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SOME ASPECTS OF POPULATION GROWTH IN COLOMBIA

Prepared by the secretariat of the Economic
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INTRODUCTION

The present report relates to a demographic study which was carried out by ECLA at Santiago, Chile, in the course of 1960 and 1961. In preparing this study, the primary purpose has been to inform the Colombian Government, through the ECLA/BTAO Advisory Group at Bogota, of probable current and future changes in the national population, and of certain implications which these demographic changes may have for particular fields of economic and social policy.

Colombia is also the first country in which the Economic Commission for Latin America (ECLA) and the Latin American Demographic Centre (CELADE) have initiated, as part of their joint programme of demographic assistance to Governments, a "case study" to promote national work in population analysis. Early in 1961, with the agreement of the Colombian authorities, a Demographic Working Group was constituted in the premises of the Colombian Department of Statistics (DANE). A technical assistance expert assisted in the preparation of its organization and work programme. The present study was also partly designed to provide suggestions as regards the type of more detailed studies that might usefully be attempted by the Colombian Group. The Group's basis programme has now progressed sufficiently to make it worthwhile to consider its eventual consolidation as a permanent Government service.

Apart from providing demographic analyses of interest to the Government, the national demographic service would also have to concern itself with the statistical raw material on which such analyses can be based. The demographic analysts, therefore, would also have to co-operate with the statisticians with a view to securing data of such quantity, quality and specific detail as would come closest to meeting practical needs. Some shortcomings were inevitable in the present study because available statistical information is not quite sufficient in a number of respects and they should lead to positive suggestions.

The advisory activities of ECLA and CELADE are never limited to any single country. Similar approaches can often be recommended for several countries. Of course, no two countries are quite alike in every detail

/nor in

nor in the type of information that can be brought to bear on their individual circumstances. With suitable adaptations, however, a study made with reference to a particular country may suggest the type of study that can usefully be carried out in other cases also. It is for this reason that, with the agreement of the Government of Colombia, the present study is being given wider distribution as one in the series of ECLA documents. This is being done in full awareness of the fact that the study is incomplete and imperfect in numerous respects. First of all, it is based almost exclusively on information available in Santiago, though much additional information, relevant to the subject-matter, is available at Bogota. Secondly, because much time has elapsed since the last Colombian population census, estimates that can now be made are no longer well supported by the available statistics. Furthermore, the study is presented here as it developed in the course of 1960 and 1961, no additional attempt having been made to round it off systematically as a more self-contained thesis. True, consultations were held both with the ECLA/BTAO Advisory Group at Bogota and with the Population Branch of United Nations Headquarters to ensure that there was no inconsistency with the information available and methods applied at those offices.

Basic to the whole report is a projection of the Colombian urban and rural population, for the period 1951 to 1981, prepared by ECLA in consultation with CELADE.[1/]

1/ Proyección de la población urbana, población rural y fuerza trabajadora de Colombia, March 1960.

I. POPULATION ESTIMATES

1. Total population growth

This is not an auspicious moment for the presentation of new population estimates for Colombia. The last population census was taken in 1951 and, with every year that has passed, the basis for estimation has become less reliable. Another Colombian census has been planned and various preparations have been made, but no decision has yet been reached with regard to when this new census is to be taken. There is now a prospect that new data will be secured in the foreseeable future and that, when this happens, any estimates now made will have to be revised, perhaps even quite extensively.

Nevertheless, those estimates may justifiably be made at any given moment and it is equally justifiable to undertake projections which, in the light of available information, are the most plausible. Population facts are among the important criteria of Government policy and policy has to be formulated and reformulated, in the course of time, in accordance with the best knowledge that can be secured at any given time.

(a) The censuses of 1938 and 1951

The two most recent Colombian population censuses are those of 5 June, 1938 and 9 May, 1951. Since the registration of births and deaths - though improving - has been unreliable, an evaluation of the current population trend depends largely on the probable rate of population growth indicated by those two censuses.

The simplest method for estimating population figures for post-censal dates is to accept the last two census totals at face value and to assume that the annual rate of growth indicated by them has remained unchanged.

There are many occasions when it is very desirable that the estimates be based on a simple method. For instance, a rule of thumb, as non-controversial as possible, is needed to calculate local population figures for the allocation of voting districts, preferably to the last unit digit of the population, although such a degree of accuracy is patently fictitious. In such instances, estimates to rounded figures, or based on more complicated, hence more arguable, methods might provoke an actual quarrel among conflicting interests. This is one reason why, in the preparation of official

population estimates, many countries have resorted to the mere extrapolation of previously recorded inter-censal increases. The same standard practice has also been followed by DANE.

The published population census totals of 1938 and 1951 were 8 701 816 and 11 548 172 respectively, indicating, for thirteen-year period, an increase at an average annual (compound interest) rate of 2.23 per cent. These data are the basis for the series of official estimates, calculated by DANE,[2/] which are as follows:

1945	10 152 090	1950	11 333 760	1955	12 657 070
1946	10 378 130	1951	11 588 980	1956	12 939 140
1947	10 609 210	1952	11 847 250	1957	13 227 480
1948	10 845 420	1953	12 111 260	1958	13 522 260
1949	11 086 900	1954	12 381 160	1959	13 823 600

The above estimates are no longer quite realistic, for these two reasons: (1) the published census totals for 1938 and 1951 are not comparable in accuracy, hence the average inter-censal rate (2.23 per cent per year) is inaccurate; and (2) because of declining mortality, population growth has accelerated.

True, when these complicating factors are taken into account, estimates can no longer be made so simply and may be made in various ways, leaving room for much argument. However, this appears to have now become necessary at least for the purpose of a guiding economic and social policy more realistically.

Under-enumeration of small children is common in the censuses of most countries and, as can be inferred from an inconsistency of age groupings, sometimes quite severe. In this respect, the 1938 census was much more defective than that of 1951. It can be estimated that about 150 000 small children failed to be enumerated in 1938, but only about 40 000 in 1951. When this adjustment is made, the census totals to be compared become approximately 8 850 000 and 11 590 000.

2/ A different calculation was made by DANE for 1959. The numbers of births registered in the course of 1959 were added to the estimates for the end of 1958, calculated as already explained, and the numbers of deaths registered in 1959 were subtracted. It was shown that this calculation gives a 3.15 per cent increase for the population during 1959, as compared with the 2.23 per cent otherwise used for the population estimates (DANE, Boletín Mensual de Estadística, April 1960, p.3).

/A relatively

A relatively small indigenous population is included in both censuses. While the estimates in the present report exclude the indigenous population,[3] its inclusion in the census totals does not affect their comparability.[4]

Most important is the fact that, whereas in 1938 administrative conditions were normal, political violence impeded enumeration in various localities in 1951. There is no a priori reason for suspecting gaps in local enumeration in 1938, but there are grounds for assuming that the 1951 returns were defective in at least some parts of the country.

To a certain extent, this circumstance was taken into account in the published census results of 1951. Apart from an enumerated population of 11 228 509, and an indigenous population of 127 980, the published 1951 total includes an estimated population of 191 683 for those localities in which the enumeration had obviously been defective. Since official population data had to be published separately for each municipality and estimates easily become a matter of argument, the published estimates had to be confined to the obvious gaps in the census.

Actually, however, the accuracy of the 1951 census had been checked more carefully, during 1952 and 1953, by the Canadian expert Omer A. Lemieux.[5] His report shows almost convincingly that census omissions must have been more considerable since sharp declines in reported housing units, between the censuses of 1938 and 1951, indicate that it is more than likely that in numerous municipalities some part of the territory was not covered in 1951.

3/ The indigenous population is still so much outside the national economy and society that it requires separate consideration from the standpoint of economic and social programmes. It was reported to be 127 980 in 1951.

4/ In the census tabulation of 1938, an indigenous population of only 4 775 was singled out for which ages had not been reported. However, comparison of the census data of 1938 and 1951 in the comisarias, where the indigenous population is in a majority, shows that the indigenous people had generally been included in the census of 1938.

5/ United Nations Technical Assistance Programme, Los Censos de Población, de Edificios y Viviendas, y Agropecuario de Colombia efectuados en 1951. Prepared by Mr. Omer A. Lemieux for the Government of Colombia (TAA/COL/6, New York, 1956).

As a census result had nevertheless been obtained for many of these municipalities the partial coverage of the census, in such instances, is not quite so obvious. Certain calculations gave population estimates for such municipalities and personal visits by Lemieux to some of these localities confirmed his view that his calculations were, on the whole, fairly justified. Whereas for individual municipalities the calculations are debatable, it can be supposed that some of the errors are compensated in the combined totals for entire departments or for the nation as a whole.

Lemieux calculated three sets of estimates. His minimum estimates of census omissions comprise those municipalities for which he regarded the evidence as convincing. His maximum estimates comprise other municipalities where omissions seemed probable but not certain. His "most probable" estimates are the average of the minimum and the maximum. He thus calculated that the population of Colombia in 1951 should have been between 500 000 and 700 000, or "most probably" about 600 000 more than the census figure.

An estimate of child under-enumeration was not made by Lemieux. When this is also taken into account, the "true" population total, at the 1951 census date, should have amounted to very nearly 12 200 000 as compared with about 8 850 000 in 1938. In this context, the average rate of population growth 1938-51 should have been about 2.5 per cent per year (compound interest), if not even slightly more.

When it is considered that political violence prior to 1951 has probably caused a considerable number of deaths, the "normal" rate of growth might have been even slightly higher. However, the number of victims of violence cannot be reliably estimated.

With the present lack of more precise information, one may regard a rate of about 2.5 per cent and perhaps slightly more as indicative of the normal population trend in the 1938-51 period. Though Lemieux's population

/estimate for

estimate for 1951 is not necessarily correct as an absolute figure, it is difficult to escape this conclusion, precisely because his calculations depended on intercensal comparisons.6/

A rate of about 2.5 per cent is high when compared with population growth recorded by earlier Colombian censuses. Thus, according to the censuses of 1912 and 1938, population should have grown at an average rate of 2.08 per cent in the preceding 26 years. An acceleration must therefore have occurred at some time before 1951. As borne out by a critical analysis of the statistics on births and deaths, most of the acceleration probably occurred within the 1938-51 period. Accordingly, by the end of that period the rate of population growth was even higher.

(b) Recent population growth in Ecuador, Mexico and Venezuela

Rapid and accelerating population growth has been reliably recorded for Ecuador, Mexico and Venezuela, three countries in which the basic conditions for population growth do not differ very greatly from those of Colombia.

The best statistics, perhaps, are those for Mexico. Here, according to censuses, population has grown at the rate of 1.77 per cent in 1930-40 and at 2.69 per cent a year in 1940-50, and 2.99 per cent in 1950-60.

In Venezuela, the censuses record these rates of increase: 1.40 per cent in 1926-36, 2.77 in 1936-41, 3.03 per cent in 1941-50 and 3.77 per cent in 1950-61.

In Ecuador, only one census has been taken, in 1950.

The registration of births and deaths has been fairly reliable in Ecuador and Mexico, but less so in Venezuela. The following birth and death rates and rate of natural increase (per 1 000) have been recorded:

6/ The view has been stated that these estimates, depending as they do on comparisons with census results of 1938, may reveal defects of either of the two censuses and not necessarily those of 1951. (DANE, Boletín Mensual de Estadística, April 1953, pp. 10-11). This argument is technically correct and cannot be refuted, despite Lemieux's personal visits to numerous localities. But, if the defects were those of 1938, they would have been a result of excessive enumeration in 1938 (in lieu of under-enumeration in 1951). In either event, the inter-censal rate of growth should have been higher than calculated by DANE in accordance with the published census totals. However, it has also been pointed out that there had been a change in the definitions of the housing censuses and that this may have reduced the value of some of the inter-censal comparisons (J.M. Melgarejo Rey, "Reseña de los Censos de 1951", Economía y Estadística, N° 82, 1956, pp. 122-123).

