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AGRICULTURE IN LATIN AMERICA: PROBLEMS AND PROSPECTS

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental procedures and the statistical tools employed.

3. The third part of the document presents the results of the study, including a comparison of the different methods and a discussion of the implications of the findings. It also includes a conclusion and a list of references.

4. The fourth part of the document provides a summary of the key findings and a final conclusion. It also includes a list of references and a list of figures and tables.

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/7. Diversification

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INTRODUCTION

One of the weakest points in the economic and social development of Latin America is the slow progress of its agricultural sector. The significance of this situation is now beginning to be realized in the region, and public opinion in a number of circles in Latin America is devoting its attention more and more to the various aspects of the agricultural question. It is true that for many years the international agencies concerned with the problems of agriculture and of over-all economic and social development have been stressing the urgent need to consider the unfavourable effects on development in general produced by the relative backwardness of agriculture, and have outlined the action that might be taken to remedy matters. It must be acknowledged, however, that most countries are still handicapped by the unsatisfactory conditions which are preventing agriculture from acquiring a more powerful dynamic impetus and the rural population from attaining higher standards of living.

The present document attempts to provide a broad over-all picture of these conditions and their principal effects, measured by means of certain important indicators. Alongside this global presentation of the most significant trends which have characterized the evolution of agriculture in Latin America during the last two decades, an attempt has also been made to give an approximate idea of the magnitude and direction of the changes in these trends which will have to take place in the coming years. Because of the pressure of population growth, on the one hand, and the inescapable need to improve, without further delay, the living conditions of the bulk of the rural population, on the other, the changes in question may have to be of a fundamental character. And they will in turn entail radical reforms in rural institutional structures, whose beneficial repercussions will make themselves felt throughout the whole of Latin American society.

/The statistical

The statistical basis for some of the data and estimates presented in this document is not always as sound as might be wished. But the general statements it contains are none the less valid. The aim has been to give a general impression of Latin America as a whole, even though the situation in each individual country may diverge, in greater or in lesser degree, from this over-all picture.

The same warning must be given with respect to the projections presented in Part II of the present document. Their purpose is solely to indicate orders of magnitude in the light of which the agricultural problem can be viewed in the proper perspective, not to offer a precise forecast of what is really going to happen. Even an approximation to the latter would require more accurate data than are at present available, from the standpoint of both quantity and quality.

Obviously, in any event, the Latin American countries should use every means at their disposal to acquire a fuller knowledge of the real agricultural situation. This would provide a more reliable basis for their development plans in relation to this sector and enable them to channel the basic changes referred to along the most appropriate lines.

Although the analysis made in this paper does not pretend to be exhaustive, it brings to light some fields of research that are clamouring for attention by the countries concerned. Apart from strictly technical aspects, such as those related to the increase of unit yield, which should be given special attention in the coming years, there are others that should also have preferential treatment. Examples of these are the factors that influence demand for agricultural commodities in different population strata and areas; the factors that have a bearing on the levels of productivity in the different countries and regions as a whole and individually; the relation between the prices of goods purchased by farmers and those of agricultural commodities; the impact of marketing factors, their structure and effects on the earnings of agricultural workers; the resources at Latin America's disposal to satisfy future demand for agricultural commodities; the possibilities of regional specialization and of increasing trade in agricultural commodities; credit and technical assistance requirements, and the need for skilled personnel at every level, etc.

/There is

There is no doubt that the search for more complete knowledge of the real agricultural situation in Latin America and for solutions to its many complex problems will be so much easier in proportion to the extent of co-operation among the Latin American countries in this respect. The progress achieved by some of them can be paralleled by the others provided that the information and the technical experts available in the different countries are exchanged on a regional basis, joint action of this kind will undoubtedly bear unsuspected fruits. In addition the work of the international organizations in the field of technical assistance will be facilitated out of all recognition if their efforts are not dispersed.

Both ECLA and FAO, which, through their Joint Division, have been working together in close collaboration for years in the examination of Latin America's agricultural problems, may find here a vast field in which to pursue their studies and research. Moreover, their efforts are now being supplemented by those of other international and regional organizations. In mid-1961, for example, the Inter-American Committee for Agricultural Development (CIDA), composed of the Organization of American States, (OAS), the Inter-American Development Bank (IDB), the Inter-American Institute of Agricultural Sciences (IIAS), FAO and ECLA, was set up for the purpose of co-ordinating the activities of the five organizations in Latin America in the field of agricultural development. This co-operation has already given good results, but their combined efforts should be intensified in view of the magnitude of the task lying before them in the next few years. As has already been said, more benefits will be obtained in a shorter space of time if the countries themselves increase and co-ordinate their share in the work.

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I. RECENT TRENDS AND PRESENT STATE OF
AGRICULTURE IN LATIN AMERICA

1. Agricultural development in the post-war period

An attempt is made in this section to give a rough panoramic view of the most significant changes in Latin America's agriculture over the past fifteen years. For this purpose, a few important indicators have been chosen which demonstrate fairly forcibly the slow rate of growth of this sector in relation to the population increase and in sharp contrast to what has occurred in other parts of the world. Space does not permit an exhaustive examination to be made here of agricultural development in each individual Latin American country; it has therefore been thought best to present the region as a whole, pointing out in pertinent cases some of the more striking discrepancies between the different countries.

However, a few figures suffice to show that Latin America's agricultural development has, on the whole, been unsatisfactory. With the exception of very few countries, whose rates of production growth have been considerably higher than those of their population increase, growth of production in most Latin American nations has been insufficient. As will be seen in detail later in this study, per capita production of some of the items most needed to raise existing low nutrition levels, e.g. meat consumption, has declined noticeably. It is easy to discern almost everywhere a clear trend towards stagnation: the highest production levels have been achieved mainly through expansion of cultivated areas, whereas yield increases in general have been very small; little diversification is noted in most of the region's agricultural areas, and this has had a depressive effect on the conservation of natural resources and resulted in the composition of agricultural exports showing little variation. Moreover, while the average income per person engaged in agriculture has increased, such an increment is not reflected in a substantial improvement of the living standards of the rural masses, because of the systems of land tenure and the existing concentration of income. The production techniques commonly applied today are the same as those in use long ago, notwithstanding the notable progress in this direction recorded in other /world regions.

world regions. This explains the fact that agricultural productivity levels, although better in recent years, continue to be lower than those registered in other activities.

Other sections of this paper analyse more fully the causes of this situation, its impact on economic and social development, the future prospects and the changes that must be introduced in order to solve the problems that have arisen. This section, as pointed out above, will be confined to indicating some of the outstanding aspects of development since the last war.

(a) Production

Latin America's total agricultural production ^{1/} rose by approximately 80 per cent between the pre-war period and 1958-60, that is, at a rate of 2.6 per cent per annum. Despite the fact that in aggregate terms this increase was considerable, and indeed greater than that registered by the other regions of the world, it was not enough to raise per capita production levels significantly, owing to the region's exceptional population growth during the last few decades. In fact, as will be noted in table 1, while Latin America's aggregate agricultural production index for 1958-60 was 20 per cent higher than the index for the whole world, actually in terms of production per inhabitant the index for Latin America was 8 per cent lower than the world average.

Latin America has made no mean effort, particularly during the post-war period, when annual rates of 3.8 and 4.5 per cent were attained, if Argentina is excluded. These rates are surpassed during the period in question only by those for the Middle East and the socialist countries. However, as already stated, this effort has not been sufficient to raise per capita production levels at the same rate as in other parts of the world. During the 1948-52 period the position in Latin America was the same as in Western Europe, in terms of per capita production: both regions had suffered a decline of 5 per cent with respect to pre-war levels. Ten years later the relationship had changed radically: while in Western Europe production per inhabitant had increased by 17 per cent, Latin America registered a meagre increment of approximately 4 per cent, also in relation to the pre-war period.

^{1/} Excluding forestry and fisheries.

Table 1
AGRICULTURAL PRODUCTION INDICES, BY REGIONS
(1934-38 = 100)

Region	1948-52		1958-60		Annual rate of overall growth in 1958-60 compared with	
	Aggregate	Per capita	Aggregate	Per capita	1934-38	1948-52
Africa	128	102	162	107	2.1	2.7
Eastern Europe and USSR	105	109	160	146	2.1	4.8
Far East ^{a/}	103	85	136	96	1.3	3.1
Middle East	116	98	179	114	2.6	4.9
North America	137	114	158	113	2.0	1.6
Oceania	115	96	152	103	1.8	3.2
Western Europe	105	95	140	117	1.5	3.3
Latin America	130	95	181	104	2.6	3.8
Latin America excluding Argentina	140	103	208	118	3.2	4.5
<u>World total</u>	<u>115</u>	<u>100</u>	<u>152</u>	<u>112</u>	<u>1.8</u>	<u>3.2</u>

Source: Latin America: ECLA; Rest of the world: FAO.

a/ Excluding Mainland China.

/The average

The average index for Latin America is not, however, a faithful reflection of what has occurred in the greater part of the region. A powerful factor has been the highly unfavourable evolution of Argentina's agricultural production. Excluding this country from the above computation, it will be seen that the rest of the region experienced a considerable increment, in both aggregate and per capita terms: total production is considered to have more than doubled, resulting in a production increase per head of about 18 per cent, which is slightly more than the proportion recorded for Western Europe.

Nevertheless, even this apparently more favourable situation for the region as a whole, excluding Argentina, conceals notable discrepancies between the individual countries, as will be seen from table 2. Of the fourteen countries covered, only six had an increase in agricultural production exceeding population growth. Among these are Brazil and Mexico which, after excluding Argentina, carry decided weight within the total index. Attention is called within this picture to the extraordinary difference noted between the group of countries in the southern cone of Latin America - Argentina, Bolivia, Chile, Paraguay and Uruguay - which have the lowest growth indices, i.e., less than 2 per cent per annum, and the countries in the northern part of South America, Central America and Mexico. Particularly noteworthy are the cases of Mexico and Ecuador which though for different reasons, register an annual increase of over 7 per cent. In Mexico the increase has been spread evenly over a large group of products, and fostered by an extension of the area under irrigation and an over-all improvement in yields; in Ecuador, on the other hand, the substantial increment in the index is due essentially to the exceptional increase in the production of one commodity - bananas - in response to favourable foreign demand conditions.

Caution should nevertheless be exercised in connexion with the above figures. It should not be concluded at once that the production increase registered - excluding Argentina - has signified a correlative rise in Latin America's income levels. In actual fact, a large part of the increment noted is derived from the greater production of export items, mainly tropical and semi-tropical, whose world market prices have persistently

/Table 2

Table 2

YEARLY RATE OF INCREASE IN AGRICULTURAL PRODUCTION AND POPULATION
IN SOME LATIN AMERICAN COUNTRIES, 1945-47 TO 1958-60

	Population	Agricultural production
Argentina	1.0	2.1
Bolivia	1.3	2.0
Brazil	3.9	2.9
Chile	1.8	2.2
Colombia	2.5	2.8
Ecuador	7.2	3.0
El Salvador	3.8	2.3
Guatemala	2.7	3.0
Honduras	2.1	3.0
Mexico	7.1	3.0
Paraguay	1.5	2.4
Peru	2.9	2.3
Uruguay	1.4	1.6
Venezuela	4.6	3.7

Source: ECLA, with the exception of Chile, the figures for which were obtained from publications issued by the Production Development Corporation.

/declined in

declined in the course of the last few years. As will be noted in the following section, the Latin American countries, like those in other regions, have had to export a far larger volume of agricultural products in order to maintain the same foreign income levels they had at the beginning of the 'fifties.

In so far as the different items of agricultural production are concerned, there are marked differences, as mentioned above. In the first place, stress should be laid on the unequal growth of crop and livestock production. While the former increased by 87 per cent between the pre-war years and 1958-60, that is, 2.8 per cent per annum, the rise in animal production was barely 49 per cent, at an annual rate of 1.8 per cent. (See figure I.)

As already pointed out, tropical and semi-tropical commodities experienced a relatively greater increase within the group of agricultural products. Thus the production of bananas, sugar and cotton was more than doubled in relation to the pre-war period, by virtue of the favourable conditions of external demand; that of coffee rose by nearly 50 per cent, although the increment in the post-war period was almost one hundred per cent, production having fallen off considerably during the war as a consequence of the loss of foreign markets, especially the European market. By contrast, important temperate climate products, such as wheat and maize, experienced a much smaller increase in production. As will be seen from table 3, the production of these cereals increased only 8 and 17 per cent respectively between the pre-war period and 1958-60. Here again, these figures were influenced by the decline in Argentina's production: from 6.6 million tons of wheat and 8.2 million tons of maize per year during the 1934-38 period, it dropped to 5.5 and 4.6 million tons respectively in 1958-60. Excluding Argentina, it may be noted that the rest of the region showed an increase of 90 per cent in the case of wheat and nearly 70 per cent in that of maize.

In the case of products of animal origin, the adverse evolution of the index is due primarily to the slow growth of meat and wool production, since that of milk and eggs went up considerably during the period under review. In fact, aggregate meat production rose by only 40 per cent, which meant a decline of nearly 20 per cent in terms of per capita production. This situation has been general throughout Latin America;

/Table 3

Figure

LATIN AMERICA : INDICES OF THE QUANTUM OF PER CAPITA PRODUCTION OF CROPS AND LIVESTOCK



Source :ECLA, on the basis of national statistics

Table 3

LATIN AMERICA: AGRICULTURAL PRODUCTION BY SELECTED ITEMS

Product	1934-38	1958-60	Aggregate index	Per capita index	Annual rate
<u>(Thousands of tons)</u>					
Wheat	8 620	9 283	108	62	0.3
(excluding Argentina)	1 986	3 777	190	108	2.8
Maize	17 954	21 024	117	67	0.7
(excluding Argentina)	9 730	16 409	169	96	2.3
Coffee	2 112	3 152	149	86	1.8
Sugar	7 840	18 655	238	137	3.8
Cotton	590	1 277	216	125	3.4
Bananas	4 200	11 870	283	163	4.6
Meat	5 020	7 097	141	81	1.5
(excluding Argentina)	3 068	4 613	150	85	1.8
Wool	145	196	135	78	1.3
Milk (total)	12 220	21 340	175	101	2.5
<u>(Indices)</u>					
Crops products	100	187	187	108	2.8
Animal products ^{a/}	100	149	149	86	1.8
Total agricultural products	100	181	181	104	2.6
(excluding Argentina)	100	208	208	118	3.2
(excluding sugar, cotton and bananas)	100	165	165	95	2.2

Source: Quantum: FAO, Production Yearbooks, 1956 and 1961; indices: ECLA, on the basis of national statistics.

a/ Meat, milk, wool, eggs.

/very few

very few countries, among them Mexico, Brazil and Venezuela, have succeeded in increasing their production of meat at a higher rate than that of their population growth. The want of a proper livestock raising policy to promote higher unit yields and slaughtering rates, has brought about genuine stagnation in meat production in practically the whole region. On the other hand, increasing development may be noted in milk production which has made it possible, at least, to maintain the per capita levels recorded before the war.

In contrast to what has taken place regarding animal production, attention should be drawn to the notable increase in fisheries production in many countries of the region. Thus, for example, the volume of catches and shellfish harvests in Peru rose more than a hundred times from 1948 to 1961, i.e., from 48 thousand to 5.2 million tons. In Chile the increase was seven-fold over the same period, and fourteen-fold if compared with the pre-war period; in Mexico catches were twelve times the volume of twenty years ago, while in Brazil, Colombia and Cuba they were three times that volume. Likewise, increased production of some forestry items outstripped that of agricultural products; for example, production of wood pulp rose from 220 to 580 thousand tons from the period 1948-52 to 1961, that is, at a rate of over 9 per cent annually.

(b) Foreign trade

Foreign trade in agricultural commodities has been characterized from the beginning of the post-war period by a steadily increasing volume of both exports and imports. The latter, however, have increased at a much faster pace. As will be noted from table 4, while gross exports rose by less than 20 per cent from the pre-war period to 1958-60, imports more than doubled during that time. In consequence, Latin America's net exports increased very slightly over that period. If these figures are analysed in terms of population growth, it may be observed that the net volume of agricultural exports per head during this period declined by nearly 40 per cent.

/Table 4

Table 4

LATIN AMERICA: INDICES OF THE VOLUME OF AGRICULTURAL EXPORTS
AND IMPORTS, AGGREGATE AND PER CAPITA

(1934-38 = 100)

	1948-52	1958-60	Yearly rate 1958-60 with respect to: (percentages)	
			1934-38	1948-52
Gross exports	95	119	0.8	2.5
Gross imports	152	205	3.1	3.2
Net exports	88	108	0.3	2.3
Net <u>per capita</u> exports	65	62	-2.1	-0.5

Source: FAO, The State of Food and Agriculture, 1962.

/However, it

However, it is worth-while pointing out the discrepancy registered in the behaviour of exports between the period extending from pre-war days up to the years immediately following the war, and the past decade. Whereas during the first period, the volume of agricultural exports fell off by 5 per cent, for reasons which are only too well known, there has been a sharp turn in this trend in the last ten years, even though it has been insufficient to reach the level of population growth. Imports, on the other hand, increased at the same high rate during both periods.

(i) Exports. The fact that the Latin American agricultural export trade is not sufficiently dynamic has brought about a reduction in the region's share of world trade in these commodities. As will be noted from table 5, whereas world agricultural exports increased by 32 per cent from the pre-war period to 1958-60, Latin America's rose by only 19 per cent. It will be seen from the above table that, with the exceptions of the Far East where a recession occurred with respect to the pre-war situation, Latin America's export trade has the lowest rate of increase of all the regions considered. Attention should be drawn, in this respect, to the notable increment in African exports, many of which compete with Latin America's.

As in the case of production, developments in connexion with Argentina's exports have had a marked impact on the over-all index for Latin America. While the Argentine export trade declined by approximately 25 per cent between the pre-war period and 1958-60, that of the rest of the region increased by over 43 per cent. Argentina's exports, which like those of other crop-exporting countries were seriously affected by the last war, have been unable to recover completely since the close of hostilities. This has been due, in part, to the exceptional increment in the production of cereals, meat and other temperate climate products in erstwhile importing countries, many of which later became net exporters of these commodities; and in part, too, to Argentina's notably increased internal demand which, in the face of insufficient production growth, had to be met to an increasing extent from the portion destined for export. As a result of the combined effect of these two factors, Argentina's cereal exports dropped by nearly 50 per cent between 1934-38 and 1958-60, those

/Table 5.

Table 5

INDEX OF PHYSICAL VOLUME OF WORLD AGRICULTURAL EXPORTS, BY REGIONS

(1934-38 = 100)

Region	Foods and forage		Flavoured beverages and tobacco		Raw materials		All agricultural products	
	1958-60	Annual rate (percentage)	1958-60	Annual rate (percentage)	1958-60	Annual rate (percentage)	1958-60	Annual rate (percentage)
Africa	159	2.0	195	2.9	180	2.6	179	2.6
Far East ^{a/}	49	-3.1	112	0.5	89	-0.5	64	-2.0
Middle East	143	1.6	182	2.6	143	1.6	145	1.6
North America	406	6.3	114	0.6	100	0.0	223	3.6
Oceania	130	1.1	136	1.3	167	2.3	147	1.7
Western Europe	166	8.2	170	2.3	85	-0.7	156	2.0
Latin America	115	0.6	124	0.9	111	0.5	119	0.7
<u>World total</u> ^{b/}	<u>139</u>	<u>1.4</u>	<u>139</u>	<u>1.4</u>	<u>114</u>	<u>0.6</u>	<u>132</u>	<u>1.2</u>

Source: FAO, The State of Food and Agriculture, 1962.^{a/} Excluding Mainland China.^{b/} Excluding Mainland China, Soviet Union and Eastern Europe.

/of livestock

of livestock and meat by 10 per cent, of animal fats by 80 per cent, and oil seeds and vegetable oils by 65 per cent, to cite only a few of the more important items.

It would be well now to investigate the behaviour of exports in the rest of the region. As mentioned above, the export index as a whole shows a significant improvement of slightly over 43 per cent. There were notable differences, however, between the different commodities and countries. In the first place, it is worth pointing out that exports of animal products fell off by nearly 10 per cent, owing to slow production growth and increased domestic demand. The item registering the largest absolute reduction was wool, owing to the smaller volume of Uruguayan exports, although meat, eggs and animal fats also suffered a relatively sharp decline (see table 6). Alone of this group, exports of milk products showed a significant increase, although their relative importance continued to be very slight.

On the other hand, excluding Argentina, the volume of crop exports underwent a decided increase. With the exception of cereals, which fell by 25 per cent, and oleaginous products which remained virtually stationary, exports of the remaining products increased substantially. However, the major part of this increase was due to four products: cotton, sugar, bananas and coffee, the increment in these exports representing 97 per cent of the over-all increase of the entire group.

In the case of cotton, the increase of 107 per cent registered between the pre-war period and 1958-60 derived chiefly from the considerable increment in Mexico's exports, which rose from 23 000 to 354 000 metric tons during this period (see table 7). El Salvador, Nicaragua and Peru also showed important increments, those of the first two countries being particularly noteworthy as they were not cotton exporters before the war. Brazil, on the other hand, experienced a sharp decline from nearly 200 000 to 70 000 tons; this is explained by the huge expansion of its textile industry in the post-war period and the consequent increase in domestic demand.

/Table 6

Table 6

PHYSICAL VOLUME OF LATIN AMERICA'S AGRICULTURAL EXPORTS,
EXCLUDING ARGENTINA

(Thousands of U.S. dollars at 1960 prices)^{a/}

	1934-38	1958-60	Index (1934-38 = 100)
<u>Total agricultural products</u>	<u>2 294 916</u>	<u>3 289 714</u>	<u>143.3</u>
<u>Animal products</u>	<u>233 547</u>	<u>211 505</u>	<u>90.6</u>
Livestock and meat	165 676	164 201	99.1
Milk products	310	828	267.1
Eggs	1 596	532	33.3
Animal fats	3 725	376	10.1
Wool	62 240	45 568	73.2
<u>Crop products</u>	<u>2 061 369</u>	<u>3 078 209</u>	<u>149.3</u>
Cereals	42 400	32 060	75.6
Fruits	185 346	269 304	145.3
Roots and tubers	613	2 676	436.5
Sugar	376 371	832 164	221.1
Alcoholic beverages	1 099 864	1 341 160	121.9
Tobacco	72 152	100 764	139.7
Oleaginous products	37 649	38 620	102.6
Fibres	210 796	428 859	203.4
Other	36 178	34 602	95.6

Source: FAO, Trade Yearbooks, 1958, 1961.

a/ Based on world market prices.

/Table 7

Table 7

VOLUME OF FOUR IMPORTANT LATIN AMERICAN EXPORTS, BY COUNTRIES,
IN THE PRE-WAR PERIOD AND 1958-60

(Thousands of metric tons)

	1934-38	1958-60	Index (1934-38 = 100)
<u>Coffe</u>			
<u>Latin America</u>	<u>1 398</u>	<u>1 751</u>	<u>125</u>
Brazil	875	943	108
Colombia	230	356	155
Costa Rica	23	45	196
El Salvador	54	84	156
Guatemala	47	78	166
Mexico	37	79	214
Venezuela	48	30	63
Other countries	84	136	162
<u>Bananas</u>			
<u>Latin America</u>	<u>2 035</u>	<u>3 113</u>	<u>153</u>
Brazil	214	242	113
Colombia	162	189	117
Costa Rica	96	263	274
Ecuador	39	982	2 518
Guatemala	168	153	91
Honduras	349	372	107
Mexico	256	23	9
Panama	113	274	242
Other countries	638	615	96
<u>Sugar</u>			
<u>Latin America</u>	<u>4 050</u>	<u>8 982</u>	<u>222</u>
Brazil	42	714	1 700
Cuba	2 587	5 343	207
Mexico	0	272	-
Peru	278	476	171
Dominican Republic	420	814	194
Other countries	723	1 363	189
<u>Cotton</u>			
<u>Latin America</u>	<u>338</u>	<u>646</u>	<u>191</u>
Brazil	194	71	37
El Salvador	0	34	-
Mexico	23	354	1 539
Nicaragua	1	44	-
Peru	75	107	143
Other countries	45	36	80

Source: FAO, Trade Yearbooks, 1958, 1961.

/The largest

The largest increase in sugar exports, in absolute terms, was registered by Cuba, with an increment of 2.7 million tons over the pre-war period, the total reached during the three years 1958-60 being over 5.3 million tons.^{2/} In relative terms, however, the increase from 42 000 to 714 000 tons in Brazil's exports was far greater; the expansion of Mexico's export trade has been equally remarkable; from zero before the war, exports have risen to over 270 000 tons in 1958-60. Exports from Peru and the Dominican Republic also registered a considerable rise, while in Haiti, which exported approximately 30 000 tons before the war, they fell to less than half that figure.

As regards bananas, a significant increase was recorded in four countries - Ecuador, Costa Rica, Panama and the Dominican Republic - the most important being that of Ecuador with an increment of 940 000 tons, or almost twenty-four times that country's total exports in the pre-war period. On the other hand, banana exports from Mexico and Cuba, which together represented about one-fifth of the region's total exports before the war, virtually disappeared in the period 1958-60.

Coffee exports show a relatively lesser growth than those of the three other products referred to above, owing primarily to the small increment registered by Brazilian exports - a mere 8 per cent for the period under review. By contrast, there were far greater increases in exports from Colombia, Mexico, El Salvador, Guatemala, Costa Rica, Ecuador and the Dominican Republic. Of a total increase of 353 000 tons for the region, Brazil contributed only 68 000 tons, its share in total exports falling from 63 per cent in 1934-38 to 54 per cent in 1958-60. The recently concluded International Coffee Agreement nevertheless allocated to Brazil a basic export quota equivalent to about 63 per cent of that for Latin America, in other words a proportion similar to that which the country enjoyed in the pre-war period.

^{2/} As a consequence of the drastic reduction in Cuba's 1962 sugar harvest exports from this country have declined far below the 1958-60 level.

