

# CEPAL Review

*Director*

RAUL PREBISCH

*Technical Editor*

ADOLFO GURRIERI



UNITED NATIONS  
ECONOMIC COMMISSION FOR LATIN AMERICA  
SANTIAGO, CHILE / AUGUST 1979

## CONTENTS

The future of the international railways of South America. A historical approach Robert T. Brown	7
The basic needs strategy as an option. Its possibilities in the Latin American context Jorge Graciarena	39
The process of modernization in Latin American agriculture. Gerson Gomes and Antonio Pérez	55
Plans versus planning in Latin American experience Carlos A. de Mattos	75
The Brazilian economy: option for the eighties Pedro Sampaio Malán	91
Contemporary protectionism and the exports of developing countries Gary P. Sampson	103
Economic Policy: Science or Ideology? (Part Two) Carlos Lessa	119
Some CEPAL publications	145

# The process of modernization in Latin American agriculture

*Gerson Gomes and Antonio Pérez\**

Incontestably, the picture presented by Latin American agriculture is an ambivalent one. Although in recent decades it has shown that it is not a traditional backward sector, and has been sufficiently transformed and invigorated to meet effective demand successfully, it has not been able to achieve the levels of output required to help to solve the food, employment, income and other problems which persist both in the countryside and in the cities.

The explanation for this inadequate performance lies not in a shortage of material, technical or human resources, but in the very nature of the general functioning of agriculture, which takes the form of the expansion of the modern subsector and the decline of the traditional subsector. These processes are consistent with the comprehensive transformation of the region's economy in recent years, with its forms of social organization and its international linkages. Nevertheless, the development of these processes will not permit a solution to the problems mentioned above, since they share the tendency of the system as a whole towards concentration and exclusivity.

It is therefore necessary to carry out deliberate action for the proper channelling of resources and the remedying of the worst socio-economic imbalances, in order to ensure that the benefits of technical progress also reach the entire rural population.

\*FAO staff members. This article, initially prepared in April 1977, has enjoyed the benefit of valuable comments and suggestions made by colleagues in FAO and CEPAL, and by other Latin American agricultural specialists, especially Danilo Astori and Jaime Crispi—who co-operated in revising the article at the end of 1977—and Jacobo Schatan. The views expressed do not necessarily reflect those of FAO.

## Introduction

In the period since the end of the war—a period in which the trends of economic change which had been emerging since the 1930s have taken clearer shape in some of the countries of the region—the problems of Latin American agriculture have been the subject of a variety of attempts at interpretation.

Notwithstanding their obvious conceptual differences, most of these attempts, which were based on neo-classical and structuralist conceptions, asserted that the under-development of agricultural capitalism and, in their more extreme versions, the pre-capitalist nature of the dominant systems of production, played a decisive role in shaping the socio-economic problems of agriculture and the inability of this sector to fulfil the tasks supposedly falling to it in the development process.

The validity of these approaches is manifestly debatable when they are contrasted with present circumstances in agriculture in the region. In recent decades there have been substantial transformations in Latin American agriculture such as, for example, the increasing use of technological inputs and modern equipment, the spread of new, frankly mercantile forms of management, the rise in the number and importance of wage earners among the agricultural work force, the widespread monetization of economic relations, and the expansion and diversification of marketed output. All this indicates the presence of a process of capitalist expansion, albeit of varying intensity, in almost all the countries of the region. Consequently, it is difficult to continue to describe their agriculture as predominantly pre-capitalist or backward, though this does not mean ignoring the persistence of traditional structures and relations of production in certain subsectors, activities or regions.

Nevertheless, the socio-economic problems which have historically dominated the rural scene have persisted or worsened, promoting the studies mentioned above. Underemployment remains very high in the agricultural work force, and even appears to have increased in some countries, despite substantial migration to the urban areas. The dominant

patterns of land and water use continue to be clearly inappropriate, both as regards the efficient use of these factors and the preservation of productive potential. The income level and living conditions of the vast majority of the rural population have remained extremely low as a result of the extreme concentration in appropriation of the income from the sector. The number of people affected by rural poverty —“rediscovered” in the present decade by some thinkers associated with the neo-classical school— would appear to have increased, and now makes up a substantial proportion of the population. The problems of malnutrition have not been solved, despite the sustained growth in agricultural output and the relatively satisfactory nutritional levels achieved by many countries.

Leaving aside the shortcomings linked with the use of aggregate data at the regional and even country level, this group of characteristics would appear to suggest that the interpretations proposed by the thinkers mentioned above—which have largely taken the form of the notions of “lack of flexibility of agricultural supply”, “distortions in the system of economic stimuli”, “inadequate demand in agriculture” and “structural distortions in the agricultural sector”— though possibly useful for the identification of specific problems, are inadequate as an all-embracing explanation of the pattern of growth in agriculture in the region.

This is not to deny the existence of many of the problems referred to by such thinkers. For example, growth in output and domestic consumption of agricultural products has been clearly insufficient, in comparison both with the potential implicit in the available resources and, above all, with the needs of broad groups of the population. However, are these problems really consequences of under-developed capitalism in agriculture or, on the contrary, is it precisely this under-development, with its particular features in the Latin American case, which has contributed to their persistence? Have insufficient output and demand for food, and the social consequences linked to the patterns of use and control of basic resources, actually represented “problems”, “obstacles” or “distortions” within the logic of the specific functioning of agriculture and the economic

system as a whole or—more important still—to what extent are the present economic and socio-political structures compatible with the task of overcoming these problems and shortcomings?

It is clear that these questions are not relevant within the theoretical systems and interpretations mentioned above. Hence, in order to grasp the actual current state of agriculture in the region, it is necessary to overcome the methodological limitations of these systems.<sup>1</sup> This means redirecting the analytical effort in two directions: working out the logic of the overall process which gives consistency and rationality to the various partial phenomena observed, and establishing the fundamental trends which cause these phenomena, in the specific historical circumstances of the countries of Latin America. It is against this background that an attempt has been made, in the reflections which follow, to contribute to the discussion of the problems and characteristics of Latin American agriculture. Three central hypotheses guide this analysis. Firstly, it does not seem, as has repeatedly been asserted, that the apparently contradictory features of this evolution—for example, the penetration of technical progress versus the deterioration in the living conditions of the rural population; the expansion of production while nutritional deficiencies persist; the availability of new productive resources while the employment capacity in agriculture suffers a relative decline, and so on—are a result of the persistence of “traditional” forms of production: on the contrary they seem to be a consequence and manifestation of their transformation. Secondly, this transformation would appear to be occurring in the context of a single specific historical pro-

<sup>1</sup>The structuralist formulations have produced a considerable step forward in this field, by rejecting the automatic and universal view of the development process implicit in neo-classical thinking and attempting to incorporate Latin American social reality in their categories of analysis. However, this effort towards analytical integration of the historical dimension has only been partial, and development has continued to be wrongly conceived as an objective in itself, independent of the concrete forms of social organization and the specific interests of social classes.

cess of "modernization" of agriculture. The concept of modernization is used here in the broad sense, and covers the entire range of transformations in socio-economic structures and relationships in agriculture, which tend to enhance the capitalist nature of the agricultural production system.<sup>2</sup> Accordingly, the characterization of this process is the essence of the analytical effort to identify the factors which determine the evolution of agriculture in the region. Thirdly, agricultural modernization would seem to mean nothing other than bringing the functions of agriculture into line, under new arrangements, with the process of capital accumulation at the national level. The analysis of these functions—linked to the crucial problems of the formation of a labour surplus and the reproduction of the labour force—is of fundamental importance in explaining the nature of the relations between agriculture and the rest of the economic system and understanding the structural adjustments and transformations under way within the agricultural sector itself.

Of the various limitations of the present study, two should be mentioned. The first is related to the absence of explicit description of certain sociopolitical aspects, consideration of which would be essential for better under-

standing of the facts analysed. The level of generalization at which the analysis had to be made partly explains the absence of greater references in this regard; but it is obvious that understanding of the process of modernization presupposes the incorporation and systematizing of the class relationships and alliances which give meaning to the evolution of the historical reality analysed.