	Ecuador			Mexico			Venezuela		
	Birth rate	Death rate	Natural increase	Birth rate	Death rate	Natural increase	Birth rate	Death rate	Natural increase
1940-44	46.6	23.0	23.6	44.6	22.1	22.5	35.7	16.4	19.3
1945-49	46.0	19.1	26.9	44.9	17.8	27.1	38.5	13.6	24.9
1950-54	46.3	16.6	29.7	45.1	15.5	29.6	44.6	10.6	34.0
1955-58	46.3	15.0	31.3	46.2	12.9	33.3	44.9	9.9	35.0

In all three instances, rates of population growth have risen from nearly 2 per cent per year about 1940 to nearly 3 per cent per year about 1950. In the case of Venezuela, where there has been much immigration and the registration of births and deaths - though improving - less reliable, the observation is not so accurate.

With a similar cultural background and in a roughly comparable phase of social changes, Colombia may very well have experienced a similar recent acceleration of population growth. Colombian statistics of births and deaths have been improving but are still not very reliable. In particular, be it noted that the birth statistics are based on baptismal records. It is known that a baptism is not promptly reported in the case of every birth. To evaluate the more detailed population trend of Colombia, use must be made of less direct estimating methods.

(c) Birth rates and death rates in Colombia

The following birth and death rates and rates of natural increase have been recorded, though not accurately, in Colombia.

	Birth rate (baptisms)	Death rate	Natural increase
1940-44	32.4	16.0	16.4
1945-49	33.4	14.7	18.7
1950-54	37.3	13.4	23.9
1955-59	42.3	12.9	29.4

As in Venezuela, the series suggests at first glance a considerable rise in the birth rate and a slow decrease in the death rate. However, as

/registration has

registration has been improving during this period, the actual birth rate probably changed little, whereas the actual death rate fell considerably.

A description of the estimating methods which were used by ECLA as a basis for its recent population projection for Colombia would take up much space.7/ Use was made of the calculable interdependence between age composition of the population, the age composition of persons reported as dying, the inter-censal rate of growth, the actual birth rate and the actual death rate. The estimates, made by various methods and with successive approximations finally converge on figures which are most nearly consistent with all the available data. The following results were obtained.

Birth rates have probably changed very little over a long period. In the earlier part of the century, they apparently fluctuated around an average level of about 47 to 49 per 1 000. A slight decrease in the birth rate may have resulted more recently from mortality decline; one of whose effects is a slight relative contraction in the percentage of women of child-bearing agest relative to the total population. Another element of decrease in the birth rate has probably been the progress of urbanization: birth rates are lower in urban than in rural areas hence, as more of the population is urban, the national average of the birth rate tends to be reduced. For the year 1951, the birth rate has been estimated as 45.9 per 1 000 - 41.0 in urban areas and 48.9 in rural areas.

Though the fertility of women, calculated separately for urban and rural areas, may remain virtually unchanged, further decreases in the national birth rate are to be expected as mortality continues to decline and as an increasing proportion of the total population is urbanized. According to the ECLA projections, the birth rate may decrease from about 45.9 per 1 000 in 1951 to about 41.5 in 1961 and to about 39.8 in 1971. As compared with observations for Ecuador, Mexico and Venezuela, these birth rates are not exaggeratedly high though, of course, they are very much higher than the birth rates of North America, Europe or Japan.

7/ Some of the methods are briefly explained in the ECLA manuscript of March 1960, entitled Proyección de la población urbana, población rural y fuerza trabajadora de Colombia.

Death rates, in the earlier part of the century, must have averaged within therange of 25 to 30 per 1 000 though, of course, fluctuating in accordance with changing conditions. Such death rates represent an expectation of life at birth of the order of only 35 years.

The more precise trend in death rates cannot be reconstructed. It appears that in the 1930's, and up to the year 1945, the rates still fluctuated in the range of 20 to 25 per 1 000. Though they may have had a tendency to decline, the decrease could only have been very gradual. Definite declines in the death rate, however, began from 1945 onwards.

On the assumption - admittedly hazardous - that death registration, at any one time, was as accurate as birth registration, it can be estimated that death rates declined from about 23 per 1 000 in 1945 to about 18 per 1 000 by 1950, about 14 per 1 000 by 1955, and even further in more recent years.

From changes in the age composition of persons whose deaths were registered, it can be inferred that life expectation may have risen by ten years from about 1940 to 1958.

In the ECLA projection, the national death rate was estimated as 17.8 per 1 000 in 1951, falling to 15.8 by 1956, 13.7 by 1961, 11.9 by 1966 and 10.4 by 1971. As compared with registration data for Ecuador and Mexico, these estimated death rates do not appear unduly low.

Finally, the results are consistent with estimated inter-censal rates of population growth.

From 1912 to 1938, the population of Colombia grew at an average rate of 2.08 per cent per year. This may very well have resulted from an average birth rate of the order of 48 and an average death rate of the order of 27 per 1 000.

From 1938 to 1951, as has been shown here, the rate of inter-censal population growth should have been of the order of 2.5 per cent. Near the beginning of the period, a birth rate of about 47 and a death rate of about 25 per 1 000 may well have produced an annual growth of no more than 2.2 per cent. Near the end of the period, a birth rate of about 46 and a death rate of about 18 per 1 000 may have resulted in a growth rate

/of about

of about 2.8 per cent. This is consistent with an average rate, over the entire period, of about 2.5 per cent.

As estimated in the ECLA projection, this acceleration has now come to a virtual halt. The further decline in death rates is now almost compensated by a gradual decrease in birth rates, the latter being caused by urbanization and mortality decline. Throughout the 1950's and 1960's, the ECLA projection indicates annual rates of growth of the order of 2.8 or 2.9 per cent. This is slightly less than the population growth recently recorded in Ecuador, Mexico and Venezuela.

(d) Estimated population growth, 1945-70

The problem of the acceptability of the published population census total of 1951 remains unresolved. Lemieux's estimate of the 1951 population may be quite correct. On the other hand, Lemieux may have overrated the accuracy of the 1938 census, and some of the discrepancies discovered by him might have resulted from an excessive count in 1938.[8] Although this may not be so probable, it does make it less advisable to depart from the published figure of the 1951 census which has been widely used already. It would seem preferable to avoid confusion and to accept the published figure of the 1951 census.[9]

With exclusion of the indigenous population, the 1951 census total is 11 420 192. Brought forward to mid-1951, the figure becomes 11 459 000.[10]

8/ See the argument in footnote 5/. In this event, however, the population of 1938 would have to be reestimated.

9/ Enumerated and estimated non-indigenous population. In the remainder of this report, the indigenous population (127 980 in 1951) is not taken into account.

10/ Lemieux's "most probable" estimate, taking into account child-enumeration, may be taken as 12 200 000 including the indigenous population. When the indigenous population is excluded the 1951 figure amounts to approximately 12 000 000, i.e. at least half a million more than the figure here accepted. But, according to Lemieux, omissions in enumeration were far greater in rural than in urban areas. The urban population of mid-1951 is here estimated at 4 416 000 according to the census, though it may be put at 4 500 000 according to Lemieux. The rural population of mid-1951 would be 7 143 000 according to the census, and 7 500 000 or even more according to Lemieux. When the latter estimates are used, the rural-urban composition is slightly different. Estimates of total population consistent with Lemieux are not a simple multiple of estimates consistent with the published census total.

The ECLA projection begins with the year 1951 and carries the population forward according to assumed constant rates of urban and rural fertility, declining rates of urban and rural mortality and calculated net transfers of rural population to urban areas.[11/]

Estimates for years prior to 1951 have here been made on the assumption that population growth then accelerated fairly continuously, as is consistent with the analysis of probable trends in birth and death rates during 1938-51.

11/ Reference is made to Projection II in the ECLA manuscript of March 1960. In this projection, transfers occur in such manner that the rural population maintains an annual rate of growth of 1.0 per cent. The alternative projection (Projection I), where a rate of increase of the order of 4.5 per cent is maintained by the urban population, is probably less realistic.

/Table 1

Table 1

COLOMBIA: ANNUAL POPULATION ESTIMATES, 1945-70

(Thousands)

Year	Estimates in accordance with published 1951 census total a/		Estimates made by DANE (including indigenous population)
	Excluding indigenous population	Including indigenous population b/	
1945	9 760	9 890	10 152
1946	10 008	10 138	10 378
1947	10 273	10 403	10 609
1948	10 546	10 676	10 845
1949	10 837	10 967	11 087
1950	11 143	11 273	11 334
1951	11 459	11 589	11 589
1952	11 789	11 919	11 847
1953	12 129	12 259	12 111
1954	12 477	12 607	12 381
1955	12 836	12 966	12 657
1956	13 205	13 335	12 939
1957	13 582	13 712	13 227
1958	13 968	14 098	13 522
1959	14 364	14 494	13 824
1960	14 771	14 901	14 132 c/
1961	15 191	15 321	14 447 c/
1962	15 622	15 752	14 768 c/
1963	16 063	16 193	...
1964	16 517	16 647	...
1965	16 985	17 115	...
1966	17 473	17 603	...
1967	17 977	18 107	...
1968	18 496	18 626	...
1969	19 032	19 162	...
1970	19 589	19 719	...

a/ If Lemieux's evaluation of the 1951 census was correct, the true size of the population at any given date, may be some 5 to 6 per cent greater. To avoid confusion, this possibility is not taken into account in the remainder of the report.

b/ Indigenous population assumed constant.
The estimates of the first column are here recommended for use.
They are consistent with the 1951 census total when inclusion is made of the indigenous population which probably changes little in the course of time.

c/ DANE, Boletín Mensual de Estadística, August 1964, p. 17.

2. Population growth by departments

Population estimates for the entire nation can provide a framework for overall economic and social planning targets. The detailed plans, however, must also be adapted to local and regional conditions which, in a country of such varied geography as Colombia, are rather diverse. A standard system of economic or social and economic regions does not yet exist. The departments of Colombia are large and not co-extensive with any precise geographic regions. Nevertheless, as a first step in the appreciation of regional differences, it is useful to distinguish the population trends of the several departments.

(a) Growth of departmental populations according to censuses

Table 2 shows the population figures by departments, published from the censuses of 1922, 1938 and 1951, as well as the "most probable" 1951 estimates made by Lemieux[12/] (in thousands). They are ranked according to the size of population in 1951. It will be noted that some changes in order have occurred. Cundinamarca has overtaken Antioquia. Valle del Cauca was ninth in 1912, fifth in 1938 and third in 1951. Boyaca has dropped from third place in 1912 to sixth place in 1951.

12/ Figures include the indigenous population. The departments are as constituted in 1951. Since that date, the formerly large departments of Bolivar has been divided into a reduced department of Bolivar and a new department of Cordoba. The former comisaria of Casanare is now included with the department of Boyaca. A portion of Magdalena has been transferred to the intendencia of La Guajira. Meta, formerly an intendencia, is now a department. Arauca and La Guajira are now intendencias.

/Table 2

Table 2

COLOMBIA: POPULATION, BY DEPARTMENTS

(Thousands)

Department	1912	1938	1951	
	Census figures		Census figures	Estimates by Lemieux
Cundinamarca	718	1 175	1 624	1 679
Antioquia	741	1 189	1 570	1 627
Valle del Cauca	217	613	1 107	1 141
Caldas	341	770	1 068	1 075
Bolivar a/	416	765	991	1 021
Boyaca b/	586	737	779	795
Santander	403	616	748	821
Tolima	282	548	712	700
Nariño	293	466	547	563
Magdalena	150	342	457	485
Cauca	212	356	413	461
Atlantico	115	268	428	434
Norte de Santander	204	346	387	423
Huila	158	217	294	303
Choco	83	111	131	132
Intendencias c/ and comisarias d/	157	176	259	301

a/ Including the new department of Cordoba.

b/ Not including the former comisaria of Casanare.

c/ Caqueta, Meta and San Andres y Providencia.

d/ Amazonas, Arauca, Casanare, Guajira, Putumayo, Vaupes and Vichada.

/From 1912

From 1912 to 1951, the population of Valle del Cauca has increased five-fold, that of Atlantico has quadrupled and those of Caldas and Magdalena have more than trebled. The population of Boyaca, on the other hand, has increased by less than one-half. Arranged in the order of increases during 1938-51, the several departments had the following average annual rates of growth (see figure I and table 3).