(ii) Value of agricultural exports. In comparison with Latin America's agricultural export earnings before the war, the situation in aggregate terms in 1958-60 was apparently satisfactory. The value of exports, at current prices, rose by 370 per cent during the period in question. In real terms, however, this increase was far less, since the price index for manufactured goods - which shows the purchasing power of agricultural exports - rose at a much faster rate than that for agricultural commodities. As will be noted from table 8, if the necessary adjustment is made, the real value of Latin America's agricultural exports would appear to have increased by only 84 per cent. As during that period, population growth was slightly over 73 per cent, there would appear to have been an effective increment of 6 per cent in the real value of exports per head.

Table 8

LATIN AMERICA: VALUE OF AGRICULTURAL EXPORTS

(1934-38 = 100)

	1948-52	1958-60
At current prices	354	373
Real value ^{a/}	186	184
Real <u>per capita</u> value	138	106

Source: FAO, The State of Food and Agriculture, 1962.

a/ Deflated according to the United Nations index of unit value for exports of manufactured goods.

The wide disparity between the two periods indicated is clear from the foregoing table. While the real value of exports increased considerably in the early post-war period, attaining a per capita level 34 per cent higher than that registered before the war, prices of agricultural commodities began to decline steadily from 1952 onwards, to the extent that in 1958-60 the real value was 2 per cent lower than in the five years 1948-52, despite the fact that the volume of exports increased by
/25 per cent

25 per cent during the same period. In consequence, the real per capita value fell off by 23 per cent between the two periods in question.

Although the drop in world prices has severely affected the majority of important exports, with the exception of meat, it has not been equally sharp for them all, nor has it followed the same pattern chronologically. Thus it may be noted from table 9 that the average unit price for cereals remained relatively high during the early post-war years, a decline setting in after 1948; it has kept practically stable over the past three years, but at a level 35 per cent below that for 1947-49. The price of coffee, after climbing steadily to reach its highest peak in 1954, declined drastically from that year onwards, so that by 1961 it represented less than half that level, though still somewhat higher than that registered in the early post-war years. A similar situation arose in the case of cotton: maximum quotations were reached in 1951, as a result of the Korean War, falling off to just over half in the last three years. As regards bananas and sugar, price fluctuations have not been so violent, but in any case in recent years they have been about 20 per cent lower than when quotations were at their peak.^{3/} In so far as meat is concerned, the process has been the reverse, as pointed out above. There has been a slow, but steady rise in prices up to 1959-61, when the average level attained was 30 per cent higher than in the year 1947-49.

3/ During the course of the past year world market sugar quotations rose steeply. While on 1 March 1962 the price quoted was 23 sterling per metric ton, by 1 March 1963 it had reached the level of £53.10.0 c.i.f. London. (Bank of London and South America Ltd., Fortnightly Review N° 689.)

Table 9.

INDEX OF AVERAGE UNIT VALUES OF EXPORTS OF SELECTED AGRICULTURAL
COMMODITIES AT CURRENT PRICES

(1952-53 = 100)

	1934-38	1948	1951	1954	1957	1959	1960	1961
Cereals	33.0	124	92	84	75	73	72	72
Meat	42	83	94	103	101	106	109	107
Coffee	16	45	96	125	91	67	64	61
Cotton	29	97	132	93	84	67	71	72
Sugar	37	96	112	96	112	91	86	84
Bananas	31	102	102	101	104	88	86	86
All agricultural commodities	34	99	117	99	94	85	85	81
Manufactured goods	51	101	102	96	104	103	105	107

Source: FAO, The State of Food and Agriculture (various years).

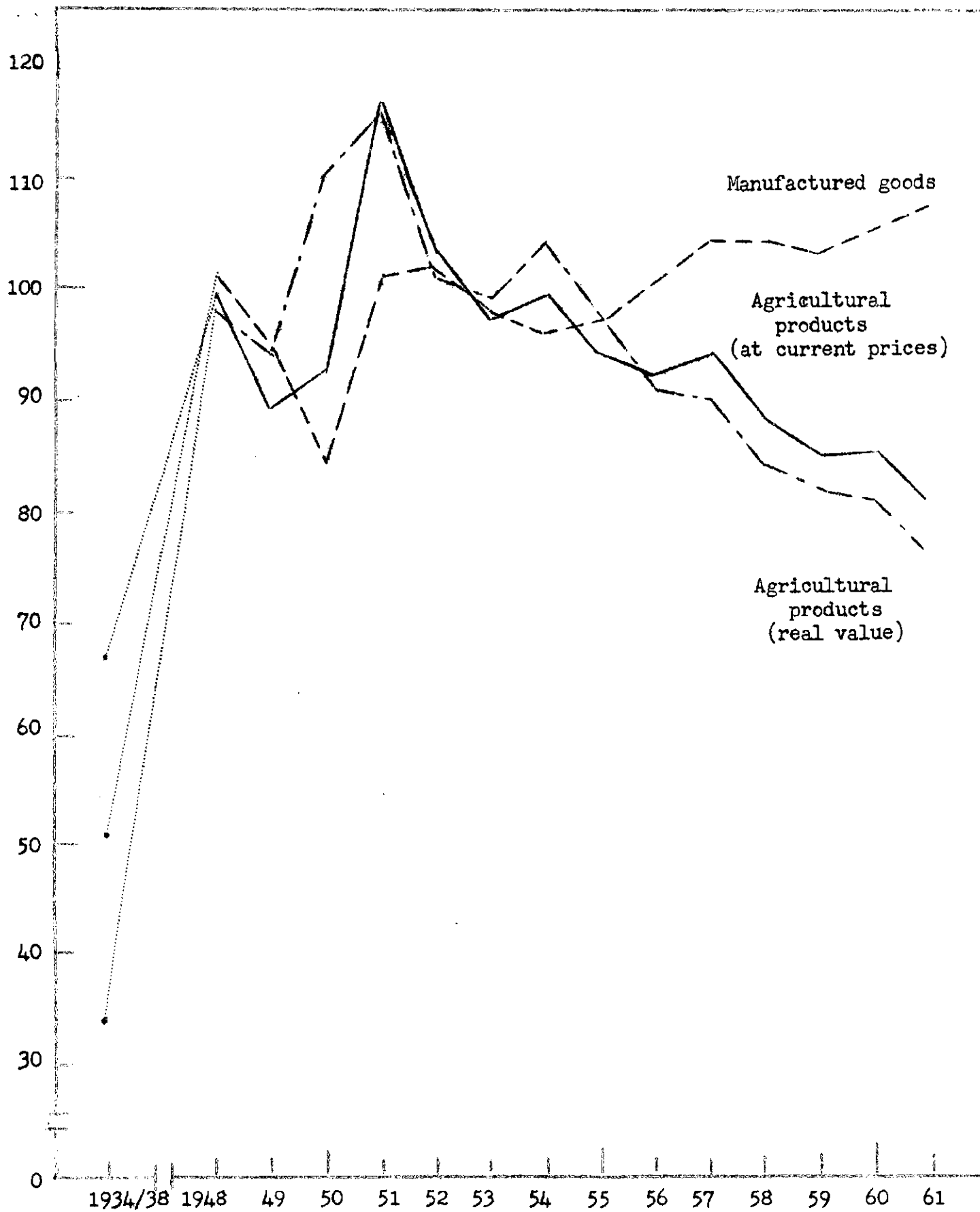
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Figure II

INDICES OF THE AVERAGE UNIT VALUE OF WORLD EXPORTS OF
ALL AGRICULTURAL PRODUCTS

(1952-53 = 100)

Escala natural



Source : FAO, State of Food and Agriculture

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial statements and for providing a clear audit trail. The second part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial statements and for providing a clear audit trail.



The graph illustrates the relationship between the two variables over time. The first variable increases at a constant rate, while the second variable increases at a slower, constant rate. This suggests that the first variable is more sensitive to changes in time than the second variable. The data points are as follows:

Time	Series 1	Series 2
0	0	0
1	10	5
2	20	10
3	30	15
4	40	20
5	50	25
6	60	30
7	70	35
8	80	40
9	90	45
10	100	50

The data points are as follows: (0,0), (1,10), (2,20), (3,30), (4,40), (5,50), (6,60), (7,70), (8,80), (9,90), (10,100) for the first series and (0,0), (1,5), (2,10), (3,15), (4,20), (5,25), (6,30), (7,35), (8,40), (9,45), (10,50) for the second series.

In real terms, these price variations have been even more accentuated, since precisely in the last few years the rise in the price of manufactures has coincided with the drop in agricultural prices (see figure II).

While it is true that the decline in agricultural prices has had a very similar impact on all countries exporting these commodities, its repercussions on Latin America have been particularly adverse owing to the important contribution of such exports to the region's aggregate foreign exchange receipts. In 1950 they represented 53 per cent of total Latin American exports; this share declined in 1959, for the reasons mentioned, but they still constituted approximately 40 per cent of the total. This unfavourable impact has been largely due to the excessively rigid structure of the Latin American agricultural export trade. There have been no significant changes in this structure for the past ten years: coffee and sugar have contributed steadily to two-thirds of total agricultural export revenue. A small increase in the share of cotton and meat has been offset by a decline in that of wool, hides and wheat. The importance of other exports, such as temperate climate fruits and semi-manufactured products, continues to be minimal.

Neither have there been any substantial changes in the destination of Latin America's agricultural exports. The United States and Western Europe together have continued to absorb three-fourths of the total, although as a result of the recovery of European markets, the increase in exports to these markets has been proportionately greater. Some increase is also noted in exports to Japan and Eastern Europe, whose economies have expanded vigorously in the last ten years. By contrast, intra-regional exports have remained practically constant at the excessively low level of 10 per cent of total agricultural exports.^{4/}

^{4/} The distribution of exports from ALALC countries in 1958-60, by destination, was the following:

ALALC - 9.6 per cent	U.S.A. - 38.8 per cent
Rest of Latin America - 0.6 per cent	Western Europe - 37 per cent
	Rest of the world - 14 per cent.

(iii) Imports. As stated above, the gross volume of agricultural imports doubled between the pre-war period and 1958-60. It is worthwhile now investigating in greater detail where and in what commodities such an increase occurred.

In contrast to developments in the case of exports, and as a result of the insufficient growth of production vis-a-vis increased internal demand, imports of products of animal origin have gone up at a much faster rate than those of vegetable origin. Whereas the former imports more than trebled from 1934-38 to 1958-60, those of crops rose by only 80 per cent (see table 10).

Among the animal products contributing most of this increment, primary mention should be made of milk products. During the period under review, these imports multiplied more than five-fold, from 15 to 80 million dollars (at 1960 prices). Of the 65 million dollar increment, 25 million represented Venezuela, while a further 25 million were distributed in varying proportions among Chile, Peru, Cuba, Haiti and Mexico. The remainder represented imports of lesser quantities effected by the other Latin American countries. The increase in livestock and meat imports was also significant, from 45 million dollars (at 1960 prices) in the pre-war period to 82 million in 1958-60. This increment was wholly accounted for by larger imports effected by Chile, Venezuela, Cuba, Peru and Mexico, as detailed in table 11. Imports of eggs and wool rose at a relatively faster rate than those of the commodities mentioned previously (14 and 6.5 times, respectively), although they are of considerably less importance within the group. These increments are due almost exclusively to larger imports of eggs by Venezuela, and of wool by Mexico.

As far as products of vegetable origin are concerned, the picture is somewhat more diversified, even though a single product - wheat - is responsible for nearly half the total increase. Aggregate imports of this cereal rose from 1.7 million tons in pre-war years to 3.8 million in 1958-60; 40 per cent of the difference of 2.1 million tons represented larger imports by Brazil; 13 per cent by Venezuela, and 10 per cent by Peru. The remaining 800 000 tons were distributed in varying proportions among eight other Latin American countries (see table 11). It should be emphasized that this notable increment in wheat imports was in response

/Table 10

Table 10

LATIN AMERICA: PHYSICAL VOLUME OF AGRICULTURAL IMPORTS

(Thousands of U.S. dollars at 1960 prices)^{a/}

	1934-38	1958-60	Index
<u>Total</u>	<u>401 703</u>	<u>806 127</u>	<u>200.7</u>
<u>Animal products</u>	<u>67 999</u>	<u>207 469</u>	<u>305.1</u>
Livestock and meat	45 459	81 496	179.3
Milk products	14 890	79 885	536.5
Eggs	1 064	15 248	1 433.1
Animal fats	3 474	10 612	305.5
Wool	3 112	20 228	650.0
<u>Crop products</u>	<u>333 704</u>	<u>598 658</u>	<u>179.4</u>
Cereals	147 116	296 138	201.3
Fruits	25 329	35 223	139.1
Roots and tubers	10 911	11 635	106.6
Sugar	23 436	28 644	122.2
Alcoholic beverages	33 373	45 399	136.0
Tobacco	14 928	17 416	116.7
Oleaginous products	43 507	45 522	104.6
Vegetable fibres	15 452	34 410	222.7
Other	19 652	84 271	428.8

Source: FAO, Trade Yearbooks, 1958, 1961.^{a/} World market prices.

/Table 11

Table 11
LATIN AMERICA: IMPORTS OF SOME AGRICULTURAL COMMODITIES, BY COUNTRIES

	Crop products (Thousands of tons)			Animal products (Millions of U.S. dollars at 1960 prices)		
	1934-38	1958-60	Index	1934-38	1958-60	Index
<u>Cotton</u>				<u>Meat</u>		
<u>Latin America</u>	2.3	48.0	516	<u>Latin America</u>	45.3	180
Colombia	3.3	6.9	179	Cuba	1.1	909
Cuba	1.5	5.9	393	Chile	4.0	343
Chile	2.3	19.8	861	Mexico	0.4	675
Uruguay	0.1	8.6	-	Peru	0.6	950
Other countries	2.1	7.8	371	Venezuela	1.5	747
<u>Wheat</u>				<u>Milk products</u>		
<u>Latin America</u>	1 670.0	3 800.0	228	<u>Latin America</u>	14.9	535
Bolivia	35.0	105.0	300	Cuba	0.7	600
Brazil	990.0	1 803.0	182	Chile	-	-
Colombia	15.0	126.0	840	Haiti	0.1	-
Cuba	121.0	222.0	183	Mexico	0.6	717
Chile	13.0	93.0	715	Peru	1.3	385
Peru	128.0	327.0	255	Venezuela	1.1	2 390
Venezuela	30.0	303.0	1 010	Other countries	11.1	231
Other countries	338.0	821.0	243			

Source: FAO, Trade Yearbooks, 1958, 1961.

/to the

to the great increase in demand by those countries, which could not be covered by local production. In Brazil, for example, notwithstanding the production increase of nearly 500 000 tons, or four times the total pre-war output, consumption rose by 1.3 million tons, giving rise to the additional importation of 800 thousand tons referred to.

As regards maize, the increase in imports was accounted for almost exclusively by Mexico's purchases in 1958. In 1959 and 1960, once local production had reverted to normal, the volume of imports was reduced to insignificant proportions.

As to cotton, another commodity carrying considerable weight in the imports of some countries, the increment of 35 000 tons recorded for the region as a whole is almost entirely accounted for by larger purchases effected by non-producing countries such as Chile, Cuba and Uruguay, i.e., 17 500, 4 400 and 8 500 tons respectively.

The rest of the agricultural imports consists of a large group of commodities of which only rubber is of any importance. Imports of this commodity rose by 45 million dollars between the pre-war period and 1958-60, the major part representing Argentina and Brazil. (Although Brazil is the only important rubber producer in Latin America, its output has lagged behind increased demand.) Minor increases were registered in Chile, Colombia, Peru, Uruguay and Venezuela.

As regards origin, about half the agricultural imports come from the region itself. (See annex II, table 1.) A substantial proportion of the other half is from the United States, part of it purchased on special terms in accordance with US Public Law 480.

(c) Consumption of agricultural commodities.

By relating the above figures on production and foreign trade, the pattern of Latin America's consumption of agricultural commodities can now be determined.

According to the figures shown in table 12, apparent consumption of these commodities rose at an annual rate of 3.7 per cent after the pre-war period, which led to an improvement in per capita supplies at a rate of approximately 1.25 per cent per annum. This fairly moderate

/Table 12

Table 12.

LATIN AMERICA: INDICES OF APPARENT CONSUMPTION OF
AGRICULTURAL COMMODITIES

(1934-38 = 100)

	Production	Exports	Imports	Apparent consumption		
				Aggregate	Per capita	Annual rate (Percent)
<u>A. The whole region</u>						
1948-52	129	95	160	158	117	1.10
1958-60	181	118	207	231	133	1.25
<u>B. Excluding Argentina</u>						
1948-52	143	118	168	164	121	1.30 ^{a/}
1958-60	208	143	227	257	146	1.60
<u>C. Excluding coffee</u>						
1948-52	157	119	187	180	133	2.10 ^{a/}
1958-60	222	152	247	261	148	1.70

Source: Calculations based on the previous tables.

^{a/} 1948-52 to 1958-60.

/rate was

rate was adversely affected by Argentina's relatively slower growth. In fact, owing to the small growth in this country's production, and notwithstanding the appreciable decline in imports, Argentina's apparent aggregate consumption increased by only 66 per cent in the course of the two decades under consideration, as compared with 131 per cent for the region as a whole. Excluding this country from the calculations, a substantial improvement is noted in the rate of increase in per capita consumption, i.e., 1.6 per cent per year for the rest of the region during the whole period in question. As may be seen from the table, during the second half of the period the annual rate of consumption growth appears to have quickened as from the pre-war period to 1948-52 it was only 1.3 per cent. However, this accelerated rate was less real than it appeared, owing to the impact of Brazil's coffee stocks which increased considerably over the past few years, and are included in the aggregate consumption figures. Excluding this commodity, the annual growth rate between 1948-52 and 1958-60 is only 1.3 per cent, as against 2.1 per cent if it is included.

Although imports rose considerably during the period under review, their share in the region's total consumption remained fairly steady at approximately 6 per cent. With exports of these commodities lagging behind the rise in production, there was a larger surplus in the region to meet internal demand. If the pre-war proportion of exports had been maintained, the supplies available for consumption within the region would have risen by only 82 per cent in 1958-60, as compared with the actual rate of 131 per cent. If Argentina is excluded, the relative difference between the two situations would be somewhat less, as the consumption increase would have been 110 per cent instead of the actual 157 per cent; this proves that Argentina was forced to devote a proportionately larger part of its exportable production to meet domestic consumption needs. The increase in per capita consumption for the region, excluding Argentina, has not been the same for all agricultural commodities. As will be seen from table 13, fairly large increments are recorded in the consumption of rice, wheat, milk, sugar, wool, cotton and eggs; consumption of maize has remained steady, and that of red meat has declined. Although the reduction in meat consumption has been partially offset by the rise

/Table 13

Table 13

LATIN AMERICA (EXCLUDING ARGENTINA): APPARENT PER CAPITA CONSUMPTION
OF SELECTED AGRICULTURAL COMMODITIES

(Kilogrammes per person per year)

Commodity	1934-38	1958-60
Cotton	2.3	3.2
Sugar ^{a/}	35.6	50.2
Meat	28.5	25.0
Milk	88.7	98.1
Wool	0.2	0.4
Eggs	3.7	4.1
Wheat	34.7	41.5
Maize	98.2	99.0
Rice (clean)	15.1	27.0

Source: FAO, Trade Yearbooks, 1958, 1961.

a/ Includes panela and other non-centrifugal sugars.

/in consumption

in consumption of fish and poultry,^{5/} such a situation is none the less serious since it reveals that, at best, animal protein consumption has shown no significant improvement. Broadly speaking, in spite of the average increase recorded by the consumption figures given in table 12, the absolute levels are still low in comparison with those prevailing in more developed countries.

Even including Argentina, whose high consumption levels contribute appreciably to raising average per capita consumption for the region, it will be noted that Latin America is very far from attaining the levels existing in the more developed countries. Thus, table 14 shows that cereal consumption (both human and animal) is equivalent to one-fourth of that of North America (if Argentina is excluded, this ratio is in fact a great deal more unfavourable). The disparity in the consumption of edible fats and oils is also noteworthy. Only in respect of sugar and cotton is the position relatively equal, although in the case of cotton it must be remembered that the more industrialized countries' demand for fibres is largely covered by synthetic products.

Table 14
APPARENT PER CAPITA CONSUMPTION OF SOME AGRICULTURAL COMMODITIES
IN LATIN AMERICA AND SELECTED COUNTRIES ^{a/}
(Kilogrammes per year)

Commodities	Latin America	North America	France	Federal Republic of Germany	United Kingdom
All cereals ^{b/}	204	859	391	295	348
Sugar	44	43	34	35	56
Fats and oils	13	29	24	31	29
Meat ^{c/}	37	93	73	57	73
Cotton	4	9	5	6	6

Source: Various FAO publications.

^{a/} Latest available figures.

^{b/} Human consumption and forage.

^{c/} Includes red meat, poultry and other kinds of meat.

^{5/} Not included in the table as complete statistical figures for the whole region are not available.

/If this

If this situation is expressed in terms of the Latin American population's average daily intake of food factors, the contrast with prevailing levels in the developed countries will be more clearly appreciated. As may be seen in table 15, with the exception of Argentina and Uruguay, the region's consumption of calories and proteins - particularly animal protein - is highly deficient. Thus countries like Colombia, Ecuador, Peru and Venezuela register a daily intake per head of little more than 2 100 calories, 53 grammes of proteins in all, and 20 grammes of animal protein, which represents a deficit in relation to the developed countries of 30, 40 and 65 per cent, respectively.

Table 15

COMPARISON BETWEEN NUTRITION LEVELS IN TEN LATIN AMERICAN COUNTRIES
AND IN SOME OF THE DEVELOPED COUNTRIES, 1960 ^{a/}

	Population (millions of unhabitants)	Daily in- take of calories	Total protein (grammes/day)	Total animal protein (grammes/ day)
<u>Latin America</u>				
Higher group ^{b/}	23 783	2 950	92	50
Middle group ^{c/}	114 983	2 580	68	20
Lower group ^{d/}	36 973	2 180	53	20
All 10 countries ^{e/}	176 739 ^{e/}	2 540	68	24
Developed countries ^{f/}	390 348	3 050	88	54

Source: FAO, The State of Food and Agriculture (various years).

^{a/} Latest available figures have been used in the case of countries for which no data exist for that year.

^{b/} Argentina and Uruguay.

^{c/} Brazil, Chile, Mexico and Paraguay.

^{d/} Colombia, Ecuador, Peru and Venezuela.

^{e/} Account for 85.7 per cent of the Latin American population.

^{f/} United States, Federal Republic of Germany, France, United Kingdom, Netherlands and Italy.

/As may

As may be seen from table 15, disparities in consumption levels do not exist solely between Latin America and more developed countries in other regions, but are also to be found in a highly acute form among the Latin American countries themselves. In order to present a clearer picture of the situation, the ten countries selected have been grouped at three levels. In the topmost group are Argentina and Uruguay, where the average diet of the population is adequate in both quantity and composition, especially as regards protective foods. In the middle group are countries such as Chile, Brazil, Mexico and Paraguay, where the diet has serious deficiencies and is particularly lacking in animal proteins. It should of course be pointed out that the population of these countries is heavily concentrated in towns where average levels of income and consumption are usually higher, and that this tends to distort to some extent the significance of the averages given. There are large population groups mainly in the rural sectors, whose nutritional level is one of the worst in the world and, at best, is equivalent to those of the lowest group. This comprises countries with a predominantly rural population, such as Bolivia, Colombia, Ecuador, Haiti, Peru and Venezuela, where food consumption is conspicuously deficient in the elements mentioned above. It should be noted, however, that in Venezuela consumption has expanded very rapidly in the last few years owing to the substantial and steady increase in income (see also annex II, table 2).

When this point is being considered, it should be remembered that the basic statistical data available are quite inadequate, since no clear picture of the food situation of the different population groups in each country can be obtained. The averages quoted hide marked discrepancies in the nutritional levels of the various groups. Moreover, there is no reliable information available on the reactions of these population groups to fluctuations in their earnings and in the prices of agricultural commodities. Consequently, the figures given in the course of this study should be regarded simply as approximations. This is particularly true of the effect that the rise in the relative prices of agricultural

/commodities may

commodities may have had on their consumption. It is equally impossible to determine with any accuracy the price impact of supply shortages when demand is expanding. As many of the price policies applied in the Latin American countries are intended to protect real consumer purchasing power, they are sometimes instrumental in preventing scarcities from being properly reflected in the price level of the particular item in relatively short supply. Generally speaking, however, agricultural commodities have tended to become more expensive than other goods at the consumer level in several Latin American countries. Table 16 shows that between 1950 and 1960 the cost of foodstuffs rose more rapidly than the cost of living in Argentina, Brazil, Chile, Peru and Uruguay, whereas the relation remained almost the same in Mexico. If the heavy incidence of foodstuffs in the cost-of-living indices of these countries is taken into account, it may be concluded that the difference between foodstuffs and other products was actually greater than the percentage relation would indicate.

It should be pointed out, however, that not all farmers benefited to the same extent from the relatively greater rise in food prices. As a rule, most of the increases in consumer prices were retained in the distribution system. The shortcomings of the marketing process and the existence of unduly large number of middlemen - partly because of mass shifts by the rural population to other activities - have broadened the distribution margins in many places. For instance, a study recently carried out in Chile^{6/} shows that between 1947-51 and 1959-60 the ratio between wholesale and retail meat prices contracted from 48 to less than 35 per cent. Much the same probably happened, in Chile as in other countries, in the case of perishable foodstuffs (e.g. fruits and vegetables) which are mainly supplied from smallholdings and whose wholesale prices are seldom controlled. Even in the case of more durable commodities, such as cereals, middlemen play an exaggeratedly important part in many countries. In some of the Central American countries for example, 50 per cent of the price paid by consumers for such commodities is absorbed by the marketing margin. A quarter of this margin consists of transport and storage costs and the remainder represents the middlemen's profits.

^{6/} Development Corporation and Ministry of Agriculture, Programa Nacional de Desarrollo Ganadero 1961-70.

Table 16

SELECTED LATIN AMERICAN COUNTRIES: PERCENTAGE RELATION BETWEEN
THE INDICES OF THE COST OF FOODSTUFFS AND
COST OF LIVING, RESPECTIVELY, 1950-60 a/
(1950 = 100)

Country	1960
Argentina	1.19
Brazil	1.18
Chile	1.75
Mexico	1.02
Peru	1.12
Uruguay	1.34

Source: ECLA, on the basis of official national statistics.

a/ The index for the cost of foodstuffs has been divided by
cost-of-living index.