The second basic limitation is related to the fact that the diversity of situations in Latin America and the methodological approach used restrict the scope of a "regional" analysis of modernization. In order to outline the fundamental features of the process under way in Latin American agriculture, it has been necessary to identify elements common to the many countries where the expansion of modern agriculture has been intensified only more recently. As a result, the analysis has been carried out at a high level of abstraction, and its results do not reflect the particular characteristics of individual countries. For all these reasons, these notes represent merely an effort towards systematizing some general hypotheses for research on the structural tendencies of agriculture in the region. The main method of gaining further knowledge of the subject continues to be the study of specific countries.

## I Persistence of socio-economic problems related to agriculture

As a result of the process of urbanization and industrialization experienced by the region in the post-war period, the role of agriculture in the Latin American economy has declined considerably. This can be clearly seen in the sphere of employment: even though it is still the sector employing the largest proportion of the work force, the relative—and in some cases

absolute—reduction in the agricultural population and employment has meant that since as far back as the 1960s agriculture has occupied a secondary place in absorbing the increase in employment, well behind trade and other non-basic services. The strength of this process can better be gauged from the fact that between 1950 and 1975 the agricultural population dropped in relative terms from 54% to 38% of the total population, while during the same period about 40 million peasants—almost half the total natural increase in the agricultural population—migrated to urban areas. Moreover, although in relative terms they represent a declining proportion of the

<sup>2</sup>Although there are differences of degree in the various countries, the existence and development of capitalist relationships is not a new phenomenon in Latin American agriculture. The point to be emphasized here is the accentuation, in recent decades, of the trend for such relationships to become dominant in the economic and social dynamics of agriculture as a whole.

urban population, migrants from rural areas have substantially increased, from less than 1 million people per year at the beginning of the 1950s to more than 2 million in recent years. Although the period of major migratory pressure would already appear to have reached its peak, there will be no reversal in this trend until the agricultural population has dropped in absolute terms.

This relative drop in the importance of agriculture within the economy may also be observed in other aspects, such as its contribution to the formation of the gross product—down from 20% to 13%—and total exports, where its share dropped from 62% to 40% during the period referred to above.<sup>3</sup>

For some thinkers, who seek to explain Latin American realities in the light of the experience of the developed capitalist countries, such processes should constitute a clear indicator of development. If the evolution of Latin American agriculture since the post-war period is examined, however, a notable feature is the persistence of some characteristics, both in the internal dynamics of the sector and its linkages with the economic system as a whole, which are clearly at odds with the most common acceptance of development.

In the first place, trends in agriculture have clearly been in the direction of concentration, and have excluded a substantial part of the rural population from their benefits.

The chronically makeshift living conditions still suffered by the rural masses—who in Latin America fundamentally depend on agriculture—represent the most notable manifestation of this problem. Without entering into details, which are provided by many studies and monographs published in the past few years,<sup>4</sup> it is worth mentioning that the data relating to agricultural income distribution and population growth suggest that rural poverty increased between 1950 and 1975 despite a substantial average increase in the per capita

sectoral product of about 60% over the same period.

Whatever its historical tendencies might have been, the “rediscovery” of poverty in the present decade—normally the result of not unfounded fears that poverty restricts the effectiveness of population control campaigns and exacerbates social disquiet which threatens the dominant socio-political systems—had the virtue of giving rise to many attempts to quantify the problem. Thus, World Bank estimates for 1969 indicate that, according to Bank criteria, 38% of the rural population in Latin America, or about 45 million people, were living in poverty.<sup>5</sup>

More recent studies by CEPAL, which use more accurate criteria and draw on more specific empirical evidence—even though it is less reliable for rural than for urban areas—reach the considerably more pessimistic conclusion that in 1970, 68 million country dwellers were living in poverty. This was equivalent to 62% of the total rural population, and represented a much larger proportion than the corresponding urban figure of 26%. This is due not to the fact that income distribution is much more concentrated in the countryside than in the towns, but to the fact that the average income of urban dwellers is between three and four times higher than that of country dwellers. Of the nine countries studied in detail, Honduras, Brazil and Peru would seem to be in the most serious situation, with between two thirds and three quarters of the rural population below the poverty line. Colombia and Mexico would appear to be in an intermediate situation, with about half the rural dwellers in such circumstances, while the problem would seem to be less pronounced in Argentina and Uruguay, where the proportion was 20%.<sup>6</sup>

<sup>5</sup>*Rural Development*, Sector Policy Paper (Washington, D.C., World Bank, February 1975). The Bank describes as living in “relative poverty” all persons in receipt of an income less than a third of the national average.

<sup>6</sup>See O. Altimir, *La dimensión de la pobreza en América Latina*, Cuadernos de la CEPAL, N.º 27 (Santiago, Chile, CEPAL, 1978). In this study the poverty line was defined for each country and differentiated as between urban and rural areas on the basis of a detailed quantification of the minimum income required by households to meet minimum needs for food and other

<sup>3</sup>Estimates by the CEPAL/FAO Joint Agriculture Division, 1977.

<sup>4</sup>See, for example, the CIDA studies on Chile, Ecuador, Mexico, Peru, etc.; the GAFICA study on Central America; the ILO study, *Meeting Basic Needs* (Geneva, 1977); and many national studies.

A fundamental component in the living conditions of the population is the satisfaction of their food needs. The persistence of notable shortcomings in this regard confirms that the predominant style of development in the region tends towards exclusion in this case clearly going beyond the agricultural and rural sphere. Meeting these needs is basically linked with the possibility of directly producing food or purchasing it on the market, and the ability to purchase food is determined by the level and distribution of income in the various sectors of the population.

The measurement of malnutrition still comes up against various conceptual and practical problems, which have often led to controversy. The Fourth World Food Survey carried out by FAO around 1973 records the existence in Latin America of 46 million people—2 million more than in 1970—who are obliged to subsist with insufficient food; this represents about 15% of the total population of the region.<sup>7</sup> This estimate is an absolute minimum, since it includes only persons whose calorie consumption falls below a "critical limit" which strictly measures the energy requirements for passive human survival, in other words without physical activity of any kind. For Latin America the limit of malnutrition would seem to be about 1,540 calories per person per day. Compare this figure with the 3,350 calories consumed on average by the inhabitants of developed countries, and with the previous estimate of about 2,400 calories a day as the average minimum requirements for maintaining an active life in Latin America.<sup>8</sup>

---

basic consumption, which in general was estimated to require expenditure approximately similar to that on food. In this way, the absolute poverty line varies according to the country, with an average of US\$ 133 at 1970 prices for rural areas in Latin America. At the aggregate level for Latin America, CEPAL estimates on the magnitude of poverty are still somewhat below those of the ILO study for 1972 referred to above.

<sup>7</sup> *Fourth World Food Survey* (Rome, FAO, 1977), table II.2.1.

<sup>8</sup> The recent holding of a very comprehensive food survey in Brazil makes it possible to give examples of these differences. Using the first criterion, sufferers from malnutrition totalled 13.5 million in 1972-1974 (13% of the total population). On the other hand, if the limit for an

This has occurred even though the average per capita availability of food is relatively satisfactory in Latin America—2,540 calories a day in 1972-1974—and has tended to increase, though slowly, from 1961-1963 when the figure was 2,400 calories. Nevertheless, it should be noted that this small increase of 6% in 11 years was registered in a period which roughly coincides with the time of greatest growth in production in the region since the post-war period, when average income per capita grew by about 41%. This indicates that the greater availability of food has largely been of benefit to the sectors with medium and high incomes, and not to the groups which suffer most from problems of malnutrition. It also seems to confirm the hypothesis that income distribution has tended to become concentrated, since only in this way could one explain the very low (0.15) income-calorie consumption elasticity implicit in these figures.

The problems mentioned above are not unrelated to the persistence of high levels of underemployment which, expressed in terms of unemployment, affects more than a fifth or even a quarter of the available work force in many countries, even taking into account the seasonal nature of agricultural activities. This labour surplus in agriculture does not seem to have worsened markedly in recent years, largely because it has shifted geographically towards the urban centres and their surrounding areas. As will be seen below, both surpluses play an essential role in the operation of the system of production, both at the general and at the sectoral level.

