td>
<td>132.80</td>
<td>63.60</td>
<td>59.85</td>
<td>63.00</td>
</tr>
<tr>
<td>4- fertilizers</td>
<td>205.50</td>
<td>141.00</td>
<td>123.50</td>
<td>158.50</td>
<td>173.80</td>
<td>278.00</td>
</tr>
<tr>
<td>5- agrochemicals</td>
<td>149.95</td>
<td>18.91</td>
<td>35.16</td>
<td>12.46</td>
<td>123.00</td>
<td>159.00</td>
</tr>
<tr>
<td>6- general expenses</td>
<td>23.74</td>
<td>9.43</td>
<td>10.80</td>
<td>10.69</td>
<td>11.10</td>
<td>13.33</td>
</tr>
<tr>
<td>7- external freight</td>
<td>32.40</td>
<td>16.75</td>
<td>8.00</td>
<td>26.00</td>
<td>19.00</td>
<td>17.71</td>
</tr>
<tr>
<td>8- grain storage</td>
<td>-</td>
<td>17.50</td>
<td>8.40</td>
<td>35.00</td>
<td>25.20</td>
<td>23.80</td>
</tr>
<tr>
<td>9- tech. assistance</td>
<td>21.00</td>
<td>7.60</td>
<td>10.32</td>
<td>7.98</td>
<td>9.75</td>
<td>8.62</td>
</tr>
<tr>
<td>10- PROAGRO</td>
<td>63.00</td>
<td>22.81</td>
<td>30.96</td>
<td>19.94</td>
<td>24.36</td>
<td>25.85</td>
</tr>
<tr>
<td>11- financial costs</td>
<td>90.16</td>
<td>42.29</td>
<td>27.47</td>
<td>47.63</td>
<td>59.47</td>
<td>67.38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1417.27</td>
<td>587.63</td>
<td>636.11</td>
<td>681.57</td>
<td>703.87</td>
<td>823.26</td>
</tr>
</tbody>
</table>

| **Fixed Costs** |        |      |       |       |         |       |
| 1- depreciation and soil liming | 175.37 | 72.24 | 75.99 | 128.51 | 169.37 | 174.81 |
| 2- capital remuneration | 115.49 | 76.82 | 78.74 | 93.71 | 118.73 | 121.58 |
| 3- insurance and taxes | 7.37 | 4.14 | 4.30 | 5.54 | 7.62 | 7.87 |
| 4- permanent workforce | 123.83 | 51.16 | 55.50 | 68.27 | 68.41 | 72.25 |
| 5- land remuneration | 200.00 | 143.00 | 143.00 | 143.00 | 143.00 | 143.56 |
| **Total** | 622.06 | 347.36 | 357.53 | 439.03 | 507.13 | 520.07 |

| **Total Costs** | 2039.33 | 934.99 | 993.64 | 1120.60 | 211.00 | 1343.33 |
| **Yield per Ha** | 120arr* | 25 sc | 12sc | 50sc | 36sc | 34sc |
| **Average Cost / sack(1)** | 17.00 | 37.40 | 82.80 | 22.42 | 33.64 | 39.51 |
| **Prices Paid Farmers(2)** | 14.00 | 18.13 | 99.00 | 12.80 | 22.37 | 22.32 |
| **Minimum Prices(3)** | 13.85 | 23.28 | 67.98 | 18.10 | 21.06 | 28.92 |
| **Balance (2-1)** | -3.00 | -19.27 | 16.20 | -9.62 | -11.27 | -17.19 |
| **Balance (3-1)** | -3.15 | -14.12 | -14.82 | -4.32 | -12.58 | -10.59 |

Source: Secretaria da Agricultura e do Abastecimento do Paraná (SEAB)

* arr stands for arroba, corresponding to 15 kg. The average cost of cotton is also for 15 kg.