The rates of population growth have risen considerably in Huila, Cundinamarca, Valle del Cauca, Antioquia, Santander and Atlantico; with the exception of Huila, these are the departments containing the largest cities. On the other hand, population growth has slowed down significantly in Tolima, Caldas, Norte de Santander and Magdalena. Evidently migration to some of the largest cities has had an increasing effect on the geographic distribution of the population. The intensity of the migratory currents may also change in the future, partly under the growing influence of urbanization.

(b) Effects of migration

A tabulation of the inhabitants living in each department, by department of birth was made at the 1951 census. From those data, the effects of migration can be clearly seen. Below are shown the percentages of persons, in each department, who were born in other departments, together with the percentages born in those other departments which have furnished at least 2 per cent of their present population (see table 4).13/

When a comparison is made of these percentages - those born in other departments who live in a given department and those living in other departments who were born in the given department - the following facts stand out. The departments of Valle del Cauca, Atlantico and Cundinamarca are characterized by much immigration. Emigration predominates in Boyaca Antioquia, Nariño, Cauca, Bolivar and Norte de Santander. The departments of Caldas, Tolima, Huila and Magdalena are affected by large migration inwards as well as outwards.

13/ The comparisons are confined to the population born and living in Colombia. They take no account of international migration.

/(Figure I)

Figure I

COLOMBIA : POPULATION OF THE DEPARTMENTS ACCORDING TO CENSUSES FOR 1912, 1938 AND 1951; AND ESTIMATES FOR 1960 AND 1970

(Thousands)

Semi-logarithmic scale

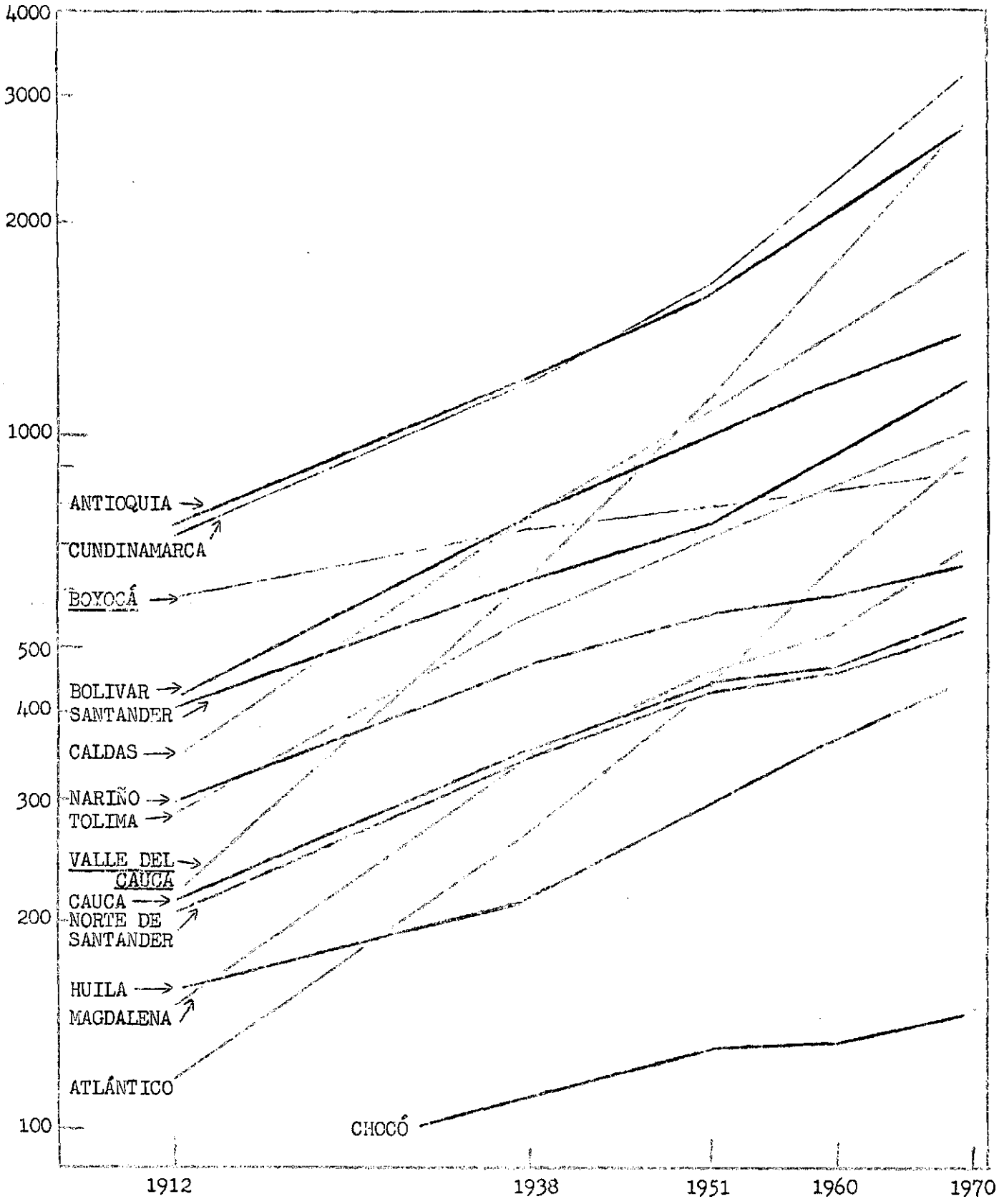


Table 3

COLOMBIA: AVERAGE ANNUAL RATES OF GROWTH, BY DEPARTMENTS

(Percentage)

Department	1912-1938	1938-51	
		Based on census data	Based on estimates by Lemieux
Valle del Cauca	4.04	4.71	4.96
Atlantico	3.28	3.71	3.82
Cundinamarca	1.89	2.55	2.81
Magdalena	3.19	2.28	2.76
Caldas	3.15	2.58	2.63
Huila	1.22	2.40	2.63
Antioquia	1.82	2.19	2.47
Bolivar	2.35	2.04	2.27
Santander	1.63	1.52	2.26
Cauca	1.99	1.72	2.03
Tolima	2.56	2.07	1.92
Norte de Santander	2.03	0.38	1.57
Nariño	1.78	1.22	1.47
Choco	1.11	1.29	1.35
Boyaca	0.88	0.65	0.71
Intendencias and comisarias	0.44	3.05	4.26

/Table 4

Table 4

COLOMBIA: PROPORTION OF INHABITANTS OF EACH DEPARTMENT BORN ELSEWHERE

Department	Percentage born in other departments	Percentage greater than 2.0 born in other departments
Valle del Cauca	37.1	Caldas (14.5), Antioquia (6.0), Cauca (5.1), Tolima (3.4), Nariño (2.5), Cundinamarca (2.0)
Atlantico	24.6	Bolivar (10.9), Magdalena (7.2)
Caldas	21.8	Antioquia (10.1), Tolima (3.7), Valle del Cauca (3.4), Cundinamarca (2.2)
Cundinamarca	18.5	Boyaca (9.8), Tolima (2.6), Santander (2.0)
Tolima	17.0	Cundinamarca (8.6), Boyaca (2.7), Caldas (2.1)
Huila	15.1	Tolima (5.2), Cundinamarca (2.5), Cauca (2.5)
Magdalena	13.4	Bolivar (5.1), Norte de Santander (3.5), Atlantico (3.0)
Cauca	10.1	Valle del Cauca (4.0), Nariño (2.8)
Santander	9.2	Boyaca (3.2), Norte de Santander (2.0)
Norte de Santander	7.2	Santander (3.2)
Choco	6.2	Antioquia (3.6)
Antioquia	4.4	...
Boyaca	4.4	Cundinamarca (2.0)
Bolivar	3.3	...
Nariño	1.8	...
Intendencias	49.5	Cundinamarca (19.5), Huila (16.3), Tolima (6.4), Boyaca (6.1), Santander (3.2)
Comisarias	29.5	Nariño (11.7), Magdalena (5.4), Boyaca (5.0)

/Table 5

Table 5

COLOMBIA: POPULATION DISTRIBUTION, BY DEPARTMENT OF BIRTH, 1951

Department of birth	Percentage living in other departments	Percentage greater than 2.0 living in other Departments
Boyaca	23.6	Cundinamarca (15.2), Santander (2.5)
Tolima	21.8	Cundinamarca (5.9), Caldas (5.6), Valle del Cauca (5.6), Huila (2.1)
Caldas	20.8	Valle del Cauca (15.1), Antioquia (2.1)
Huila	18.9	Intendencias (5.5), Valle del Cauca (4.8), Cundinamarca (3.0), Tolima (2.7)
Cauca	17.7	Valle del Cauca (13.2)
Antioquia	12.9	Caldas (6.4), Valle del Cauca (3.9)
Norte de Santander	12.9	Magdalena (4.0), Santander (3.8), Cundinamarca (2.0)
Magdalena	12.1	Atlantico (6.8)
Cundinamarca	11.6	Tolima (3.9)
Santander	11.6	Cundinamarca (4.3)
Choco	11.1	Valle del Cauca (5.5), Antioquia (3.0)
Valle del Cauca	10.5	Caldas (4.8), Cauca (2.0)
Bolivar	10.2	Atlantico (4.6), Magdalena (2.4)
Narifio	9.9	Valle del Cauca (4.8)
Atlantico	8.8	Magdalena (4.0), Bolívar (2.2)
Intendencias and comisarias	13.0	Cundinamarca (4.6)

The net effect of migration can be determined from the comparison in table 6 of the population living in each department with the population born there.

/Table 6

Table 6

COLOMBIA: NET EFFECT OF IN-MIGRATION BY DEPARTMENTS

Department	Population living in the department	Population born in the department	Ratio of the first to the second	Annual percentage (+) or loss (-) a/
Valle del Cauca	1 100	772	142.5	+2.56
Atlantico	419	347	121.0	+1.37
Cundinamarca	1 595	1 470	108.5	+0.58
Magdalena	456	449	101.6	+0.11
Caldas	1 067	1 057	101.0	+0.07
Santander	747	765	97.7	-0.17
Huila	288	299	96.2	-0.28
Choco	120	126	05.1	-0.36
Tolima	666	707	94.2	-0.40
Bolivar	923	989	93.3	-0.49
Norte de Santander	379	404	92.9	-0.52
Nariño	539	587	91.8	-0.61
Cauca	391	427	91.7	-0.62
Antioquia	1 541	1 691	91.1	-0.66
Boyaca	769	962	79.9	-1.57
Intendencias and comisarias	180	112	159.0	+3.37

a/ Assuming that migrants have lived in their departments of residence for an average of fourteen years.

The last column shows estimated annual percentage gains and losses in population on the very rough assumption that migrants have moved from their departments of birth, on an average, fourteen years prior to the census.14/

14/ An average of fourteen years has been assumed, somewhat arbirarily, on the supposition that rates of natural increase in the department with greatest migratory gain (Valle del Cauca) and that of greatest migratory loss (Boyacá) might have been about the same. Obviously the assumption cannot be very accurate.

/Thus, Valle

Thus, Valle del Cauca would have gained, by the migratory balance, at the rate of 2.56 per cent per year, while Boyaca would have been losing at the average rate of 1.57 per cent.

(c) Natural increase

In table 6 average annual net gains or losses by migration were estimated for each department. When these estimates are subtracted from the estimated annual rates of population growth during 1938-51 (estimates in accordance with Lemieux), the following rates of natural increase per 1 000 inhabitants can be inferred: Antioquia, 31; Huila, 29; Bolivar, 28; Caldas, 26; Cauca, 26; Magdalena, 26; Atlantico, 24: Santander, 24; Valle del Cauca, 24; Boyaca, 23; Tolima, 23; Cundinamarca, 22: Nariño, 21; Norte de Santander, 21; Choco, 17.

As indicated by data on age composition, in 1938 and in 1951 the birth rates in each of the departments must have remained fairly constant in recent periods. The percentage of the population of each department aged 1-4 years may be taken as a rough index of comparative birth rates. Equating to 100 this percentage in the total national population, birth indices are obtained for each department relative to the national birth rate. When the national birth rate is assumed to have averaged 46.6 per 1 000 during 1938-51, approximate average birth rates for each department can then be estimated accordingly. Death rates can then be calculated by subtracting the above-estimated rates of natural increase from these estimates of the birth rates. The results are shown in table 7 and some margins of error indicated.