/Table 17

Table 17

LATIN AMERICA: VARIATIONS IN THE AVERAGE YIELD AND CROP AREA OF NINETEEN
AGRICULTURAL COMMODITIES, PRE-WAR PERIOD TO 1957-59 a/

(Index: 1934-38 = 100)

	Index 1957-59	Annual rate of variation
Production	160	2.2
Crop area	138	1.5
Productivity per hectare <u>b/</u>	116	0.7
Average yield per hectare <u>c/</u>	105	0.3
Crop area (millions of hectares)	50.9	-

Source: FAO, Production Yearbooks. The unit values of the ECLA index ...
were used to calculate the production index.

- a/ Including wheat, maize, rice, oats, barley, beans, peas, lentils, chick-peas, broad beans, sweet potatoes, manioc, potatoes, tomatoes, peanuts, sunflower seed, linseed, cotton, tobacco.
- b/ The production index is divided by the index of area to give this result.
- c/ The increase in unit yield has been weighted in accordance with the relative importance of each commodity within the total area occupied by the group in the base year.

/(d) Production

(d) Production efficiency

It is interesting to note that, unlike the trend of developments in other regions, the increase in agricultural production recorded in Latin America is chiefly attributable to an extension of the cultivated area since average unit yield has improved very little.

The group of nineteen staple commodities presented in table 17, which together cover more than 50 million hectares, in other words, nearly half the entire crop area,^{7/} recorded a productivity increment of only 16 per cent per hectare between the pre-war period and 1957-59, equivalent to an annual growth rate of 0.7 per cent, whereas the area on which they were grown was enlarged during the same period by 38 per cent, i.e. at the rate of 1.5 per cent yearly. Much of this improvement in productivity can be ascribed to the greater relative output of items having a higher unit value. If yield increment is considered in physical terms alone, the rise in productivity during the period under consideration was not more than 5 per cent, which would represent an annual rate of only 0.3 per cent.

There was no radical change in the situation after the war. Table 18, which covers the same commodities as table 17 and includes a few more on which adequate information could be obtained, shows that between the five-year period 1948-52 and 1957-59 yield increased very little in physical terms, i.e. only 7 per cent in eight years - an annual rate of 0.8 per cent. Although this admittedly is a relative improvement over the whole period, it is certainly far below the percentage registered in Europe and North America during the same period. In fact, average yield for the group of commodities under consideration increased in both regions at the rate of about 2.8 per cent yearly (approximately 25 per cent in eight years). This pushed up production there to an appreciable extent, despite the fact that in Europe the crop area expanded barely 3 per cent and in North America was reduced by 7 per cent.

^{7/} The proportion is actually larger, since 15 to 20 per cent of the crop area is lying idle.

Table 18

LATIN AMERICA, EUROPE AND NORTH AMERICA: VARIATIONS IN AVERAGE
YIELD AND CROP AREA, 1948-52 TO 1957-59 a/

(Index: 1948-52 = 100)

	Index of crop area	Index of average yield
Latin America	124	107
Europe	103	124
North America	93	125
<u>World total</u>	<u>114</u>	<u>121</u>

Source: As for table 17.

a/ Comprising the nineteen commodities listed in table 17 plus sorghum, soya beans, sesame, onions and grapes. In the case of Europe manioc was excluded, and in that of North America, manioc, broad beans, chick-peas, lentils and sesame, since the quantities produced are too small to appear in the statistics.

From table 19 it may be seen that only six of the twenty-four commodities under review showed an increment in yield of more than 10 per cent in Latin America, whereas in Europe and North America this percentage was improved upon by seventeen commodities and by fourteen in the whole world.

/Table 19

Table 19
LATIN AMERICA, EUROPE AND NORTH AMERICA: VARIATIONS IN
AGRICULTURAL YIELD, 1948-52 TO 1957-59

Percentage variation	Latin America		North America		Europe		World total	
	Number of commodities	Percentage area a/	Number of commodities	Percentage area a/	Number of commodities	Percentage area a/	Number of commodities	Percentage area a/
More than 10	6	13.8	17	89.3	17	88.1	14	87.4
5 - 10	5	54.1	-	-	3	11.0	3	3.4
0 - 5	5	25.1	1	8.4	1	0.5	4	7.3
0 or minus	8	10.6	1	2.3	2	0.4	3	1.9
<u>Total</u>	<u>24</u>	<u>100.0</u>	<u>19</u>	<u>100.0</u>	<u>23</u>	<u>100.0</u>	<u>24</u>	<u>100.0</u>

Source: As for table 17.

a/ Percentage corresponding to 1957-59.

/In terms

In terms of the area covered by each of the crops concerned, the difference between Latin America and Europe, North America and the world total is still more marked. The crops whose yield has been stepped up by more than 10 per cent occupy in Latin America less than 14 per cent of the total acreage for the twenty-four commodities, while the proportion for the other two regions and the world is nearly 90 per cent. Similarly, the crops whose yield has gone down represent an area of more than 10 per cent in Latin America, but a negligible percentage in the other two regions. At a time when production of nearly every agricultural commodity made striking advances in both Europe and North America thanks to the adoption of improved techniques, Latin America saw the productivity of a number of salient commodities decline, and when some improvement did take place it was usually greatly inferior to achievements in other regions (see annex II, table 3).

The situation is, in fact, even more serious, since the levels of yield in Latin America are, on the whole, far below those prevailing in other regions. Table 20 shows that unit yield for the six items listed is much lower in Latin America than in Europe and North America. For instance, in the case of rice it is less than half the amount in North America

Table 20

LATIN AMERICA, EUROPE AND NORTH AMERICA: YIELD VARIATIONS FOR SIX SELECTED COMMODITIES a/

(Quintals per hectare)

	Latin America		Europe		North America	
	1948-52	1957-59	1948-52	1957-59	1948-52	1957-59
Wheat	10.6	11.6	14.7	18.2	11.6	14.7
Rice	16.9	17.1	42.2	45.3	25.6	36.4
Maize	10.6	11.4	12.4	19.8	24.5	31.6
Barley	10.6	10.4	16.9	21.6	14.5	15.0
Potatoes	53.0	60.0	138.0	148.0	152.0	188.0
Cotton	2.1	2.6	1.5	2.7	3.2	4.9

Source: As for table 17.

a/ Representing 75 per cent of the entire crop area occupied by the sample of twenty-four commodities in Latin America.

/and almost

and almost a third of the figure obtaining in Europe. The situation as regards maize, barley and potatoes is much the same, but in the case of wheat there is less of a difference between Latin America and North America although it is still fairly marked between Latin America and Europe. The only crop from which a relatively higher yield is obtained in Latin America is cotton, but even here the region is gradually falling behind the other two regions, as a result of their progress in the past decade.

In the group of commodities taken as a whole, on four-fifths of the total acreage covered, yield per hectare was less than the world average, higher figures being obtained on only 18 per cent of the area. In North America, on the other hand, virtually the whole of the crop area yields more than the world average and in Europe only 27 per cent produces less (see annex II, table 3). Other staple products that were not included for want of full statistical coverage for the region are in the same situation as the group described. For instance, coffee production in Brazil rose 90 per cent between the five-year period 1948-52 and 1960, following an increment of 61 per cent in the cultivated area but of only 18 per cent in average yield,^{8/} and cacao production increased by 46 per cent during the same period simply by virtue of a 70 per cent expansion in the crop area, since unit yield dropped 15 per cent. In Ecuador the 28 per cent increment in cacao production was due to an expansion of 20 per cent in the crop area and an improvement of 7 per cent in yield. Lastly, the development of banana cultivation in Brazil and Mexico was entirely attributable to an extension of the cultivated area, yield during the decade remaining the same.

Animal products are in an even worse position. Argentina, Chile and Uruguay are the only countries where beef yield per head of stock is more or less on a par with figures in more developed stock farming areas, such as Australia and New Zealand. In the rest of Latin America beef production per head of stock is about half that of the three countries mentioned. The same applies to the rate of slaughter. As table 21

^{8/} The fact that the new land brought into cultivation was more fertile, especially in the State of Parana, helped to raise yield.

Table 21
BEEF YIELD IN LATIN AMERICA AND SELECTED COUNTRIES, 1960

	Rate of slaughter (Percentage)	Carcase meat per head of stock (kilogrammes)
Argentina	21.1	43.8
Uruguay	14.0	34.5
Chile	18.7	43.9
Rest of Latin America	11.0	20.0
Australia	38.4	39.3
Canada	31.6	54.5
United States	27.0	74.6
New Zealand	36.5	40.0
United Kingdom	28.0	70.6

Source: ECLA, on the basis of official statistics on cattle slaughtering, meat production and estimated inventories.

indicates, the extraction percentage in 1960 was approximately 21 and 19 per cent in Argentina and Chile respectively, but barely reached 11 per cent for the whole of the rest of the region. It should be pointed out, however, that even the relatively high rates in the first two are considerably lower than those recorded in more developed countries.

Apart from the factors mentioned, there are other productivity indices in Latin America, such as the lower birth rate, higher death rate and the very limited carrying capacity of pastureland, which testify to the inefficiency of stock farming there in comparison with more advanced areas.

Sheep and pig production is in much the same state. In the case of the latter, it is estimated that the slaughter rate in Latin America is a third of the rate in more developed countries, where the annual extraction exceeds the total inventory, which is replenished from year to year. Furthermore, the size and fattening of the animals has never acquired the same importance in Latin America as in other parts of the world.

/Because of

Because of this low average productivity, Latin America has had a much larger cattle population with which to achieve the meat production levels recorded. North America and Europe, with approximately 110 million head of stock each, produced more meat than Latin America, which has nearly 200 million.

With respect to milk production, the picture is also one of low unit yield, although there are considerable differences among the Latin American countries and even within a single country. For instance, in the temperate zones, where strains are more specialized, animals are better fed and herd and pasture management is more efficient, the annual yield recorded is about 1,200 to 1,500 litres of milk per cow. Nevertheless, this figure is far outstripped by the yield obtained in such countries as the United States, Denmark and the Netherlands, where it fluctuates between 3,000 and 4,000 litres. In tropical countries it is more difficult to acclimatize specialized European strains and exploitation is much more extensive, so that average yield is usually not more than 800 litres per cow yearly. It should be noted, however, that isolated examples of highly efficient dairy farms are to be found in every Latin American country, sometimes in very diverse climates, which proves that the average productivity of the dairy industry could be much higher than it is.^{2/}

As regards wool yield, the situation is equally unfavourable. Production per animal barely averages 1.5 kilogrammes in the majority of countries. Only in the River Plate area and Chile did the yearly average come close to 3.5 kilogrammes per animal, although in a similar environment 5 to 6 kilogrammes were obtained in Australia and New Zealand.

The evolution of unit yield has not been the same everywhere. Commodities have progressed in some countries and lost ground in others. Absolute yield also varies considerably from one country to another, according to the natural factors and the systems of production used (see annex II, table 5).

The increments in unit yield recorded in Latin America cannot always be ascribed to actual improvements in production methods. For instance, in the case of Argentina, there is no doubt that the increase in wheat yield was largely due to a reduction in the area sown, extensive marginal

2/ This also applies to meat production, and to agricultural production in general.

zones with a very low yield thus being eliminated so that cultivation could be concentrated on land with a higher productivity per hectare.^{10/}

On the other hand, the upward trend of unit yield and the substantial growth of agricultural production in Mexico were largely due to the extension of the irrigated area during the last fifteen years. From 816,000 hectares in 1946 the figure had become more than 2.7 million by 1960. The difference between the yield obtained from irrigated and from non-irrigated land is quite considerable, being more than double in the case of some commodities.^{11/} Apart from the expansion in the irrigated area, improved techniques were introduced and made it possible to raise the yield of a good many irrigation crops and a smaller number of crops grown on non-irrigated land.

The low yields of crop and livestock production can be put down to a number of reasons, which are often closely interrelated. There are, for instance, the primitive systems of cultivation, the scant use made of fertilizers or improved seeds, deficiencies in water utilization, the poor livestock feeding, mainly because of seasonal shortages of fodder and inefficient pasture management, the generally low standards of animal health and genetics, and the lack of integration or complementarity between livestock and crops, etc. all of which are closely bound up with the low educational level of the rural worker, the system of land tenure in force and, in general, the lack of an agrarian policy that would stimulate the application of more modern technical methods. The influence of structural

^{10/} Between the two five-year periods 1925-29 and 1950-54, wheat land was reduced by about 2.5 million hectares altogether, the low-yield areas eliminated amounting to even more.

^{11/} The following figures give a clear idea of the disparities:

	<u>Irrigated land</u> (Kg/ha)	<u>Non-irrigated land</u> (Kg/ha)
Rice	2 839	1 736
Maize	1 512	913
Wheat	1 972	1 037
Beans	1 077	430
Potatoes	8 170	5 087
Sugar-cane	67 553	51 655

/and institutional

and institutional shortcomings on agricultural production and productivity are gone into more exhaustively in other parts of this study, while livestock production problems are examined in greater detail in other documents.^{12/}

In the present section, all that is intended is to bring out one fundamental point, i.e. the gradual destruction of the land's productive capacity that can be observed in many agricultural areas in Latin America.

Even when trustworthy data on cases of soil destruction in Latin America are not obtainable, there are manifest signs in most countries - dune formation and advance, marginal areas of cultivation, impoverished pastureland, etc. - that this process has assumed alarming proportions, owing to the lack of soil conservation practices and, to a great extent, the lack or insufficient use of fertilizers to replace the nourishment that the crops extract from the soil. Table 22 demonstrates that, even though fertilizer consumption increased more than five-fold in Latin America during the last fifteen years, it is still very low in absolute terms, especially in comparison with the levels in other regions. In fact, in the 1959/60 crop year, the total amount of fertilizers consumed in Latin America (in terms of nutrients per hectare) was equivalent to only 10 per cent of the total in Europe and little more than a quarter of consumption in Oceania and North America. The difference between some of the Latin American countries on the one hand, and, on the other, North America and countries in Europe and Asia may be appreciated from annex II, table 6. Chile, for example, which is a major producer of sodium nitrate, does not use more than the equivalent of 7 per cent of the total amount consumed by Japan, with an arable area of much the same size.

In view of the exceptional importance of soil destruction through unplanned forest exploitation, it has been thought worth while to devote a special paragraph to this subject. The beneficial properties of forests as a protection for the soil are well known. They include the multiple action of tree roots, of the topsoil and of the humus formed from leaf droppings; their controlling influence over surface and underground streams, preventing torrents and flood damage and regulating river flow; wind

^{12/} See Livestock in Latin America: Status, Problems and Prospects. I. Colombia, Mexico, Uruguay, Venezuela, United Nations Publication, Sales No.: 61.II.G.7 and Livestock in Brazil: Status, Problems and Prospects (E/CN.12.636).

protection, defence against dunes, etc. In addition, they provide a convenient shelter for livestock and wild animals. But a continuous process of deforestation is obviously going on in Latin America which is not being counteracted by adequate replacement activities, and is often without any justification as regards the level of timber production. In many parts of Latin America, the arable area was enlarged at the expense of the forests and without a proper conservation policy; this has meant that, with the passage of time, large tracts of land have become useless for both timber and crops, since most deforested land is unsuitable for permanent crop or stock farming. It is clearly essential for fertility to be restored to the soil in many parts of the region by means of extensive afforestation programmes. This would entail the mass adoption of modern farming techniques in those parts of the remaining land which are clearly suitable for crops or livestock.

Table 22

FERTILIZER CONSUMPTION BY REGIONS, 1945-60

Region	Arable area (Millions of Hectares)	Nutrients in plants (kg/ha)				Percentage increment with respect to 1945-46		
		1945-46	1949-50	1954-55	1959-60	1949-50	1954-55	1959-60
Africa	223	0.5	0.8	1.4	1.8	57	167	248
Europe	154	21.9	41.5	59.7	83.1	89	173	280
Far East ^{a/}	261	0.3	3.9	6.7	9.7	1 079	1 903	2 842
Latin America	102	1.5	2.2	4.7	8.2	46	212	446
Middle East	77	0.6	1.7	2.7	3.2	177	329	421
North America	229	11.7	17.6	25.7	31.1	51	120	167
Oceania	28	13.3	18.1	25.8	30.0	36	94	125
Soviet Union	221	3.1	4.6	7.8	10.6	51	153	244
<u>World total ^{a/}</u>	<u>1 295</u>	<u>5.8</u>	<u>10.4</u>	<u>15.6</u>	<u>20.9</u>	<u>80</u>	<u>170</u>	<u>262</u>

Source: As for table 17.

a/ Excluding mainland China.

/(e) Economically

(e) Economically active population and gross product in the agricultural sector

In view of the fact that agricultural production has progressed less rapidly than that of other sectors of the Latin American economy, the share of agriculture in the regional gross domestic product has been gradually shrinking during the last few decades. From nearly 30 per cent in the pre-war period, it came to represent little more than 21 per cent in 1958-60.

This evolution, which is normal in developing countries, was accompanied in Latin America by an extensive drift to the towns. As indicated in table 23, the economically active population in the agricultural sector increased by only 30 per cent between the pre-war period and 1958-60, i.e. at an annual rate of approximately 1.3 per cent, whereas the total active population increased by 65 per cent in the same period, and by 118 per cent in the other sectors, i.e. 3.8 per cent yearly. However, during the last decade the economically active agricultural population increased at a more vigorous pace thanks to the upward trend of demographic growth in the region as a whole, attaining a rate of 1.5 per cent annually. But, despite the rising rate, population shifts continued to take place on a fairly sizable scale, since the economically active population in non-agricultural sectors increased 3.9 per cent yearly in the same decade. Consequently, this group in the agricultural sector reckoned as a percentage of the total economically active population dropped sharply to nearly 48 per cent in 1958-60 from 60 per cent before the war.^{13/}

For the same reason the gross product per economically active person increased more rapidly in the agricultural sector than in all the other sectors together. Although the total agricultural gross product failed to keep pace with that of other activities, the product per economically active person in the same sector expanded by 38 per cent (1.6 per cent annually) in the course of the two decades under consideration, but by only 27 per cent in the remaining sectors as a whole (1.2 per cent annually). In the last few years of the period, there was a fairly considerable step-up in the rate at which productivity per employed person in agriculture was increasing yearly to nearly 2.3 per cent. Conversely, a substantial decline was

^{13/} Nevertheless, the active agricultural population continued to increase in absolute terms: from 24.7 million before the war it rose to 32.2 million in 1958-60.

Table 23

LATIN AMERICA: AGRICULTURAL AND NON-AGRICULTURAL GROSS
DOMESTIC PRODUCT

(Total and per economically active person)

	Pre-war period a/	1945-47	1951-53	1958-60
Total gross domestic product	100	137	182	248
Agricultural sector	100	114	138	179
Non-agricultural sectors	100	146	200	278
Total economically active population	100	118	137	165
Agricultural	100	109	117	130
Non-agricultural	100	132	167	218
Gross domestic product per economically active person	100	115	133	151
Agricultural sector	100	104	118	138
Non-agricultural sectors	100	111	120	127
Agricultural sector as a percentage of the total gross domestic product	29.5	24.6	22.4	21.3
Agricultural workers as a percentage of the total economically active population	60.5	55.9	51.9	47.8
Ratio between the gross domestic product per person economically active in non-agricultural and agricultural sectors	3.66	3.88	3.74	3.38

Source: ECLA estimates.

a/ 1937-39.

/recorded for

recorded for the other sectors where the rate dropped to as little as 0.8 per cent yearly. This came about because of their failure to develop enough to absorb all the immigrants from the countryside which meant that some of the unemployment and underemployment in agricultural activities was transferred to the towns.

The influence exerted by the weak growth rate of Argentina's economy in general and agricultural sector in particular should be taken into account here. When this country is excluded, both the agricultural and non-agricultural gross products made much swifter progress (see table 24). Productivity per employed person also rose much more quickly, annual rates of 1.9 and 1.3 per cent respectively being recorded for the agricultural sector and the remaining sectors as a whole. For the latter period, approximately the same ratios as those indicated for the entire region were maintained: the product per economically active person in the agricultural sector increased 2.6 per cent yearly, but dropped to only 1 per cent for the other sectors. However, if Argentina is left out, the economically active persons in the agricultural sector represent a larger share of the total number, since only a small proportion of about 20 per cent is employed in crop and livestock activities.

The tables in question offer other interesting points for consideration. For instance, there is the question of the disparity between productivity per person employed in the agricultural and in the other sectors. Although the gap has narrowed in the last few years as a result of the greater relative increase of productivity in the former, it is still appreciable, the ratio being currently about three and a half to one. There are, of course, marked disparities among the different countries of the region. According to preliminary information obtained, the ratio is 1 to 1.5 in Argentina, but almost one to four in Brazil, Mexico and Peru - which demonstrates that agriculture in the last three is at a very low level technically. The product per economically active person also differs considerably in absolute terms. In 1960, the gross agricultural product per economically active person in Argentina, Cuba and Uruguay was about eight times greater than in Bolivia and Haiti, and four times greater than in Paraguay and Peru. As table 25 testifies, only nine of the Latin American countries exceeded the regional average.

/Table 24

Table 24

LATIN AMERICA (EXCLUDING ARGENTINA): AGRICULTURAL AND NON-AGRICULTURAL
GROSS DOMESTIC PRODUCT

(Total and per economically active person)

	Pre-war period a/	1945-47	1951-53	1958-60
Total gross domestic product	100	137	190	269
Agricultural sector	100	115	145	193
Non-agricultural sectors	100	147	210	304
Total economically active population	100	118	138	167
Agricultural	100	110	118	132
Non-agricultural	100	132	175	235
Gross domestic product per economically active person	100	117	138	161
Agricultural sector	100	105	123	147
Non-agricultural sectors	100	111	120	130
Agricultural sector as a percentage of the total gross domestic product	31.3	26.3	23.9	22.4
Agricultural workers as a percentage of the total economically active population	65.3	61.0	55.9	51.3
Ratio between the gross domestic product per person economically active in non-agricultural and agricultural sectors	4.14	4.38	4.03	3.65

Source: ECLA estimates.

a/ 1937-39.

/Table 25

Table 25

LATIN AMERICA: AGRICULTURAL GROSS DOMESTIC PRODUCT PER
ACTIVE PERSON, 1960

(Indices: Latin America = 100)

Country	Index
Uruguay	290
Cuba	249
Argentina	244
Costa Rica	200
Venezuela	147
Colombia	143
Panama	143
Nicaragua	115
Chile	111
Guatemala	90
Dominican Republic	87
Mexico	86
Brazil	80
El Salvador	73
Honduras	71
Ecuador	68
Peru	61
Paraguay	59
Bolivia	31
Haiti	31

Source: ECLA, on the basis of purely provisional data.

/It may

It may be worth while to add a further reminder that the sole purpose of the indices given in other tables is to illustrate orders of magnitude. Each of them incorporates large rural population sectors whose income is much less than the corresponding national average. As will be shown in a later section, the inequitable distribution of agricultural income, due chiefly to the great extent to which land is concentrated in the hands of a few owners, means that the income levels of most of the agricultural population fall 20 or 30 per cent or even farther short of the statistical averages mentioned. If the annual gross product per member of the agricultural population is taken to be, in absolute terms, about 140 dollars (at 1950 prices) for Latin America as a whole, in the case of the bulk of agricultural wage-earners and smallholders the corresponding figure probably does not exceed 90 or 100 dollars a year. Because of the statistical difficulties to which allusion has repeatedly been made, it is impossible to present an exact picture of the situation, either by population groups or by geographical areas; the real state of affairs, however, cannot differ very greatly from that described, at least as far as the relative disparities between the various countries and social groups are concerned.

2. Living condition of the agricultural population in Latin America

Of the 206 million inhabitants of the twenty Latin American republics in 1960, approximately 110 million were living in rural areas. It is the present living conditions of the major proportion of this rural population - those engaged in crop and stock farming and forestry ^{14/} - that will be briefly analysed in the present chapter. ^{15/}

^{14/} Under the classification used in population censuses, inhabitants of small townships pursuing such occupations as mining or fishing on the one hand, or business or home industries on the other, are also shown as rural population. Although as a general rule their levels of living are very similar to those of agricultural workers, it is primarily to the living conditions of these latter, who represent over 90 per cent of the rural population, that the present chapter will refer.

^{15/} It should be noted that extremely fragmentary data had to be used in this connexion, as no complete statistics exist whereby the levels of living of the agricultural population can be precisely assessed. Even with these reservations, however, the figures presented are fairly illustrative of the situation prevailing in the rural areas of Latin America.

The geographical distribution of the rural population throughout Latin America is determined by the relative demographic importance of each country and by its degree of urbanization. In 1960 approximately 40 per cent of the total was concentrated in Brazil, where about 43 million persons were living in rural areas. Next in importance came Mexico, with a little over 16 million; Colombia, with 8.3 million; and Peru and Argentina, with about 7 million each. In all the other Latin American countries the rural population in 1960 numbered fewer than 4 million inhabitants.

In relative terms, the countries with the highest degree of urbanization or the lowest proportion of rural population are Uruguay, Argentina, Chile and Venezuela;^{16/} those whose population is of a semi-urban (or semi-rural) character are Colombia, Cuba, Mexico, Panama, Brazil and Costa Rica;^{17/} and the population of the remainder is pre-eminently rural.^{18/}

Broadly speaking, there is a certain over-all correlation between the degree of urbanization and the level of economic development in the countries listed. In the most highly urbanized, average per capita income tends to be higher than in those where semi-urbanization or rural conditions prevail; but despite this correlation, even in the countries that are apparently at a more advanced stage of development the standard of living of vast masses of the rural population is extremely low.

The analysis which follows will cover various aspects of the living conditions in question.

(a) Economic situation

Generally speaking, this is characterized by a low average level and a very inequitable distribution of agricultural income. It has already been pointed out that the average income of the agricultural worker was much smaller than that of the worker engaged in non-agricultural activities.

^{16/} More than 60 per cent of the total population was urban in 1960, and over 80 per cent in the case of Uruguay.

^{17/} Between 40 and 60 per cent of their total population was urban in 1960.

^{18/} The minimum proportion of rural population in 1960 was 65 per cent, but in some countries the figure was much higher (78 per cent in Honduras and 87 per cent in Haiti).