Although this calculation has underpinned farmers’ demands for economic support, mostly in terms of higher
minimum prices, it includes items which do not represent real resources expenditure. Firstly, farmers' accountability does not regard the interest imputed on their asset values (including land) as a cost in their year-to-year business administration. Likewise, depreciation is not taken into account as an annual expense incurred for the future replacement of machinery, since utilisation is extended for a period longer than the standard machine's operational life. That is, machines and equipment are used for a period longer than that predicted by general calculations of depreciation and durability. This is especially so in a period when investment has become more expensive. Moreover, in some years of low profit, sales of "mother cows" and pieces of equipment become a measure of self defense against periodic negative results. Conversely, the years of profitable prices and plentiful harvest provide sufficient resources to replace machinery and to undertake other investments either on production related assets or outside farming.

Consequently, if farming production were assessed in terms of business management, including the pre-requisites for capital efficiency as shown in Table 27, the result would be mostly negative, for these requirements are not part of practical business administration in farming. The costs composition revealed by farmers is far much simpler than that elaborated by their organisations and official institutes alike, for it is only related to the operational costs incurred in a specific year, which provides farmers with the parameters necessary for their business. Despite the
differences between them, these two types of costs composition share the common ground of being able to elaborate accounts mainly in the short term basis. The following table is an attempt to gather some illustrative information about production costs outlined by farmers themselves during the field research.
Table 29: Soybean Production Cost Composition, for three cases, in Paraná, -Cz$-

<table>
<thead>
<tr>
<th>Costs</th>
<th>case 1 1989/90</th>
<th>case 2 1989/90</th>
<th>case 3 1988/89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1- seeds</td>
<td>44.44</td>
<td>95.65</td>
<td>8.89</td>
</tr>
<tr>
<td>2- fertilizer</td>
<td>88.89</td>
<td>147.83</td>
<td>8.42</td>
</tr>
<tr>
<td>3- herbicide</td>
<td>152.78</td>
<td>151.31</td>
<td>5.84</td>
</tr>
<tr>
<td>4- insecticide</td>
<td>-</td>
<td>19.13</td>
<td>1.56</td>
</tr>
<tr>
<td>5- fungicide</td>
<td>-</td>
<td>-</td>
<td>0.93</td>
</tr>
<tr>
<td>6- other agrochem.</td>
<td>-</td>
<td>-</td>
<td>1.16</td>
</tr>
<tr>
<td>7- lime</td>
<td>-</td>
<td>-</td>
<td>0.65</td>
</tr>
<tr>
<td>8- tractor/service</td>
<td>177.78</td>
<td>69.57</td>
<td>0.08</td>
</tr>
<tr>
<td>9- harvest</td>
<td>58.00</td>
<td>69.57</td>
<td>-</td>
</tr>
<tr>
<td>10- pulverization</td>
<td>-</td>
<td>-</td>
<td>1.30</td>
</tr>
<tr>
<td>11- workforce</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12- diesel</td>
<td>-</td>
<td>-</td>
<td>0.60</td>
</tr>
<tr>
<td>13- repairs</td>
<td>-</td>
<td>38.04</td>
<td>-</td>
</tr>
<tr>
<td>14- freight</td>
<td>18.00</td>
<td>41.74</td>
<td>0.76</td>
</tr>
<tr>
<td>15- interest</td>
<td>44.44</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>584.33</td>
<td>632.84</td>
<td>30.19</td>
</tr>
</tbody>
</table>

| Fixed Costs                  |              |              |              |
| 16- taxes                    | -            | 37.13        | -            |
| 17- tech. assist.            | -            | 14.92        | -            |
| 18- soil conservat.          | -            | 69.57        | -            |
| 19- FUNRURAL                 | 14.50        | -            | 0.70         |
| 20- depreciation             | -            | -            | 3.05         |
| 21- tenancy                  | -            | -            | 3.05         |
| 22- cooperative fee          | -            | -            | 1.02         |
| Total                        | 14.50        | 121.62       | 7.82         |

| Total Costs/sc               | 598.83       | 754.46       | 38.01        |
| Price/sc                    | 710.00       | 710.00       | 30.50        |
| Gross Profit                | 111.17       | -44.46       | -7.53        |
| Yield sc/ha                 | 37.19        | 23.76        | 39.91        |


The three cases are tabulated above only to illustrate the procedures adopted by farmers to elaborate their calculations on production expenditures. Case 1 shows a better performance due to both fewer items of cost and relatively less expensive inputs. It is possible that such a gross profit is elusive, but these are the grounds for farmers assessment.
of their economic performance. If other cost components were to be included in the table above the deficit would be more obvious as can be seen from Table 28. In order to decide whether growing soybean would pay off, an interviewee outlined the likely costs in terms of five items: the seeds, the fertilizer, soil preparation, the agrochemicals (herbicide, insecticide, etc) and the harvest, which would constitute the total cost. The positive difference from the market price would be his profit, the incentive which would encourage him to sow seeds.