However, in addition to this unemployment—which is less open and tends rather to appear on a seasonal basis—the work force is subject to working conditions which are difficult to reconcile with improvement of their living conditions and their capacity to increase their quantitative and qualitative contribution

---

active life is fixed, still conservatively, at 2,250 calories (since according to FAO/WHO 2,390 would be required on average in Brazil), nutritional problems would affect 48% and 33% of the population, respectively, in the urban and rural areas of the south of the country—which enjoys the best conditions—and 75% and 63% respectively in the north-east (*ibid.*, table II.2.3 and appendices C and M).

to the process of production. Apart from the fact that a growing proportion of agricultural work is obtained from the landless labourers or smallholders who have to work as part of the proletariat for part of the year, the relative importance of workers living with their families on the farms where they work has substantially declined. This is linked with the mechanization of many agricultural operations—sowing, control of pests and weeds, and so on—which has reduced needs for permanent staff, and the decline in some pre-capitalist forms of tenure—such as leasing, tenant farming, sharecropping, *huasipungo* and so on—which have been replaced by other forms where seasonal wage-paid work and even itinerant work, with much greater mobility, tend to predominate. Aside from its social and ethical implications, all this implies a notable failure to exploit the potential of the available labour force, and even a tendency towards its destruction.

The often predatory and far from creative nature of the agricultural production system appears equally strongly in relation to natural resources. From the macro-social viewpoint, natural resources have often been used in a highly irrational way—in the past normally attributed to the polarity between large estates and small holdings—involving a mixture of socio-economic, technical and ecological elements.

In many countries there are serious distortions in the use of agricultural land in relation to its potential capacity—for example, fertile valleys and/or plains are underpopulated and underused for livestock raising or extensive crops, while intensive agriculture for domestic consumption predominates on steep, heavily populated terrain—

and nomadic agriculture has expanded. Elsewhere the increase in the area of land devoted to agriculture has been accompanied by the uncontrolled destruction of plant cover. In all these cases of overuse, the result has been increased erosion and deterioration of natural resources, with the consequent adverse impact on the ecology and on the possibility of future use of the natural resources.<sup>9</sup>

The expansion of Latin American agriculture has occurred within the context of technological patterns and trade and financial relations which tend to link it closely to interests outside the region in relations which are acquiring strong traits of dependence. Without denying the importance of technical progress in agriculture, there has been indiscriminate adoption of technological forms from advanced countries with resource endowments very different from that which prevails in Latin America. In addition to heavy use of energy per unit of food energy produced, these forms are based on the concentrated use by a small number of enterprises of the national capacity for investment and importing.

This and other evidence would appear to suggest that the changes in technology and in company organization recorded in recent years have not fundamentally altered the socio-economic conditions which determine the pattern of use of natural and technological resources and the possibilities of making productive use of the labour force. Rather, new elements have been added which tend to aggravate the spoliation and waste of such resources, as well as the contradiction between the existence of much land to which access is available to only a few and the concentration of most peasants on tiny farms covering a small proportion of the available agricultural land.

## II

### Implausibility of the dominant explanations

The persistence of the problems mentioned has been attributed to various factors. The explanations which predominated until a few years ago, and which are still very widespread, identified as central elements the rigidity in the growth of output and the technological

backwardness of agriculture. In turn this “inflexibility” in domestic supply is said to

<sup>9</sup>See *The State of Food and Agriculture 1977* (Rome, FAO, 1978), chap. 3: “The state of natural resources and the human environment for food and agriculture”.



originate in the absence or shortage of economic stimuli to encourage entrepreneurs to effect the investment required for agricultural modernization.<sup>10</sup> Others hold, in contrast, that the principal cause of this rigidity has been the traditional or pre-capitalist nature of the agricultural structures.<sup>11</sup> In both approaches, the shortcomings in the processes of generating and spreading new technical knowledge almost always play an important role. Somewhat more recently it has been suggested that such problems derive rather from the slow expansion in domestic and external demand for agricultural products;<sup>12</sup> growth in the rural component of domestic demand would seem to be limited principally by obstacles hindering the rural masses from gaining access to natural resources and the concentrated income distribution inherent in the above-mentioned structures of ownership and tenure of land.

Available evidence does not confirm the validity of these explanations, at least within the rationale which determines the operation of the economic and social systems of most of the countries of the region. On the contrary, the principal characteristic of the period analysed is not stagnation in agriculture, but the appreciable economic expansion experienced by a part of the sector, although this was accompanied by a worsening of the problems of employment, income distribution and living conditions of a substantial proportion of the rural population.

It does not appear that there have been rigidities inherent in agricultural production which have led to persistent and widespread

imbalances between supply and effective demand for products from the sector. In fact, from a long-term viewpoint, agricultural production as a whole has expanded at a reasonable rate—3.2% a year between 1950 and 1977—and now stands at almost two and a half times the level of 1950. Thus, in most cases it would seem to have kept up with growth in domestic demand effectively generated by the economic system without creating tensions in prices or affecting the balance of external trade in products from the sector, although naturally this does not mean that the real food needs of the lowest-income groups have been met.

Moreover, output has shown marked flexibility for some specific items, generally those linked to certain types of urban domestic demand or destined for export.<sup>13</sup> In the latter, the temporary vigour of demand has in many cases, and increasingly in recent years, been strengthened by a number of institutional factors, such as credit facilities and tax exemptions, and by the closer link between the international interests associated with external marketing and/or agro-industries and the enterprises in the primary system of production.

Agricultural imports, for their part, have remained within reasonable limits, although it must be recognized that they have increased at relatively high rates in the last five years in some countries. However, aside from the fact that a substantial proportion of such imports are of wheat, meat and dairy products—production of which is subject to various types of restrictions, including ecological ones, in many countries—a substantial part of the increases have originated in climatic problems which affected the harvest in various countries in different years, and in other temporary factors which do not seem to indicate the type of imbalance mentioned above.<sup>14</sup> In this regard, it

<sup>10</sup>See, for example, T. Schultz, *La crisis económica de la agricultura* (Madrid, Alianza, 1969) (especially the appendix on "La teoría del crecimiento económico y la rentabilidad de la agricultura en América Latina"); R. H. Brannon, *The Agricultural development of Uruguay* (New York, Praeger, 1967); and G. E. Schuh, *The Agricultural Development of Brazil* (New York, Praeger, 1970).

<sup>11</sup>CEPAL, *Economic Development, Planning and International Co-operation* (United Nations publication, Sales N.º 61.II.G.6); and CEPAL, *Problemas y perspectivas de la agricultura latinoamericana* (Buenos Aires, Solar/Hachette, 1965).

<sup>12</sup>"Present conditions and future prospects for food and agriculture in Latin America" (FAO document LARC/70/8), and "Situation and perspectives of agriculture in Latin America" (FAO document LARC/72/4).

<sup>13</sup>For example, in the case of the domestic market: wheat, poultry, pigs and vegetables in Mexico; rice, potatoes and cotton in Colombia; and rice, sugar, poultry meat, pigs, and milk in Venezuela. For exports: soya, sugar and cotton in Brazil; cotton and soya beans in Paraguay; fruit, vegetables and livestock in Mexico; sugar, flowers, etc., in Colombia.

<sup>14</sup>This argument does not exclude the possibility that, in specific cases, situations different from those mentioned here may have arisen.

is also necessary to mention that some increases in imports do not necessarily indicate rigidities in domestic production, since with the increasing involvement of the region in international markets the rationality of the system may require that productive resources should be channelled towards expanding exports from agriculture or other sectors.

In short, the fact that output has not increased much more than the population does not necessarily imply that agricultural supply is inflexible. In the same way, the fact that part of these increases may basically be attributed to growth in certain items, and that other mass-consumption products have shown less vigour, growing in some cases by less than the population, does not in itself mean that there is a "production problem". In a market economy, insufficiency of output is measured in relation to effective demand; and this, as has been said, appears to have been met in the Latin American case.