The estimated birth rates - which probably do not stray far from the facts - range from about 44 per 1 000 (Atlantico, Cundinamarca, Nariño, Valle del Cauca) to about 50 per 1 000 (Bolivar, Magdalena). The death rates, estimated as a residual, are far less reliable, ranging from about 17 per 1 000 (Antioquia, Huila) to about 30 per 1 000 (Choco). A wide geographic range in death rates, however, is to be expected in a period rapid mortality decline, progress, at any given time, being unequal in the different areas. With intensified public health measures, death rates will eventually tend to converge at a lower level. Birth rates are also apt to decrease to a varying extent, partly in relation to the varying intensity of urbanization in the several departments.

/Table 7

Table 7

COLOMBIA: BIRTH RATES, DEATH RATES AND RATES OF NATURAL INCREASE, BY DEPARTMENTS, 1938-51

(Per mil)

Department	Birth rate	Death rate	Natural increase
Antioquia	47-49	15-19	30-32
Huila	47-49	17-21	28-30
Bolivar	49-51	20-24	27-29
Caldas	46-48	19-23	25-27
Cauca	45-47	18-22	25-27
Magdalena	49-51	22-26	25-27
Atlantico	43-45	18-22	23-25
Santander	45-47	20-24	23-25
Valle del Cauca	43-45	18-22	23-25
Tolima	48-50	24-28	22-24
Boyaca	46-48	22-26	22-24
Cundinamarca	43-45	20-24	21-23
Nariño	43-45	21-25	20-22
Norte de Santander	46-48	24-28	20-22
Choco	47-49	29-33	15-18

/(d) Population

(d) Population estimates for departments, 1945-70

It would not be impossible to calculate detailed population projections for each department. To this end, however, the varying factors which provoke changes in the rates of migration, births and deaths, in each of the several areas, would have to be duly taken into account. Since another population census is expected in the near future, such a laborious procedure is perhaps not warranted at the present time.

A simpler procedure is used in many countries and has also been adopted by DANE. Inter-censal rates of increase are applied to the census figures for each department giving extrapolated figures for each post-censal year. The latter figures are then readjusted to coincide with the DANE estimates of the country's total population for the same dates (see figure II).15/

However, as has been noted, migration tends to be increasingly directed towards the departments which have the largest cities. A refinement of the method would consist in extrapolating separately the urban and rural population estimates for each department. This has been done here.16/ The total (i.e. urban and rural) population of each department17/ can then be estimated as shown in table 8 for five-year intervals, from 1950 to 1970 and for individual years from 1960 to 1964. The figures refer to mid-year dates and are in thousands.

15/ Such estimates appeared in e.g. the Boletín Mensual de Estadística, February 1960, p. 16.

16/ The estimates of urban and rural population are presented further on. Urban population was extrapolated according to increases recorded in the published census figures. The same was also done for the rural population in the department of Bolívar and Cordoba. For the remaining departments, increase rates for the rural population were taken in accordance with Lemieux's estimates of the population in 1951, after subtraction of the urban population. The Lemieux estimates were taken from an earlier draft of his report, available only in manuscript, and differ somewhat from those of his final report (quoted in footnote 5/). The extrapolated departmental figures of urban and rural population were adjusted to coincide with national totals of urban and rural population according to the ECLA population projection.

17/ Departments as constituted in 1958, but excluding the intendencias, comisarías and the new department of Meta, for which the calculations are quite unreliable. Adjustments were made to take account of boundary changes since 1951 in the cases of Bolívar, Boyacá, Cordoba and Magdalena. The national totals include the estimates for intendencias, comisarías and Meta.

/Table 8

Table 8

COLOMBIA: ESTIMATED TOTAL MID-YEAR POPULATION
(EXCLUDING INDIGENOUS INHABITANTS),
BY DEPARTMENTS

(Thousands)

Department a/	1950	1955	1960	1965	1970
Cundinamarca	1 576	1 894	2 274	2 728	3 288
Antioquia	1 532	1 772	2 058	2 377	2 752
Valle del Cauca	1 058	1 371	1 754	2 221	2 797
Caldas	1 042	1 210	1 394	1 595	1 823
Boyaca b/	788	812	834	855	878
Santander	734	825	929	1 048	1 188
Tolima	701	770	842	916	1 006
Bolivar c/	653	731	806	874	941
Nariño	540	563	585	629	651
Atlantico	413	523	645	774	923
Magdalena d/	393	460	528	601	677
Cauca	385	423	463	505	552
Norte de Santander	382	417	453	490	527
Cordoba e/	322	354	386	419	452
Huila	387	325	363	404	447
Choco	118	125	133	139	146
Total f/	11 143	12 836	14 771	16 985	19 589

Department a/	1960	1961	1962	1963	1964
Cundinamarca	2 274	2 359	2 448	2 536	2 630
Antioquia	2 058	2 118	2 180	2 243	2 310
Valle del Cauca	1 754	1 841	1 931	2 023	1 121
Caldas	1 394	1 433	1 473	1 513	1 554
Boyaca b/	834	838	842	847	851
Santander	929	951	975	999	1 023
Tolima	842	857	872	888	902
Bolivar c/	806	819	833	847	859
Nariño	585	594	602	610	619
Atlantico	645	670	696	722	749
Magdalena d/	528	543	557	572	587
Cauca	463	471	479	487	496
Norte de Santander	453	460	467	475	482
Cordoba e/	386	393	399	406	412
Huila	363	371	379	388	396
Choco	133	134	135	136	137
Total f/	14 771	15 191	15 622	16 063	16 517

a/ Not including the department of Meta, intendencias and comisarias, for which no reliable estimates could be made.

b/ Including the former comisaria of Casanare.

c/ Not including the department of Córdoba, formerly part of Bolivar.

d/ Not including the part which was transferred in 1954 to the intendencia of La Guajira.

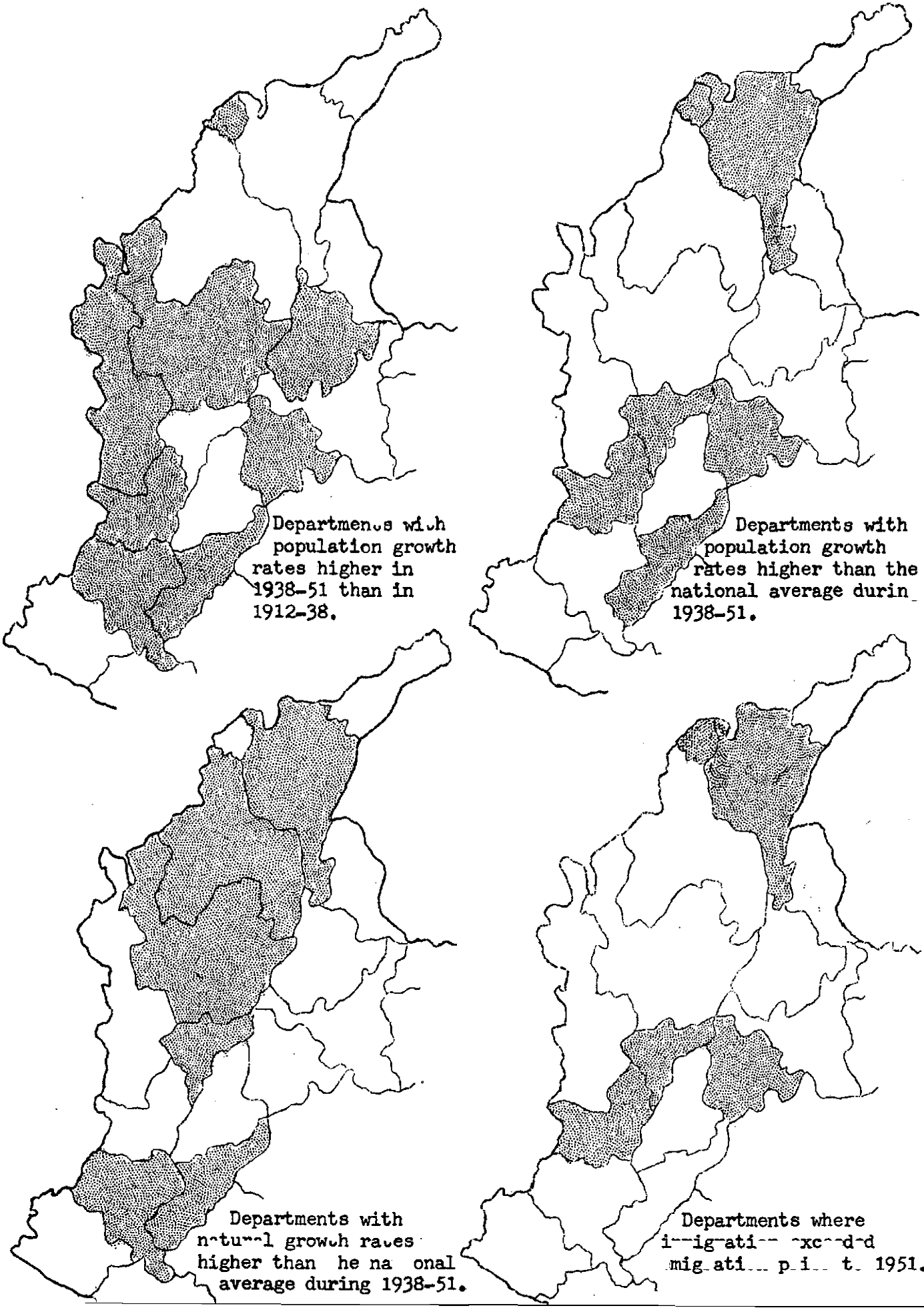
e/ New department, formed in 1952, previously a part of the department of Bolivar.

f/ Including the figures which were calculated, though unreliably, for Meta and the intendencias and comisarias.

/The estimates

Figure II

COLOMBIA : DANE ESTIMATES OF POPULATION GROWTH BY DEPARTMENTS



The estimates suggest a continuation of past trends, with minor modifications, as shown in figure I, drawn on the logarithmic scale.[18/] Valle del Cauca and Atlantico continue growing at the fastest, and Boyaca at the slowest rate. An acceleration of growth can also be expected in the department which contain the largest cities (Cundinamarca, Antioquia, Valle del Cauca, Santander and Atlantico).

The following major shifts in population are indicated: (1) a relative increase of population in the departments with the largest cities; (2) a relative increase in the departments which border on either of the two oceans; and (3) a relative shift from north to south. This is shown in table 9, which compares grouped population totals for 1912, 1938, 1951, 1960 and 1970.

Of the three shifts, the one towards departments with the largest cities is now the most pronounced, the one from north to south being more marked than the one from inland regions towards the coast.

3. Urban and rural population

(a) Census definitions

The censuses of 1938 and 1951 provide various data that distinguish between the population of municipal centres (cabeceras) and other places (otras localidades) on the one hand and the population of urban and of rural localities on the other. In the case of the latter, urban localities have been defined as centres with 1 500 or more inhabitants.

In fact, a relative discontinuity seems to exist between the population that is either dispersed or lives in very small centres, and that which lives in centres of at least 1 500 inhabitants. Thus, in almost every part of the country, the "urban" population, as defined in the census, differs little from that of the cabeceras of municipalities. The characteristics of urban and rural populations as regards sex-age composition, education and economic activities differ quite sharply.

18/ In figure I, census data are plotted for the years 1912, 1938 and 1951, as well as estimates for 1960 and 1970. Since the censuses are not quite comparable, some temporary slow-downs of population growth (in 1938-51) appear for Nariño, Norte de Santander and Santander which, however, may be attributable to relative defects in the 1951 census. The estimates for Cauca and Choco exclude the indigenous population, though it is included in the census figures.