Nevertheless, the distinctive methods of cost elaboration adopted by farmers only accounts for the way they run the farm business and for their decision-making. Farmers are not necessarily pushed out of business if a harvest is unsuccessful, or if their records show a negative result.

7.2-Farming Investment Alternatives

As stressed above, the transfer of resources from one activity to another within the economic complexity of farming production, allows farmers to offset deficits in one sector by gains generated on other investment fronts. This mechanism is most noticeable in respect to livestock and crop production, in a strategy to preserve the entire capital. Under the economic instabilities of the 1980s it became more important for farmers to be able to manipulate the various possible means of income sources, which include control over the best opportunity to sell and to buy; flexibility between the most
profitable rural activities, and also off-farm investment alternatives, such as those in the financial market.

Bearing in mind all the consequences of the instability caused by the administration of agricultural policies and the actual sluggishness of the productive system as source of income, most farmers, following a pervasive trend common throughout the Brazilian economy, began to divert their resources to the financial market as a measure of self defense. This response is identified more easily among capitalist farmers as a procedure to face the deepening crisis, thus saving their assets from inflationary erosion.

"Today, the best deal is not having cattle, crops, or being attached to any other productive activity. The best deal is in the banks, in investing in the over-night, 'bill of exchange'(*letra de câmbio*), in the CDB/RDB". (Remarks made by a member of the FAESP-Federação da Agricultura do Estado de Sao Paulo - linked to the CNA, in O Indicador Rural, Dec.1986)

As interest payments became the major item of production costs, farmers began to operate in the financial market in an attempt to keep pace with the complex financial gamble existing in the country. The rush to this market became part of the farming business administration as a measure to offset sagging prices concomitant with a reduction in official credit allowances and rising interest rate.

The first step taken, after the harvest has been sold, has been to whisk the money to the banks, in order to obtain interest, which thus complements their incomes. This practice simply reflects the fact that capital in agriculture could not survive on returns to production alone. It thus became necessary to keep this capital in liquid form as money, which
is capable of being transferred from one sector to another.

Therefore, the decision to divert resources from the productive sector to the financial market became part of farmers' strategy to save their capital by taking advantage of conditions provided by the general economic system.

Similarly, it is as part of this general dynamism that land has been targeted as an investment option, as pointed out by a farmers' leader:

"the financial market has been very much utilised by the rural producer during the last five years. Concomitantly, the land market is always aimed at by farmers as an alternative for the money placed in agriculture."

Figure 9

The fluctuations of land prices shown in Figure 9 clearly reflect the trends in the rural economy, as well as those of
inflation and interest rates. Between 1980 and 1985 the rampant increase in interest rates, coupled with bad harvests in some years, discouraged investors from buying land and drove farmers to financial operations. After the favourable reaction of international prices in 1984, causing a recovery in farmers' level of income, land purchase again came to the fore, strongly reinforced by the short-lived success of the Cruzado Plan which temporarily reduced inflation and interest rates. The available resources held in the financial system also returned to land in the form of machinery and equipment, thus expanding the productive capacity. Moreover, farmers took advantage of low interest rates by borrowing resources for land acquisition. When the government started to relax the price freeze in the late 1986, land lost its attractiveness, reversing the trend of the previous year. Corroded by the high interest rates and by farm prices lagging below inflation, farmers diverted again from productive investments. Therefore it must be emphasized that the land market is only partially determined by elements directly within farming economy, namely, by prospective gains in the agricultural commodity market. Apart from the agricultural economy, land prices are largely determined by the oscillation of interest rates, insofar as decisions to invest in land are related to the returns paid in the financial market.