/And this

And this is true, in varying degrees, of all the countries of the region. The averages registered, however, obscure the real facts as to the economic situation of the bulk of the rural population, because of the extremely uneven distribution of agricultural income. In Chile, for example, in the middle of the last decade, the agricultural-employer sector, which represented 12.4 per cent of that country's total agricultural active population, received an average income fourteen times as high as that of the agricultural-worker sector (see table 26).

The over-all data presented are corroborated by many specific studies. A case in point is the research undertaken by the Ministry of Agriculture of Chile in the large agricultural commune of San Vicente de Tagua-Tagua,^{19/} according to which, inter alia, the total income of the local inquilinos,^{20/} taking into account all forms of remuneration (including consumption of their own produce), was insufficient to guarantee a minimum balanced diet, irrespective of other expenditure.

Within the group of semi-urban or semi-rural countries, the cases of Cuba and Brazil may be cited. A survey carried out in Cuba in 1956,^{21/} which covered a thousand agricultural workers' households, distributed throughout the country's 126 municipalities, and considered to be representative of a sample universe of about 400,000 households, indicated that, in contrast with the average annual income of approximately 370 dollars registered for the country as a whole, the average income of the rural population was only

^{19/} Ministry of Agriculture, Department of Agronomics, Aspectos Económicos y Sociales del Inquilinaje en San Vicente de Tagua-Tagua, Santiago, Chile, 1960.

^{20/} The inquilino is the cornerstone of the structure of agricultural labour in Chile. The system of inquilinaje is characterized by the following features: (a) annual contracts and steady work; (b) payment basically in kind, including a plot of cultivable land for the inquilino's own use and grazing rights for a given number of animals (only 25 per cent of the total remuneration is paid in cash); and (c) the obligation to bring another worker into the agricultural enterprise (if no relative is available, the inquilino, in order to comply with the rules of the system, must provide board and lodging in his house for an outsider and must share with him the remuneration received in kind).

^{21/} This survey was carried out by the Agrupación Católica Universitaria.

Table 26

CHILE: INCOME DISTRIBUTION IN THE AGRICULTURAL SECTOR,
BY SOCIAL GROUPS, 1954

(Expressed in terms of escudos at 1960 prices)

Social group	Active persons		Aggregate income		Income per active person (Escudos)
	Thousands	Percent ages	Millions of escudos	Percent-ages	
Working class	574.2	87.2	190.3	34.0	331
Middle class	2.9	0.4	2.1	0.4	724
Employer class ^{a/}	81.7	12.4	367.0	65.6	4 492
	<u>658.8</u>	<u>100.0</u>	<u>559.4</u>	<u>100.0</u>	<u>849</u>

Source: Helio Varela, Estratificación social de la población trabajadora en Chile y su participación en el ingreso nacional (1940-1954) Panorama Económico, N° 199, Editorial Universitaria, Santiago, Chile, February, 1959.

The figures for the working class were adjusted by Marvin J. Sternberg, Distribución de los ingresos en la agricultura chilena Panorama Económico, N° 226, December 1961.

a/ The author of the table classifies employers' earnings under two heads: one representing entrepreneurial earnings, to which he assigns 133 million escudos (1,628 escudos per active person), and the other corresponding to income on property calculated residually, to which he assigns 234 million escudos (2,864 escudos per active person).

/92 dollars,

92 dollars, i.e., one-fourth as much. A similar situation prevails in Brazil. The average national income per active person in the agricultural sector is about 110 dollars (as against 440 dollars in the non-agricultural sectors); but in the North Eastern region, where about one-third of Brazil's total population is to be found, and almost 80 per cent of whose inhabitants live in rural areas, the over-all average falls to about 85 dollars a year, while for agricultural workers in the sugar-growing areas it drops to approximately 50 dollars.

In the pre-eminently rural countries of Latin America the economic situation of the broad masses of the rural population is certainly no better. A few data relating to Ecuador may serve to illustrate this fact.

One of the most characteristic groups within the rural population of Ecuador, although numerically not one of the largest,^{22/} is that of the huasipungueros, composed of agricultural labourers who have to work for a certain number of days a week on the farms in the sierra, receiving in compensation a cash payment and the right to cultivate a plot of land. In a study carried out for the Institute of Anthropology and Geography of Ecuador in 1959,^{23/} it was found that the average income of the huasipunguero population fluctuated (in terms of dollars) between 11 and 27 cents a day, including both cash wages and payments in kind. At the same time, it was established that the daily wage for unattached labourers (who are not entitled to remuneration in kind) was - taking the average for the ten sierra provinces - equivalent to a little under 40 cents. If it is estimated that each worker has a household of three persons, average per capita income works out at less than 15 cents a day. On the coast of Ecuador wages are higher, and in 1959, according to the study referred to above, they reached an average of rather more than 60 cents a day per worker. Although in law the huasipunguero system was abolished in 1962, the situation of other agricultural workers was clearly not much better.

^{22/} About 100,000 persons.

^{23/} See Alfredo Corrales Samaniego, in the Revista del Instituto de Derecho del Trabajo y de Investigaciones Sociales, Year I, No.2 (July-December 1961), Central University of Quito, Ecuador.

(b) Diet

This is another basic indicator of the level of living of the bulk of Latin America's rural population. Unfortunately, on this subject again there are no studies which give an exact idea of the real state of affairs among the agricultural populations of the various countries of the region. The few studies available on consumption of food in general and of calories and proteins in particular relate, as indicated in an earlier section, to the population as a whole, and do not differentiate either between social classes (upper, middle and lower) or between population sectors (urban and rural). It is easy to see, however, that owing to the low income levels prevailing in rural environments nutritional conditions among the rural population groups are in general very unsatisfactory, especially from the qualitative standpoint.

Thus, for example, the survey carried out in Cuba in 1956 revealed the following facts in connexion with the diet of the rural population. Only 4 per cent of the population in question indicated that meat formed an integral part of their usual rations. Fish was mentioned by less than 1 per cent. Eggs were eaten by 2 per cent of agricultural workers, and only 11 per cent drank milk. Consumption of bread and wheat flour was confined to 3 per cent and 7 per cent of the rural population, respectively, and no mention whatever was made of green vegetables. The main sources of energy-giving food were rice, which constituted 24 per cent of the total diet; beans accounting for 23 per cent; and a group of vegetables comprising plantains, sweet potatoes, malanga and squash, which represented 22 per cent. It was remarkable how uniformly these three items figured as the staple diet of the Cuban agricultural worker.

In Peru, according to a publication ^{24/} which sums up the findings of several surveys carried out in the various geographical zones of the country (coastal belt, sierra and selva) and in different environments (urban and rural areas), the situation with respect to nutritional deficiencies is as indicated in table 27.

^{24/} See Ministry of Public Health and Social Welfare, Inter-American Co-operative Service of Public Health, and Institute of Nutrition, La Alimentación y el Estado de Nutrición en el Perú, Lima, Perú, March 1960.

Table 27

PERU PERCENTAGE OF FAMILIES CONSUMING LESS THAN 75 PER CENT OF THE DIET
RECOMMENDED, BROKEN DOWN BY FOOD FACTORS

(Percentages)

Food factor	Coastal belt		Mountain region		Forest region
	Urban area	Rural area	Urban area	Rural area	Semi-urban and urban area
Calories	5.8	19.8	21.0	60.7	26.2
Proteins	9.1	29.7	18.0	67.7	21.9
Calcium	77.1	85.9	86.0	89.9	82.9
Iron	9.9	27.6	13.0	16.7	7.9
Vitamin A	36.9	65.3	42.0	89.5	37.1
Thiamine	35.9	59.8	66.0	41.7	33.8
Riboflavin	34.7	68.4	52.0	53.7	45.5
Niacin	3.1	13.5	0.0	25.0	24.3
Vitamin C	22.4	40.8	24.0	35.2	11.8

Source: Ministry of Public Health and Social Welfare, Inter-American Co-operative Service of Public Health, and Institute of Nutrition, La Alimentación y el Estado de Nutrición en el Perú, Lima, Peru, March 1960.

/It can

It can be seen from the table in question that both on the coast and in the sierra nutritional deficiencies tend to be much more serious in rural than in urban households. Dietary recommendations in respect of the various food factors represent quantities sufficient to keep healthy persons well nourished and to provide a safety margin over and above minimum requirements. A danger point is reached when intake is between 50 and 75 per cent of the recommended diet. Thus, households classified in the groups consuming less than 75 per cent of the amounts recommended are considered to be suffering from some kind of nutritional deficiency.

In the light of this concept, and of the data presented in table 27, it can be seen that the diet of 20 per cent of rural households on the coast and 60 per cent in the sierra is seriously deficient in calories. Intake of proteins is inadequate in 30 per cent of rural households on the coast and nearly 70 per cent in the sierra. In the case of other food factors, such as calcium, the deficiency is much more widespread, and affects about 90 per cent of rural households both on the coast and in the sierra. Considerable deficiencies are also observable in respect of vitamin A, thiamine, riboflavin, niacin and vitamin C. All this shows that the nutritional levels of the rural population of Peru are as a general rule deplorably low.

With respect to Brazil, mention may be made of the North Eastern region, an area with a pre-eminently rural population. Here the average daily consumption of calories is less than 2,000, as against an average consumption of approximately 2,500 calories a day in Brazil as a whole. According to some sources,^{25/} there are many cases in the area in question where the income of the rural population is so low that their nutritional levels are far below the average.^{26/}

^{25/} See René Dumont, Terres vivantes, Plon, Paris, 1961.

^{26/} On some reasonably typical estates the daily wage in 1958 was from 20 to 35 cruzeiros, without food. Farm workers had to pay for their farinha (dry yucca starch, almost entirely devoid of proteins and often containing from 15 to 30 per cent of pulp), which is the staple item of food throughout the whole of the North and North Eastern regions of Brazil, at a rate of 25 cruzeiros per kilogramme. In other words, their daily wage was the equivalent of about 1 kilogramme of farinha. In South China, the lowest wages which Professor Dumont came across represented the equivalent of 2 kilogrammes of hulled rice, a food of much higher quality than farinha.

/Another example

Another example is afforded by Ecuador, where, according to various surveys, the diet of the bulk of the rural population does not provide a satisfactory daily minimum of calories per inhabitant.

Evidence of this can be found in a study published by the Ministry of Social Security and Health, in which nutritional surveys carried out in various parts of the country are analysed. Table 28 sums up the principal findings of these surveys with respect to the rural population groups.

(c) Education

The low income of Latin America's rural population, analysed in earlier paragraphs, is reflected in appalling social conditions as regards levels of education, housing, public health, sanitation and diet.

With respect to education, it should be pointed out that the over-all level of illiteracy is much higher in the rural than in the urban areas in all the countries of the region, without a single exception. By way of corroboration, a UNESCO table is reproduced here showing the level of illiteracy among the urban and rural population aged fifteen years or over, in nine Latin American countries, about 1950.

It can be seen from table 29 that the level of illiteracy was from twice to six times as high - according to the country concerned - in the rural areas as in the larger towns. In the latter at worst, not more than 30-35 per cent of the population in the over 15 age group are illiterate. In the rural areas, on the other hand, the level of illiteracy ordinarily fluctuates between 40 and 80 per cent of the population aged over 15 years. Although the proportions have no doubt varied in the course of the past decade, these figures give a fairly clear idea of the situation.

It should also be stressed that there is no direct correlation between the level of rural illiteracy and average per capita income levels in the agricultural sectors of the various countries. Thus, for example, Paraguay where the average income figure is less than half that registered in Chile, shows exactly the same rural illiteracy percentage as the latter country. In Venezuela, where average per capita income in the agricultural sector is slightly more than in Panama, the level of rural illiteracy is 50 per cent higher.

/Table 28

Table 28

ECUADOR: NUTRITIONAL LEVELS IN SELECTED RURAL AREAS

Locality	Year of survey	Type of population	Average daily intake of calories	Main nutritional deficiencies
Cotacollao Canton of Quito	1953	Mainly <u>mestizo</u> ; a smaller proportion indigenous	1 705	Calcium Vitamin A
Communities of Pegucho and La Bolsa (Otavalo)	1953	Indigenous	1 697	Calcium Vitamin A Riboflavin
Rural population on the littoral or Costa Baja of Ecuador	1954	<u>Mestizos</u> in the sierra and negroes on the coast	2 035	Calcium Riboflavin

Source: Ministry of Social Security and Public Health, La Realidad Alimentaria Ecuatoriana, 1956.

Table 29

LATIN AMERICA: ILLITERACY AMONG THE URBAN AND RURAL POPULATION IN THE
OVER-FIFTEEN AGE GROUP IN NINE SELECTED COUNTRIES, 1950 ^{a/}

Country	Percentage of illiterate persons	
	Urban	Rural
Brazil	27	67
Chile	11	37
Costa Rica	8	28
Dominican Republic	29	67
El Salvador	35	77
Nicaragua	30	80
Panama	8	46
Paraguay	14	37
Venezuela	30	72

Source: UNESCO, The educational situation in Latin America, Paris, 1960
^{a/} Chile, 1952.

/Primary school

Primary school attendance rates in the 5-14 age group constitute another important aspect of the question, since they are indicative of what is being done to raise the future level of literacy in the various countries. Table 30 shows rates of attendance at primary schools, determined on the basis of the ratio of the number of children enrolled to the total number of children of primary school age (5 to 14 years).^{27/} These rates are given for the various countries of the region and relate to the period 1955-59.

The rates indicated in table 30 correspond to the total number of children in the 5-14 age group, regardless of whether they came from urban or from rural homes. In order to give some idea of the position in the urban and rural sectors in this respect, rural population percentages in 1960 are shown in the first column of the table, by countries in descending order of magnitude. From a comparison of the two columns it can be seen that, broadly speaking, and with due allowance for a few exceptions such as Costa Rica, the Dominican Republic and Paraguay, the larger the proportion of the total population represented by the rural population, the lower the rate of school attendance. This would suggest that educational facilities at the primary level are far less adequate in the rural than in the urban areas, and that the higher the percentage of rural population the less chance there is that a major proportion of the children in the 5-14 age group will be taught to read and write.^{28/}

^{27/} The rates given are higher than the real rates of school attendance, for it is common knowledge that many of the children who enrol subsequently fail to attend school regularly.

^{28/} A case in point is that of Venezuela. The 1950 Census data showed that in urban centres 32 per cent of the population aged over 7 years was illiterate, whereas in rural areas the corresponding proportion was 74 per cent.

The following were the causes of failure to attend school in rural areas in Venezuela:

- 57.0 per cent: dearth of schools
- 15.3 per cent: children gainfully employed
- 23.5 per cent: lack of resources
- 2.1 per cent: chronic disease or disability
- 2.1 per cent: unspecified causes

Total: 100 per cent.

The foregoing data are taken from Luis P. Prieto F., Reforma Agraria y Educación en Venezuela, Política, No. 8, Caracas, Venezuela, April 1960.

Table 30

LATIN AMERICA: PERCENTAGE OF RURAL POPULATION, PERCENTAGE OF TOTAL
POPULATION AGED FIVE TO FOURTEEN YEARS ENROLLED
IN PRIMARY SCHOOLS, AND FUTURE
RATE OF POPULATION GROWTH

Country	Percentage of rural population in 1960	Percentage of total population aged 5 to 14 years enrolled in primary schools in 1955-59	Estimated rate of population growth in 1965-75
	(1)	(2)	(3)
Haiti	87	24	2.6
Honduras	78	36	3.5
Dominican Republic	71	68	3.5
Bolivia	70	40	2.5
Guatemala	69	26	3.1
El Salvador	67	45	3.2
Paraguay	66	71	2.8
Nicaragua	66	40	3.5
Ecuador	65	47	3.2
Peru	64	48	3.2
Costa Rica	62	83	3.5
Brazil	61	43	3.0
Panama	59	60	2.8
Colombia	54	39	2.9
Mexico	46	51	3.0
Cuba	45	57	2.0
Venezuela	38	51	2.9
Chile	37	62	2.4
Argentina	32	70	1.7
Uruguay	18	67	0.8

Sources: For (1) and (3): ECLA, provisional population estimates for the twenty Latin American republics, presented in the Statistical Supplement to the Economic Bulletin for Latin America, Vol. VII, No. 1, Santiago, Chile, October 1962;
For (2): Latin American Demographic Centre (CELADE), A demographic analysis of the educational situation in Latin America (UNESCO/ED/CEDES/8; ST/ECLA/CONF.10/L.8; PAU/SEC/8), January 1962, document prepared for the Conference on Education and Economic and Social Development in Latin America, Santiago, Chile.

/A third

A third column has been added to the table to show probable annual rates of population growth during the period 1965-75. While they are in general very high, it should be noted that in almost all the countries with a large proportion of rural population they exceed 3 per cent. In other words, the rapidity of the estimated rate of population growth will call for a substantial effort on the part of these countries to improve the low primary-school attendance rates.

The educational situation of the rural population has been analysed only in terms of the levels of literacy and of primary education. The other educational levels (secondary and university) have not been taken into account, for want of sufficient relevant data. Nor has consideration been given to the technological training of the rural population to enable them to farm more efficiently and turn their resources to better account in the interests of social development. In all these respects, educational deficiencies are far more serious still than the deficiencies in respect of elementary literacy. Consequently, it may be asserted that the vast majority of the rural population of Latin America, apart from its minimal income levels, is in a marginal position with respect to education and culture.

(d) Housing

Another significant index which shows how extremely low is the level of living of Latin America's agricultural population is that relating to the housing situation. It is worth while to consider a few data which reveal the general position in this respect. Table 31 shows the percentages of housing units with mud floors, straw-thatched roofs and adobe walls in six countries of the region about the year 1950.

It can readily be deduced that the higher the percentage of rural housing in a given country, the poorer, as a rule, is the quality of the materials with which the housing unit is built and the worse the state in which it is maintained. Further evidence of this is afforded by a study of the situation in those countries where figures relating to the same period are available for both urban and rural housing, as is the case in Honduras, Panama and Venezuela. It is clear that in these countries mud floors and straw-thatched roofs are to be found in much higher percentages of the rural than of the urban housing units.

/Table 31

Table 31

LATIN AMERICA: PERCENTAGE OF HOUSING UNITS WITH MUD FLOORS,
STRAW-THATCHED ROOFS AND ADOBE WALLS IN SIX
SELECTED COUNTRIES, UP TO 1950

Country	Number of urban housing units as a percentage of total number of housing units	Percentage of housing units with:		
		Mud floors	Straw-thatched roofs	Adobe walls
Argentina	64	23.8	18.1	19.8
Venezuela	49			
Urban		26.4	14.7	-
Rural		83.3	67.0	84.6
Panama	42			
Urban		4.8		
Rural		69.6		
Colombia	38	52.7	46.2	72.3
Paraguay	28	73.6	74.3	-
Honduras	17			
Urban		52.7	6.3	64.6
Rural		89.8	33.8	58.4

Source: Preliminary version (October 1962) of a study on outstanding aspects of the social development of Latin America (chapter II:Housing), prepared by the General Secretariat of the Organization of American States (OAS) for the Economic and Social Survey of Latin America, 1961.

/Table 32

Table 32 shows the percentage of the population living in housing units provided with tap water, electric light and sanitary facilities, in urban and rural areas in six Latin American countries, about the year 1950.

It can be seen from table 32 that as regards the availability of tap water, electric light and sanitary facilities, the situation of residents in urban areas is vastly different from that of the population living in rural housing units.

The data given in these over-all tables can be corroborated by a series of national or local examples taken both from countries with relatively high levels of per capita income and degrees of urbanization and from those where income levels are low and the population is pre-eminently rural. They all indicate that, broadly speaking, in all the countries of the region housing conditions in rural areas are seriously deficient. In Chile, for example, it was stated at a seminar on rural housing held in 1958 that 51 per cent of the existing rural housing units ought to be completely scrapped and replaced.

The study of the commune of San Vicente de Tagua-Tagua cited above established that 37 per cent of the typical rural housing units investigated had earthen floors; 60 per cent were devoid of sanitary facilities; in 57 per cent, drinking-water was obtained from irrigation ditches; in 34 per cent, candles were used for lighting purposes; and in 90 per cent, there was only one bed for more than one and up to four persons.

In another local study carried out in the Chilean province of Aconcagua,^{29/} the various components of a housing unit were considered from the standpoint of quality. If the same criterion is adopted, but is applied to housing units throughout the whole country, it can be seen that only 22.8 per cent of urban households live in housing conditions as poor as the majority of rural households. Better standards prevailed for all the rest of the urban households, i.e., nearly 80 per cent.

Similarly, in Cuba according to the national survey mentioned earlier, 64 per cent of rural housing units had neither toilets nor latrines, 60 per cent were built of poor-quality materials, 83 per cent had no bath or shower, only 7 per cent were supplied with electric light and in 42 per cent there was only one bedroom. Their general condition was considered

^{29/} Luis Ratinoff, La estratificación urbana y rural en la Provincia de Aconcagua, Economic Planning Centre of the University of Chile (unpublished).

Table 32

SELECTED LATIN AMERICAN COUNTRIES: PERCENTAGE OF THE POPULATION SUPPLIED WITH TAP WATER, ELECTRIC LIGHT AND SANITARY FACILITIES, 1950

Country	Population living in urban and rural housing units supplied with					
	Tap water		Electric light		Sanitary facilities	
	Urban	Rural	Urban	Rural	Urban	Rural
Brazil	39.5	1.4	62.7	3.6	71.3	10.4
Cuba	82.8	10.5	86.1	9.0	95.1	46.2
Dominican Republic	80.1	12.4	46.1	1.9	97.4	87.9
Honduras	33.7	1.9	22.5	1.3	28.6	11.4
Panama	97.3	10.3	-	-	97.7	37.7
Venezuela	51.3	5.9	68.8	8.7	67.5	10.9

Source: OAS, study on the social development of Latin America, *op. cit.*, table 43.

/by the

by the surveyors to be satisfactory only in the case of 22 per cent, fair in that of 36 per cent and poor in that of 42 per cent.

In the North Eastern region of Brazil, only 4 per cent of housing units had tap water, 9 per cent electric light and 13 per cent sanitary facilities. These data also cover urban housing units, so that the percentages for rural housing units alone must certainly have been much lower.

In Haiti, in the departments of Norte and Antionite, in which the population is predominantly rural, and which take up about 40 per cent of the total area of the country, the housing situation, according to the 1950 Census, was as follows: in Norte, out of 117,000 housing units enumerated, only 2 per cent had electric light and 1 per cent indoor tap water, while 92 per cent had no sanitary facilities; in the department of Antionite, out of 133,000 housing units enumerated, only 0.5 per cent had electric light and 0.8 per cent indoor tap water, while sanitary facilities were lacking in 93.5 per cent.

During the fifties this situation probably improved somewhat. However, no up-to-date information is available whereby the improvement, if any, can be assessed. In any event, the data presented above bear eloquent witness to the deplorable housing conditions which up to a few years ago prevailed in the rural areas of Latin America.

(e) Sanitation and health situation

As in the foregoing cases, the data available are insufficient for a thorough analysis of the sanitation and health situation of Latin America's rural populations. To give an approximate idea of the conditions in question, the countries of the region are grouped in table 33 in order of the percentages of their total population represented by the population of rural areas. Alongside the countries are presented as indicators the death rates from infectious and parasitic diseases and the number of hospital beds per thousand inhabitants.

From an analysis of table 33 it emerges that, in general terms, the higher the proportion of rural population, the heavier the incidence of

/Table 33

Table 33

LATIN AMERICA: RELATION BETWEEN RURAL POPULATIONS, DEATH RATE FROM
INFECTIOUS AND PARASITIC DISEASES AND NUMBER OF
HOSPITAL BEDS, BY COUNTRIES

Country	Percentage of rural population in 1960	Death rate from infectious and parasitic diseases (Per 100 000 inhabitants) a/	Number of hospital beds (Per 1 000 inhabitants) a/
	(1)	(2)	(3)
Haiti	87	...	0.7
Honduras	78	184.7	2.0
Dominican Republic	71	109.6	2.7
Bolivia	70	...	1.8
Guatemala	69	503.8	2.8
El Salvador	67	109.2	2.0
Paraguay	66	98.1	0.8
Nicaragua	66	157.1	1.8
Ecuador	65	302.8	2.1
Peru	64	149.5	2.2
Costa Rica	62	102.8	5.1
Brazil	61	182.9	3.4
Panama	59	110.5	3.8
Colombia	54	139.7	3.2
Mexico	46	151.8	1.4
Cuba	45	34.0	2.3
Venezuela	38	55.5	3.6
Chile	37	107.3	5.0
Argentina	32	34.3	6.4
Uruguay	18	39.7	3.9

Sources: For column (1): As for table 30 columns (1) and (3); for columns (2) and (3): Pan American Health Organization (Pan American Sanitary Bureau, Regional Office of the World Health Organization), Summary of Four-Year Reports on Health Conditions in the Americas 1957-1960, prepared for the XVI Pan American Sanitary Conference, July 1962.

a/ 1960, or the most recent year for which data are available.

/deaths from

deaths from infectious and parasitic diseases, which are closely linked to sanitary conditions. Thus, for example, in countries where more than 45 per cent of the population lives in a rural environment this death rate almost invariably exceeds one hundred deaths yearly per hundred thousand inhabitants, and this proportion sometimes rises to over five hundred. In contrast, in four of the five Latin American countries whose rural population represents 45 per cent or less of the total, the corresponding annual mortality rate is about fifty deaths or even fewer, per hundred thousand inhabitants, and in only one of these countries - Chile - does the annual figure slightly exceed one hundred.

/II. FUTURE

II FUTURE OUTLOOK

1. Growth of internal demand

Latin America must be prepared to deal, in the next few decades, with an extraordinarily large increase in the internal demand for agricultural products. It has been shown above that in recent years the growth rate of production has been only slightly higher than that of the population, which means that the level of consumption of such products has remained very low for most of the population of Latin America, in relation both to minimum recommended nutritional levels, and to the levels obtaining in the wealthier groups of the region itself, and for the majority of the population in the more developed countries. As will be shown below, internal demand is likely to increase more rapidly than in the past, which will lead to strong pressure on the productive capacity of the Latin American countries. The extent to which agriculture in these countries is able to deal successfully with this increase in demand will largely determine whether or not the region's general economic development can proceed more rapidly, and the broad masses can attain a more satisfactory level of living.