/Table 9

Table 9

COLOMBIA: TOTAL POPULATION, IN SELECTED YEARS, BY GROUPS OF DEPARTMENTS

(Millions)

Groups of departments	1912	1938	1951	1960	1970
A. With largest cities a/	2.2	3.9	5.5	7.7	10.9
B. Other departments b/	2.7	4.7	5.8	6.8	8.1
C. Ratio of A to B	0.51	0.83	0.94	1.13	1.35
A. Bordering on ocean c/	2.2	4.1	5.7	7.4	9.9
B. Landlocked d/	2.7	4.4	5.6	7.1	9.2
C. Ratio of A to B	0.83	0.93	1.01	1.04	1.08
A. Southern e/	1.6	3.1	4.3	5.5	7.4
B. Northern f/	1.9	3.1	3.8	4.7	5.6
C. Ratio of A to B g/	0.85	1.00	1.14	1.28	1.33

a/ Antioquia, Atlantico, Cundinamarca, Santander and Valle del Cauca.

b/ Bolivar, Boyaca, Caldas, Cauca, Cordoba, Choco, Huila, Magdalena, Nariño, Norte de Santander and Tolima.

c/ Antioquia, Atlantico, Bolivar, Cauca, Cordoba, Chocó, Magdalena, Nariño, and Valle del Cauca.

d/ Boyaca, Caldas, Cundinamarca, Huila, Norte de Santander, Santander, and Tolima.

e/ Caldas, Cauca, Choco, Huila, Nariño, Tolima and Valle del Cauca.

f/ Atlantico, Bolivar, Boyaca, Cordoba, Magdalena, Norte de Santander, and Santander.

g/ In this comparison, the departments of Antioquia and Cundinamarca are not included.

/It must

It must be admitted, on the other hand, that most of the numerous small centres with more than 1 500 inhabitants present few "urban" features, in the modern sense of the term. There may be as much, if not more, difference between the services suitable for a large city, e.g. with 100 000 inhabitants, and a relatively small town, e.g. of some 2 000 or 3 000 inhabitants, as there is between the latter and a strictly rural environment. The organization of education, public health, urban planning and industrialization necessarily varies considerably as between large cities, smaller towns, villages and the open country. These reservations must be borne in mind when use is made of census data on "urban" and "rural" population.

(b) The projection

The ECLA projection, to which reference has already been made, has been calculated separately for the urban and rural segments of the national population, as defined in the census. As compared with the rural segment, it was estimated that urban mortality is somewhat lower and urban fertility considerably lower. The sex-age compositions and rates of natural increase, in the two population segments differ accordingly. There is also a movement from rural to urban places of migrants, many of whom are rather young, more of them being female than male. The projection recommended for use is the one in which rural-urban population transfers occur on such a scale that the rural population grows at a constant rate of 1 per cent per year. As a consequence of this assumption, urban population increases at rates greater than 5 per cent per year during the 1950's, slowing down to about $4\frac{1}{2}$ per cent per year during the 1960's. In addition to the projection, estimates of urban and rural population have also been made for years preceding 1951. The mid-year estimates for 1945-70 are presented in table 10.[19/]

19/ Estimates consistent with the published data of the 1951 census. The estimates for 1945-50 imply accelerated urbanization beginning in 1948. It is to be noted that, in accordance with Lemieux's findings, the urban population may be slightly and the rural population considerably underestimated. Thus an urban population of 4 500 000 and a rural population of 7 500 000 might also be estimated for 1951, in accordance with Lemieux.

Table 10

COLOMBIA: MID-YEAR POPULATION ESTIMATES, 1945-70

(Thousands)

Year	Urban	Rural
1945	3 256	6 504
1946	3 395	6 613
1947	3 549	6 724
1948	3 711	6 835
1949	3 933	6 904
1950	4 196	6 974
1951	4 416	7 043
1952	4 671	7 115
1953	4 942	7 187
1954	5 218	7 259
1955	5 504	7 332
1956	5 799	7 406
1957	6 102	7 480
1958	6 414	7 554
1959	6 735	7 629
1960	7 066	7 705
1961	7 410	7 781
1962	7 764	7 858
1963	8 127	7 936
1964	8 502	8 015
1965	8 891	8 094
1966	9 298	8 175
1967	9 720	8 257
1968	10 155	8 341
1969	10 607	8 425
1970	11 079	8 510

/Thus, in

Thus, in the 25-year period from 1945 to 1970, the urban population may increase more than threefold, while the rural population grows by less than one-third. In 1945, the urban population was only one-half the size of the rural population. By 1963, the numbers of the urban population may surpass those of the rural population.

Whether it is realistic to assume an annual 1 per cent increase in rural population remains unverified. It is probable that rural population is now growing relatively slowly. Already from 1938 to 1951 urban population increased at an average rate of 4.2 per cent, and rural population at an average rate of 0.9 per cent or, possibly, 1.5 per cent.[20/] In more recent years, insecure political conditions have probably retarded the increase in the rural population, a development which has been offset by a corresponding acceleration in the growth of cities.

As the relative weight of urban population in the national total increases, maintenance of an annual 1 per cent growth in rural population is consistent with an eventually diminishing rate in the growth of cities. In addition, because of birth rates that are lower in urban than in rural areas, it can be assumed that the national average birth rate will tend to decrease as the population becomes more urbanized.

(c) Population of towns of various sizes

From the ECLA projections of urban and rural population for the entire country and from census data for 1938 and 1951, estimates of urban and rural population have also been made for each department.[21/] The estimates of urban population in each department, in turn, have been used to obtain

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20/ A percentage of 0.9 according to published census results; 1.5 per cent according to the population estimates of Lemieux.

21/ See 3 (d). The method is briefly described in footnote 16/. Estimates of total population by departments presented in 2 (d), are the sums of estimated departmental urban and rural population.

estimates for individual towns and cities.[22/] While not much accuracy can be ascribed to the estimates for individual towns, especially some of the smaller ones, derived in this way, it is rather probable that errors of estimation tend to be compensatory and, hence, that at least the estimates for groups of towns are meaningful.

The results for the ten cities which were estimated to have at least 100 000 inhabitants in 1960 (are shown in table 11). Meanwhile, the remainder of Colombia's urban population would be increasing from 2 885 000 in 1955 to 3 576 000 in 1960 and 4 382 000 in 1965, i.e. by 52 per cent. The ten largest cities, therefore, will soon have more inhabitants than all the other towns and cities combined. The cities of Bogota and Medellín together now comprise one-quarter of Colombia's urban population (see figure III).

22/ Here, the "apportionment method" was used. From census data for 1938 and 1951, the amounts of population increase were noted for individual towns (data on cabeceras of municipalities) as well as for the urban population of each department. It was then assumed that future absolute increases in the population of each town will absorb the same percentage of absolute increases in the urban population of the corresponding department as they did in the past. These calculations were made for all towns and cities which were sufficiently large, or have shown a sufficiently large increase, to justify the belief that they may have at least 20 000 inhabitants by 1965, on the assumption that only the cabeceras of municipalities existing since 1938 may attain such a size. (There are no corresponding census data for towns that are not also cabeceras; however, it is unlikely that many of the latter are large). It was not considered reasonable to extend the calculations beyond the year 1965.

/Table 11

COLOMBIA : TOWNS OF 20 000 INHABITANTS AND OVER IN 1938, 1951, 1960 AND 1965

• 20 000 - 49 999 inhabitants
× 50 000 - 99 999 inhabitants
○ 100 000 - 199 999 inhabitants
⊙ 200 000 - 499 999 inhabitants
⊛ 500 000 and over inhabitants

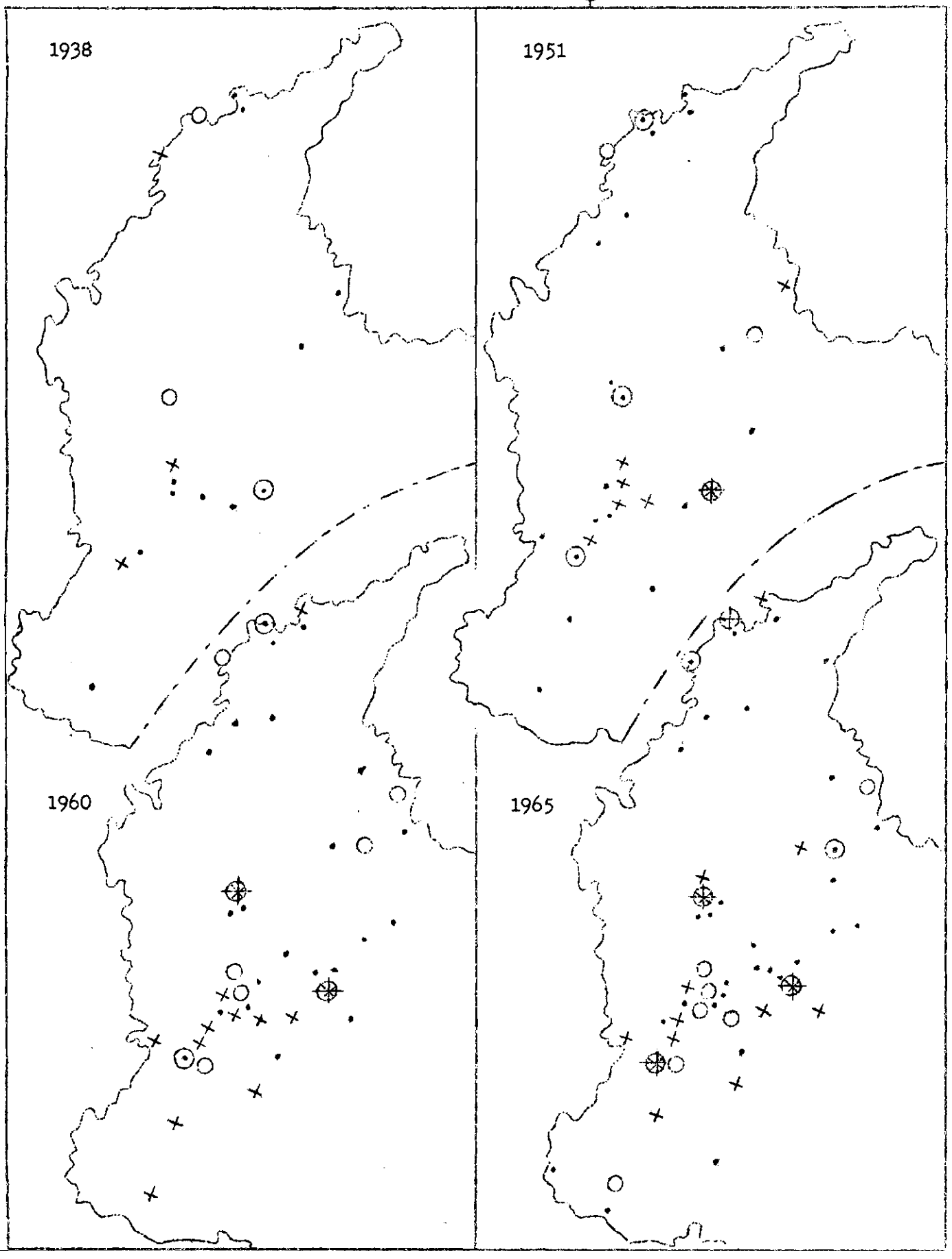


Table 11

COLOMBIA: CITIES WITH A POPULATION OF AT LEAST 100 000, 1960

(In thousands)

	1955	1960	1965	Percentage increase 1955-65
Bogota	835	1 118	1 457	74
Medellin	441	600	784	78
Cali	338	480	656	94
Barranquilla	354	451	555	57
Bucamaranga	141	193	256	82
Cartagena	141	175	206	46
Pereira (Caldas)	104	141	184	77
Manizales	100	114	130	30
Cucuta	90	112	137	52
Palmira (Valle del Cauca)	75	106	144	92
Total	2 619	3 490	4 509	72

/ A more

A more striking way of indicating the growth of cities is to combine, for each date, the numbers of the population of those cities which, at that time, are of a given size class. The size classes and numbers of cities involved are shown in table 12.