Nor does technological stagnation appear to have been a characteristic feature of the period under consideration. Although Latin American agriculture continues to be predominantly backward in this regard, technological change has rapidly expanded in the production area, reflecting its increasing capitalization. Thus, between 1948-1952 and 1976, consumption of inorganic fertilizers rose 19 times, the use of tractors almost 7 times, and the irrigated area doubled,<sup>15</sup> while the working population and the area under crops increased by only 55% and 85% respectively. Concentration is very high, however, since Brazil, Mexico and Argentina account for approximately 70% of these increases,<sup>16</sup> and more importantly, the proportion of farms in these and other countries which have incorporated the new technologies is relatively

small. Both characteristics—acceleration and concentration—represent central aspects of the technological expansion recorded in recent years.

Expansion of the areas farmed continues to be a decisive factor in agricultural output, though its importance is decreasing. In the crop farming subsector the rises in yields would account for only a third of the greater output during the period mentioned, as opposed to the increase in the area harvested, but this proportion would be halved if it were related—as would be more correct for crops—to the total arable land. The situation varies considerably from one country to another. In Brazil, for example, the abundance of land facilitated a growth strategy essentially based on increases in area, which accounts for somewhat more than 80% of the greater output obtained on the land harvested. In the remaining countries of the region the size of the yields is increasing substantially—40% in 1950-1976—and is tending to accelerate over time, also at a notable rate: approximately 50% in 1960-1970 and 70% in 1970-1976.<sup>17</sup>

Labour productivity would also appear to have increased at an appreciable rate, as is suggested by the figures for per capita GDP during the period, which seems to have increased at an annual average rate of over 2%.

Finally, in the sphere of land tenure one may also observe dynamic elements which are of importance in a proper assessment of progress in agriculture in the region. Although the structures of land tenure in Latin American agriculture continue to have a substantial "traditional" element, there is evidence that substantial shifts have already occurred, principally taking the form of the development of the subsector containing modern commercial agricultural enterprises. This is not a new fact, particularly in export-related activities, but the considerable expansion of these enterprises in recent decades has acquired a nature of its own, hand in hand with the intensification of agricultural output, the rise in the level of skills within national agriculture and the extension of their activities to the domestic

<sup>15</sup>Even since 1961-1965, when the basic levels of comparison were no longer low, the use of fertilizers and tractors has continued to increase at cumulative rates of 12% and 5% a year respectively.

<sup>16</sup>However, similar phenomena occur in many other countries. In Colombia, for example, a recent study states that 60% to 70% of the "tractorizable" area is already effectively mechanized, and that the use of chemical inputs in agriculture increased at an average rate of 9.8% a year between 1960 and 1971. See S. Kalmanovitz, *El desarrollo de la agricultura en Colombia* (Bogotá, La Carreta, 1978).

<sup>17</sup>*The State of Food and Agriculture 1977*, pp. 2-28.

market, increasingly unified at the national level.

This is not to deny that, except in the countries which have carried out more consistent agrarian reform policies, the concentration of ownership in agriculture continues to have a strong influence on the socio-economic evolution of the sector. This is particularly true where agriculture is the dominant activity in the economy, and where this dominance is accompanied by notable technological backwardness which makes land the main factor in the technical process of production. Furthermore, almost all the countries are apparently experiencing a decline in the traditional tenure relationships—leasing, share-cropping and so on—which are being replaced by renting and other more strictly capitalist forms.

In short, the emphasis here is on three central aspects related to the problem under discussion: (i) there is no indication that the persistence of traditional features has hindered the technological and productive expansion of the agricultural sector; (ii) the land tenure structure, even in the countries which have adopted no agrarian reform measures, has not remained static, but in general has shown significant changes; and (iii) it is precisely in the countries where these changes were brought about with greatest intensity and outside the context of a reform process that the socio-economic problems referred to in the section above appear to have worsened.

Nor can growth in demand, at least as far as its domestic component is concerned, be regarded as an obstacle to sectoral expansion. Theoretically, domestic demand for agricultural products might have reached rather higher levels and growth rates, since there are obviously unmet needs, as well as revenue which society might have used to meet them, for example by shifting it from luxury consumption. However, this subject cannot be analysed without considering the conditions which determine the performance of this variable in actual Latin American economic circumstances. In fact, the level and composition of demand reflect the patterns of distribution of income inherent in the prevailing systems of production and in the economic

rationale which governs the operation of the economic system as a whole.

At the same time, it should be remembered that the composition of domestic demand for agricultural products, which makes up more than four fifths of total demand, has undergone significant changes in the period under review. The strong expansion in the market section of demand, attributable to the high growth rates in the urban population and the rise in income of the non-agricultural sector, is perhaps the clearest reflection of these changes, and undoubtedly accounts for the greater part of the relative dynamism of agricultural domestic demand as a whole in this period. Although the concentration of urban income distribution tends to mean that the figures for average growth in total demand are of only relative significance, the rise in the ratio of market demand to total demand alone has profound implications for the structure and evolution of the whole agricultural sector.

The situation is different as regards external demand. The lower relative growth in agricultural exports and the continuous decline in Latin America's share in world trade, which has characterized the performance of the agricultural external sector, both in global terms and with regard to specific products of traditional importance within the region's export structure, in fact reflect limitations on the potential market. To judge by available evidence, this is due much more to the protectionist policies adopted by the importing countries, price and market manipulation by transnational corporations and other economic and institutional factors linked to the structure of world trade, than to shortfalls in regional production.<sup>18</sup> With the principal exception of the last four or five years, the real value of regional exports has suffered a sharp, continuous and increasing relative decline, affecting the majority of the main items. This deterioration in the terms of trade is one more of the characteristics of Latin America's linkages

<sup>18</sup>Concentration on a very small number of products and markets, which was another of the salient features of the structure of Latin American exports, is equally a reflection of the institutional factors which influence their trade relations with the world economy.

with the central nuclei of the world economy.

In this case it is possible to speak of a real brake imposed by external demand on the expansion of the agricultural economy. Nevertheless, because of its proportionately low share in the total number for agricultural products, the lower relative dynamism of exports is an insufficient explanation in itself for the socio-economic problems which have typified the evolution of regional agriculture.

In short, the specific aspects on which the

theories examined have focused, although they may describe real phenomena or situations, do not permit a proper appraisal of the problems of agricultural development in the region. This suggests that it is necessary to reorient the analytical effort towards identification of the fundamental elements and processes which, behind the outward appearance of the phenomena, determine their nature and their interrelations and thus govern the evolution of agriculture as a whole.<sup>19</sup>

### III

## The overall framework of the process of agricultural modernization

The problems and trends enumerated above are not independent of one another, and accordingly must be explained together. Rather than "distortions" or "obstacles", they represent the concrete expression of the features and forms of the process of transformation of the traditional basis of the system of agricultural production in Latin America.

This process tends to deepen the differentiation of the economic and social structures of agriculture, and to strengthen their integration within the operation and evolution of the economy as a whole. Hence, it is part, and corresponds to a phase, of the general expansion of capitalism in the region. As a result, it can only be understood by reference to the trends in the world capitalist economy and the specific features of Latin American industrialization, on the one hand, and to the influences arising from the characteristics of the agricultural structures as they have been historically shaped, on the other.

It is outside the scope of this study to go deeply into these subjects. However, a list of those aspects and general relations which are essential for an understanding of the nature of agricultural modernization and its driving forces are given below.

#### A. General trends

The process of modernization of agriculture

can be viewed through a set of phenomena which occur at three interdependent levels.

#### 1. *Relations between the Latin American economies and the world capitalist system*

At this level, the dominant trend has been the internationalization of the economies of the countries of the region, through their growing integration in the world circuit of capital accumulation. This has tended to alter their functions within the international division of labour and to strengthen their dependent character under new arrangements. Although the inclusion of Latin America in this circuit occurred long ago, the changes observed in the structure of central capitalism—tending towards the centralization and unification of the accumulation process at the world level under the auspices of the transnational corporations—have had an effect on the intensity and forms of the process of modernization of agriculture, by various means.