In the next few years the basic challenge for the Latin American countries, and for their economic, social and political structures, will above all be posed by their population growth. At present this growth is faster than in any other part of the world, and there are no grounds for assuming that it will decrease soon; on the contrary, it seems more likely that Latin America's population growth rate may tend to increase in the immediate future.

Between 1925 and 1960 the region's population increased by about 112 million, a more than twofold increase. Nevertheless, this growth was not even; in the decade 1926-35 the annual growth rate was 2 per cent, whereas in 1946-55 it amounted to 2.6 per cent, and rose to nearly 2.9 per cent for 1956-60. The data available indicate that this trend will be maintained in the next few years, so that the region's total population, which in 1960 was 206 million, will rise to 315 million in 1977 and nearly 360 million in 1980. In more specific terms, this means that within twenty years Latin America will have to be able to feed, clothe and find shelter for 150 million more people than at present, and at the same time

/improve food,

improve food, clothing and housing standards for a large part of the remaining 200 million. The impact that this situation is bound to have on the region's various economic sector and particularly on the agricultural sector, is too clearly significant to need underlining.

In order to understand fully the magnitude of the effort that Latin America must make to meet the increased demand for food and other agricultural products, it is sufficient to examine a few figures. Purely by way of illustration, some over-all estimates are given below of the level that internal demand may reach in 1980, and the implications for policy on production, employment, and income distribution. In subsequent sections of the present document some of the basic conditions required for the fulfilment of these hypotheses will be considered in more detail.

In order to determine the extent of agricultural demand in coming years with some degree of accuracy, information about at least three factors is necessary: the growth of population, the increase in income, and individual changes in demand for each product in terms of a given increase in income.^{30/} Only for population can a fairly reliable estimate be made; as stated previously, it is calculated that the population will increase during the next few years at an annual rate no lower than that for the last five years, that is, about 2.9 per cent. As for the rate of growth of income, it is estimated that in the next few years this will be substantially higher than in the past, and that there will have to be a greater degree of redistribution if it is hoped to attain certain minimum welfare targets, especially for that part of the population that is now at the lowest social levels. Consequently it has been assumed that the annual average rate of income growth should not be less than 6 per cent, or 3 per cent in per capita terms. Similarly, it has been assumed that the total consumption of goods and services will grow at an over-all rate of 5 per cent (2 per cent in per capita terms), which will make possible a marked increase in the rate of capitalization.

^{30/} The ratio in question is what is termed the coefficient of the income elasticity of demand. The effect of prices is not taken into account.

/As regards

As regards the coefficients of income elasticity of demand for the various agricultural products, unfortunately there is no adequate statistical basis for making a detailed projection of the demand for each product separately. The lack of complete studies in this field means that the best that can be done is to present a quantitative evaluation for all agricultural products taken together, and for the region as a whole, on the basis of information from other parts of the world and of piecemeal data from the region itself. Nevertheless, some individual estimates of the coefficients in question for a number of important products are presented, for the purpose of translating the effects of the increase in demand in physical terms, even though in a very tentative manner.

According to estimates given in another document^{31/} 5 per cent of the population of Latin America absorbs 24 per cent of the region's total consumption of goods and services; 45 per cent absorbs 60 per cent of consumption; and the remaining 50 per cent, representing the groups with the lowest average incomes, accounts for the remainder that is, 16 per cent of total personal consumption. For the purpose of projecting future demand for agricultural products use was made of the same classification of the population by income groups. It is assumed that in the highest income group total per capita consumption will be reduced by 20 per cent by 1980, but that the per capita consumption of agricultural products will remain at the 1960 level.^{32/} It is also assumed that the total per capita consumption of the middle income group will increase at an annual rate of 2.1 per cent, and that the consumption of agricultural products will increase at an annual rate of slightly over 1 per cent, the elasticity for this group being estimated as 0.5; for the low income groups it is estimated that total per capita consumption will increase at an annual rate of 4.8 per cent, which will make possible a duplication of this consumption within fifteen years, and that the per capita consumption of agricultural products will increase at an annual rate of 3.6 per cent, representing an elasticity of 0.75 per cent.

^{31/} El desarrollo económico de América Latina en la postguerra (E/CN.12/659).

^{32/} This involves the assumption that the decrease will make itself felt mainly in the consumption of services.

On the basis of these assumptions, dealt with in detail in annex A of the present document, over-all internal demand for agricultural products will increase by 146 per cent by 1980, representing an annual growth rate of 4.6 per cent (1.7 per cent in per capita terms). For the three income groups considered, the increase in twenty years, and the respective annual growth rates, are as follows (in percentages):

	Total consumption		Per capita consumption	
	Increase	Annual growth rate	Increase	Annual growth rate
Low income group	260	6.60	103	3.60
Middle income group	118	4.00	23	1.05
High income group	77	2.90	0	0.00
Total	146	4.60	39	1.70

According to these figures, in the next twenty years the low income group will double its real per capita consumption of food and other agricultural products, which will mean a marked improvement in both the quantity and quality of its diet, and bring this group closer to the consumption levels of the other groups. Whereas in 1960 the ratios were 1 to 2.9 and 1 to 5.8, respectively, in 1980 they will be reduced to 1 to 1.7 and 1 to 2.8, respectively. However, the achievement of this improvement will require the adoption of an adequate food policy to educate and assist this majority group of the population to channel a considerable part of the increase referred to above into the consumption of foods with a higher protein content, especially foods of animal origin, and of other items in which their diet is now deficient.

It is interesting to note that the projected increase in annual per capita consumption (1.7 per cent) is substantially higher than that for the last twenty years (1.25 per cent) for Latin America as a whole, but that it is the same as the rate for the region excluding Argentina, and excluding the consumption of coffee (see table 12). Consequently, the target suggested here does not seem to be over-ambitious. The most important change in comparison with the past trend is the distribution of consumption between the various population groups.

2. Growth of external demand

To complete the picture of total demand and its implications for the supply of agricultural products in the region, we must now estimate net external demand. It is no easy matter to project future external demand for agricultural products, because of the large number of factors that affect the production and trade policies of the countries that import Latin American agricultural products. However, on the basis of the data available,^{33/} which will be examined in greater detail in another section of this document, only a moderate increase in Latin American agricultural exports can be foreseen. The outlook differs considerably as regards the various products concerned, and will, of course, have a very different effect on the situation of the individual exporting countries. However, for the purpose of an over-all projection of the kind presented here, it seems reasonable to assume that the volume of the region's agricultural exports will increase at an annual rate not exceeding that for the last decade, which was, as noted previously, approximately 2.5 per cent. As regards extra-regional imports of agricultural products, it is even more difficult to forecast future developments. Nevertheless, since they depend basically on what happens to national production, and since the opportunities for the substitution of this type of product in Latin America are good, it is estimated that imports should increase at an annual rate not exceeding 1.2 per cent, which is much lower than in the past.

3. Growth of production and productivity

Putting together the various elements considered thus far, it may be concluded that over-all production must increase during the next twenty years at an annual rate of about 4.2 per cent, representing a total

^{33/} See United Nations Food and Agriculture Organization (FAO), Agricultural Commodities - Projections for 1970, FAO Commodity Review 1962, special supplement (E/CN.13/48; CCP 62/5).

/total increase

total increase of 134 per cent in twenty years,^{34/} in order to meet the projected demand.

If the prices of agricultural products in relation to other goods and services do not change, total agricultural income should increase at the same annual rate of 4.2 per cent, but the total consumption of the agricultural sector would increase at a lower rate - estimated as about 3.5 per cent because of the higher rate of capitalization assumed.^{35/} Thus it is necessary to consider what growth rate of the agricultural population would make it possible to reconcile the assumptions as to consumption and production that have been put forward thus far. Since the projected average increase in per capita consumption is in the

^{34/} The calculation is as follows:

The structure of production and consumption in 1960 is estimated as being:

Production for internal consumption 70 per cent, and for export 30 per cent. Consumption of domestically produced goods, 94 per cent, and of imports, 6 per cent.

In addition it is assumed that the following annual growth rates will be attained: total internal consumption 4.6 per cent, imports 1.2 per cent, and exports 2.5 per cent.

The resulting calculation is as follows:

	1960	1980	Index for 1980 (1960 = 100)	Annual growth rate (Percentage)
	(Units)			
Total consumption	<u>100</u>	<u>245</u>	<u>245</u>	<u>4.6</u>
Imports	6	8	127	1.2
Domestic production	<u>94</u>	<u>237</u>	<u>252</u>	<u>4.7</u>
Exports	<u>40</u>	<u>66</u>	<u>164</u>	<u>2.5</u>
Production	134	303	228	4.2

^{35/} In this connexion it should be recalled that a growth rate of 6 per cent in the gross income of the regional economy as a whole has been estimated, compared with an increase of only 5 per cent in the total consumption of goods and services. If the same proportion is maintained for the agricultural sector, the result would be an increase of 3.5 per cent in total consumption, compared with the increase of 4.2 per cent in income that has been referred to.

/neighbourhood of

neighbourhood of 2 per cent a year, it can be inferred that the annual increase in the agricultural population must not be more than 1.5 per cent if the total consumption of this sector is to increase at an annual rate of 3.5 per cent. This rate is close to that recorded over the last fifteen years for their rural population, although slightly higher, perhaps, than that for the strictly agricultural population.^{36/}

In accordance with the foregoing assumptions, and provided that the active agricultural population increases at the same annual rate of 1.5 per cent as the total agricultural population, labour productivity in agriculture should increase at an annual rate of 2.7 per cent. This rate is substantially higher than that recorded for the region as a whole over the past twenty years, namely 1.7 per cent, but it is only slightly higher than that for the last decade, when an annual average rate of 2.4 per cent was attained, and practically the same as that for the region excluding Argentina during the last decade (see tables 23 and 24).

An annual growth rate of 1.5 per cent in the active agricultural population would mean that the large-scale movement of this population into other activities would continue, and that consequently new employment opportunities would have to be created outside agriculture in order to avoid an increase in urban unemployment and under-employment. However, this movement could be to some extent decreased by a vigorous development of forestry and related activities, for which, according to information presented in another document,^{37/} there are excellent prospects in Latin America. The transfer of the agricultural population might also be less than that referred to if agricultural exports increased at a higher rate

^{36/} The proportion of strictly agricultural population within the rural population has probably tended to decrease as a result of the increase in non-agricultural activities in rural areas, and of the greater migration of the agricultural population to the towns.

^{37/} ECLA/FAO, Latin American Timber Trends and Prospects (E/CN.12/624; United Nations publication, Sales No: 63.II.G.1).

/than that

than that estimated, or if there were an increase in the share of agricultural producers in the total expenditure of consumers as a result of improvements in marketing. The effect of these two factors would be to increase the growth rate of the gross agricultural income. Furthermore, the same effect might be achieved if part of the consumption of the agricultural population were subsidized by the State, or if a proportionally larger share of agricultural investment involved public funds. In the last case the effect would be to reduce the difference between the growth rates of income and consumption, which would make it possible for more people to stay in the countryside without affecting the projected per capita consumption targets.^{38/}

4. Ways and means of attaining production goals

Now the question is, how is Latin America to attain the higher levels of production projected? Obviously, there are only two principal ways of doing so, (a) to extend the area under cultivation and increase the total number of livestock, and (b) to increase yield per unit area and per head of livestock. The problem is not so much to choose between these alternatives, as to determine what each of them should contribute. This decision is of prime importance, since there will be radical differences in many of the policy measures of agricultural development and of general economic development adopted, according to which of these methods predominates. For example, the type of investment required to bring new areas under cultivation is very different from that needed to increase yield. In the first case a number of infrastructure activities will have to be undertaken in order to provide the facilities needed in the new zones to be brought under cultivation, whereas in the second the emphasis must be on investment in experiments and training, and investment aimed at the production of inputs intended to improve production (seeds, pesticides, fertilizers, etc.) and investment in installation and equipment on the farms. As will be shown subsequently, it is clear that Latin America should

^{38/} For example, if total consumption increased at an annual rate of 3.8 per cent instead of 3.5 per cent, the agricultural population could increase at an annual rate of 1.8 per cent instead of the 1.5 per cent referred to.

/place more

place more emphasis on the second method, which would involve a decisive break with the past trend. Although there are still abundant reserves of unexploited land (and even unexplored territory), their conditioning for cultivation would require vast capital investment; furthermore, the best land is already under cultivation, and not much is known about the potential of the remainder. Most of the reserves of land are in the tropical zones, and not enough physical surveys have been made to permit a rough estimate of their productive capacity. However, it is obvious that in many Latin American countries a policy of extending the agricultural areas will have to be pursued, essentially for the purpose of relieving the congestion in areas where the soil is poor and the population dense.^{39/}

As indicated in an earlier section, the increase of production that took place in the last two decades was due essentially to the extension of the area under cultivation; for a large group of crops, that together now occupy over 50 million hectares (half the total arable area), the area under cultivation increased by 38 per cent, whereas the average yield increase was only 16 per cent, representing an annual increase of 0.7 per cent. Similarly, as regards cattle, the increase in meat production was almost entirely due to the increase in the cattle population, with no perceptible improvement in unit yield. If these trends were maintained, it would be necessary, in order to attain the production goals deriving from the present projection,^{40/} to increase the area under cultivation by

^{39/} Many farmers in these zones, most of them farming minifundios, have land that slopes steeply. It would not be either easy or economic for them to use technological improvements to improve unit yields. As regards maize, for instance, which is one of the subsistence crops most widely grown in Latin America, the use of better seed would require more nutritious elements in the soil, that is, the use of fertilizers. But the steep slope of the land would mean that much of the fertilizer would be carried off and lost. In many cases it appears difficult for minifundio farmers to change the type of farming they have developed because of the small size of their holdings. Any extension in the size of these holdings presupposes moving part of the agricultural population to other areas.

^{40/} That is, 134 per cent for agricultural production as a whole. However, considering that elasticities for products of animal origin are substantially higher than for crop products, it is estimated that production of the former should increase by 165 per cent, compared with an increase of 120 per cent in the latter. An annual increase in yield of 0.8 per cent would mean an increase of 17 per cent over the twenty years. Dividing the crop production index by the yield index (117) gives the area index referred to in the text (188).

about 88 per cent, or about 90 million hectares, and the livestock population by 150 per cent, which would mean, for cattle alone, an increase of nearly 300 million head. Clearly increases of this magnitude would be very difficult, if not impossible, to achieve. Firstly, much of the additional crop land would have to come from areas now given to natural pasture, which would make it even more difficult to maintain a livestock population as large as that referred to, or else from forested area whose agricultural potential might be low.^{41/} Secondly, the volume of investment needed to reclaim such an amount of land is clearly beyond the region's capacity.^{42/} Thus these figures show the imperative need for Latin America to strive more vigorously to increase unit yields, for both crops and livestock, in order to attain the production increases envisaged.

It would be rash to attempt to indicate precisely what yield improvements are needed to obtain these production increases with a minimum of reclaimed land. However, it can be estimated, on the basis of the experience of other geographical areas, and even of many zones in Latin America itself, that an average yield increase of about 60 per cent over the twenty years, or 2.4 per cent a year, would not be difficult to attain, provided that the modern production techniques that are now at the disposal of all the Latin American countries are applied on a large scale.^{43/} On this hypothesis,

^{41/} The fact is that the real agricultural potential of present reserves of land in Latin America is not accurately known, as regards either forested land or land under natural pasture. However, it has been established that there are countries, such as Argentina and Uruguay, for example, where no further extension of the area under cultivation is possible.

^{42/} If the cost of bring one hectare of land under cultivation is estimated as about 300 dollars (including the infrastructure works required), the incorporation of the new land in the area under cultivation would require an investment of nearly 30,000 million dollars in twenty years.

^{43/} Table 18 shows that Europe and North America increased the average yield for the group of twenty-four products included in the table by about 25 per cent in nine years, starting from absolute levels substantially higher than those that now prevail in Latin America. With an increase such as that estimated, Latin America could attain by 1980 the average levels for Europe for the three-year period 1957-59.

about 35 million hectares of reclaimed land would be needed for additional cultivation. This figure appears much closer to what is feasible, since it represents a net addition of 1.5 to 2 million hectares a year.^{44/}

An analysis of the outlook for some specific products makes clearer this need to increase yield, and the feasibility of doing so. Let us take, for example, wheat, maize, rice and beans, which together account for 35 per cent of all land under cultivation in the region, and constitute the staple foods of a large percentage of Latin America's population. Table 34 shows the levels that internal demand is likely to have reached by 1980, and the areas that would have to be given over to the crops in question on two different assumptions as to yield.

It can be seen that, except for rice, it should not be difficult for Latin America to attain by 1980 the yield levels which prevailed in Europe two or three years ago. If this happened, the extension of the area under cultivation would be 20 million hectares less for the four commodities in question alone.

However, even on this favourable assumption the need to extend the area under cultivation would still be considerable. As regards wheat, for example, it would not be easy in existing circumstances to achieve an increase of nearly 5 million hectares, in view of the fact that only five countries, namely Argentina, Brazil, Chile, Mexico and Uruguay, account for 90 per cent of the total area under wheat in the region and that in some of these countries the possibilities for expansion are decidedly limited. The outlook is most hopeful in Argentina and Mexico, although in Brazil (and also in other countries in the region) there are virtually unexplored areas that might perhaps be used for wheat production. Hence

^{44/} In fact the requirements for new land could be further reduced by making better use of the land already under cultivation. It is estimated that of the 100 million hectares now cultivated, between 15 and 20 million are lying fallow. The pressure on land might also be reduced if the losses that are incurred in the marketing process, which are for some items very considerable, could be brought down.

Table 34

LATIN AMERICA: PROJECTIONS OF TOTAL INTERNAL DEMAND AND PRODUCTION
FOR FIVE AGRICULTURAL PRODUCTS IN 1980
(Millions of tons)

Product	Total internal demand		Production		Yield			Area (Millions of hectares)		
	1958-60	1980	1958-60	1980	1958-60	1980		1958-60	1980	
						Ia/	Iib/		Ia	II
Wheat	11.4	24.6	10.1	24.6 ^{c/}	11.6	14.4	18.2	8.8	17.1	13.5
Maize	20.6	53.5	21.0	53.5 ^{c/}	11.4	14.3	19.8	18.3	37.4	27.0
Rice ^{d/}	7.5	18.1	7.3	18.1 ^{c/}	17.5	18.7	45.3	4.2	9.7	4.0
Beans	2.6	5.3	2.6	5.3 ^{c/}	5.9	6.4	6.4	4.5	8.3	8.3
								35.8	72.5	52.8

Source and methods: See annex II, table 7.

a/ By extrapolation of the trend for the period 1948/52 - 1958/60

b/ Average yield for Europe in 1957-59, except for beans, for which the level was lower than in Latin America.

c/ It is assumed that there will be no net foreign trade balance.

d/ Rice in the husk.

/it is

it is likely that imports of wheat from outside the region will tend to rise, unless unit yields increase beyond the highest projected levels, or the population's consumption is restricted. However this may be, attention is called to the urgency of making a careful and systematic study of the land resources of Latin America, in order to determine more accurately the real possibilities in the region of effecting an increase in the production of the various agricultural items in line with the growth of demand.

As regards livestock the situation is even more alarming. Partly because no technological improvements have been introduced in the past, and partly because future needs to increase production will be greater, it is essential to bring about a radical change in recent trends. With respect to beef, for example, it is estimated that internal demand may increase from 4.8 million tons in 1960 to 12.4 million in 1980, an increase of about 160 per cent. Leaving out of account net exports, which may increase at a lower rate, it will be necessary to produce between 7 million and 8 million more tons of beef to meet the demand of Latin America's population. If, as has been indicated, the average yields per animal, estimated for the region as a whole as about 26 kg of meat, are maintained, about 300 million more head of cattle will be needed. On the other hand, if there were a large-scale introduction of production techniques currently applied in the agriculturally more advanced countries, it would not be difficult to attain an average meat yield of about 35 kg per animal,^{45/} which would reduce the increase needed in the cattle population to 150 million head.

^{45/} It should be pointed out that the average in Argentina and Chile is now higher than this, and that in Uruguay it is equal to it. Consequently the average yield to be attained in the other Latin American countries for which the yield as a group is now about 20 kg, would be somewhat lower than that indicated. It is worth noting that in 1960 the average yield in the United States was 75 kg, in the United Kingdom 70 kg, and in Australia and New Zealand 40 kg.

/From the

From the brief outline given thus far a number of basic conclusions can be drawn. (a) Income, and thus the consumption of a substantial part of the population of Latin America, must increase in the future at a much faster rate than in the past, in order to make it possible for them to obtain a better standard of living; (b) population growth and income growth will lead to a substantial increase in the internal demand for agricultural products, and (c) in order to meet this demand, it will be essential to effect a great increase in agricultural production by the large-scale use of improved techniques and a rise in labour productivity. It will be useful now to examine in greater detail the basis for these conclusions and how they can be translated into action.

5. Increase and redistribution of income

There is no doubt whatever that, just as the population of Latin America is rapidly increasing in numbers, it desires a rapid increase in its qualitative level. This means that it wants to be better fed, better educated, and better housed, and to consume an increasing quantity of industrial goods and other goods and services.

These desires, that exert an ever-increasing pressure on the economic, social and political structures of the countries of the region year after year, are largely the result of the demonstration effect, that is, increasing knowledge of the patterns of living and of consumption in the highest income groups within these countries, and of those that prevail in the more developed countries. The rapid urbanization of Latin America's population, and the spread of such modern mass communication media as the cinema, radio, television, illustrated magazines and the press, mean that the patterns of life in other groups and regions have had a direct visual and emotional impact on nearly all sectors of the population. This has created new desires, new consumption goals, and new attitudes. Already there are large numbers who do not accept their wretched conditions as part of the natural order of things, with the passivity that used to exist, and this psychological factor tends to strengthen considerably the implications of rapid population growth for the Latin American countries, and the challenge it constitutes.

/But, apart

But, apart from the social and political grounds for an effective redistribution of income, especially in the agricultural sector, there are strong economic reasons which make this change a matter of urgency.

The extremely unequal distribution of wealth and income, and the lag in agricultural production and productivity and the low levels of living that prevail in the Latin American countryside that result, have harmful consequences that go beyond the agricultural sector itself and affect the development of the whole economy, as will be shown below.

It is widely recognized that the industrial development of many Latin American countries is held back by the small size of the domestic markets. This explains the importance attributed to agreements on industrial complementation under the Montevideo and Central American treaties, which will make possible a substantial extension of the consumer market for a whole series of manufactured goods. The finalizing of such agreements will undoubtedly provide a vital impetus to industrial development in the countries concerned; yet even this vast programme of co-ordination and complementation will take effect in a joint market that does not comprise more than 50 or 60 per cent of the population of Latin America, since the rest of this population, with its pitifully small income, at present represents a total purchasing power of manufactured goods that is infinitesimal. There is no need to labour this point to make clear the additional impetus to industrial expansion that would result from the full incorporation of this great mass in the economic process. It should also be borne in mind that the propensity to import is much lower in the low income groups than in the high income groups, which means that the pressure on imports of consumption goods would tend to decline with a higher level of redistribution.^{46/}

^{46/} This would only be possible if sufficient quantities of foodstuffs were available, since, as has been shown, income redistribution has an immediate and powerful effect on the demand for these products.

This point is of vital importance in view of the fact that the outlook for agricultural exports is not particularly promising, and that consequently the countries of the region should proceed with great caution in distributing the external income available if they wish to avoid an undue contraction of imports of capital goods.

If industry is provided with a broader consumption base, its expansion could be effected by taking advantage of the benefits arising from economies of scale. Larger-scale units can be installed that involve lower unit costs, and this in turn would make it possible to face foreign competition on a stronger footing and ensure an extra-regional market for the goods produced.

From the employment standpoint it is equally important to create a larger domestic market for industry. It is very likely that, at least during the first stages of redistribution, the greater demand of the low income groups will be diverted to (apart from food products) such simple manufactured goods as clothing, household goods, etc. This will give a great impetus to light industry, which could undoubtedly absorb a relatively higher proportion of the available labour force. In this connexion it should be remembered that the projection presented above involves a substantial transfer of the rural population to the towns.

Moreover agriculture, as an economic sector, is a purchaser of a large number of goods of industrial origin (equipment, tools, building materials, fertilizers, pesticides, etc.). As farming attains a more technical level, a vast new field will be opened up for the installation of new industrial enterprises to supply the inputs required for efficient farming, and these new enterprises will provide additional employment.

6. Employment in the agricultural sector

As indicated in the chapter on projections, it is estimated that if the indicated targets for the increase in per capita income in the agricultural sector are to be attained, a large part of the natural increase in the rural population will have to continue to migrate to the towns. Although the

/assumed rate

assumed rate of migration is lower than in the recent past, it nevertheless represents a considerable addition to the labour force available for the growth of the urban sector itself. This will call for a careful study of employment policy in this sector, since experience shows that in the past the absorption of manpower by industry has not been sufficient to provide effective employment for the whole of the population that has moved in from the rural areas. The data available make it clear that a high proportion of this labour force has been engaged in services with a very low productivity, which means that the effect has merely been to transfer under-employment from the countryside to the towns. This is demonstrated by the visible presence in all the large towns in the region of considerable marginal population groups who live crammed together in wretched hovels (which have their own name in each country - callampas, favelas, villas miserias, etc.) and which are a symptom not only of the housing shortage, but also of the urban economy's obvious failure to absorb the whole of this labour force in productive activity.

As already indicated, migration to the towns will continue in the future. Consequently the industrialization and urbanization policy will have to be pursued to take due account of the need to provide productive employment for the new population groups that will become available. This will call for, among other things, an examination of the policy of automation in industry, in order to forecast the maximum employment compatible with a reasonable increase in productivity.^{47/}

^{47/} This is particularly important because generally speaking the industrial techniques used in Latin America come from highly developed countries where labour is relatively scarce, its cost is high, and consequently there is a trend towards increasing the capital density per worker employed. Moreover the large amount of hidden unemployment that exists in Latin America makes it possible for many of the new jobs to be filled by persons who change from jobs in other industries or businesses that have too many workers, with the consequence that the jobs that are left vacant can remain so without affecting the volume of goods and services produced by such enterprises.