Table 12

COLOMBIA: NUMBER OF CITIES BELONGING TO SPECIFIC SIZE CATEGORIES IN SELECTED YEARS

Size (number of inhabitants)	1938	1951	1955	1960	1965
500 000 and over	0	1 a/	1 a/	2 b/	4 c/
100 000 - 499 999	3 d/	5 e/	6 f/	8 g/	9 h/
20 000 - 99 999	13	22	25	32	39
Total, 20 000 and over	16	28	32	42	52

a/ Bogota.

b/ Bogota and Medellin.

c/ Bogota, Medellin, Cali and Barranquilla.

d/ Bogota, Barranquilla and Medellin.

e/ Medellin, Barranquilla, Cali, Cartagena and Bucamaranga.

f/ Medellin, Barranquilla, Cali, Cartagena, Bucamaranga and Pereira (Caldas

g/ Cali, Barranquilla, Bucamaranga, Cartagena, Pereira, Manizales, Cucuta and Palmira (Valle del Cauca).

h/ Bucamaranga, Cartagena, Pereira, Palmira, Cucuta, Manizales, Armenia, Ibague and Pasto.

The estimated population totals for cities of each size class are presented in table 13.

Table 13

COLOMBIA: ESTIMATED POPULATION TOTALS FOR CITIES OF EACH SIZE CLASS

Size (number of inhabitants)	1938	1951	1955	1960	1965
500 000 and over	0	638	835	1 718	3 452
100 000 - 499 999	620	1 059	1 519	1 722	1 398
20 000 - 99 999	499	870	1 114	1 347	1 601
1 500 - 19 999	1 415	1 799	2 036	2 229	2 440
Total urban population	2 534	4 366	5 504	7 066	8 891

The urban

The urban population is to an increasing degree concentrated in large cities. The percentage composition of the total urban population changes as shown in table 14:

Table 14

COLOMBIA: PERCENTAGE COMPOSITION OF TOTAL URBAN POPULATION

Size (number of inhabitants)	1938	1951	1955	1960	1965
500 000 and over	0.0	14.6	15.2	24.3	38.8
100 000 - 499 999	24.5	24.5	27.6	25.1	15.6
20 000 - 99 999	19.7	19.9	20.2	19.1	18.0
1 500 - 19 999	55.8	41.0	37.0	31.5	27.6
Total urban population	100.0	100.0	100.0	100.0	100.0

Thus, the population of small towns (less than 20 000 but more than 1 500 inhabitants) which constituted more than one-half of the "urban" population in 1938, is now less than one third of it and is likely to dwindle further in its relative importance. In fact, the population of towns and cities with less than 100 000 inhabitants at any given time now increases no faster than the total population of Colombia. Relative to Colombia's total population, the percentage changes as shown in table 15.

Table 15

COLOMBIA: PERCENTAGE OF THE POPULATION IN CITIES AND TOWNS ACCORDING TO NUMBER OF INHABITANTS

Size (number of inhabitants)	1938	1951	1955	1960	1965
100 000 and over	7.1	14.9	18.3	23.6	28.6
1 500 - 99 999	22.0	23.4	24.5	24.2	23.8
Less than 1 500 (rural)	70.9	61.7	57.2	52.2	47.6
Total population (urban and rural)	100.0	100.0	100.0	100.0	100.0

/If small

If small and middle-sized towns increase no faster than the population of the entire country, it may be presumed that they experience almost equal amounts of emigration and immigration.[23/] The smaller towns (under 20 000), no doubt experience a net migratory loss. In fact, they are not fully "urban" in every modern sense of that term. In the following the 1 500-19 999 group will be referred to as "semi-urban".

(d) Urban and rural population, by departments

A distinction is now made within the "urban" population, as defined in the census, a "strictly urban" population (towns of 20 000 or more inhabitants) and a "semi-urban" population (towns of 1 500 to 19 999 inhabitants), apart from the "rural" population. The population estimates for individual departments are as shown in table 16.

Percentages of "urban" population are shown below for 1960, firstly in respect of population in localities with 20 000 or more inhabitants, and secondly, for localities with 1 500 or more inhabitants (see table 17). The table is arranged in the order of percentages "strictly urban" in 1960. The comparison also shows the relative size of the percentages of population in small towns (1 500 to 19 999 inhabitants), which are rather considerable in the northern departments of Atlantico, Bolivar, Cordoba and Magdalena, and also in Choco, Caldas and Tolima. Whether or not the northern departments are heavily urbanized is a question whose answer depends on the criterion being used. Evidently, there are some regional differences in the prevailing forms of human settlement, whether agglomerated or dispersed.

23/ Almost every year or two a city passes into the above-100 000 category, representing a loss of 100 000 persons for the 1 500-99 999 group. On the other hand, an unknown number of small places attain each year the figure of 1 500.

/Table 16

Table 16

COLOMBIA: POPULATION ESTIMATES FOR INDIVIDUAL DEPARTMENTS

(In thousands of inhabitants)

Department Category of population	1938	1951	1955	1960	1965
Antioquia					
Strictly urban	144	356	482	714	958
Semi-urban	186	255	301	311	347
Rural	859	959	989	1 033	1 072
Total	1 189	1 570	1 772	2 058	2 377
Atlantico					
Strictly urban	150	296	379	483	594
Semi-urban	88	89	96	108	119
Rural	31	43	48	54	61
Total	269	428	523	645	774
Bolivar [a]					
Strictly urban	73	133	191	238	280
Semi-urban	188	203	193	199	203
Rural	255	329	347	369	391
Total	516	665	731	806	874
Boyaca [b]					
Strictly urban	0	23	27	57	68
Semi-urban	48	52	64	54	64
Rural	690	717	721	723	723
Total	738	792	812	834	855
Caldas					
Strictly urban	112	222	299	405	526
Semi-urban	135	198	226	259	292
Rural	523	648	685	730	777
Total	770	1 068	1 210	1 394	1 595

a/ Not including the department of Cordoba, formerly part of Bolivar.

b/ Including the former Comisaria of Casanare.

/Table 16 (Cont.)

Table 16 (Cont.)

Department Category of population	1938	1951	1955	1960	1965
Cauca					
Strictly urban	0	32	40	52	64
Semi-urban	39	36	46	58	73
Rural	317	324	337	353	368
Total	356	392	423	463	505
Cordoba c/					
Strictly urban	0	24	30	38	45
Semi-urban	60	62	71	81	92
Rural	189	241	253	267	282
Total	249	327	354	386	419
Cundinamarca					
Strictly urban	349	674	879	1 225	1 617
Semi-urban	65	142	191	209	255
Rural	761	807	824	840	856
Total	1 175	1 623	1 894	2 274	2 728
Choco					
Strictly urban	0	0	0	0	0
Semi-urban	10	16	19	24	28
Rural	101	104	106	109	111
Total	111	120	125	133	139
Huila					
Strictly urban	0	33	45	57	70
Semi-urban	54	47	51	57	64
Rural	163	214	229	249	270
Total	217	294	325	363	404
Magdalena d/					
Strictly urban	48	51	69	79	111
Semi-urban	86	150	173	212	231
Rural	167	202	218	237	259
Total	301	403	460	528	601

c/ New department previously part of Bolivar.

d/ Excluding the part transferred to the intendencia of La Guajira in 1954.

/Table 16 (Cont.)

Table 16 (Cont.)

Department Category of population	1938	1951	1955	1960	1965
Nariño					
Strictly urban	28	49	62	77	150
Semi-urban	49	57	62	68	38
Rural	389	436	439	440	441
Total	466	542	563	585	629
Norte de Santander					
Strictly urban	37	70	90	155	186
Semi-urban	51	68	77	47	53
Rural	258	249	250	251	251
Total	346	387	417	453	490
Santander					
Strictly urban	42	128	176	241	342
Semi-urban	76	93	109	133	137
Rural	498	526	540	555	569
Total	616	747	825	929	1 048
Tolima					
Strictly urban	27	54	71	132	184
Semi-urban	92	137	163	157	164
Rural	428	521	536	553	568
Total	547	712	770	842	916
Valle del Cauca					
Strictly urban	109	422	603	845	1 167
Semi-urban	160	133	133	158	166
Rural	344	552	635	751	888
Total	613	1 107	1 371	1 754	2 221

/Table 17

Table 17

COLOMBIA: POPULATION PERCENTAGES, 1960

Department	Percentage "strictly urban"	Percentage "Semi-urban"	Percentage "urban" (combined)	Percentage "rural"
Atlantico	75	17	92	8
Cundinamarca	54	9	63	37
Valle del Cauca	48	9	57	43
Antioquia	35	15	50	50
Norte de Santander	34	10	44	56
Bolivar	30	25	55	45
Caldas	29	19	48	52
Santander	26	14	40	60
Tolima	16	19	35	65
Huila	16	16	32	68
Magdalena	15	40	55	45
Nariño	13	12	25	75
Cauca	11	13	24	76
Cordoba	10	21	31	69
Boyaca	7	7	14	86
Choco	0	18	18	82

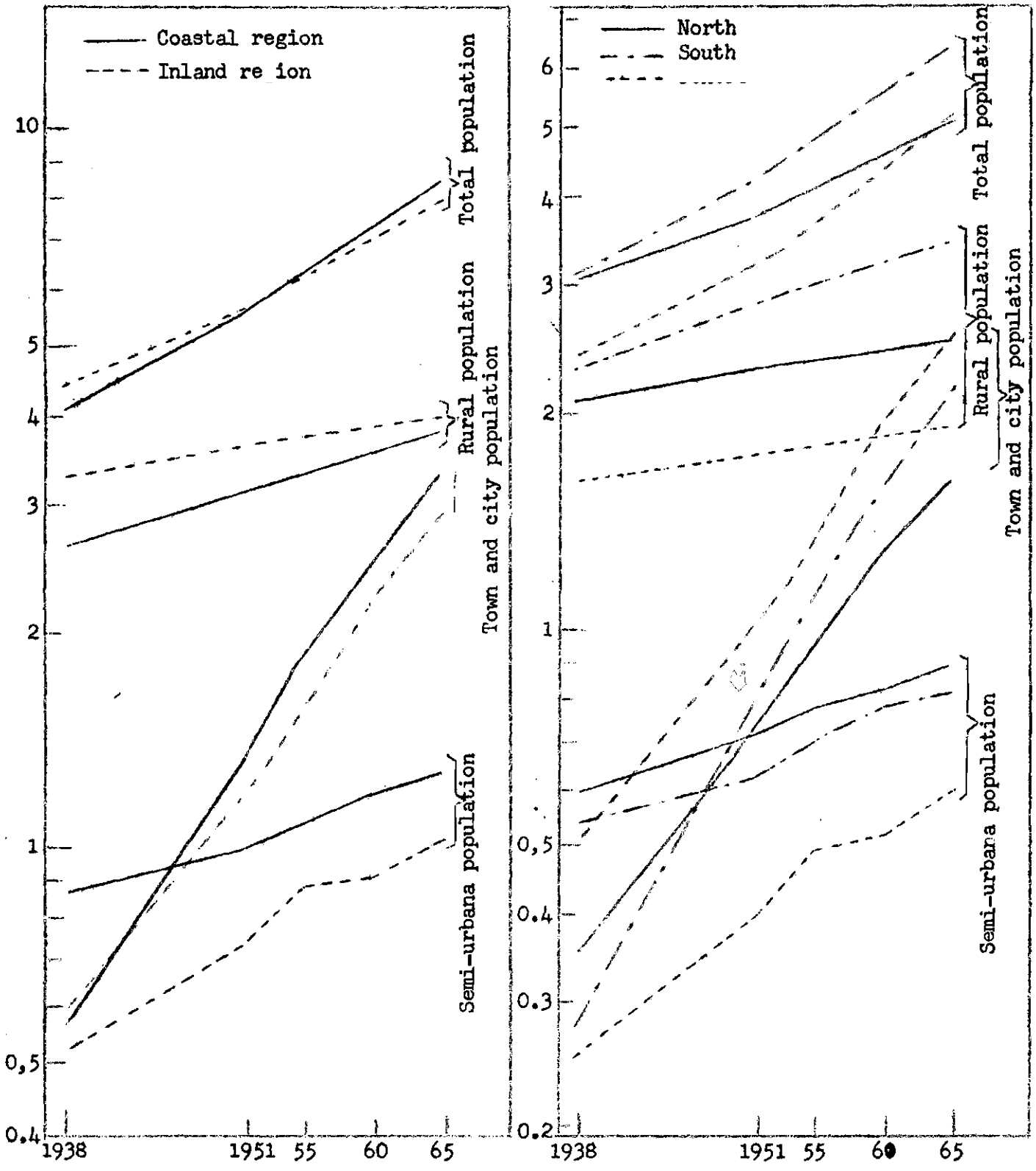
/By grouping

Figure IV

COLOMBIA : GROWTH OF URBAN AND RURAL POPULATION, BY LARGE REGIONS, 1938-65

(Millions)

Semi-logarithmic scale



By grouping the population estimates for departments into large regions, some further interesting comparisons are obtained. (See Table 18).[24/]

Firstly, a distinction is made between departments which border one of the two oceans and landlocked departments. The figures show that the seaboard departments are somewhat more urbanized than the inland ones and that both the urban and the rural population grow more rapidly in the departments nearer the coasts.