The expansion of international trade, originally connected with the vigour and modernization impulse of agricultural exporting activity, has markedly accelerated in recent decades, together with the increasing

<sup>19</sup>For a detailed analysis of the principal schools of thought on agricultural development, see D. Astori, *El proceso de desarrollo agrícola en América Latina. Algunas interpretaciones* (Rome, FAO, 1979).

“management” and control of markets on the basis of the accumulation needs of the central economies. Although for Latin America as a whole this has been accompanied by a relative drop in its share in international trade in agricultural products, various Latin American countries have sharply increased their agricultural exports as a by-product of the “transnationalization” of their external trade.<sup>20</sup>

Aside from the fact that a substantial part of the traditional export revenues generated by this expansion has been transferred to the central economies by various means, it is clear that the vigour of the external sector has had an influence on the size of the markets for some specific items, though subject to the restrictions arising from “management” of the markets.

Further to the above, the action of the transnational corporations, both directly as producers and, above all, as organizers of production through control of the marketing and/or processing of agricultural products, has profoundly altered the socio-economic conditions of production in huge areas in different

Latin American countries. This influence has of course increased in the case of export products, taking advantage of the lower wages prevailing in the region. However, the same is also occurring in the branches of production oriented towards consumption by the urban middle-income and high-income sectors, where the previous advantages are compounded by the benefits of frequently monopolistic exploitation of the domestic market.<sup>21</sup>

Furthermore, this unification and centralization of the world economy has led to growing concentration of the processes of creation of certain forms of technology—with the consequent tendency towards standardization—and a market acceleration in their transfer and dissemination. The latter has largely been a result of the activities of the transnational corporations, both those operating in the production, marketing and processing of agricultural products and those linked to the production and marketing of capital goods and modern agricultural inputs, whose viable use has been facilitated by the advances of the so-called Green Revolution.<sup>22</sup> The availability of

<sup>20</sup>In some countries with substantial agricultural resources which have adopted policies of opening up to foreign capital, the vigour of the economic model has meant that the external sector has recovered its strategic importance and that rapid growth in agricultural exports has proved necessary. Available evidence indicates, however, that this expansion has been linked with a substantial increase in external debt and remittances abroad.

<sup>21</sup>In addition to consolidating their control over production and/or external marketing of so-called traditional products—principally cotton, sugar, bananas, coffee and tobacco—the transnational corporations, during the period under review, extended and diversified their activities to other branches of agriculture and agro-industry, such as, for example, meat production, preparation, preservation and processing, basically for export, in Brazil and Central America; the production and marketing of fruit and vegetables for export in Mexico and Central America; the production and marketing of poultry and fodder in Colombia, Brazil and México; the production and domestic and external marketing of products destined to feed animals, particularly soya and sorghum, in Brazil, Argentina, Colombia, Guatemala, El Salvador and Peru (up to 1973); the processing and marketing of milk in Mexico, Brazil and Panama, and so on. See N. Bellino, “La penetración en la agricultura latinoamericana por las empresas transnacionales”, preliminary draft, unpublished, Rome, 1978. Concerning the general aspects related to the process of expansion of the transnational corporations in the agricul-

tural and agro-industrial sector, see, for example, G. Arroyo, *Agro-industrial Transnational Firms, Agrarian Reform and Rural Development* (Paris, University of Paris, 1978); S. George, *How the Other Half Dies* (Harmondsworth, Middx., Penguin Books); A. Domike and G. Rodríguez, *Agroindustria en México* (Mexico, CIDE, 1976); E. Feder, “La nueva penetración en la agricultura de los países subdesarrollados por los países industriales y sus empresas multinacionales”, *El Trimestre Económico*, N.º 169 (January-March 1976); *Marketing and Distribution of Tobacco* (United Nations publication, Sales N.º E.78.II.D.14); F. Moore Lappé and J. Collins, *Food First. Beyond the Myth of Scarcity* (Boston, Houghton Mifflin, 1977); G. Garreau, *L'agrobusiness* (Paris, Calmann-Lévy, 1977); R. Quiroz Guardia, *Agricultural Development in Central America: Its Origins and Nature* (University of Wisconsin, Land Tenure Center, 1973); D. Slutsky, “La industria de la carne en Honduras”, *Estudios Sociales Centro-Americanos* (January-April 1979).

<sup>22</sup>As is pointed out by G. Edward Schuh in his article “The modernization of Brazilian agriculture”, the critical difference between varieties is the response to fertilizers, with the improved varieties tending to have a greater and more continuous reaction. Naturally, an important objective of the variety creation programmes that produced the new types of wheat and rice which became famous in the so-called Green Revolution was precisely to develop this response characteristic. He also states that if the new technology (improved variety) did not exist, the introduction of the input (fertilizer) would not be feasible, since its use would not be economic.

these new methods of production, which can easily be assimilated but which are not always appropriate for Latin American circumstances, and the establishment of flexible channels for the transfer and dissemination of technology, are of marked importance in the recent evolution of Latin American agriculture, as will be seen below.

## 2. *Relations between agriculture and the rest of the economy*

The central trend in these relations has been the sharp acceleration in the past 25 years of the process of urbanization and industrialization, which expresses in a global form the differentiation between the economic and social structures of society as a whole.

One of the principal consequences of the above is the restructuring of domestic demand for agricultural products, whose monetized component tends to grow rapidly. The most important consequences of this fact have been the expansion of channels of marketing and the intervention of urban traders—both facilitated by the development of the road network—and the generalization of the practice of buying and selling agricultural production on a commercial basis, which opened the way for the transformation of the structure of agricultural production. However, this phenomenon is not the same everywhere, since some of the characteristics of industrialization lead to highly concentrated distribution of the income generated, which in turn encourages higher growth in urban demand for agricultural products destined for consumption by the middle-income and high-income groups.

The development of industrial and commercial activities has also been reflected in a marked shift in the labour force towards the urban areas, a phenomenon which alters one of the fundamental pillars maintaining the existing structure in agriculture, as will be seen below. Both because of its dependence on external capital and technology, and because of the limitations of the composition of demand on which it bases its development, the process of industrialization has required a relative restriction of wage rates. This tendency, which has become accentuated in recent years and

in hand with the increase in migrations towards the urban and industrial economy, is one of the distinctive features of Latin American industrialization which has a direct influence on the vigour of agriculture.

## 3. *Relations between the various subsectors within agriculture*

Here the central phenomenon has been the tendency for the modern subsector to become dominant, as a reflection of the growing differentiation of the system of agricultural production.

This general tendency is linked to a group of changes in the socio-economic relationships of agriculture which are reflected, from the standpoint of circulation, in the growing monetization of the agricultural economy; in the subordination of all production units to the market, directly or indirectly; in the modernization of marketing (already referred to); in the tendency towards integration and unification of the national markets for agricultural products; etc.

The changes in the production sphere, which constitute the basis for the trend referred to, take the form of a process which simultaneously develops modern agriculture and breaks up traditional agriculture. The first part of this process is reflected in the formation of a group of strictly capitalist enterprises through which the use of capital goods and technological change spread in agriculture. And in turn, in direct proportion to the above, traditional agriculture declines, both because of the dismemberment or conversion of existing large estates, and because of the disintegration of the "peasant" economy linked to them.

In the case of Latin America this disintegration has not meant the disappearance of the peasant economy; on the contrary, in some countries it has tended to recreate this subsector with new linkages with modern agriculture.<sup>23</sup>

<sup>23</sup>Concerning the various approaches to and aspects of this process of transformation in agriculture, see, for example, Alain de Janvry, "The political economy of rural development in Latin America: an interpretation", *American Journal of Agricultural Economics* (August 1975);

### B. *The role of agriculture in capital accumulation*

The transition from traditional to modern agriculture does not represent a break in the historical evolution of capitalist relationships in the region. On the contrary, the structural transformations under way in agriculture are a reflection of the alignment of its system of production with the new conditions required for it to fulfil its functions within the process of accumulation. At present there are basically three such functions: (i) to create a labour surplus and free labour for the development of non-agricultural activities, principally in its most "modern" nuclei; (ii) to supply food at low cost for the development of such activities and nuclei; (iii) to supply food and raw materials at low cost to the central economies.