Consequently, the increases in land prices have become the main component of land rent, as well as a significant source of profit in agricultural business. Moreover, this new status of land as financial asset has mostly been taken
advantage of by large capital, more extensively located outside agriculture or integrated with farming business. As Delgado(1985) pointed out,

"the diversification of financial investment into the land market also is an important part of the strategy of capitalist valorization adopted by large capital." (p.204)

In frontier areas, this strategy is based on the attractions of founders' rent, which has drawn many large enterprises from various sectors into the land market, mostly through colonization projects, because of the gains implicit in the differences between buying and selling prices. Furthermore, it is crucial to take into account the fact that land ownership has been the most important collateral for rural credit contracts, and that the subsidised low-interest rural credit attracted investors to agriculture, pushing up land prices.

Although farmers have also taken part in this speculative market, many of them cannot make decisions about buying land oriented by financial short-term expectations alone, because their capital is highly committed to keeping their existing holding in production. However, it has been widely argued that land value increase is the main factor in farmers' capital accumulation. As Bell and Newby,(1974) pointed out

"The farmer's wealth consists basically of a rapidly-depreciating set of working capital ... and an equally rapidly-inflating set of fixed assets, the farm land and buildings". (p.93)

On the other hand, it has just as frequently been objected, accumulated wealth is not part of farmers' current business, but only of an expected future revenue when the
previously acquired land is realised in the market. In other words, the investment made on behalf of future generations, as some farmers have justified their purchases of land, is not something to be converted back into liquid form in the short term.

From the point of view of many farmers, land is not necessarily purchased as part of a financial gamble, given their relatively poor finances. They are interested in land because of the basic principle that total revenue will be higher if they increase total production. In addition land is a depositary of monetary surplus which is invested as part of a strategy to protect their capital against inflation.

Those who take part in the land market, mainly large farmers, and make money out of its price oscillations, have more chance of maintaining the liquidity of their capital in the deployment between land and financial market. On the other hand, farmers whose income is predominantly committed to the production process are bound to suffer from any shortage of resources to take advantage of the different fronts of investment.

Beside wealth generated by land price variations, and in connection with them, capital accumulation in the farming sector is more successfully achieved by those who run businesses in the urban sector in association with farming activities. These non-farm operations provide an alternative source of resources to make up for possible losses or an eventual slump in prices. However, in such cases agriculture in recent years has become the least profitable segment of
their whole business complex. According to those farmers regarded as entrepreneurs, those who depend solely on agriculture cannot survive as such, and it has become crucial for them to have an extra source of income outside farming operations.

With the withdrawal of government support, farmers became more affected by economic instability, thereby challenging them to improve their efficiency. Consequently, the needs for investment in production improvement have come to the fore, requiring behaviour scarcely adopted in previous years. Therefore, farmers were challenged for the first time to take up the position of entrepreneurs and rely on their own resources and expertise. Likewise, for the first time they became exposed to the vulnerability intrinsic to farming, which makes even greater demands on their entrepreneurial ability.
Chapter 8
Conclusion

This final discussion is divided into two major sections, which review the analysis carried out in this study. Firstly, the main points of each chapter are highlighted in order to summarise the interpretation of capitalist farms in Brazil, with emphasis on the development during the 1980s. Secondly, the main elements that emerged from the analysis are reassessed, in order to discuss their implications for theoretical interpretations of capital accumulation in agriculture, and also for the implementation of agricultural policies.

8.1- A Summary of the Main Results

The pattern of landownership and rural wealth distribution in Brazil was to a large extent established before the modernization process began in late 1960s. When agriculture became more closely articulated with the agroindustrial complex, the official strategy behind the technical transformation of the farm production process took the existing land tenure structure as a datum and further consolidated it. In other words, the access to land and to the benefits provided by the agricultural policy during the modernisation period only added new elements to the prevailing social and economic differentiation in the sector. Moreover, the prospective gains to be secured from farming itself were only part of the attractiveness of land purchases.
This legacy of landownership, which stretches back to the colonial period, also provided the basis for the emergence of the agrarian interests. These were largely identified with large concentrated landownership and the most profitable activities such as coffee, sugarcane and cattle ranching. These landed and sectorial interests also became the main influences defining the relationship between the state and agriculture. This relationship, in turn, provided the framework of technological modernisation policy which explicitly favoured these groups of larger holdings.