Table 18

COLOMBIA: POPULATION ESTIMATES BY TYPE OF REGION
(Population in millions)

Department	1938	1951	1955	1960	1965
A. Bordering on ocean a/					
Strictly urban	0.6	1.4	1.9	2.5	3.4
Semi-urban	0.9	1.0	1.1	1.2	1.3
Rural	2.7	3.2	3.4	3.6	3.9
B. Landlocked b/					
Strictly urban	0.6	1.2	1.6	2.3	3.0
Semi-urban	0.5	0.7	0.9	0.9	1.0
Rural	3.3	3.7	3.8	3.9	4.0

a/ Antioquia, Atlantico, Bolivar, Cauca, Cordoba, Choco, Magdalena, Nariño, and Valle del Cauca.

b/ Boyaca, Caldas, Cundinamarca, Huila, Norte de Santander, Santander, and Tolima

Secondly, a distinction is made between the Northern, Southern and Central region (see table 19). The Central region is the two departments of Antioquia and Cundinamarca, while the other two regions consist of the departments lying to the north and south of it. The Central region is the most urbanized containing the two largest cities (Bogota and Medellin). The semi-urban population (small towns of 1 500 to 19 999 inhabitants) is relatively large in the North and relatively small in the Centre. Total populati increases less rapidly in the North than either in the Centre or the South. Rapid population growth in the Centre is conditioned by the relatively large size of the city population which, it may be assumed, attracts migrants from

24/ Refer also to figure IV.

outside this region. In the South, urban as well as rural populations grow more rapidly than in the other two regions, on the probable supposition that migration in this direction will also continue. The North, despite evidently high fertility,[25/] probably loses substantial numbers of migrants.

Table 19

COLOMBIA: ESTIMATES BY REGIONS
(Population in millions)

Departments	1938	1951	1955	1960	1965
A. North					
Strictly urban	0.4	0.7	1.0	1.3	1.6
Semi-urban	0.6	0.7	0.8	0.8	0.9
Rural	2.1	2.3	2.4	2.5	2.5
B. Centre					
Strictly urban	0.5	1.0	1.4	1.9	2.6
Semi-urban	0.3	0.4	0.5	0.5	0.6
Rural	1.6	1.8	1.8	1.9	1.9
C. South					
Strictly urban	0.3	0.8	1.1	1.6	2.2
Semi-urban	0.5	0.6	0.7	0.8	0.8
Rural	2.3	2.8	3.0	3.2	3.4

25/ According to rough estimates, see 2 (d).

II. IMPLICATIONS FOR EDUCATION, MANPOWER AND HOUSING

1. Population and primary education

(a) Children enrolled in primary schools

The relationship between the number of children of statutory school age and the requirements for schools, classrooms and teachers is not a very direct one in a country in which there are still some shortcomings in the enforcement of primary education. Before assessing the need for schools, etc., it is therefore necessary to examine the trend and composition of the children who were actually enrolled in primary schools.

Expansion in the number of children enrolled in primary schools - both public and private - has indeed been rapid, especially from about 1950 onward, according to data assembled by DANE.[26/] Thus from 1938 to 1948, the number of urban and rural school children increased by 23 per cent and 21 per cent respectively; from 1948 to 1958, the increase was 143 per cent, and 49 per cent respectively.[27/] The year-to-year series are presented in table 20.

Ideally, the school system provides for five grades of primary schooling in urban areas and for four grades in rural areas. In actual fact, about one-half of all the schools in the country, in any of the years 1938-58, have been double-session rural schools providing two grades of schooling only in alternating half-day sessions separately arranted for boys and girls.[28/] In 1947, for instance, the available schools can be distinguished, according to the number of grades of schooling provided, as shown in table 21,[29/] resulting in an average of 3.9 grades provided per

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26/ Boletín Mensual de Estadística, July 1959, pp. 92-94. In some years, prio to 1950, reporting may have been incomplete, particularly in the case of private schools. Only few private schools have been reported, at any time in rural areas; in urban areas, however, between one-fifth and one-third o elementary pupils were enrolled in private schools.

27/ Further on, these figures will be related to the corresponding trend in th number of children of school age.

28/ "Escuelas alternadas". Some of these are also found in urban localities. Other schools are for boys only, or for girls only, in nearly equal number

29/ Boletín Mensual de Estadística, August 1958, p. 95.

/Table 20

Table 20

COLOMBIA: NUMBER OF CHILDREN IN PRIMARY SCHOOLS, 1938 - 1958

(In thousands)

	Urban	Rural	Total
1938	306	322	628
1939	292	314	606
1940	294	312	606
1941	327	337	664
1942	325	322	647
1943	339	340	679
1944	346	353	699
1945	328	350	678
1946	349	363	712
1947	364	375	739
1948	375	390	765
1949	370	397	767
1950	409	400	809
1951	457	413	875
1952	496	427	923
1953	588	467	1 055
1954	631	494	1 125
1955	707	529	1 236
1956	771	541	1 312
1957	831	550	1 381
1958 a/	910	580	1 490

a/ Provisional figures.

Table 21

COLOMBIA: BREAKDOWN OF PRIMARY SCHOOLS BY NUMBER OF GRADES PROVIDED

	Urban	Rural	Total
Single-grade schools	325	740	1 065
Two-grade schools	701	8 341 a/	9 042
Three-grade schools	862	1 477	2 339
Four-grade schools	1 153	464	1 617
Five-grade schools	2 518	100	2 618
All schools	5 559	11 122	16 681

a/ In the same year, there were 8 361 public mixed or alternating schools in rural areas. Probably to a large extent these are identical with the rural schools providing a two-year course only.

urban school, 2.2 grades per rural school, and 2.7 grades per school in the nation.[30/]

Ideally, also, children are expected to enter school in the school year which follows their seventh birthday. Ordinarily, they should advance from grade to the next in each subsequent year. On an average, therefore, they should be aged 7.5 years upon entering school and 12.5 years upon leaving school in an urban area (or 11.5 years in a rural area). In actual fact, this is far from being the case.

Some children enter school before the age of seven but many probably not before they are eight or older. Many children drop out of school during the school year or fail their examinations and thus remain in the same grade in the following year. Many children do not re-enrol in a new school year even though they have not completed the full course and some probably never attend school at all.

In urban and rural areas alike, many children aged eleven years or more are still found in the first primary grade. More girls attend in urban schools while more boys attend in rural schools.

Statistics are provided permitting the breakdown of students by sex, age and school grade attended (see table 22).[31/] In the year 1957, for public and private schools combined, the following numbers of boys and girls were reported in urban and rural areas (in thousands):

30/ Actually, opportunities provided to the average school child are probably somewhat greater since it can be supposed that schools providing a relatively full course are, on the whole, bigger and more accessible to larger population groups than schools which have the least complete course. Also, rural children may at times attend urban schools in order to complete school grades not provided in the rural locality.

31/ Anuario General de Estadística, 1957.

/Table 22

Table 22

COLOMBIA: BREAKDOWN OF PRIMARY SHOOL CHILDREN BY SEX, AGE AND SCHOOL GRADE

(In thousands)

	Age in years						
	Uder 7	7-8	8-9	9-10	10-11	11-12	12 and over
				Urban areas: boys			
I	46.5	43.3	24.2	16.4	9.2	10.3	149.9
II	...	26.3	25.8	20.8	13.3	15.7	101.9
III	...	...	17.3	18.6	15.4	22.1	73.4
IV	...	...	...	11.9	13.4	25.4	50.7
V	...	...	...	2.4	6.4	24.9	33.7
All grades	46.5	69.6	67.3	70.1	57.7	98.4	
				Urban areas: girls			
I	49.5	44.8	25.9	16.4	8.5	8.4	153.5
II	...	26.7	27.8	21.7	14.7	14.9	105.8
III	...	...	17.0	19.3	16.3	22.5	75.1
IV	...	...	...	11.7	13.2	26.2	51.1
V	...	...	...	2.0	6.6	26.7	35.3
All grades	49.5	71.5	70.7	71.1	59.3	98.7	420.8
				Rural areas: boys			
I	48.0	42.4	31.3	26.1	15.8	21.7	185.3
II	...	10.2	14.7	18.9	16.6	27.1	87.5
III	...	...	1.4	2.2	2.7	5.4	11.7
IV	...	...	...	0.4	0.7	1.9	3.0
V	...	...	...	0.0	0.1	0.7	0.8
All grades	48.0	52.6	47.4	47.6	35.9	56.8	288.3
				Rural areas: girls			
I	46.1	39.1	28.9	22.6	13.1	16.0	165.8
II	...	10.4	14.9	18.6	15.8	23.0	82.7
III	...	...	1.5	2.2	2.3	4.4	10.4
IV	...	...	...	0.3	0.5	1.5	2.3
V	...	...	...	0.0	0.0	0.4	0.4
All grades	46.1	49.5	45.3	43.7	31.7	45.3	261.6

/In urban

In urban schools, more than 300 000 children were in first grade, but fewer than 70 000 in fifth grade. In rural schools, more than 350 000 were in first grade, but fewer than 30 000 in any grade higher than the second. Yet, a five-grade primary education is the prerequisite for any formal education past the elementary stage.

The lack of correspondence of the children's ages with the grade attended can be expressed in various ways. Ideally, first grade should be attended by children whose age at enrolment is 7-8 years, second grade by those aged 8-9, and so forth. Actually, the ages of pupils vary much more widely, being typically[32] as shown in table 23.

Ideally, children aged 7-8 should attend first grade, those aged 8-9 second grade, and so forth. Typically, however, the grades attended by children of each given age are as shown in table 24.

The relatively low school grade attended by some of the older children is only in part the result of frequent repetition of the same grade. According to data from the same source, repetition is more frequent in rural schools and most frequent in first grade. Girls repeat somewhat less frequently than boys. The percentages of repeaters among schoolchildren enrolled in each grade are as shown in table 25.

Aside from repetition, there are also high percentages of children who drop out of school, as can be ascertained from the percentages of students initially enrolled who do not sit for final examinations.[33] Again, the phenomenon varies by grade, sex and urban or rural area, as shown in table 26.

Of those sitting for final examinations, various percentages fail the examination. Failures are most frequent in first grade of rural schools. Again, as in other respects, the performance of girls is consistently better than that of boys (see table 27).

32/ Data are not provided by single years of age past the age of 11 years. The "typical" ranges may best be expressed as inter-quartile ranges but, because of this lack of detail, could not be calculated with more precision.

33/ An enquiry into the causes for dropping out was made in Atlantico Department in 1957. Of 8 543 children who had dropped out, 24 per cent had left because of change of residence, 16 per cent because of illness, 3 per cent because of bad conduct, 11 per cent for unknown family reasons, 13 per cent because of poverty, 6 per cent for economic activity, 5 per cent for domestic activity, and 22 per cent for other reasons. Boletín Mensual de Estadística, January 1958, p. 77.