The relative importance of these functions has changed over time. At the beginning, the most important functions were the last and, to a much lesser extent, the first of the aspects referred to. They were put into effect under an organization of production based on the extensive exploitation of land, the concentration of land ownership and the institutional control of labour, the availability of which was essential to ensure that the system of production adopted was viable. These forms of the organization of production find their best-known expressions in the ranch and the *latifundio-minifundio* complex.<sup>24</sup> They formed a type of traditional

agriculture, though this is not to deny their clearly mercantile nature, which until recently was compatible with the requirements of the capital accumulation process. In fact, in addition to its micro-economic rationality, the monopolistic appropriation of land played a macro-social function that of generating the reserve of labour necessary for accumulation in agriculture, an activity which at that time was dominant in most of the countries of the region.<sup>25</sup> The traditional tenure relationships were, in that context, the necessary complement to the general scheme of accumulation. By tying the reserve of labour to the land, they guaranteed its retention and reproduction at extremely low cost from the point of view of the large traditional enterprise; furthermore, this permitted the appropriation of the surplus generated by the subsistence farms, principally through land rent, but also through extra-economic mechanisms. This system of control and exploitation of the labour force also reconciled the limited productivity inherent in traditional agriculture with the maintenance of relatively low prices in external and domestic markets, without affecting the profits of the agricultural enterprises or the developing marketing and agro-industrial activities. This was achieved by means of a restriction of the remuneration of the labour force, made easier by the concentration of private land ownership.

Despite its low productivity, both with regard to the land and in general to the labour force, this form of organization of agricultural production was sound even in the initial stages of the process of industrialization in the Latin American economies, precisely because of their high potential labour surplus.

The factors which led to the progressive transformation of traditional agriculture are the same as those which lie at the base of the spread of modernization: on the one hand, a change in prevailing conditions in the internal

Alain de Janvry and Carlos Garramón, "The dynamics of rural poverty in Latin America", *Journal of Peasant Studies* (July-September 1977); Francisco Oliveira, "La economía brasileña: Crítica de la razón dualista", *El Trimestre Económico*, N.º 158 (April-June 1973); Fernando Henrique Cardoso, "Las contradicciones del desarrollo asociado", *Desarrollo Económico*, N.º 23 (April-June 1974); David Barkings, "Desarrollo regional y reorganización campesina. La Chontalpa como reflejo del gran problema agrario mexicano", *Comercio Exterior*, vol. 27, N.º 12 (December 1977); Gustavo Esteva, "¿Y si los campesinos existen?", *Comercio Exterior*, vol. 28, N.º 6 (June 1978); C. Santos de Morais, *El modelo hondureño de desarrollo agrario* (Tegucigalpa, Ed. Proccara, 1975); and Kalmanovitz, *op. cit.*

<sup>24</sup>The availability of labour played a double role within the traditional system of production: it permitted the timely exploitation of the possibilities which arose in the market, and absorbed, at least in part, any reductions in the level of income of the farms associated with fluctuations in demand and in prices.

<sup>25</sup>It should not be forgotten that the so-called surplus of agricultural labour was generated within and as a part of the process of expansion in mercantile relations in the region, as is witnessed by the fact that, until about the end of the last century, the economies of the countries of the region were generally characterized by a labour shortage.

and external markets, the rise and spread of new technological forms, the expansion of the urban industrial economy, and so on; and on the other, the endogenous transformations which were taking place within agriculture itself, as a result of the progressive opening up of new, lower-productivity areas, the build-up of social tensions in the countryside, the crises in the market, and other factors which encouraged the differentiation and gradual specialization of some subsectors of the traditional system of production. Within the framework of the general tendencies of the economy as a whole, and the related changes in socio-political

structures, traditional extensive agriculture came into conflict with the new requirements of the accumulation process. The specific purpose of the expansion of the modern sector is to fulfil by other means —principally the intensification of production on more suitable land which has been or is being opened up for use—the same functions as those mentioned above.<sup>26</sup> Both because of its intrinsic characteristics and because of the inherited socio-economic framework, this expansion tends, as will be seen below, to produce serious imbalances within agriculture and in its relationships with the rest of the economy.

## IV

### The internal dynamics of the process of agricultural modernization

From the viewpoint of capital accumulation, the fundamental problems to be resolved through the expansion of the modern sector, as regards the functions of agriculture in that process, are basically the following:

(i) How is it possible to reduce the cost of reproduction of the labour force and guarantee the reproduction of the reserve of labour, for the purpose of regulating the level and variations of the wage rate?

(ii) How can the agricultural economic surplus be mobilized in a manner consistent with the needs of the accumulation process?

In the case of the Latin American countries at an advanced stage of agricultural modernization, the replies are to be found in the development of three basic trends linked with the process of expansion of modern agriculture and the decline of traditional agriculture: (i) the concentration of production and capital; (ii) the proletarianization of the peasant; (iii) the re-creation of the subsistence economy.

The principal features of this process are analysed below, on the basis of the relationships between the two types of agriculture.

#### *A. Characteristics of agricultural modernization*

Firstly, productive and technological expansion tends to occur on a relatively small number

of farms. In many cases these are old traditional units which are converted or broken up. They are generally of medium or large size and located on the best land, which has been or is being opened up for use. Moreover, these farms are to a large extent direct beneficiaries of public investment in infrastructure, and of economic incentives and official support services, such as credit resources, remunerative prices, relatively well protected markets and technical assistance. In this way the conditions are created for the concentrated introduction of new technologies and the consolidation of the nuclei of agricultural entrepreneurs who are most dynamic and have the political capacity to mobilize the support of the State apparatus.

This is clear from the experience of various countries. In Brazil, for example, only 2.2% of all farms studied possess tractors, whereas in São Paulo —the oldest nucleus of agricultural modernity— this figure rises to almost 14%. The most dynamic agricultural states in the

<sup>26</sup>The fact that this process of transition has occurred, and the way in which it has occurred, as well as the relationships of domination which it has itself generated, correspond to a specific system of class alliances, without reference to which it is difficult to explain the trend of agricultural development. Other possibilities would have meant profound structural changes in agriculture and in the economy as a whole.



southern region (São Paulo, Paraná and Rio Grande) have one-fifth of the total area farmed but four-fifths of the tractors in the country.<sup>27</sup> The use of fertilizers is in practice concentrated on export items, and in 1970, while national average consumption per hectare was only 29 kg, the figure was 73 kg in São Paulo. In addition, aside from the fact that the Government finances up to 80% of investment in specific production lines for export, the southern region in 1970 absorbed 65% of total credit granted.<sup>28</sup> All these figures would be still more revealing if information broken down by type of enterprise were available.

Secondly, the economic and physical return in the modern sector is in general markedly higher than that in traditional agriculture.<sup>29</sup> As a result, expansion of the former leads to a substantial rise in its share in income and in total production. Concerning this latter aspect, there is evidence that in various countries the rises in output recorded in recent years are fundamentally due to the contribution of this sector. This may be clearly noted, for example, in the case of Mexico, where less than 4% of the total number of enterprises, located largely in the irrigated land in the north and north-west, contributed 80% of the rise in agricultural output in the decade 1950-1960.<sup>30</sup> Furthermore, between 1940 and 1970 there was a considerable increase in the differences in level of development between these regions and the more backward agricultural zones of the country.<sup>31</sup>

In Brazil another national and regional analysis, this time giving detailed classification

of the products on the basis of their origin in modern or traditional agriculture, showed that, with the exception of the centre-west region (States of Goiás and Matto Grosso), output from modern agriculture grew at higher rates than traditional agriculture throughout the country.<sup>32</sup>

In a study carried out in Colombia relating to the modernization of cultivation of a specific crop of great importance for domestic consumption—rice—the same trends were noted. Following the introduction of new varieties appropriate only for modern irrigated agriculture, this subsector rapidly increased its output, with the result that the share of traditional agriculture—normally located in the uplands—fell from 50% of total output in 1966 to only 10% in 1974.<sup>33</sup>

The expansion of modern agriculture does not necessarily lead to the adoption of intensive production practices. This will depend on the entire range of factors available, as is illustrated by a comparison between Mexico and Brazil. In the former, the possibility of making use of the better land through the introduction of irrigation stimulated the development of a modern sector of the intensive type, linked, as is well known, to the Green Revolution. In Brazil, however, the abundance of land and the possibility of opening up new areas with high natural fertility permitted the coexistence of two variants of modernization: the intensive variant in the older areas, such as São Paulo, where the area under agriculture has practically become stable and the coefficient of use of available land is already fairly high, and the extensive variant, normally in new areas with high fertility (basically the centre-west region), which is based on considerable mechanization to replace labour, although labour is often essential in the initial accumu-

<sup>27</sup>*Censo agropecuario de 1970. Preliminary synopsis.*

<sup>28</sup>See R. Miller Paiva and others, *Brazil's Agricultural Sector* (São Paulo, 1973).