The modernizing policies of the 1970s provided capitalist farms with financial incentives largely conceived and implemented under the assumption of low inflation and a stable economy, producing an agricultural model highly dependent on official support. A central objective of the modernisation programme was to transform the latifundio into a rural enterprise. This was partly because of large farmers' influence in the elaboration of agricultural policy, and partly because it represented a clear decision by the state to build a capitalist agriculture based on large holdings.

The modern agriculture established by the favourable conditions of the 1970s faced a major challenge in the 1980s when high inflation swept through the economy and undermined the financial structure of the state. The effects of the combination of unstable prices and the increasing withdrawal of official financial support are discussed from two main standpoints. Firstly, the political reaction against the lack of supportive economic policies for agriculture led to the
emergence of political movements to preserve the status quo and to fight for advantageous policies on a permanent basis. The crisis of the 1980s thus provided the grounds for farmers to organise and mobilise their forces politically in order to press their demands for official support. However, this mobilisation also revealed the narrow social bases of their movement, as well as a considerable gap between the rank and file and the leadership. Even today, the level of political organisation at the grassroots of farming society is rudimentary, and the lobbies associated with the leadership have remained important. Within the farmers' organisations, potential conflicts can be detected in their lobbying activities which have not yet fully emerged. Farmers' organisations, such as FAAB, have been functioning like a political umbrella, representing relatively opposing interests for the sake of the agricultural sector as a whole, but there are many interests based on specific products, still to come to light. These interests may well undermine the unity of the umbrella organisations, insofar as many opposing demands may emerge.

Secondly, the economic crisis and the reduction of government subsidies challenged agricultural enterprises to become more efficient and economically well organised. This economic pressure, coupled with the burning issues of land reform, prompted the discussion in Chapter 5 on farming efficiency in the light of the existing distribution of landownership. This question is dealt with in the present study by a comparative analysis of farm size groups. Despite
the specific management requirements dictated by agronomic factors and the structure of the market related to different activities, the analysis of farm groups, based on area, reveals that the level of efficiency according to economic indicators (investment and level of financial return) and technical indicators (use of fertilizers and tractors), is not correlated with size. Indeed, those groups of farms below 200 ha show a better performance in terms of these indicators. These results sparked off two main points of discussion. Firstly, the most efficient group of farms is that devoted to the types of crop production which are more articulated with the industrial demands in terms of technological changes. Secondly, these results suggest that the profitability, and any possible superiority, of large farms are based on a different type of efficiency, which is not reflected in the indicators mentioned above. The reasons for the overwhelming superiority of the large farms over the smaller ones are to be found in their higher income combined with the valorization of physical assets, mainly land, and in the dynamism of activities mostly related to the external market.

The strategies of capital reproduction adopted by farmers are thus primarily shaped by the dynamics of different crops and other activities, mainly those linked with the external market, which has provided relatively higher returns compared to the domestic market. Agrarian capital has not become a monolithic section of capital in general, but a composite of different economic and political structures within agriculture. Although there is some degree of diversification
on large farms, these farms tend to be more specialized in one type of business, which then determines their other structural characteristics, such as infrastructure, technical changes, minimum size, rates of return. In other words, the economy of cattle ranching is not the same as that of soybean nor other activities. Agrarian capital thus is not a uniform category but an expression of differentiated processes within agriculture.

On the other hand, the oscillations in the prices of physical assets, mainly land, have become a mechanism underlying the reproduction of agrarian capital. This question is not only related to the expansion of wealth via the acquisition of more land, but also to the possibility of being able to take part in the land market. Land prices oscillate in relation to a number of factors, notably returns on financial assets and the prospective gains from agricultural commodities, which cause farmers' assets to increase or decrease in value. Selling and buying land can thus be a profitable source of accumulation, through speculative capital gains, if farmers are in a position to take advantage of these oscillations. This possibility marks a clear distinction between groups of farmers, by stressing the greater ability of the larger ones to sell parts of their property and convert it into larger plots in other regions, without causing a major impact on the whole of the enterprise. This manipulation of physical assets can also be used to purchase assets outside agriculture, such as houses, flats, urban land, either for private use or as alternative investment.
Short-term operations in financial markets represent another mechanism used by agrarian capital as an alternative non-farm source of income. These operations became very crucial in the 1980s when inflation accelerated, serving as an instrument to preserve the real value of farmers' wealth and offset the instabilities in farm commodities markets. This mechanism was used much more by large farmers, who had greater resources at their disposal, especially after a successful harvest. A mechanism functioning as a parallel support for farmers' capital accumulation thus exists, stretching beyond the boundaries of farm economy. It is possible to infer that the crisis faced by the land-based investments was more easily overcome by those groups of farmers whose wealth economic potential were also based on these alternative assets. Knowledge of the possible alternatives for investing a financial surplus and of the possibilities of using them as an instrument to support the economic capacity of farming enterprises is a major aspect of capital accumulation in agriculture which, in turn, is not based entirely on the use of land.