/However, even

However, even when the problem of urban employment is satisfactorily solved, the problem of employment in the countryside will still have to be dealt with. As already indicated, the postulated rate of increase in the active agricultural population is about 1.5 per cent a year, which means that each year about 5 million will be added to the agricultural labour force. This figure would seem moderate if the rural labour force were being fully used at present; but this is not the case. The under-employment of the Latin American rural worker has been, and continues to be, one of the striking features of agriculture in the region. The average level of agricultural employment ranges, with slight variations according to the various areas and types of farming, between slightly over 100 and slightly less than 200 days a year. This is due not so much to factors inherent in the nature of the agricultural work as to structural factors relating to single-crop production and to the organization of the agricultural enterprises that prevail in the region.

The past development of Latin American agriculture was essentially a colonial type of development. Its basic purpose was to produce coffee and cocoa, food and raw materials for other more advanced countries, which furnished in exchange most of the manufactured products required. As a result of the patterns imposed when the conquistadores first settled the region, which became entrenched in the colonial life that followed and remained virtually unchanged by the political independence attained at the beginning of the nineteenth century, farming on the basis of a single crop or type of livestock, and the latifundio worked with what amounted to serf labour, became the predominating features everywhere.

Efforts to diversify agriculture and to introduce more intensive farming methods have been generally very limited and on a small scale, except in certain regions. This is largely due to the lack of a dynamic domestic market - resulting from the low general level of income and above all to its extremely uneven distribution - and to the absence, up to a fairly recent date, of any political, social or economic pressure to bring about changes in the structure of the traditional estate.

/This is

This is the situation that has been largely responsible for the increasing movement of population from the countryside to the towns. Contrary to what happened in the more developed countries, what led to the migration to the towns of a large part of the new rural population was, not the diversification of farming and the introduction of technical improvements, but the lack of an agricultural development capable of providing work for the additional labour on a large enough scale and sufficiently well paid, with the social consequences already referred to.

The structure of land ownership that prevails in most of Latin America, with large areas owned by a few and large numbers of rural workers who own little land, or none, has led not only to the under-employment of the labour force, but also to the under-utilization and spoilage of agricultural land. Under-utilization, because with extensive production methods much good land lies idle or produces at a level that is very low in relation to its capacity.^{48/} Spoilage, because the lack of rotation, the predominance of the single crop, the absence of any integration of crop farming, stock raising and forestry, and the failure to use conservation practices, result in the productive capacity of the land under cultivation being eaten away by erosion, neglect, or endless repetition of the same crop grown by methods that exhaust the soil.

In the light of the growing need of the population of Latin America for agricultural products this situation, where there is under-utilization both of the labour force and of agricultural land, is absurd. The increased production that it is hoped to obtain from agricultural land, and the better conservation of this land, can be attained by the use of improved techniques,

^{48/} In some Latin American countries the proportion of agricultural land lying fallow amounts to 50 per cent of the total of such land.

/which require,

which require, to an extent that varies according to the type of technique, a much higher rate of investment per unit area than in the past. However, much of this investment could be effected by means of a more intensive use of the under-employed labour force. Many improvement works need only a small component of material per worker employed, for example the building of approach roads, land levelling, terracing, small and medium-sized irrigation and drainage works, plantings, flood control works, and so forth, which, in addition to contributing to an increase in output, are most important for the conservation of natural resources.

7. Diversification of agricultural production, and the introduction of intensive methods

Apart from the execution of different kinds of works, both on the farms and outside them, that can be undertaken during agriculture's slack periods, the most effective way of providing permanent and productive employment for the rural population is by diversifying agricultural activity and introducing intensive methods.

It has been indicated in a previous section that if the projections in question are fulfilled labour productivity would increase at the annual rate of 2.7 per cent. Without being particularly striking, this rate would be satisfactory compared with the average rate of 1.6 per cent recorded in the last two decades. This rate of increase in productivity would be necessary to ensure that the rural population can achieve a reasonable increase in their average income during the next twenty years. The next question is, what are the basic requirements that must be met to make this increase in productivity possible ?

Obviously there can be no easy answer to this question. The transformation of agriculture that such an answer would imply requires a united and simultaneous effort on a number of fronts. Many of the measures that should be taken could produce some result in isolation, but only combined action will make it possible to attain let alone exceed, the projected target figures.

/The various

The various fields in which action must be taken to make possible a more intensive agriculture include four areas of basic importance:

- (a) The application of a body of production techniques and methods that will permit full utilization both of the labour force and of the land, and proper land conservation;
- (b) The education of the rural population so that it will be capable of using the new production techniques and methods;
- (c) The transformation of present conditions of land tenure and water rights;
- (d) The organization and extension of the domestic market for agricultural products, for the benefit of producers and consumers.

Other aspects, equally important but more general in nature, such as foreign trade policy and the planning of agricultural development, will be dealt with in subsequent sections.

(a) Technological transformation

From what has been said in previous sections it is clear that the greater part of the increase in agricultural production required to meet the growing demand will have to come from improved unit yields. Certain targets were put forward there that, without being unduly optimistic, represent a considerable advance in relation to the existing situation. In fact, if such targets are to be reached, a real technological revolution will have to take place.

This is not the place for a detailed list of the technical measures that will have to be applied for each crop and in each country, a task which, in addition to being beyond the scope of the present paper, would be hampered by the lack of sufficient information. Despite all that has been said on the subject in Latin America, no clear picture exists of what would have to be done in each particular case.

What should be stressed at this point is precisely the lack of technical information available for a successful attempt to undertake the herculean task of effecting a balanced rise in productivity levels in Latin American agriculture. Although the technical services of the region can, with great advantage, make use of the progress in research made

/in more

in more advanced countries, the results in question cannot always be properly adapted to the very different conditions that prevail in Latin America, in terms not only of ecological factors, but also of economic, social and cultural factors.

Although all the countries of the region have some kind of agricultural research services, they do not appear, broadly speaking, to be adequate for the task to be undertaken. There are no specific figures as to how much is invested in agricultural research in Latin America, but to judge by the scanty and fragmentary data available, the amount spent is very small in relation to the economic importance of the agricultural sector.^{49/}

The lack of funds, which in turn leads to a shortage of skilled personnel, and the lack of a policy for agricultural research directly related to the region's agricultural development requirements, have prevented the services concerned from undertaking studies in a series of basic fields. Thus, for example, matters relating to animal nutrition and other fundamental aspects of livestock production have been shamefully neglected, which is one reason for the low level of development in this activity. Another glaring lack relates to research on soil problems and on the productive capacity of soils and alternative uses, and also to systematic study of the use of fertilizers. With few exceptions, there are no complete studies of farm management and administration, or of the economic aspects

^{49/} For example, in Argentina the National Institute for Agricultural Technology (INTA) spend about 1,400 million pesos in 1961-62 on research carried out at its forty experimental stations. This sum represents only 1 per cent of the gross product of Argentina's agricultural sector. The ratio is very similar in other countries of the region. These data are from Inventario de la información básica para la programación del desarrollo agrícola en la América Latina, prepared by the Inter-American Committee for Agricultural Development (ICAD) in 1962.

of farming, such as relative prices, utilization of machinery and manpower, the use of credit, marketing and processing of products, etc.

One research field that deserves special attention is the mechanization and use of labour. For reasons given previously, it is clear that any technological improvements introduced should be such as to obviate any unnecessary displacement of labour, in view of the rapid population growth and the difficulty of other sectors in absorbing the surplus rural population in a satisfactory manner. Consequently any study of mechanization policy should be undertaken in the light of national, and not individual, requirements. For any one agricultural enterprise the use of tractors might be advisable for a number of reasons, but if there is a general spread of mechanization, the effect might be harmful to the economy as a whole because of the increase in unemployment it would lead to.

This does not mean that agricultural work should not be mechanized. On the contrary, in many cases mechanization may be essential in making possible intensive farming methods. For example, the short harvesting season, due to climatic reasons, enforces intensive use of combined harvesters and similar equipment if large areas are planted with cereal crops. Similarly, the preparation of the land for large-scale sowing requires a considerable number of tractors. Nevertheless, there should be a detailed survey in each country that would make it possible to determine the maximum degree of mechanization compatible with the desirable increase in the active agricultural population and in labour productivity.

Another vitally important aspect is that relating to research on water use. In most of the Latin American countries water is a scarce resource that is not properly used. Furthermore, experience

/shows that

shows that irrigation is essential for the raising of agricultural production and productivity in large geographical areas. But with the water resources available, it would be possible to irrigate a much larger area than at present if scientific principles were applied to the use of water.

It is also pertinent to stress the enormous importance of research on the use of fertilizers. As indicated in an earlier section, one of the factors that has most contributed to the increase of yields in the United States, Europe, Oceania and Japan, is the intensive use of fertilizers (see table 22). There is no doubt that the Latin American countries will also have to attain substantially higher levels of fertilization than at present in order to attain the required increases in yield. But this will mean a much broader research effort.^{50/}

The above outline is undoubtedly incomplete; there are many other items of equal or similar importance that should be considered, but the foregoing observations have been put forward as a sample of what still remains to be done in the region.

^{50/} Very few experiment stations in Latin America keep a proper check on the yield curves that result from successive applications of fertilizers (CIDA, op. cit.).

(b) Diffusion and application of the new technology

It is not enough for laboratories and experimental stations to have a store of technical knowledge; the information should also be placed at the disposal of farmers for use on a commercial scale. Hence, it is vitally important that the new technology should be spread and taken up by farmers. Indeed many countries could make spectacular progress in their agricultural production merely with the technical knowledge now accessible to them. The methods used over the greater part of Latin America are so rudimentary that a few slight improvements would suffice to raise the level of unit yield considerably. Proof of this is afforded by the numerous individual cases in which production levels per hectare that are comparable to those of more developed countries have been achieved without any special advantage as to soil or other natural factors. The reason why progress has not been more universal is to be found chiefly in the following factors: (a) inadequate extension services; (b) the low educational level of the rural worker; (c) the structure of land tenure; and (d) other institutional factors such as the lack of credit facilities and of an efficient marketing system. Only the first two will be taken up at this juncture, the others being dealt with later.

As indicated before in connexion with the living levels of the Latin American rural population, there is a vast amount of illiteracy in country districts, 80 per cent of the entire rural population of some countries being unable to read or write. Furthermore, a sizable proportion is ignorant of all but traditional methods of farming that have been followed for generations.

The great problem in intensifying the spread of technology is how to prepare the rural population as quickly as possible to accept a new kind of agriculture characterized by crop diversification (rotation), mixed farming (crops-livestock-forests), land, water and forest conservation and higher yields per unit of area for crops and livestock.

From a broader human and social angle, another problem is how to progress rapidly from education for the minority to education for the masses, in order to equip them to know how to raise their standard of living and to use their earnings in a more effective way inasmuch as their personal development and that of the community is concerned.

/The scope

The scope and implications of the task and the meagre supply of human and material resources to draw upon in coping with it indicate that the educational and technical assistance facilities provided in the past for the rural worker should be drastically overhauled.

Vast numbers of rural workers have to be taught to read and write, new techniques and methods of production must be inculcated, they have to be organized in co-operatives of different kinds which they must be able to run themselves, and they have to be taught to spend the family income in a more useful and rational way, as well as how to use their own working capacity productively and to channel the joint efforts of the community to develop.

As table 35 indicates, the number of agricultural experts attached to extension services in the Latin American countries is extremely low in comparison with the number of people they have to assist. The situation is seen to be even worse if it is compared with the state of affairs in countries at a similar or even less advanced stage of development in other regions. For instance, in Argentina, where agriculture is more developed than in any other part of Latin America, the number of extension service personnel per agricultural worker is about half the number in Taiwan and South Korea. In Japan, where farming efficiency has made rapid strides in the last few decades, the proportion is six times greater than in Argentina, eight times greater than in Chile and nearly twenty times greater than in Haiti.

Table 35

NUMBER OF AGRICULTURAL WORKERS PER AGRONOMIST ATTACHED TO EXTENSION SERVICES IN SELECTED COUNTRIES, 1959

Haiti	11 900
Ecuador	7 000
Bolivia	6 000
Chile	5 000
Argentina	4 000
Thailand	13 000
South Korea	2 500
Taiwan	1 500
Japan	650

Source: FAO, The World Situation of Food and Agriculture, 1961; Haiti, preliminary report of the OAS/IDB/ECLA mission.

Given Latin America's lack of professional personnel to cope with the tremendous task of disseminating information on the new technology in a relatively short space of time, radical changes should be made in the traditional methods of technical assistance used up to now which are largely based on the systems in force in the United States. The latter country, however, has access to an immense pool of professional personnel and material resources, its agricultural population is relatively small with nearly 100 per cent literacy, and there is a universal interest in technological matters, which is spread wholesale through the communication media of a highly industrialized and culturally well-integrated society.

In Latin America, on the other hand, the social and economic facts of literacy among the rural population, cultural integration of society, supply of professional persons and material resources for technical assistance are, as pointed out before, very different. Accordingly, some thought must be given to providing the sort of technical assistance for

/the rural

the rural masses in which they could themselves take part, since the fact that they speak the same language and live in the same conditions would make it much easier for them to understand one another. The formation of farmers' associations, housewives' committees and youth clubs can help to smooth the way for the rapid expansion of technical assistance services.

This does not, of course, mean that persons of professional standing are not to be called upon. On the contrary, they will have to be used more than ever and every effort must be made to train thousands of new professional recruits in the shortest possible time.^{51/} It is essential, however, that a broad intermediate category drawn from the rural population should be created between the rural sector and the professional personnel.

To begin with, there must be simple if fundamental innovations, easy and complementary technical improvements that can be understood with the minimum of intellectual effort and are calculated to increase the agricultural workers' productivity and income in a short space of time, while simultaneously protecting the soil. The following examples of this: ploughing, contour, the use of hybrid maize seed, fertilizer application, the installation of easily-made silos to store animal fodder against times of shortage, the adoption of strains that are resistant to a particular disease, and the preservation of the best seed for sowing instead of the worst, as is usually the case. In each zone and important branch of farming, there are about ten or twelve simple but basic improvements that can be made which, if introduced as a body, can increase the sector's production and the income of agricultural workers to a remarkable degree.

It is this series of simple improvements that should be rapidly disseminated in agricultural communities through the medium of thousands of workers who have already become familiar with them and have been organized to pass on their knowledge with the backing of more high-level technical assistance.

^{51/} A FAO study on advanced agricultural training in Latin America estimates that about 42,000 agronomists are needed to take care of the region's requirements properly. There are now less than 20,000. (See A. Chaparro, Un Estudio de la Educación Agrícola Universitaria en América Latina, Rome, 1959.)

What has just been stated exclusively in terms of technological advances for production systems also applies to the living conditions of the rural population. In this context, simple improvements that are easy to accept and grasp should be introduced in the fields of health, nutrition, the construction of community co-operatives by the people themselves, etc.

Given the vital importance and urgency of this question, it is essential for these measures to be taken in a number of places at the same time.^{52/} The rural population as a whole should be induced to introduce improvements by giving them information on simple points that are easy to understand and explain to others and offer practical and tangible rewards in a short space of time. Once the first steps forward have been taken on a wide front, the chances of making greater progress in future will be enhanced and are more likely to materialize soon. The principle of spiralling in a favourable sense will go far towards smoothing the path once the initial impulse has been generated and communicated. Before this can take place, however, the responsible public agencies will have to make a radical change in their mode of operation.^{53/}

Because of the overwhelming importance of educational work for the development of the agricultural sector in Latin America, it is quite clear that agricultural training will have to be planned at all levels as an intrinsic part of general educational planning. It is just as important to establish personnel training goals throughout the region as to fix

^{52/} This does not rule out the possibility that, in certain circumstances and, above all, at the beginning of the process of agrarian reform, more resources will be concentrated in particular geographical areas which, if developed in a co-ordinated way, could start the process of demonstration. These nuclei could be used to train nearly all the rural leaders who would subsequently help to spread the new techniques, and to teach the professional staff from different specialties to work together in a co-ordinated way.

^{53/} Among these, the close co-ordination of extension services with research activities is particularly important, since both are interdependent. One of the most serious defects observed in the Latin American countries is precisely the absence of any liaison between the two services which detracts from their effectiveness.

production targets.^{54/}

(c) Agrarian reform

As already pointed out, one of the factors most influencing Latin America's low level of agricultural development is the inadequacy of the systems of land tenure and water use prevailing in most parts of the region. For the reasons analysed below, the large-scale application of new production technologies considered in the foregoing pages will be possible only if radical changes are introduced in the existing outmoded agrarian structures.

It is a well-known fact that one of the features characterizing the Latin American agrarian structure is the concentration of a major proportion of the agricultural land in the hands of a few landowners, while the majority of farmers either own very limited tracts of arable land or are landless rural workers. At one end of the scale are a few thousand huge estates, and at the other there are millions of properties whose average area is too small to support a family.^{55/} According to figures available on the subject, of the 32 million inhabitants constituting the economically active rural population, some 100,000 or less own two-thirds of the total agricultural area, about 2 million are medium farmers and approximately 30 million are minifundio farmers or landless agricultural workers. The degree of concentration of land ownership varies, naturally, from one country to another, some contributing factors being the area of land available, the system of farming, population pressure on arable land, etc. Even with such variations, however, the common denominator is the concentration of land ownership and, consequently, a like concentration of rural income.

^{54/} In connexion with this point, it should be pointed out that FAO has a comprehensive study under way on the present situation and future requirements of agricultural training in Latin America. It would be highly desirable for the findings of this survey to be duly taken into account by the Latin American countries when preparing their agricultural development plans.

^{55/} Of a total of 7.5 million agricultural holdings, 100,000, or about 1.5 per cent, cover 65 per cent of the whole agricultural area in the region. On the other hand, 5.5 million properties of less than 20 hectares each include less than 4 per cent of that area.

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This is not the place to analyse the historical events which led to this situation. It is, however, important to examine the consequences of the unusual concentration of land ownership in so few hands, which is greater than in any of the other large under-developed regions of the world.

The first fact to be noted is the poor utilization of agricultural land. The large estates normally practise crop or stock farming by extensive methods, with a very low physical and economic yield per unit area. This, however, would not appear to be a drawback for the owner or manager, since the large extent of land available to him makes it possible, for a small capital investment, to obtain an income which is more than sufficient to meet his economic needs and maintain his status. His profits would appear to be derived primarily from the manner in which he remunerates his workers, who are paid a small pittance and frequently nothing at all, their compensation being the right to cultivate for their own use a piece of marginal land which the owner does not utilize.^{56/}

This seems to be one of the basic reasons underlying the extensive system of crop and stock farming. Since labour is virtually free and the area very extensive, even though production per unit area is low, land may be under-exploited and still produce a substantial profit.

A particular sign of poor land use is the large area of agricultural land lying fallow or covered with natural pastures, which in many countries represents over half the existing arable land. With extraordinary regularity these two basic symbols of extensive agriculture and livestock raising - idle land and fields of natural pasture - make up the picture of Latin America's agriculture. Added to this is the lack of concern displayed regarding conservation of land capital, both on large estates and smallholdings.

^{56/} In many Latin American countries, in return for the right to cultivate one or two hectares of poor land for his own use, the agricultural worker (colono, peón, terrazguero or huasipunguero) is expected to work on the farm from sun-up to sun-down, from one to four, and sometimes five days a week, without any money payment whatsoever. In other cases, in addition to the right to cultivate land, he receives a wage which is far below that paid to free labourers.

/Those owning

Those owning extensive areas of land do not worry overmuch about its conservation. From their point of view it is so plentiful that there is no need to trouble about amortization. At the opposite end of the scale the minifundio farmer, who owns little land and often of poor quality, uses it also without any concern for its conservation.

However, unsatisfactory land use does not find expression solely in crop and stock farming by extensive methods. Another result is single-crop production. In the first place, it is worth mentioning in this respect that the integration of agriculture and livestock raising on the same farm is exceptional in Latin America. The two types of activities are usually pursued separately. Thus, all the benefits of such integration (utilization of stubble for forage, general forage cultivation for home consumption, natural fertilization, rotation of crops and cultivated pastures, increased possibilities of sound soil management and conservation, etc.) are generally wasted.

Secondly, it may be pointed out that proper supplementary crop rotation is rarely practised, the normal procedure being single-crop farming which exhausts the soil and encourages erosion.^{57/} Single-crop farming cannot, of course, be attributed solely to unsatisfactory land distribution - markets, types of farming, etc. are other influential factors -, but there can be no doubt that excessive concentration of land ownership on the one hand and limited land resources for thousands of small farmers on the other also contribute decisively to this system.

^{57/} Attention should be drawn to the serious degree of destruction of agricultural land that is taking place in Latin America. Partly owing to single-crop farming and also partly to indiscriminate utilization of forest resources, it is an undisputed fact that large tracts of agricultural land are lost annually for want of proper conservation practices. The destruction of forests to open up new arable land is not always conducive to the actual incorporation of agricultural areas. Many of them are exclusively adapted to forestry; after a few years of agricultural use they lose their fertility and have to be abandoned. In the absence of a rational reforestation policy, these lands are condemned to utter deterioration.

A second social-economic consequence of the abnormal concentration of land ownership has been under-employment of the rural population, as mentioned earlier in this study. Even if under-capitalized, crop and livestock farming by extensive methods requires few workers per unit of area. Moreover, production of a single crop, even on well-run, up-to-date farms, gives rise to large-scale seasonal unemployment. An example of this is the sugar plantations, where the ratio of employment between harvest-time (3 to 4 months) and the rest of the year is 4 to 1. Thus another of the plentiful resources available to farming in the region, i.e. manpower, is considerably under-utilized as a result of the extensive system of farming in use due to unsatisfactory land distribution. Such under-employment, in turn, signifies low average productivity and wretched living conditions for the rural masses of the region, whose standard of living tends to adjust itself to the level of the poorest. For example, in the State of São Paulo, where farming seems to be more up to date and progressive than in most parts of Latin America, it has been noted that, in general, wages on the more productive and efficiently-run farms are inclined to remain at the same level as on the less productive ones.^{58/} Accordingly, greater productivity is by no means reflected in higher wages; most of it is retained by the farmer. This is merely the result of excessive concentration of land ownership in the hands of a few farmers, which leaves landless workers and farmers owning so little land that they cannot subsist on it, with no alternative but to accept the lowest wage levels.

A third consequence of this excessive concentration of land ownership would appear to be that it fails to offer an appropriate incentive to utilize agricultural technologies which it is important should be developed in Latin America, namely, those enabling full use to be made of the most plentiful resources (land and labour force), and the most efficient use possible of the least abundant: capital. Without underestimating the importance of the tractor and the harvester, the real symbols of

^{58/} Salomón Schattan: "Estructura Económica de la Agricultura Paulista", in Revista Brasileira de Estudos Políticos, University of Minas Gerais, Belo Horizonte; Nº 12, October 1961.

agricultural progress in Latin America should be: fertilizers, pesticides, improved seeds, crop rotation, cultivated pastures and improved pasture and herd management. However, if the farmer has a great deal of land available which he can cultivate at a low cost, a very small net income per hectare multiplied by a large number of hectares represents a substantial aggregate income.

This would also explain the reason why agriculture for internal consumption should react so slowly to market stimuli. A favourable price policy not always induces important landowners to adopt all the necessary progressive measures designed to raise production, as this implies larger capital investment and better organization of farming methods, which, on account of the huge areas involved, could demand a greater effort from them than their farming capabilities allow, let alone obliging them to change their pattern of living. Neither are such incentives successful in the case of the minifundio farmer since it is more than likely that in the face of a rise in prices, instead of increasing his production and marketing a larger quantity of commodities, he would reduce his sales, thereby maintaining his level of monetary income. Such a reaction is, perhaps, more understandable in the case of these rural workers, in view of the small size of their holdings, their low level of education and all the other reasons given earlier in this paper.^{59/}

The general consequence of the concentration of land ownership is, in a word, the social stratification of Latin America's rural population into veritable separate castes, with the majority condemned to poverty and wretched living conditions.

If a modern, democratic society is to function as such, there must be at least a minimum degree of social integration, a minimum of openness and permeability between the various human groups composing that society. From

^{59/} Nevertheless, agriculture is not completely at a standstill. Vis-à-vis favourable world market price conditions, as has occurred in the case of coffee, cotton and other commodities in the last few years, production of these items has tended to increase at a faster pace. This is primarily due to the fact that export farming, while subject to most of the above shortcomings, is better organized and responds more dynamically to the stimulus of external demand.

a study of Latin America's agrarian society it is easy to see that such a minimum degree of integration does not exist between its different social sectors. Not only is their status diametrically opposed, but their opportunities, expectations and scales of values are all totally different. On the one hand, there is the small group consisting of latifundio farmers of traditional outlook and capitalist farmers engaged in agriculture for the internal market or in speculative export farming, which accounts for most of the available land resources and further absorbs a substantial proportion of the income generated by the agricultural sector; hence the average ratio of 20, 30 or more to 1 between per capita income of this group and that of the rural masses as a whole.

Most of this small group come from the lower social strata embracing the huge rural masses. These groups consist of different population sectors according to the country and type of farming.

In nearly all the Latin American countries there are minifundio farmers who may be owners, tenants, de facto land occupants, and so on. They have one feature in common: in view of the impossibility of meeting their minimum needs by working their own land, they have to hire themselves out for a wage or devote part of their time to the extractive industries, commerce, or other activities. The second basic component of the lower strata consists of the various types of workers employed on traditional estates:^{60/} inquilinos, medieros or aparceros, colonos, conuqueros, etc. A large portion of their payment is not in money but in kind (the use of, or the right to build a hut within the farm precincts, grazing for their animals, the right to grow subsistence crops, on what is usually marginal land, etc. The predominating mentality of this group, as a rule, is that

^{60/} It would be well to differentiate within this group between the permanent farm hands and the many seasonal labourers who are employed only at certain periods of the year (sowing, weeding, harvesting, etc.). The latter are forced to lead a semi-nomad existence, virtually outside the pale of the community. They wander from place to place throughout most of the year, obtaining sporadic employment and often having to scrape a living on the wrong side of the law.