<sup>29</sup>This does not mean that expansion of the modern sector always brings with it a rise in physical return compared with the traditional sector. For example, in the case of the adoption of modern and extensive technologies based on motorization, this increase is marginal. Nevertheless, even in this case one may observe the phenomena of concentration of production—through expansion in area—and of income.

<sup>30</sup>S. Eckstein, *El marco macroeconómico del problema agrícola mexicano* (Washington, CIDA, 1965).

<sup>31</sup>See in this regard *Crecimiento agropecuario comparativo de las entidades federativas del país, 1940-70* (México, Secretaría de Recursos Hidráulicos).

<sup>32</sup>The biggest differences were found in São Paulo (5.1% and -0.5% respectively, between 1948-1950 and 1967-1969) and in the eastern region, with 4.2% and 2.1%. See G. F. Patrick, "Fontes de crescimento na agricultura brasileira: O sector de culturas" in C. Contador, ed., *Tecnología e desenvolvimento agrícola* (Rio de Janeiro, IPEA/INDES, 1975).

<sup>33</sup>See G. M. Scobie and R. Posada, "The impact of technical change in income distribution: the case of rice in Colombia", *American Journal of Agricultural Economics* (February 1978).

lation required to extend the area cultivated (clearing operations, and so on).<sup>34</sup>

Thirdly, in the domestic market, the rural-urban migrations and concentration of income characteristic of the Latin American economies have produced changes in the structures and growth rates of consumption of agricultural products. The domestic market grows almost exclusively in line with its monetized component, the rapid growth of which has basically been caused by the rise in income and the increase in the non-agricultural population. Moreover, an appreciable proportion of the rise in total agricultural demand has originated in consumption by the sectors with medium and high incomes, as would appear to be indicated by the fact that in various countries per capita consumption of staple foods has grown little, and less than total average food consumption.<sup>35</sup>

These facts are of considerable importance, since growth in the monetized component of demand basically encourages modern agriculture, which is best structured to supply it. Demand from rural areas tends to grow very little, while at the same time traditional agriculture must cope with increasing competition from the modern enterprises in supplying such demand.<sup>36</sup>

Moreover, it should be pointed out that as agricultural migration tends to become relatively less important in the expansion of the non-agricultural population,<sup>37</sup> the subsequent development of the "marketed" component of demand comes to depend increasingly on growth in non-agricultural income and its distribution.<sup>38</sup> If income

distribution is concentrated, the decline in the income elasticities of demand for food tends to reduce the rate of growth in urban consumption of agricultural products, which is the most dynamic element of total domestic demand, and the two factors—lower population growth and the drop in income elasticity—combine to reduce the growth rate in "marketed" demand.

Fourthly, modernization necessarily fits into a framework of political conditions which tends to guarantee the stability of institutions and eliminate obstacles to the conduct of flexible and smooth commercial operations. The large agricultural entrepreneurs enter into various types of alliance with the financial groups, the institutions which control the storage installations, the agro-industries, the main exporters and the centres which have the modern technologies, whether imported or of national origin. They also require a land market with a minimum of restrictions.

#### B. Mechanisms of the modernization process

The factors mentioned in the preceding paragraphs help to clarify the mechanisms of the process of expansion of modern agriculture and the simultaneous decline of traditional agriculture.

The faster the growth rate in modern production compared with the rate of growth in demand, the sooner will modern output tend to displace output from traditional agriculture, bearing in mind its greater profitability and financial capacity. This is particularly marked in the areas which have the best links with the major centres of consumption, where the existing infrastructure permits smoother and more rapid penetration of the markets by modern agriculture.

Furthermore, the greater use of capital goods and technological inputs and, frequently, the higher quality of the land it occupies, enables modern agriculture to use much less labour than traditional agriculture to achieve similar levels of output. In given

<sup>34</sup>In contrast to the traditional extensive model, the modern extensive model is not based on the under-utilization of land. It is extensive because growth occurs as a result of an increase in the land factor rather than in unit yield.

<sup>35</sup>Although part of this difference in growth may be attributed to changes in the structure of consumption related to the growing share of the urban population in the total.

<sup>36</sup>The importance of urban domestic demand as a factor in the process of agricultural modernization in Colombia is highlighted by S. Kalmanovitz, (*op. cit.*).

<sup>37</sup>A situation which worsens when the non-agricultural population exceeds the level of the agricultural population.

<sup>38</sup>Obviously, this is the more so when the rate of natural growth in the non-agricultural population falls,

as seems to be happening in the countries which urbanized earliest.

market conditions, the replacement of traditional output by modern output leads to a reduction in the level of agricultural employment—which is more intense the greater difference in productivity between the two sectors—and a growing concentration of output and agricultural capital.<sup>39</sup>

Subject to the structural conditions mentioned above, the two mechanisms act in a convergent manner in the sense that they recreate and expand the reserve of agricultural labour, given the rate of natural growth of the labour force in the sector.

The decline of traditional agriculture in Latin America has occurred through a combination of the following three readjustment options, whose relative importance has varied depending on the country: a rise in migration to the towns; an increase in the number of wage earners and their share in the agricultural working population; and physical expansion of subsistence agriculture, sometimes only in terms of persons and production units but sometimes also of area occupied.<sup>40</sup> In the first two cases, there would tend to be an expansion in marketed demand, and therefore in the market for the modern sector itself.

Some of the aspects mentioned are clear, for example, in the case of Brazil. According to the most recent agricultural census, between

1960 and 1970 the number of farms less than five hectares in area increased by 76%, while the total number of farms increased by only 48%. Furthermore, the total area of this group expanded by only 55%, with a sharp reduction in the already small average size. Still more significant, however, is the fact that while in 1960 this stratum occupied only 2 of every 10 persons employed in Brazilian agriculture, it absorbed 7 of every 10 new agricultural workers during the subsequent decade, at various levels of occupation. In addition, in the farms of between 100 and 1,000 hectares—where perhaps most of the modern enterprises are to be found—the numbers employed dropped by almost 15%.

If one considers the quality (probably lower) of the land where most of the small farms are situated, and the over-exploitation to which they are subject, it is easy to deduce that the rise in the man/land ratio which may be inferred from the above figures has very serious repercussions on the effective level of employment and income of this group. Together with a substantial proportion of the temporary workers, this group makes up the reserve or surplus of agricultural labour to which reference was made above.

This continuous reproduction of the mass of landless workers and of a subsistence sector with extremely low levels of productivity and income plays a fundamental role in the process of modernization, both in agriculture and generally.

In fact, it is the decline in traditional agriculture which enables the modern subsector to play the roles mentioned above, since: (i) it generates the availability of labour required for the expansion of modern activities, both in agriculture itself and, most importantly, in the urban and industrial areas; and (ii) it keeps the incomes of the labour force in traditional agriculture at relatively low levels, in order to avoid as far as possible any upward pressures on the process of the basic foodstuffs for domestic consumption. Since the two aspects determine the level of salaries in the modern nuclei, both agricultural and non-agricultural, they play a central role in the process of capital accumulation in the economy as a whole.

<sup>39</sup>This does not exclude the possibility that the creation of job opportunities in modern agriculture may increase, especially if the market grows rapidly and if the lines of production adopted by the modern enterprises, in addition to not competing with those of traditional agriculture, have a coefficient of labour requirement per hectare higher than "traditional" crops.