Finally, the state emerged as a central determinant of stability in the farm economy, inasmuch as it administers credit and minimum price policies. The main objective of the political action taken by farmers' organisations was to maintain and translate this official support into a permanent agricultural policy. However, two stumbling blocks emerged. First, the decision taken by government to benefit smaller holdings relatively more than larger ones in the
implementation of credit policy. The second, and more important, was the growing conflict between the resources needs of agriculture and the fiscal crisis experienced by the government, which in fact reduced the possibilities of allocating credit to the rural economy. Moreover, the Achilles' heel of any credit policy for agriculture proved to be the difficulty of establishing a level of interest rates acceptable by farmers' budgets. In other words, agriculture can be benefited by favourable policies only within the limits of a stable economy, with low levels of inflation and, more importantly, with equilibrium in the implementation of macroeconomic policies.

8.2- Implications for the Theoretical Discussion and Policy Implementation

The points summarised in the above section provide the basis for reassessing the discussion in Chapter 1 about the limits and conditions of capital accumulation in the farming sector. It is important to stress again that the large rural enterprises have emerged from a structure already established by the previous process of land occupation. This skewed pattern of access to land is the foundation of differential access to alternative investment opportunities and speculative gains, which reduces the competitiveness of small holdings in a capitalist agriculture.

Furthermore, the comparison between small and large farms cannot be restricted to farming activities alone which, as described in Chapter 5, show no significant differences
between them. The elements which make large holdings superior occur in a domain which extends beyond the efficiency of land use alone. More precisely, this question cannot be addressed by comparing size groups in order to establish which is the ideal one or the most efficient one in terms of land use.

The discussion in Chapters 6 and 7 emphasised on the one hand, that the dynamics of capitalist farming have been analyzed as if capital invested in this type of business were "trapped" and immobile within the limits of agriculture. On the other hand, higher returns to capital invested in agriculture can be expected if farmers broaden the confines of their operations towards markets in physical assets, notably land, urban activities, financial assets, and activities supported by the state.

Therefore, any discussion of capital in agriculture must take into consideration the mechanisms that allow farmers to take part in the general circulation of capital, which includes all possible investment alternatives profitable enough to broaden their accumulation potential. In other words, capitalist farmers tend to become economically stronger insofar as their capital is not solely restricted to agriculture. The more successful a farmer is in operating the farm business, the more agriculture tends to become a part-time activity for his capital, and "agrarian capital" thus loses its identification with farming. Only by this process can capital overcome the inherent constraints of agriculture, making this a viable field of accumulation.

The expansion of agroindustrial sectors towards
agriculture provides the mechanism that frees capital from its agrarian roots, integrating it into the general circulation of capital and spelling the possible end of agrarian capital as an isolated social category. A process which gives more substance to this trend is the attraction farming has for off-farm capital, largely related to prospects of speculative gains and institutional rents, as well as those of specific activities such as cattle ranching, forestry and some export crops, whose profitability is more certain. The attractiveness of agriculture to capital is thus explained by these elements which are more accessible and favourable to large farms than to small ones. The importance of these mechanisms provides strong grounds for questioning the view that agriculture is a field reserved to small units.

These new mechanisms linking farmers' income to asset market and financial operations have not been fully incorporated into assessments by farmers' leaders of the economic state of the farming industry. Policy makers similarly have not recognised their importance when taking decisions about supporting agriculture. The financial difficulties arising from bad harvests, which fuel frequent demands for financial compensation by the state, must be examined in the light of the points stressed above, together with the fact that successful harvests function as a financial cushion against the impact of possible future losses.