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of the minor rural worker, and their highest aspiration is to work their own land, as distinct from the wage-earning farm hands on large plantations where the individual hunger for land is less intense and the social claims are of the wage-earning category. In countries engaged in plantation agriculture, in particular, it is possible to distinguish a type of rural wage-earning class with a mentality very similar to that of the industrial worker, and which in many aspects and reactions could easily be assimilated in the urban wage-earning classes.

These three sectors which together probably account for about 90 per cent of Latin America's rural population, is the antithesis of the small dominating group in rural areas, there being no rural middle class between them, except in a few cases which have their own peculiar characteristics. Expectations of any improvement for these masses within the existing agrarian structure are practically nil and their only real hope is to emigrate to the cities where, owing to their lack of training and resources, and to the backward stage of industrial development, their prospects are by no means bright either.^{61/}

To overcome this dramatic situation which is giving rise to many of the gravest problems that beset Latin America today, there can be no question of proceeding otherwise than by a radical change in existing agricultural land tenure and water use conditions.

Since the problem presents varying characteristics in the different countries of the region, the process of land reform to be undertaken in each individual one should clearly also be different. What is lacking at present is comprehensive knowledge of the diverse situations to be found in Latin America. Although the facts as set out above may apply in general, they must be adjusted to each particular situation. Accordingly, it is impossible to consider a single formula or a uniform pattern of

^{61/} The situation described is aggravated in many places by the problem of indigenous populations. In fact, in many Latin American countries most of the lower groups of the agricultural sector are composed of indigenous inhabitants who still live largely according to their own scale of values, which is different from that of the main community in which they are not properly integrated.

agrarian reform. Plans should be based on the real circumstances prevailing in each individual country, and even in each geographical area therein. This necessitates first of all a more accurate investigation of present characteristics of land tenure, water use and related aspects, such as the degree of population pressure on these resources; nature of the soil, types of production and of markets; the real cultural, sociological and psychological situation of the different rural segments, etc. It is only thus, and in terms of agricultural development needs in particular and economic development needs in general, of the availability of financial resources, and other factors, that it will be possible to determine more realistically the best type of land reform to promote.^{62/}

In some cases a large-scale distribution of land may be inevitable, the economic drawbacks having to be mitigated by means of sound co-operative organization; in others, it might be better to establish both socially and economically efficient family units of production, whose size would vary according to the type of soil, the kind of agriculture practised and the degree of mechanization; in other cases again it may be essential to maintain the unity of production by seeking patterns of collective farming or farming by the association of workers with a share in both land ownership and profits, so that agriculture can develop efficiently.^{63/} Notwithstanding the foregoing, there are certain basic conditions which must be met by agrarian reform, whatever its particular pattern may be.

^{62/} The Inter-American Committee for Agricultural Development (CIDA), which co-ordinates the work of FAO, OAS, ECLA, IDB and IIAS in connexion with Latin America's agricultural development, is carrying out a survey of the various patterns of land tenure systems in force in several countries of the region, and the problems deriving from them. It is hoped that the results of this survey will be available in the second half of 1963. In the light of what has been written above, it seems unnecessary to stress the immense importance of continuing and amplifying such investigations.

^{63/} Israel, where different systems of land ownership and land tenure exist side-by-side, is a good example of this.

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In the first place, the land reform process must be quick and widespread, rather than a simple land settlement process. If redistribution of land is to be really effective, it must benefit a large number of rural families. Even if their farming capabilities are limited at present, they must be given the opportunity to develop them, which will be accomplished when they can accede to land ownership rights. It is a fallacy to claim, as often occurs, that the rural workers must first be educated and then provided with opportunities. It is more than likely that many of the rural workers benefiting from agrarian reform will fail in their farming enterprises and others will have to take their place. Nevertheless, a process of improving the levels of living and productivity of the rural masses, such as that presently aimed at, must be based on a considerable number of rural workers and not on a chosen few.

Further, land reform ought to be a rapid process, that is to say, the substantial work of mass redistribution of land ownership and water rights^{64/} should be carried out over a brief period of years. The importance of speed stems from the necessity to overcome in the shortest possible space of time the state of instability which a process of this nature tends to create in the rural medium. To counteract such instability without delay is of vital importance if the production process is not to be adversely affected, since it will have to respond to the rapid increment in demand for foodstuffs deriving from the redistribution of resources and income brought about by the actual process of reform.

To effect such a rapid and wide-scale process it is necessary to obtain the support of the majority. Hence the scope, speed and depth of agrarian reform will be determined mainly by decisions of an essentially political

^{64/} It is of fundamental importance that agrarian reform should apply to water as well as land. In many countries of the region, or at least in many parts of these countries, the irrigation factor is quite as important, or even more important, as the land itself, so far as farming results are concerned. In general, the systems in force for appropriation, distribution and use of water are defective and give rise to its unsatisfactory or inadequate utilization. Frequently, moreover, the brackishness resulting from defective water use has caused the loss of irrigated land, to say nothing of the capital invested in it.

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character. On the other hand, the technician plays an all-important role in ensuring the success of agrarian reform. He has to plan it and help in its implementation, organizing the supplementary tasks of assistance, credit, etc., and pointing out the economic implications of the political measures adopted.

A further condition for the broad-scale execution of agrarian reform in the region is the long-term financing of the expropriation of land. Agrarian reform is a highly expensive process, not only because of the land that has to be paid for, but also because of the amount of capital that must be invested in it so that the recipient rural workers can utilize it and develop it to the full. Large social capital investments are needed (roads, irrigation works, power, etc.) to permit an increment in production and its transportation to the centres of consumption. It is also vitally important to invest capital in training and technical extension, experimental centres, and so on. It is necessary, too, to erect marketing installations, build and improve housing, and increase available transport facilities, and a substantial investment in the redistributed land is called for in order to increase its productivity (construction of fences, plantations, pastures, watering facilities, cow-sheds, silos, etc.).

However economic the terms of investment may be and however great a part is played in them by the actual rural labour force that is benefited by agrarian reform, all this implies an exceedingly high financial cost in view of the magnitude of the projects to be undertaken in order that agricultural production and productivity shall reach the levels anticipated. In addition, it must not be forgotten that ample credit resources in real terms will be needed for the gradual formation of working capital for the new farmers. What is more, a certain proportion of this credit will probably not be directly recoverable at the outset, given the limited initial farming capabilities of many of the recipient rural workers.

Consequently, considering the economic and financial difficulties encountered in practically all the countries of the region, it must be realized that if an attempt is made to indemnify the present landowners at prevailing commercial values, which are often exaggeratedly enhanced for reasons unconnected with the land's productivity, the agrarian reform will not be effective or it will be frustrated almost from the start.

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Finally, it is worth noting that it is imperative to formulate the land reform programme as an integral part of over-all agricultural development plans. Obviously, as land reform is a basic means of achieving effective progress in the agricultural sector, it cannot be envisaged as an isolated undertaking, independent of the rest of the agrarian policy measures which make up the over-all development plan.

(d) Organization and diversification of the domestic market

The question has been raised in this document of the need to diversify agricultural production and introduce intensive methods, firstly as a means of meeting the demand for food products and other agricultural products, and secondly of raising the income level of the rural worker. As pointed out, the increase in internal demand would derive basically from population growth and from higher and better distributed income. However, if this increase in demand (that for reasons explained in the section concerned have been estimated only in an over-all form) is to have the effect of inducing greater diversification of agricultural production, this demand too must be diversified.

There are products of a high nutritional value, such as milk, eggs, fish, vegetables and meat, that large sections of the population of Latin America consume only in minute quantities, or not at all. The causes of this may be rooted in custom, or in the low incomes of these groups and the high relative prices of the products in question, or in the lack of supplies of these products in many areas; whatever the reason, the diet of a high percentage of Latin America's population is very badly balanced. If a policy of income redistribution in favour of the broad masses is to provide an effective stimulus to better nutrition, and thus to agricultural diversification, it is essential that the redistribution should be accompanied by a vigorous nutrition policy, that would both permit the demand to become effective, and ensure that each member of the community has the opportunity of buying the foods that will provide the minimum of calories and proteins needed to safeguard his health, welfare and ability to work.

/An essential

An essential element of this nutrition policy, in which the State could avail itself of the co-operation of private groups (consumer co-operatives, producers' associations, trade unions, etc.) is the education of the consumer. This could be carried out, as it is already being carried out to some extent, through schools, rural extension services and campaigns to encourage the consumption of particular foods. However, this education task could usefully be supplemented by direct State action in the form of the distribution of products in schools, army units, canteens and similar centres.

The mere fact that the State had entered the food market as a direct buyer and as a price-regulating factor would increase stability and provide an effective stimulus to agricultural production.

At the same time, as part of a broad nutrition policy, the market for agricultural products must be provided with a better organization. As frequently stated, one of the most striking features of Latin American agriculture is in fact the present very poor structure of the marketing systems for agricultural products, especially those intended for the domestic market. Inadequate transport systems, lack of proper facilities for the storage and handling of these products, lack of up-to-date market information, monopolistic purchasing power on the one hand and a multiplicity of small-scale intermediaries on the other, all add considerably to the final price of the product to the consumer, most of which represents revenue to the intermediary system, so that the producers are not able to obtain adequate prices for their products. It should also be emphasized that a very large part of these considerable marketing margins do not represent any real service rendered in respect of the primary product, but are frequently attributable to speculative profits, excessive losses in the distribution process, and the remuneration of various unnecessary intermediaries who intervene between the producer and the final consumer.

8. Foreign trade prospects

As was shown in Part I of the present study, Latin America's agricultural exports have been characterized by a lack of diversification both as regards their composition and in respect of markets of destination. It has also been noted that intra-regional trade has up to now been on an extremely small scale. Obviously, therefore, in view of the importance of agricultural exports in relation to total exports on the one hand, and to total agricultural output on the other, each of the Latin American countries should thoroughly overhaul its foreign trade policies with respect to agricultural commodities, in pursuit of the twofold objective of increasing their foreign exchange earnings and intensifying agricultural production.

Some important aspects of this subject are analysed below.

(a) Exports to the rest of the world

Latin America's agricultural export prospects do not appear to be particularly bright. A recent FAO study ^{65/} points out that, even if an optimistic hypothesis is adopted in respect of the growth of income in the more highly developed countries, the annual rate of expansion of these countries' net imports of tropical and semi-tropical products is unlikely to exceed 2.5 per cent. Within the group of countries referred to, it is estimated that those of Western Europe will increase their net purchases abroad at an annual rate of approximately 1.5 per cent, while North America may perhaps do so a little more slowly. On the other hand, Japan's imports, and, particularly, those of the Soviet Union and the People's Republic of China, are expected to expand at a more rapid rate.

Projections for the commodities which are of special interest to Latin America are presented in table 36.

It may be noted that, generally speaking, the net imports of the commodities in question effected by North America and Western Europe are not likely to increase very fast. In the case of sugar, this will be mainly due to the expansion of domestic production and the fact that per capita consumption in North America will increase very little, since it

^{65/} Food and Agriculture Organization of the United Nations, Agricultural commodities - Projections for 1970 (E/CN.13/48, CCP.62/65), special supplement to the FAO Commodity Review 1962, Rome, May 1962.

Table 36

ANNUAL RATE OF EXPANSION OF THE VOLUME OF NET IMPORTS
OF TROPICAL AND SEMI-TROPICAL AGRICULTURAL COMMODITIES
BETWEEN 1957-59 AND 1970, ON THE ASSUMPTION
OF CONSTANT PRICES

(Percentages)

Commodity	North America	Western Europe	Japan	USSR and People's Republic of China
Sugar	0.5	-	2.3	a/
Coffee	1.4	1.6	8.8	8.8
Cacao	1.6	1.6	5.2	6.5
Fibres a/	0.2	0.9	1.6	1.0

Source: Food and Agriculture Organization of the United Nations, Agricultural commodities: Projections for 1970 (E/CN.13/48, CCP 62/5)
Data based only on the indices corresponding to the most optimistic hypothesis of income growth.

a/ It is estimated that from net exporters these countries will become net importers, by a volume of about 3 million tons.

b/ Cotton, wool and jute.

/exceeds 7

exceeds 7 kilogrammes already and its income-elasticity is very low. In Western Europe, on the other hand, the prospects are somewhat brighter, even though in several of the countries of this region any very large-scale expansion of demand is impeded by a variety of tariff duties and taxes. Where cacao is concerned, the fluctuations of demand in the higher-income countries are much more dependent on prices. Consequently, at constant prices no significant increase in per capita demand is projected. As in the case of coffee, however, the abolition of duties in various European countries may mean that the estimated increase in consumption is exceeded. The smallness of the increment projected for textile fibres is essentially attributable to the growing competition from synthetic products, which may become keener in the future, according to the prevalent relative prices. A rise in the price of cotton, for example, will divert a proportion of demand towards consumption of synthetic fibres, and vice versa.

In the markets of the USSR, the People's Republic of China and Japan, on the other hand, the outlook is much more promising. Apart from the fact that these are economies in full process of expansion, per capita levels of consumption of the commodities under discussion are relatively low, so that demand can be expected to increase considerably in the next few decades. Latin America should therefore devote more attention to the possibilities opened up by these markets.

Prospects for the temperate-climate products of interest to Latin America - i.e., cereals and meat - differ from one of these groups of commodities to the other. It is expected that production of grain in the developed countries will continue to exceed domestic consumption, leaving substantial exportable surpluses. Western Europe will remain a net importer of grain up to 1970, but a change is likely to occur in the composition of its imports. While the wheat deficit may decrease, if the present trend towards self-sufficiency is maintained, requirements of secondary cereals are likely to increase. But the best sales prospects for grain are offered by the developing countries themselves, whose total grain deficit, according to estimates, may be doubled in the course of the next ten years. Consequently, in the specific case of Latin America, the outlook for Argentina and Uruguay will probably depend on demand in the other Latin American countries rather than on that of extra-regional markets.

/For meat,

For meat, especially beef, world demand prospects are somewhat brighter. In the FAO report cited above, it is estimated that by 1970 the net beef imports of the main importer regions may increase between 17 and 32 per cent in relation to those registered in 1957-59, while those of Japan (very small at present) may be trebled. Projections of the expansion of net imports by 1970 in selected regions, on the basis of a favourable hypothesis of consumption growth, are presented in table 37.

Table 37.

NET IMPORTS OF BEEF, 1957-59 AND 1970

(Thousands of tons, carcass weight)

Country or region	1957-59	1970	Index	Annual Percentage
North America	316	385	122	0.9
United Kingdom	629	736	117	0.7
European Economic Community	258	340	132	1.3
Japan	10	30	300	5.2
Total for countries listed	1.213	1.491	123	1.0

Source: FAO, *op. cit.*, table II-1

For forest products, world market prospects are more encouraging than for agricultural commodities. It is estimated that world requirements of industrial roundwood (wood for all purposes except use as fuel) will increase in the course of the next decade at an annual rate which may perhaps exceed 3 per cent. However, Latin America's chances of absorbing a larger proportion of world trade in sawnwood may be partly invalidated by the more favourable geographical situation of Canada and the Soviet Union. Again, the outlook for wood pulp products is very hopeful, since it is estimated that world consumption of paper and board, which amounted to 38 million tons in 1950 and 74 million in 1960, will reach approximately 124 million tons by

/1970.66/

1970.^{66/} In this field, too, Latin America's efforts should be directed towards the satisfaction of the domestic market, since at the present time the region is an extensive net importer of such products. There is no reason, however, why this should prevent Latin America, if it shows itself capable of effectively boosting its output of forest products and their derivatives, from securing its share, in due course, in the import trade of other regions.

(b) Intra-regional exports

The most powerful impetus to Latin America's foreign trade in agricultural commodities will undoubtedly have to be the expansion of demand in the countries of the region themselves. It has been shown that in all likelihood consumption of these commodities will increase more rapidly than in the past, and that, in view of the limited export prospects, it will be necessary to control the growth of imports from outside the region.

Import substitution possibilities in respect of agricultural commodities are fairly promising. A high percentage of the total quantum of extra-regional agricultural imports - which at present amounts to about 450 million dollars - is constituted by goods that can be produced within Latin America itself. Extra-regional imports of wheat and other cereals, oils and fats, milk products, pulses, tobacco, wood, livestock and meat, and cotton - to list only the staple items - represent a considerable proportion of total agricultural imports from outside the region.^{67/}

^{66/} FAO, op. cit., p. 1-23

^{67/} Thus, for example, in the countries listed below the following agricultural imports from outside Latin America were registered in 1958-60:

Brazil, 77 million dollars (wheat, 47.5 million; tobacco, 12.9 million; edible oils and fats, 5.4 million);

Chile, 29 million dollars (cotton, 6 million; wheat, 5.8 million; milk products, 5.0 million; edible oils and fats, 2.7 million);

Colombia, 30 million dollars (wheat, 10.4 million; oleaginous products 9.4 million; malt, 4.6 million; cotton, 4.4 million);

Mexico, 43 million dollars (maize, 16.8 million; greasy wool, 9.5 million; tobacco, 5.4 million; hides, 4.4 million; livestock, 3.0 million; milk products, 2.5 million);

Peru, 33 million dollars (wheat, 16.2 million; edible oils and fats, 4.4 million; milk products, 4.1 million; rice, 3.2 million; wood, 1.5 million; malt, 1.1 million);

Uruguay, 17 million dollars (wheat, 4.7 million, cotton, 4.6 million; tobacco, 3.4 million, maize, 1.3 million; wood, 0.9 million);

Venezuela, 82 million dollars (milk products, 30.2 million; wheat, 13.6 million; eggs, 12.1 million; pulses, 3.1 million; oats, 2.6 million; wood, 2.5 million).

/A prerequisite

A prerequisite for the intensification of intra-regional trade in agricultural commodities will be the adoption by the Latin American countries of a much more energetic and consistent policy as regards the improvement of transport and marketing facilities, in addition to the reciprocal tariff concessions granted by the States signatories of the Montevideo Treaty and of the treaties relating to Central American economic integration, respectively. The full implementation of these treaties, and perhaps ultimately of an agreement to which all the countries of the region are parties, will entail thorough exploration of the possibilities for such specialization in respect of agricultural commodities as will enable each of the countries concerned to turn its natural assets to the best possible account. The termination of the interim period contemplated in the treaties referred to will imply free circulation of agricultural commodities, as of goods of other kinds among the signatory States. Clearly, then, these latter will have to introduce certain adjustments in their production systems so as to safeguard marginal producers against a sudden and radical change of circumstances which may do serious harm from the social standpoint. The adoption of improved techniques and a gradual process of specialization will give the existing marginal producers an opportunity of switching over from one type of farming to another that offers more advantages, and for whose products there may be a broader market in the region as a whole. But, as has already been pointed out, if this objective is to be attained, the Latin American countries must undertake more thorough research on their levels of productivity, on alternative uses of land and other resources and on the precise trends that may be followed by future demand - which have been traced here only in broad outline - in order to determine the agrarian policies that it will be wisest to apply in each of the countries in question.

9. Agricultural development planning

Today hardly anyone questions the assumption that the economic development of Latin America cannot be left to chance, to the free interplay of market forces. On the contrary, there is a growing realization of the need to rationalize this process by laying down in advance guide-lines for action adjusted to a framework of appropriate socio-economic priorities. In the specific domain of agricultural development, the immensity of the task that lies immediately ahead has already been indicated. Decisions will have to be adopted that will affect the destiny of millions of human beings and the utilization of vast land and capital resources; they will also involve the co-ordinated action of State machinery and of private enterprise. Obviously, therefore, these decisions will have to be taken in full awareness of their repercussions and with a view to maximum exploitation of Latin America's resources.

This need to approach agricultural development through planning becomes yet more obvious when the investment problem is considered. Even though, for readily understandable reasons, it is not yet feasible to define the sum total which investment in the agricultural sector can or must reach in order to meet the requirements in respect of expansion, intensification and diversification of production indicated in earlier pages, it will clearly have to be very great. Suffice it to recall all that will have to be done in respect of irrigation works, reclamation of land, building of roads, schools and installations; marketing facilities; purchases of equipment; establishment of experimental centres; training of skilled personnel; resettlement of hundreds of thousands of agricultural workers, and so on and so forth, in order to achieve the postulated increases in production and productivity. Furthermore, it must be remembered that mass investment will have to be effected in many other fields, and that the funds available for the purpose are definitely limited. It follows logically that a careful scale of priorities must be established in order to determine how much capital should be allocated to each sector. Clearly therefore, the agricultural development of the Latin American countries can only be tackled in the context of the planning of their over-all economic development.

/A very

A very important aspect of this planning process is the organization of State services not only for the formulation but also for the implementation of the development plan. In connexion with agriculture, there are many agencies that play some part in the process. But these institutions do not always co-ordinate their action, with the result that a serious waste of skilled human resources ensues, in addition to the inconsistencies which may be perpetrated and the consequent confusion in the spheres in which the services in question pursue their activities. What has been said of the need to establish closer liaison between the agricultural research and extension service is also applicable to credit, which is not always granted for the purposes and in the ways that are most appropriate and most compatible with the interests of over-all development. Similarly, a very close relation must be established between agricultural production plans and the supply of agricultural inputs, since fertilizers, improved seeds, vaccines, etc., must be actually available and within the reach of all farmers, so that these latter can introduce modern production techniques and meet the targets established.

In addition to these and other factors which it is essential to take into account in the formulation and execution of agricultural development plans, there is another vitally important element which must be considered if the maximum impetus is to be given to the progress of this activity in Latin America - namely, the co-ordination of national plans at the regional level.

The progress being made in the planning of development, considerable as it is, is in danger of being at least partly frustrated by the manner in which the various programmes were drawn up and implemented. Many of the Latin American countries, whatever the magnitude and quality of their resources, tend to envisage a considerable degree of self-sufficiency in their development plans, which does not seem expedient in view of their modest income levels and, in most cases, low population density, and their consequently narrow internal markets, as well as, lastly the wide diversity of natural resources to be found among them. Unquestionably, the economic and social cost of achieving in each

/of these

of these countries maximum output of all the products that their land can yield is bound to be very high, if intra-regional trade possibilities and the advantages of some degree of specialization are not taken into consideration. The domestic market, which has repeatedly been singled out in the present document as the most important dynamic factor for Latin America's future industrial development, must, therefore, be understood in the context of the region as a whole and not in that of each of its constituent countries.

How, then, is this planned agricultural development to be conceived in terms of the Latin American geographical unit? It seems that with respect both to markets and to production, the first step would be to study the Latin American region not by countries but by homogeneous zones or sub-regions, from the standpoint of their natural conditions and agricultural, human and technical resources, the character of the problems to be solved or their current level of development.

Thus, for example, such areas might be chosen as that comprising the south of Brazil, Uruguay and the Argentine pampa; the Andean regions of Bolivia, Peru Ecuador and Colombia, etc. These aggregates, which are suggested purely for purposes of illustration, set an approximate pattern for the type of zoning that would have to be established. For the zoning to be satisfactory, an indispensable requisite would be thorough research on such aspects of the question as natural characteristics, predominant lines of crop and livestock production, organization of the typical agricultural enterprise, social composition of the population, income and its distribution, levels of living of the population, the extent to which intensive or extensive farming methods are practised, utilization of the labour force, land tenure systems, and many other points.

All this involves an enormous amount of work, which will call for serious efforts on the part of the countries concerned and will take a relatively long time. But the sooner a start is made on the study of Latin America's real agricultural situation in these new terms, and a co-ordinated agricultural development policy is put into effect, the easier it will be to attain the objective of a higher standard of living for the population of this continent.

/Annex I

Annex I

METHODOLOGY USED FOR THE PROJECTIONS OF DOMESTIC DEMAND FOR
AGRICULTURAL COMMODITIES

1. Assumptions:

- (a) Demographic growth: 2.9 per cent annually for all income groups.
- (b) Growth of total income: 6 per cent annually or 3 per cent per capita.
- (c) Growth of total consumption of goods and services: 5 per cent annually or 2 per cent per capita.
- (d) Growth of consumption by income groups:
 - (i) High-income group: per capita consumption will decrease 20 per cent up to 1980;
 - (ii) Medium-income group: per capita consumption will increase 2.1 per cent annually;
 - (iii) Low-income group: per capita consumption will increase 4.8 per cent annually.
- (e) The present population distribution by income groups and their respective shares of total consumption were estimated as follows:

	<u>Percentage of total population</u>	<u>Percentage of total consumption</u>
High-income group (H)	5	24
Medium-income group (M)	45	60
Low-income group (L)	<u>50</u>	<u>16</u>
Total	100	100

- (f) Consumption of agricultural commodities in relation to total consumption: H = 25 per cent; M = 45 per cent; L = 65 per cent.
- (g) Elasticity of demand for agricultural commodities in relation to total consumption: H = 0; M = 0.5; L = 0.75. For group H it was assumed that per capita consumption of agricultural commodities remained the same throughout the period.

/2. If

2. If total consumption in 1960 is equal to 1,000 million units, consumption by groups - total and agricultural - is as follows:

	<u>Over-all consumption</u> (Millions of units)		<u>Population</u> (Millions)	<u>Per capita consumption</u> (units)	
	Total	Agricultural		Total	Agricultural
Group H	240	60	10.3	23.30	5.83
Group M	600	270	92.7	6.47	2.91
Group L	160	104	103.0	1.55	1.01
Total	<u>1 000</u>	<u>434</u>	<u>206.0</u>	<u>4.85</u>	<u>2.11</u>

3. If the coefficients of elasticity of demand and the hypothetical rates of consumption growth are applied, agricultural consumption is seen to have increased by the following amounts in 1980:

	<u>Annual per capita</u> <u>growth rate of</u> <u>agricultural con-</u> <u>sumption</u>	<u>Index in</u> <u>1980</u>	<u>Index of over-</u> <u>all agricultu-</u> <u>ral consumption</u> <u>in 1980</u>	<u>Over-all agri-</u> <u>cultural con-</u> <u>sumption in</u> <u>1980</u>	<u>Per capita</u> <u>agricultural</u> <u>consumption</u> <u>in 1980</u>	
	(Percentage)	(1960=100)	(Percent (Annual tage) rate)	(Millions of units)	(Units)	
Group H	0	100	177	2.9	106	5.83
Group M	1.05	123	218	4.0	588	3.58
Group L	3.60	203	360	6.6	374	2.05
Total	1.70	139	246	4.6	1 068	2.93

4. The average elasticities obtained are: 0.85 with respect to total consumption and 0.57 with respect to income.

Annex II
STATISTICAL TABLES

Table 1
LATIN AMERICA: IMPORTS OF AGRICULTURAL PRODUCTS,
(Millions of dollars at current prices)

Origin	Latin America		ALALC countries
	1953	1955/57	1958/60
From all countries	1 153	897	525
From within the region	483	415	281
From outside the region	632	482	244
Percentage of intra-regional imports	43.3	46.3	53.5

Sources: ECLA, documents E/CN.12/369 (1956) and E/CN.12/499 (1959); the figures for ALALC have been calculated on the basis of the official foreign trade statistics of the member countries.