<sup>40</sup>For example, it has been pointed out that in Central America the expansion of banana production for export introduced wage-paid work as a basic social relationship and brought with it the disappearance of the small agricultural landowners in the area. Expansion of cotton production in Nicaragua, for its part, is held to have displaced the production of basic grains and the traditional tenure relationships, expelling the peasants to new agricultural areas, where subsistence agriculture was re-established. See R. Quiros, *Agricultural Development in Central America: Its Origin and Nature* (University of Wisconsin, Land Tenure Center, 1973). In Mexico, the number of landless wage earners in agriculture rose from almost 1,500,000 in 1950 to more than 2,500,000 in 1970, while the independent producers dropped sharply in number (by 22% between 1960 and 1970). See Luisa Paré, *El proletariado agrícola en México* (Mexico City, Siglo XXI, 1977).

Two other complementary elements may be added to this central aspect of the process of capital accumulation in modern agriculture:

(i) The growing tendency to adopt arrangements for engaging and paying the labour force which practically exclude all the "wasted time" in its use, and which have as their main consequence a continuous rise in the proportion of temporary workers in the total labour force engaged. For the enterprises this represents an effective reduction in their labour costs,<sup>41</sup> and at the same time a transfer to the wage-earners peasant sector of part of the cost of maintaining and reproducing the agricultural labour force, a transfer which is even more intense when real wages are declining;

(ii) The use, based on the control of agricultural property, of the surplus labour for capital formation, principally in the new agricultural areas to which part of the rural population shifts as peasant agriculture breaks down as a result of the consolidation of the modern sectors in the zones already opened up. This formation of capital, which takes the most varied forms (clearing of virgin land, establishment of plantations, planting of crops or pastures, etc.), costs the enterprises practically nothing, since it is based on the granting to the "landless" of farming rights—normally for family subsistence—in return for which they must pursue the activities agreed upon.

It is interesting to note in addition that restraining the remuneration of the agricultural labour force does not change the cost relationships in favour of traditional agriculture or restrict the use of new technology in modern agriculture, as ought apparently to be the case. This is due both to the differences in productivity per person employed in the two sectors and to the subsidizing of the cost of introducing modern technology through subsidies, exemptions, credit facilities and other advantages. This deliberate reduction in the cost of modern technology restricts the ability of

traditional agriculture to compete and limits the possibility of increasing agricultural employment, with the repercussions on income distribution which have already been indicated.

This form of articulation between the two types of agriculture co-exist, in some cases, with some degree of specialization in production, traditional agriculture, and particularly its peasant economy stratum, being oriented towards the less profitable items, generally items of mass consumption and less dynamic demand, the prices of which are controlled for reasons of economic policy. Depending on the relations between prices and production costs, this may contribute to the progressive impoverishment of this sector of producers, who have no alternative production possibilities.

In other cases, the articulation of the peasant economy with modern agriculture also occurs through the commercial and agro-industrial enterprises which develop simultaneously with the expansion of mercantile production in agriculture. The monopsonistic operation of the market by these enterprises is an additional element for the appropriation of the surplus produced by the peasant sector, which usually has to absorb the effects of price variations and the crises of over-production which may be generated.

The various phenomena referred to tend to strengthen the tendency towards concentration inherent in the process of modernization, given the increasing preponderance of capital in the production function of modern agriculture and the rising share of the latter in total agricultural output.<sup>42</sup>

<sup>42</sup>See, for example, M. Urrutia, "Income distribution in Colombia", *International Labour Review*, vol. 113, N.º 2 (March-April 1976). Urrutia points out not only that the distribution of income in agriculture would seem to have worsened between the 1930s and the 1960s, but also that, in contrast to what occurred in the remaining sectors, the income of agricultural day-workers and those farming very small plots would appear to have dropped in real terms. In Mexico between 1950 and 1960, there was a substantial decline in the days per year worked by day-workers on average, together with a drop of 6% in the level of the minimum wage in real terms. See J. Martínez Ríos, "Los campesinos mexicanos: perspectivas en el proceso de marginalización", in *El perfil de México en 1980*, (Mexico City, UNAM, Siglo XXI, 1972).

<sup>41</sup>Although in some cases a slight tendency for the nominal wages of this category of worker to rise has been observed, the enterprises benefit from a second source of economy, derived from non-payment of the social security contributions which must normally be paid when permanent workers are engaged.

Finally, it should be mentioned that the breaking-up of traditional agriculture is in line with a third objective within the process of modernization, namely, the expansion of the domestic market. The fact that the concentration and polarization<sup>43</sup> of income tends to worsen does not restrict the domestic market required for industrial expansion. Given the structure of industrial output, the part of the market whose expansion is of interest is that part directly linked to the "dynamic" sectors, in other words the sectors related to production

for export and for consumption by the groups with medium and high incomes. The growth of modern agriculture directly and indirectly encourages such activities, in addition to making a marginal contribution to the expansion of the market for the "ordinary" sectors of industry (food, clothing, and so on). This is an additional indicator of the compatibility of the changes which are occurring in agriculture with the overall process of modernization of the Latin American economy.

## V

### Some conclusions

On the basis of the above it is possible to outline some conclusions of interest for the definition of ideas which will be of use in reorientating agricultural development in the region.

Firstly, the absence of natural and human resources or of technical skills on the part of the farmers would not seem to provide an explanation for the difficulties encountered by Latin American agriculture in achieving higher levels of output and, in this way, contributing to solving the food, employment and other problems which persist in both rural and urban areas. With the exception of a few countries, products or circumstances, agricultural output appears to have met the requirements of demand which effectively arose in the market.

The key to understanding of the present dynamics of Latin American agricultural development is to be found in the overall functioning of agriculture, and particularly in its more recent process of transformation, which involves the expansion of modern agriculture and the decline of traditional agriculture, as briefly sketched in the preceding pages.

This process follows a logic which underlies the various phenomena noted and makes

them consistent from the viewpoint of the expansion of the modern sector, both at the level of agriculture and of the economy as a whole. Furthermore, this logic is consistent with the forms of social organization which exist in the region, and with the ways in which the Latin American economies are articulated with the economy of the central countries.

In this regard, the various aspects of Latin American agricultural development are "cogs" in the mechanism of expansion of mercantile production, consistent with the process of capital accumulation.

As is obvious, these considerations mean that efforts designed to correct or improve partial aspects of the Latin American situation which do not go to the root of the system of agricultural production as a whole are of only relative effectiveness.

Secondly, it is difficult to suppose that the future evolution of the present style of agricultural development, particularly in the modern subsector, can spontaneously eliminate its inherent anti-social features. On the contrary, the operation of the model suggests that such problems may worsen in the medium term and last excessively long in the Latin American economic and social sphere. The problem of employment, for example, can not be even partially solved within agriculture. An answer remains to be found to the question of how far and over what period the remaining economic activities, also in a process of

<sup>43</sup>The term polarization is used to reflect the increasing distance between the top and bottom of the distribution pyramid and the increasing widening of its base, with an extremely low absolute level of income.

modernization, and already with a markedly oversized service sector, will be in a position to absorb the surplus agricultural labour. This will largely depend on trends in population growth; as is well known, a reduction in population growth basically depends on a drop in the birth rate, but here there arises an additional paradox: this rate will not fall decisively until the advantages of development unmistakably reach the marginal groups both in the towns and in the countryside, and this is incompatible with the essence of the style itself.

Thirdly, it is clear that in the long term economic growth necessarily presupposes the transformation of traditional agriculture. As has been mentioned, the decline in the relative importance of agriculture within the economic system and the decline of the peasant economy are manifestations of the same process —the

industrialization of the economy— which brings with it the transformation of the entrepreneurial and technological structures in the countryside. Accordingly, the problem lies not in the entrepreneurial and technological changes necessary in order to overcome agricultural underdevelopment, but in the fact that the process of modernization is predatory and tends towards concentration and exclusivity.

The challenge posed is precisely that of seeking formulas for the transition from traditional agriculture to a new, modern agriculture consistent with better exploitation of the productive potential and the general raising of the welfare of the population. From a development viewpoint, the solution of the present problems presupposes a change in the most important structural parameters on which the process of modernization has been based.