A final point in this concluding discussion is related to the vital role played by the state in establishing stability in farm income. The arguments in favour of a free market for
agriculture are very contradictory because of the permanent requests by the farmers themselves for official financial support. Consequently, agriculture is still a special case, and as such it also incorporates a specific process of capital accumulation in which the government is still a crucial element.

However, the susceptibility of farming to bad harvests or falling prices does not necessarily mean hardship for, or losses of assets by, all farmers, especially the large ones. Therefore, it is the lack of access to other sources of investment income and support that entitles the small holdings to receive preferential treatment from the state.

This analysis of capitalist farmers in Brazil has produced some significant points to consider in elaborating a framework for the discussion of capital accumulation in agriculture. However, it is acknowledged here that it is necessary to investigate further the specific trends in each commodity market, particularly on the international front, in order to provide more detailed evidence of the present crisis and its impacts on farmers' income.
REFERENCES


Berry, R. Albert and W. R. Cline (1979)="Agrarian Structure and Productivity in Developing Countries".- a study prepared for The International Labour Office within the framework of the world employment programme.- J. Hopkins University Press, London.


M. Redcliff (1989) = "The International Farm Crisis", Macmillan; pp 46-83


Congresso Nacional (1986) = "Anais do Simpósio sobre o Crédito Rural e a Nova República".


Dias, G. L. Silva and J. R. M ( ) = "Fundamentos para uma Nova Política Agrícola".


Fagundes, M. H. (1988) = "A Influência da PGPM na Oferta Agrícola".- CFP, Carta Mensal da SUPEC, ano III,
no. 04, Brasilia, abril.


Frente Ampla da Agropecuária (1988) = "4a. Minuta de Projeto de Lei Agrícola".


Fundação IPARDES (1978) = "O Trabalho Rural Volante no Estado do Paraná." - Curitiba, 3 V.


Guardian, The (1988) = "Four Years on and it is Time to Doff that CAP". - Wednesday February 10th.


Howarth, R.W. (1969) = "The Political Strength of British Agriculture". - in Political Studies, 17(4) pp 458-


Madden, M.P (1978)="Some Questions of Value and Scale in American Agriculture".- in American Journal of Agricultural Economics, 60 (2) pp 303-308; may.


Moraes, P.G. (1987)="Algumas Observações para o Estudo das Classes Dominantes na Agropecuária Brasileira".- in Reforma Agrária, ano 17, no.2. agosto a novembro.


Nikolitch, R. (1969)="Our 31,000 Largest Farms".- USDA


O Indicador Rural (1984)= "Crise Empobreceu a Agricultura, mas a Tornou mais Profissional e Madura, Afirma Produtor".- Ano III, no. 71-72, Dezembro.


O Indicador Rural (1986)= "Campo Reinvidica Paridade com as Cidades".- Ano V, no.118 Novembro.


Rodefeld, R.D. (1979)= "Selected Farm Structural Type Characteristics: recent trends, causes, implications, and research needs".- paper presented at the Phase II Conference of the National Rural Center Small Farms Project, University of Nebraska, Lincoln.


Sayad, J. (1984)= "Crédito Rural no Brasil - avaliação das críticas e das propostas de reforma".- Estudos

Secretaria de Agricultura e Abastecimento de S.Paulo / Coordenadoria de Abastecimento (1985)="Situação Alimentar do Brasil nos Últimos 20 anos".-in Conjuntura Alimentos - Encarte Especial, Dezembro.


Silva, J. Graziano (1989)="As Representações Empresariais da Agricultura Brasileira Moderna: as disputas na transição para a democracia".- unpublished


Stanton, B.F. (1978)="Perspective on Farm Size".- in American Journal of Agricultural Economics, december.

Sutherland, D. (1968)="The Landowners".- A. Blond (Publ.)


Paraná".—Dissertação de Mestrado apresentada ao Departamento de História do Instituto de Letras, História e Psicologia de Assis.


Tweeten, L. (1979)="Foundations of Farm Policy".—University of Nebraska Press


Appendix


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Source: Secretaria da Agricultura do Paraná.