/Table 2

Table 2

LATIN AMERICA: PER CAPITA LEVELS OF CONSUMPTION OF AGRICULTURAL
PRODUCTS FOR HUMAN USE

(Kilogrammes per year)

Product	Argen- tina (1959)	Bra- zil (1957)	Chi- le (1957)	Colom- bia (1956- 1958)	Ecu- dor (1957- 1959)	Mexi- co (1957- 1959)	Para- guay (1957- 1959)	Peru (1959)	Uru- guay (1954- 1956)	Vene- zuela (1959)
<u>Food products</u>										
Grains	120	106	129	61	74	124	84	87	99	82
Roots and tubers	67	118	92	84	90	8	229	151	61	92
Sugar	31	31	37	51	22	33	15	26	33	37
Leguminous vegetables and nuts	3	27	8	9	13	21	15	9	2	16
Vegetables	44	21	77	13	30	24	36	78	37	16
Meat	91	29	31	41	15	24	48	18	109	25
Eggs	7	3	4	3	5	6	1	1	7	4
Milk (protein content)	3	2	3	2	3	3	2	1	6	4
Fats	20	10	10	8	7	12	7	9	23	13
<u>Natural fibres</u>										
Cotton	5	4	2	3	...	3	...	2	3	3
Wool	1.0	0.3	1.0	0.3	...	0.1	...	0.4	1.2	0.3

Source: FAO, State of Food and Agriculture, 1962.

/Table 3

Table 3
 INDICES OF CHANGES IN THE AREA UNDER CULTIVATION, YIELDS AND PRODUCTION FOR THE MAIN AGRICULTURAL
 PRODUCTS, BY REGIONS, 1957-59
 (1948-52 = 100)

Product	World total			Latin America			North America			Europe			Middle East			Far East			Africa		
	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production
Wheat	121.4	118.0	142.9	116.3	109.4	127.4	75.9	126.7	96.0	105.7	123.8	130.8	135.9	113.0	154.2	126.3	100.0	126.8	123.3	96.6	119.3
Rice	113.7	129.4	146.9	135.8	101.2	137.9	77.7	142.2	108.9	115.1	107.3	123.4	98.0	124.6	122.4	110.8	113.7	126.0	106.6	113.5	121.5
Maize	110.6	125.0	138.1	129.6	107.5	139.8	93.1	129.0	120.0	111.9	159.7	178.6	111.9	102.1	114.4	131.7	117.3	154.0	111.2	116.2	128.6
Barley	116.7	120.4	139.5	140.7	98.1	138.8	139.9	103.4	144.8	123.8	127.8	158.5	131.8	107.5	141.1	106.5	103.8	110.7	100.2	83.6	84.1
Oats	88.8	110.3	98.3	129.2	101.0	130.4	87.1	111.0	96.8	82.8	110.0	91.0	127.2	114.3	144.1	100.0	129.3	127.6	118.3	66.7	79.3
Sorghum	123.2	173.2	212.2	114.3	92.8	105.9	225.8	169.0	980.7	100.0	142.3	137.5	119.4	118.8	142.3	-	-	-	-	-	-
Cotton	104.6	125.0	132.5	114.8	123.8	145.0	55.8	153.1	87.7	127.5	180.0	233.3	137.5	100.0	137.9	132.8	100.0	134.0	116.6	120.0	139.5
Tobacco	116.7	108.3	126.6	116.4	112.5	131.7	70.6	120.4	84.8	126.5	114.4	144.3	136.3	96.0	126.7	140.9	95.1	134.4	110.8	126.8	140.7
Beans	122.1	102.3	124.6	124.5	103.5	129.3	92.0	111.8	103.3	102.5	118.2	124.0	115.6	120.9	140.0	152.9	100.0	149.9	105.6	111.5	118.8
Peas	95.3	107.2	102.3	101.9	88.0	90.5	100.0	113.9	113.9	70.0	103.9	72.8	100.0	100.0	100.0	109.9	113.4	125.6	94.7	95.2	89.7
Potatoes	109.5	104.7	114.6	109.6	113.2	124.2	83.3	123.7	103.0	97.3	107.7	104.3	160.9	132.0	194.4	121.0	113.6	136.8	102.0	118.0	121.1
Sweet potatoes	145.2	119.4	173.8	106.7	105.4	111.9	64.7	126.9	82.7	100.0	81.6	81.8	-	-	-	119.2	107.7	128.5	105.5	104.2	109.5
Manioc	119.8	102.0	122.1	119.9	100.6	121.0	-	-	-	-	-	-	-	-	-	152.7	108.4	164.6	108.3	102.1	110.8
Onions	125.7	110.2	134.5	144.0	105.9	163.2	100.0	116.7	116.7	105.6	116.5	122.8	152.9	118.8	180.8	131.4	109.4	143.2	140.0	80.9	113.3
Tomatoes	125.3	111.7	139.5	133.3	102.1	136.2	87.9	130.3	114.9	140.9	113.9	160.5	164.0	109.1	178.8	200.0	65.0	130.0	140.0	125.4	175.9
Broad beans	102.2	103.1	106.1	105.1	92.8	97.8	-	-	-	103.1	119.1	122.0	95.0	104.2	99.1	80.0	110.0	88.0	98.3	85.1	84.0
Chick-peas	119.7	115.4	137.6	120.7	114.5	138.0	-	-	-	83.3	119.0	98.7	106.7	95.6	102.2	123.9	119.2	145.4	95.7	80.0	75.8
Lentils	86.9	94.5	82.4	88.3	74.7	66.0	-	-	-	84.6	122.2	104.3	141.0	85.0	120.6	85.2	89.1	75.3	90.5	94.0	84.2
Vineyard products	109.1	110.9	120.8	123.7	93.3	115.5	87.3	112.3	98.1	100.5	114.2	112.7	125.2	132.2	165.9	233.3	105.5	246.0	104.3	128.4	133.9
Soya-beans	139.0	121.8	170.4	225.0	117.6	264.6	178.6	111.8	199.5	62.2	117.9	73.3	-	-	-	121.4	102.5	123.3	-	-	-
Groundnuts	135.2	105.8	141.7	175.7	116.0	204.6	65.9	132.6	87.3	100.0	107.8	108.0	345.0	126.5	434.0	137.4	108.1	67.5	-	-	-
Flax (seed)	104.3	100.0	104.3	117.3	98.5	115.3	123.7	79.3	97.6	78.9	83.1	65.4	90.0	109.3	92.5	102.7	96.3	99.3	65.2	100.0	67.0
Sesame	90.8	91.4	81.5	139.5	105.7	146.1	-	-	-	92.5	128.0	120.0	123.3	110.5	137.1	100.5	100.0	101.3	113.9	115.6	130.0
Sunflower	100.6	141.4	142.6	106.1	80.8	85.7	80.0	125.5	100.0	82.2	137.3	113.4	150.0	81.1	122.2	-	-	-	-	-	-
Total a/	114.2	120.8	138.1	124.1	107.0	133.8	93.4	125.1	116.2	102.9	123.7	128.2	130.9	111.1	145.4	118.4	109.9	129.7	109.6	104.7	114.9

Source: FAO, Production Yearbook, 1960.

a/ The total yield has been weighted by the area occupied by each crop in 1948-52.

Table 4
COMPARATIVE YIELD INDICES FOR THE MAIN AGRICULTURAL PRODUCTS, BY REGION

Product	World total			Latin America			North America			Europe											
	1 Area under culti- vation 1957-59	2 Per- cent- age of total	3 Compar- ative yield index	1 Area under culti- vation 1957-59	2 Per- cent- age of total	3 Compar- ative yield index	1 Area under culti- vation 1957-59	2 Per- cent- age of total	3 Compar- ative yield index	1 Area under culti- vation 1957-59	2 Per- cent- age of total	3 Compar- ative yield index									
Wheat	206 200	27.3	100	8 757	16.9	98	29 043	25.2	125	29 590	34.0	154									
Rice	116 667	15.5	100	3 803	7.3	83	583	0.5	176	357	0.4	219									
Maize	100 767	13.4	100	18 347	35.5	57	31 306	27.1	158	11 573	13.3	99									
Barley	60 667	8.0	100	1 717	3.3	76	9 740	8.4	110	11 003	12.6	159									
Oats	47 667	6.3	100	1 150	2.2	81	17 323	15.0	110	10 343	11.9	138									
Sorghum	27 540	3.7	100	343	0.7	93	6 977	6.1	220	40	0.1	142									
Cotton	33 367	4.4	100	4 743	9.2	87	5 463	4.7	163	510	0.6	90									
Tobacco	3 430	0.5	100	425	0.8	91	505	0.5	164	493	0.6	107									
Beans	18 933	2.5	100	4 482	8.7	131	635	0.6	296	3 537	4.1	58									
Peas	6 767	0.9	100	107	0.2	99	135	0.1	156	43	0.5	151									
Potatoes	24 967	3.3	100	997	1.9	54	700	0.6	168	9 207	10.6	132									
Sweet potatoes	14 667	1.9	100	480	0.9	72	110	0.1	89	15	0.0	146									
Manioc	7 067	0.9	100	1 607	3.1	130	-	-	-	-	-	-									
Onions	553	0.1	100	77	0.2	66	50	0.0	193	190	0.2	108									
Tomatoes	827	0.1	100	120	0.2	57	233	0.2	121	310	0.4	117									
Broad beans	4 700	0.6	100	205	0.4	65	-	-	-	907	1.0	101									
Chick-peas	12 333	1.6	100	175	0.3	132	-	-	-	450	0.5	83									
Lentils	1 373	0.2	100	53	0.1	119	-	-	-	110	0.1	127									
Vineyard products	9 600	1.3	100	433	0.8	165	227	0.2	278	6 490	7.5	96									
Soya beans	21 967	2.9	100	135	0.3	103	9 163	7.9	131	28	0.0	64									
Groundnuts	14 867	2.0	100	650	1.3	127	600	0.5	134	15	0.0	198									
Flax (seed)	8 133	1.1	100	1 267	2.5	160	2 697	2.3	115	347	0.4	123									
Sesame	4 633	0.6	100	300	0.6	175	-	-	-	37	0.0	100									
Sunflower	6 547	0.9	100	1 347	2.6	72	16	0.0	84	1 077	1.2	99									
Total sample	754 239	100.0	100	51 720	100.0	85	115 506	100	140	87 042	100.0	132									
<u>Summary</u>																					
Below world level				82.3			73.9			0.1			89.0			27.2			90.0		
Above world level				17.7			137.9			99.9			140.0			72.8			147.7		

Source: FAO, Production Yearbook 1960.

Table 5

LATIN AMERICA: UNIT YIELDS OF SOME IMPORTANT CROPS IN SELECTED COUNTRIES

(Quintals per hectare)

Country	Wheat			Maize			Rice			Potatoes			Beans			Tobacco			Cotton		
	1934 -38	1948 -52	1958 -60	1934 -38	1948 -52	1958 -60	1934 -38	1948 -52	1958 -60	1934 -38	1948 -52	1958 -60	1934 -38	1948 -52	1958 -60	1934 -38	1948 -52	1958 -60	1934 -38	1948 -52	1958 -60
Argentina	9.8	11.5	12.4	18.1	14.8	18.5	28.5	30.5	32.5	58.0	64.0	87.0	10.5	9.5	9.9	10.9	10.4	10.3	1.9	2.4	2.3
Brazil	9.0	7.4	5.1	13.9	12.4	12.9	14.3	15.7	16.3	67.0	48.0	55.0	8.7	6.8	6.9	9.0	7.6	7.9	1.8	1.5	1.6
Chile	10.6	11.9	12.6	13.8	13.8	20.0	38.4	29.0	24.6	85.0	88.0	81.0	8.5	9.3	8.2	20.8	20.3	20.6			
Colombia	8.0	7.2	8.7	9.0	10.7	11.6	...	20.4	20.4	46.0	...	...	5.0	...	...	11.0	10.4	16.9	1.7	2.2	4.1
Paraguay	...	7.8	7.2	10.3	12.0	12.6	20.4	19.1	22.1	...	63.0	36.0	...	8.3	8.0	8.5	11.1	10.0	2.1	2.6	1.6
Peru	7.0	9.3	10.1	16.1	14.3	12.7	19.9	38.5	40.4	29.0	57.0	52.0	...	9.2	9.7	...	10.2	12.9	5.0	5.0	5.1
Uruguay	7.5	9.1	6.4	6.3	6.9	5.2	35.7	32.7	33.0	41.0	38.0	37.0	4.2	...	...	9.2	...	...	
Venezuela	4.9	4.7	6.4	13.8	11.4	11.7	12.0	11.7	15.8	16.0	26.0	63.0	...	...	7.8	4.3	8.5	15.1	1.2	2.8	2.3
El Salvador				10.7	11.2	8.7	11.8	16.3	18.4				9.1	8.2	5.2				2.8	3.6	7.7
Guatemala	7.1	5.8	6.6	9.9	8.6	7.6	14.3	11.8	13.4	28.0	30.0	31.0	7.5	5.1	5.9	4.1	6.2	8.0	2.5	3.0	8.0
Honduras	...	5.8	5.9	10.5	7.3	7.6	12.0	16.2	16.6	...	19.0	20.0	4.4	4.4	4.4	5.0	5.0	5.1	...	2.9	6.6
Mexico	7.6	8.8	14.5	5.6	7.5	8.8	21.0	18.0	20.6	48.0	45.0	51.0	2.0	2.6	4.0	8.6	10.0	13.6	2.5	3.2	4.9
Latin America	9.5	10.6	11.0	12.8	10.6	11.6	15.2	16.9	17.5	44.0	53.0	62.0	6.6	5.7	6.0	8.4	8.4	9.7	2.0	2.1	2.7

Source: FAO, Production Yearbooks 1956 and 1961.

Table 6

CONSUMPTION OF FERTILIZERS IN SELECTED COUNTRIES IN
LATIN AMERICA AND OTHER REGIONS

Country	Nitrates (thousands of tons of N)		Phosphates (thousands of tons of P ₂ O ₅)		Potassium fertilizers (thousands of tons of K ₂ O)		Arable area (millions of hectares)
	1948-52	1958-59	1948-52	1958-59	1948-52	1958-59	
Brazil	11.0	44.3	31.0	81.3	11.6	65.7	19.1
Chile	9.5	47.7 ^{a/}	20.9	29.6 ^{a/}	3.5	6.5	5.5
Ecuador	0.2	3.7 ^{a/}	0.3	2.3	0.1	1.8	1.1
El Salvador	0.4	14.9	0.2	8.9	0.2	17.5	0.5
Honduras	0.6	6.5	0.7	0.3	0.7	0.1	1.0
Mexico	10.4	140.0	8.9	28.0	2.2	4.5	19.9
Peru	34.3	55.3	23.6	7.3	4.9	3.2	1.7
Venezuela	1.3	5.5	0.5	6.8 ^{b/}	0.8	4.0 ^{c/}	2.9
Belgium	77.0	97.5	85.2	91.7	118.5	152.3	1.0
France	251.7	480.8	454.2	764.4	362.1	705.4	21.5
Greece	23.6	70.8	19.1	54.6	5.3	8.5	3.7
Spain	77.0	273.8	155.5	316.0	39.5	89.7	20.9
Western Germany	194.1	226.2	405.5	607.9	660.3	1 003.8	8.6
Egypt	98.2	177.1	16.7	27.7	0.6	2.3	2.6
Japan	368.0	681.7	224.5	389.4	145.3	437.4	6.1

Source: FAO, Production Yearbook, 1960

^{a/} 1959-60.

^{b/} 1956-57.

^{c/} 1955-56.

/Table 7

Table 7
LATIN AMERICA: PROJECTIONS OF PRODUCTION, YIELD AND AREA FOR
FOUR AGRICULTURAL PRODUCTS IN 1980

	Maize	Rice ^{a/}	Beans	Wheat
<u>Average 1958-60</u>				
Area (millions of hectares)	18.3	4.2	4.5	8.8
Yield (metric quintals per hectare)	11.4	17.5	5.9	11.6
Production (millions of tons)	21.0	7.3	2.6	10.1
Net foreign trade (millions of tons) ^{b/}	-0.4	0.2	-	1.3
Total apparent consumption (millions of tons) ^{c/}	20.6	7.5	2.6	11.4
<u>Per capita</u> apparent consumption (kilogrammes)	102.7	37.4	19.0	56.9
<u>1980</u>				
<u>Per capita</u> apparent consumption (kilogrammes)	149.1 ^{d/}	50.4 ^{e/}	14.7 ^{e/}	68.6 ^{f/}
Total apparent consumption and production ^{g/} (millions of tons)	53.5	18.1	5.3	24.6
Yield per hectare (quintals per hectare) ^{h/}	14.3	18.7	6.4	14.4
Area required (millions of hectares)	37.4	9.7	8.3	17.1

Source: FAO, Production and Foreign Trade Yearbooks, 1958-60.

^{a/} Rice in the husk.

^{b/} Net imports (+); net exports (-).

^{c/} Production plus imports minus exports.

^{d/} An elasticity coefficient of 0.5 was assumed, or an annual rate of 1.5 per cent, in view of the higher growth rate estimated for animal consumption.

^{e/} The 1948-52 trend was extrapolated to 1958-60, giving an annual rate of 1.4 per cent for rice and 0.4 per cent for beans.

^{f/} The per capita consumption for Argentina, Chile and Uruguay was maintained at the same level, and for the remaining countries the same annual rate as for the last twenty years was assumed, i.e. 1.66 per cent.

^{g/} It was assumed that there would be no net foreign trade balances.

^{h/} The trend between 1948-52 and 1958-60 was extrapolated, giving the following annual rates of increase: maize and wheat 1 per cent; rice, 0.15 per cent; beans and beans, 0.4 per cent.

/Table 8

LATIN AMERICA: TOTAL POPULATION, ESTIMATES AND PROJECTIONS TO 1980
(Thousands)

Country	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
Costa Rica	456	499	551	619	695	801	951	1 171	1 390 ^{a/}	1 651 ^{a/}	1 960 ^{a/}	2 327 ^{a/}
Cuba	3 364 ^{a/}	3 837 ^{a/}	4 221	4 566	4 932	5 508	6 127	6 797	7 523 ^{a/}	8 307 ^{a/}	9 146 ^{a/}	10 034 ^{a/}
Dominican Republic	1 054	1 256	1 484	1 674	1 889	2 131	2 526	3 014	3 554 ^{a/}	4 221 ^{a/}	5 013 ^{a/}	5 954 ^{a/}
El Salvador	1 361	1 443	1 531	1 633	1 742	1 868	2 108 ^{a/}	2 442 ^{a/}	2 859 ^{a/}	3 346 ^{a/}	3 917 ^{a/}	4 585 ^{a/}
Guatemala	1 532	1 771	1 996	2 201	2 438	2 805	3 258	3 765	4 343 ^{a/}	5 053 ^{a/}	5 906 ^{a/}	6 942 ^{a/}
Haiti ^{a/}	2 472	2 632	2 802	2 983	3 175	3 380	3 722	4 140	4 645	5 255	6 001	6 912
Honduras	862 ^{a/}	948	1 042	1 146	1 261	1 428	1 660	1 950	2 315 ^{a/}	2 750 ^{a/}	3 265 ^{a/}	3 879 ^{a/}
Mexico	15 204	16 589	18 089	19 815	22 576	25 826	30 015	34 988	40 602 ^{a/}	47 022 ^{a/}	54 485 ^{a/}	63 231 ^{a/}
Nicaragua	683 ^{b/}	728 ^{b/}	775 ^{b/}	825	923	1 060	1 245	1 477	1 754 ^{a/}	2 083 ^{a/}	2 474 ^{a/}	2 938 ^{a/}
Panama ^{c/}	457	471	546	620	703	797	923	1 055	1 209 ^{a/}	1 387 ^{a/}	1 591 ^{a/}	1 823 ^{a/}
Argentina	10 358	11 896	13 044	14 169	15 390	17 189	19 122	20 956	22 909	24 937	27 068	29 334
Bolivia ^{a/ c/}	2 022	2 153	2 314	2 508	2 740	3 013	3 322	3 696	4 136	4 658	5 277	6 000
Brazil ^{b/}	30 332	33 568	37 150	41 114	46 000	51 976	60 200	70 600	82 900	96 700	111 400	126 800
Chile	4 073	4 365	4 700	5 063	5 541	6 073	6 761	7 627	8 567 ^{a/}	9 636 ^{a/}	10 872 ^{a/}	12 300 ^{a/}
Colombia ^{a/ c/}	6 562	7 280	8 115	9 097	10 267	11 679	13 441	15 468	17 787	20 514	23 774	27 691
Ecuador ^{b/}	1 857 ^{a/}	2 022 ^{a/}	2 223 ^{a/}	2 466	2 781	3 197	3 691	4 317	5 036 ^{a/}	5 909 ^{a/}	6 933 ^{a/}	8 080 ^{a/}
Paraguay ^{c/}	785	880	988	1 111	1 247	1 397	1 565	1 768	2 007 ^{a/}	2 296 ^{a/}	2 645 ^{a/}	3 065 ^{a/}
Peru ^{c/}	5 579	6 001	6 483	7 033	7 727	8 521	9 396	10 857	12 585 ^{a/}	14 681 ^{a/}	17 238 ^{a/}	20 371 ^{a/}
Uruguay	1 659	1 877	2 030	2 155	2 256	2 407	2 617	2 827	2 970 ^{b/}	3 104 ^{b/}	3 231 ^{b/}	3 355 ^{b/}
Venezuela ^{b/}	2 840	3 082	3 300	3 710	4 267	4 974	6 049 ^{a/}	7 331 ^{a/}	8 707 ^{a/}	10 320 ^{a/}	11 600 ^{a/}	13 355 ^{a/}
Total	93 512	103 298	113 384	124 508	138 550	156 130	178 699	206 246	237 798	273 830	313 797	358 976

Source: ECLA, Economic Bulletin for Latin America, Vol. VII, No. 1 (Santiago, Chile, October 1962), Statistical Supplement, table 3.

^{a/} Based on non-official statistics.

^{b/} Excluding jungle (selva) dwellers.

^{c/} Including jungle dwellers.

Table 9
LATIN AMERICA: INDEX OF AGRICULTURAL PRODUCTION
(1958 = 100)

Groups of products ^{a/}	1934-38	1945	1948	1951	1954	1957	1958	1959	1960
Grains	71.5	59.9	81.3	81.4	95.4	102.5	100.0	106.7	108.2
Roots and tubers	46.3	70.0	75.5	83.5	94.6	93.7	100.0	99.9	108.5
Pulses	51.3	62.9	73.8	80.6	98.4	101.4	100.0	105.9	113.0
Oil seeds	67.8	71.6	79.2	80.3	70.6	89.2	100.0	87.7	107.7
Sugar and panela	40.7	53.0	74.5	76.8	79.1	93.7	100.0	104.4	105.4
Fruits	45.3	49.1	60.0	71.3	89.9	99.0	100.0	106.9	109.8
Meat	59.4	66.3	76.0	79.8	78.5	96.6	100.0	89.8	89.1
Non-alcoholic beverages	73.0	57.6	65.3	67.5	73.6	90.1	100.0	114.4	136.8
Fibres	48.4	57.1	55.7	70.4	88.0	92.4	100.0	94.2	105.5
Wines	58.8	55.9	84.7	83.9	81.7	70.7	100.0	118.5	109.0
Other	41.5	62.1	68.2	78.8	90.4	99.4	100.0	103.5	110.3
Total agricultural products	57.4	59.4	71.8	76.8	85.0	95.5	100.0	102.5	108.5
Crop products	56.7	57.0	70.4	75.8	86.1	95.2	100.0	105.3	112.9
Wheat	81.0	60.0	91.7	85.1	100.6	110.9	100.0	105.6	94.7
Maize	89.6	61.8	81.7	78.5	94.7	90.8	100.0	108.2	109.8
Coffee	74.9	57.9	66.7	67.9	72.9	88.2	100.0	115.0	141.5
Sugar	39.0	51.5	72.9	75.9	78.4	93.7	100.0	104.2	105.7
Cotton	43.4	47.5	45.6	64.7	86.1	90.9	100.0	90.3	104.6
Leguminous vegetables	51.3	62.9	73.8	80.6	98.4	101.4	100.0	105.9	113.0
Oil seeds	67.8	71.6	79.2	80.3	70.6	89.2	100.0	87.7	107.7
Bananas	45.3	49.1	60.0	71.1	90.0	99.0	100.0	106.9	109.8
Livestock products	60.7	69.4	77.6	81.1	80.5	96.8	100.0	90.6	90.2
Beef	59.3	58.4	75.3	80.0	75.2	95.6	100.0	88.6	86.6
Wool	76.4	105.7	96.4	96.1	103.0	97.9	100.0	99.4	102.4
Per capita									
Total agricultural products	99	84	94	93	95	98	100	99	103
Total crop products	97	80	93	92	97	98	100	102	107
Total livestock products	104	98	102	99	90	100	100	88	85

Source: ECLA, on the basis of national statistics.

a/ Groups of products:

Grains: Wheat, maize, rice, oats, barley, rye.

Roots and tubers: Potatoes, manioc and sweet potatoes.

Leguminous vegetables: Beans, chick-peas, broad beans, lentils and peas.

Oil seeds: Sesame, cotton seed, sunflower, linseed, groundnuts, castor-oil plant and tung.

Fruits: Bananas and pineapples.

Meats: Beef, mutton and pork.

Beverages: Coffee, cocoa, tea, and yerba mate.

Fibres: Greasy wool, cotton, sisal and abaca.

Other: Fresh chili, dried chili, tomatoes and tobacco.