Table 23

COLOMBIA: TYPICAL AGES OF SCHOOLCHILDREN

Grade	Urban	Rural
I	7-9	7-10
II	8-10	9-11
III	9-11	10-12
IV	10-12	11-13
V	11-13	12-14

Table 24

COLOMBIA: GRADE TYPICALLY ATTENDED (AVERAGE)

Age	Urban	Rural
7-8	1.4	1.2
8-9	1.9	1.4
9-10	2.5	1.5
10-11	2.9	1.7
11 and over	3.4	1.8

Table 25

COLOMBIA: PERCENTAGE OF REPEATERS AMONG SCHOOLCHILDREN, BY GRADE

Grade	Urban		Rural	
	Boys	Girls	Boys	Girls
I	21.0	19.6	30.7	29.1
II	16.9	17.1	29.9	29.9
III	13.5	13.4	19.4	19.2
IV	10.6	10.0	12.2	15.1
V	9.2	9.1	7.8	9.6

/Table 26

Table 26

COLOMBIA: PERCENTAGE OF SCHOOL DESERTION, BY GRADE

Grade	Urban		Rural	
	Boys	Girls	Boys	Girls
I	23.3	22.3	22.5	19.0
II	19.4	18.8	20.2	16.7
III	16.9	17.2	21.5	20.7
IV	14.4	14.8	24.4	21.0
V	9.7	15.1	26.7	... a/

a/ According to the data, more rural girls appeared at fifth-grade final examinations than had initially been enrolled in fifth grade.

Table 27

COLOMBIA: PERCENTAGES OF FAILURES AT FINAL EXAMINATIONS, BY GRADE

	Urban		Rural	
	Boys	Girls	Boys	Girls
I	23.8	23.2	29.8	29.1
II	21.3	21.1	16.5	16.3
III	20.3	18.7	16.4	16.4
IV	17.3	16.1	14.9	14.6
V	15.8	14.7	16.1	14.4

/As the

As the combined result of school desertion and failure at final examinations, the percentages of children who are promoted at the end of the school year are not very high. Particularly in first grade, and in rural schools, not much more than one-half of the students are successful, as indicated in table 28

Table 28

COLOMBIA: PROMOTION PERCENTAGES, BY GRADE

Grade	Urban		Rural	
	Boys	Girls	Boys	Girls
I	58.5	59.7	54.4	57.4
II	63.5	64.1	66.7	69.6
III	66.3	67.3	65.6	66.3
IV	70.8	71.5	64.4	67.5
V	76.4	72.4	61.5	93.1[a/]

a/ High percentage due to data showing more candidates at final examination than girls initially enrolled.

These several findings illustrate the complexity of relating numbers of children of school age to numbers actually enrolled in school. More study is needed to determine the number of children who never enter school, the age at which they enter for the first time, and the number of children who, despite completion of the first (or some subsequent) grade are then withdrawn indefinitely from further schooling. Such a study is necessary in order to determine the probable effects of quantitative and qualitative improvements in school attendance.

In a transitional period, for instance, when school attendance is made to conform more closely to the ideal, more children may, for a time, attend school than are of corresponding ages: new students would then be enrolled - and ordinarily also promoted - at the appropriate age whereas older students would still attend school in order to complete, past the proper age, their hitherto defeetive school record. The effect of such an improvement of the educational system, in terms of enrolment, is calculabl but the elements entering the calculation are quite complex.

/(b) Number of

(b) Number of children of proper primary school age

In relation to the statutory primary education course of five years in urban schools and four years in rural schools, the "proper" age of successful students should range between an average of 7.5 to 12.5 years in urban areas, and from 7.5 to 11.5 years in rural areas. The many reasons for which schools are attended also by children of different ages have been briefly reviewed. Actually, children attend primary schools between the age of 6 and 14, and even then many fail to complete the statutor school course.

Educational policy should, of course, aim at school attendance by children of "proper" age, so far as their success as students will permit. Therefore, population estimates of children of "proper" primary school age would seem most relevant as a gauge for the planning of quantitative and qualitative improvements in the school system.

Unfortunately, very accurate population estimates cannot be made. The population census of 1951 was probably less complete than that of 1938,[34] and the age of many children, particularly in rural places, is not very accurately reported. The estimates presented below must be interpreted with these qualifications.

For 1938, primary school enrolment, both public and private, is shown in table 29.[35]

Table 29

COLOMBIA: PRIMARY SCHOOL ENROLMENT (PUBLIC AND PRIVATE), 1938
(in thousands)

Zone	Boys	Girls	Both sexes
Urban	153	152	305
Rural	168	154	322
Total	321	306	627

34/ See the discussion in I, 1. On the other hand, school enrolment statistic were probably less complete in 1938 and in 1951. Errors in census data tend to increase calculated school enrolment ratios for 1951, while error in school statistics tend to reduce the corresponding ratios for 1938; in actual fact, the situation in 1951 compares less favourably with conditio in 1938 than it would seem to from the calculated figures. A further sour of error may result if "urban" and "rural" areas are defined differently school statistics and in the census; errors from this source, however, ma not be very great.

35/ Boletín Mensual de Estadística, July 1959.

According to the population census of June, 1938, the number of children of "proper" age was as shown in table 30.[36]

The enrolment ratios, i.e. children enrolled as a percentage of children of the "proper" age, then, are shown in table 31.

The calculation suggests urban enrolment ratios, in 1938, approaching 100 per cent. This does not mean that all urban children of "proper" age attended school since, as is known, some children enter school before the age of 7 while others enter late, or repeat one or more grades, and therefore still attend school past the age of 13. Since irregular school attendance is greater in rural areas, the ratio of rural children of "proper" age attending school was probably well below 45 per cent.

The non-comparability of the same calculation for 1951 has been pointed out.[37] Table 32 shows the results obtained directly from the data for that year. The number of children enrolled in primary schools was reported to be as shown in the following table.

According to the 1951 census, the number of children of "proper" age was as shown in table 33. Hence, the school enrolment ratios (per cent) were as shown in table 34.

Comparison of the 1951 figures with those for 1938 suggests at first sight only a slight deterioration in the urban school situation, which is more than offset by considerable improvement in rural areas. In actual fact, however, it is unlikely that any significant improvement occurred from 1938 to 1951. Urban population in 1951 was probably calculated fairly accurately and actual deterioration in school attendance may have been little more than the figures suggest. Shortly before 1951 the urban populatio growth rate suddenly began to rise and this may have produced, at least temporarily a severe shortage of school facilities. It is probable, on the other hand, that the 1951 census failed to include a considerable portion

36/ Published census data refer to municipal centres (cabeceras) and other localities; these data were converted to "urban" and "rural" population, using the population ratios of "urban" to cabeceras and "rural" to other localities. Children of "proper" age numbered 338 000 in cabeceras and 691 000 in other localities. If school statistics correspond to the latter two categories, the "urban" (cabeceras) enrolment ratio would be slightly lower and the "rural" (other localities) ratio slightly higher than calculated.

37/ See footnote 34.

Table 30

COLOMBIA: NUMBER OF CHILDREN OF "PROPER" SHOOL AGE, ACCORDING TO 1938 CENSUS

(In thousands)

Zone, and age (years)	Boys	Girls	Both sexes
Urban, aged 7.5 to 12.5	155	162	317
Rural, aged 7.5 to 11.5	365	346	711
Total	520	508	1 028

Table 31

COLOMBIA: ENROLMENT PERCENTAGE OF CHILDREN OF "PROPER" SCHOOL AGE, 1938

Zone, and age (years)	Boys	Girls	Both sexes
Urban, aged 7.5 to 12.5	99	94	96
Rural, aged 7.5 to 11.5	46	45	45
Total	62	60	61

Table 32

COLOMBIA: NUMBER OF CHILDREN ENROLLED IN PRIMARY SCHOOLS, 1951

(In thousands)

Zone	Boys	Girls	Both sexes
Urban	227	230	457
Rural	217	201	418
Total	444	431	875

/Table 33

Table 33

COLOMBIA: NUMBER OF CHILDREN OF "PROPER" SCHOOL AGE, ACCORDING TO 1951 CENSUS

(In thousands)

Zone, and age (years)	Boys	Girls	Both sexes
Urban, aged 7.5 to 12.5	253	265	518
Rural, aged 7.5 to 11.5	396	367	763
Total	649	632	1 281

Table 34

COLOMBIA: ENROLMENT PERCENTAGE OF CHILDREN OF "PROPER" SCHOOL AGE, 1951

Zone, and age (years)	Boys	Girls	Both sexes
Urban, aged 7.5 to 12.5	90	87	88
Rural, aged 7.5 to 11.5	55	55	55
Total	68	68	68

/- possibly as

- possibly as much as one-tenth - of the rural population and the actual rural school-enrolment ratio may have been no more than 50 per cent, only a slight improvement over the 45 per cent calculated for the thirteen previous years. However, it is difficult to adjust data for 1951 and subsequent years while maintaining a desirable consistency with the 1951 census results.

The position in 1951 was perhaps scarcely better than in 1938. Allowing for incomplete school statistics in 1938 and an incomplete census in 1951, a national school enrolment ratio in the range of 60 to 65 per cent may be estimated for those two years.

As indicated by the series of school enrolment data,[38/] however, a marked improvement must have begun from about 1950 onward and have continued until 1958, the last date for which figures are available. How substantial was this improvement in relation to the estimated population trend?

Reference is made to the ECLA population projection[39/] from which the following number of children of "proper" age can be interpolated, as shown in table 35.

Relating these data to those on school enrolment, the enrolment ratios (per cent) obtained are shown in table 36. For the nation as a whole, the school enrolment ratio, estimated at 68 per cent in 1951, may have risen to 89 per cent by 1958 though, actually, the population estimates are too low and the true enrolment ratios probably were lower. The trend, nevertheless, is fairly accurately represented and the improvement, particularly in rural areas, has been appreciable.

Urban enrolment ratios in excess of 100 per cent are to be expected especially in a period of transition when attendance until completion of the course is being progressively enforced. This is so because in addition

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38/ Boletin Mensual de Estadística, July 1959.

39/ The projection was made on the basis of 1951 census data, and the population figures, particularly for rural areas, are probably too low. Nor is it quite certain that the rate of urbanization assumed in the projection is close to the actual rate. Use is made of Projection II, in which rural population increases at an annual rate of 1 per cent.

/Table 35

Table 35

COLOMBIA: NUMBER OF CHILDREN OF "PROPER" SCHOOL AGE, BASED ON ECLA POPULATION PROYECTION

(In thousands)

Year	Urban areas, ages 7.5 to 12.5			Rural areas, ages 7.5 to 11.5		
	Boys	Girls	Both sexes	Boys	Girls	Both sexes
1951	248	266	514	402	376	778
1952	261	284	545	414	381	795
1953	276	303	579	425	387	812
1954	292	323	615	435	392	827
1955	309	344	653	445	397	842
1956	328	366	694	454	402	856
1957	348	389	737	462	407	869
1958	369	414	783	470	412	882

Table 36

COLOMBIA: ENROLMENT PERCENTAGE OF CHILDREN OF "PROPER" SCHOOL AGE, BASED ON ECLA POPULATION PERCENTAGE

Year	Urban areas, ages 7.5 to 12.5			Rural areas, ages 7.5 to 11.5		
	Boys	Girls	Both sexes	Boys	Girls	Both sexes
1951	90	87	89	54	54	54
1952	96	86	91	54	54	54
1953	106	97	102	59	56	57
1954	106	99	103	60	60	60
1955	114	103	108	62	61	62
1956	117	106	111	64	64	64
1957	118	108	113	62	64	63
1958	121	111	116	65	67	66

/to children

to children of "proper" age now attending, there are others who repeat a school grade and those who, because of incomplete education in the past, are still making up for this gap through continued attendance beyond the "proper" age. How high this ratio may rise until the completion of the five-year course becomes general cannot be accurately determined without detailed studies of the several factors involved[40] but it would seem that a ratio as high as 120 per cent may have to be attained, or even exceeded for a period, before full school attendance becomes the general rule.

In rural areas, with an enrolment ratio in excess of 60 per cent, it may be presumed that at least a majority of the children are deriving the limited benefit afforded by the prevailing type of two-grade schools. This achievement, however, still falls far short of the rural four-year course intended by the national educational programme.

More light is thrown on the present situation from an examination of single-year school enrolment ratios, calculated on the basis of more detailed interpolations from the ECLA projection, and published school statistics for the year 1957. The interpolated single-year population estimates, needless to say, are very rough. For the middle of 1957, the number of children estimated by single years of age is shown in table 37.

A comparison of these estimates with the statistics of children enrolled in elementary schools[41] provides the rough estimates of single-year school enrolment ratios (per cent) shown in table 38.

40/ The various factors discussed on pages 46 and 48 tend to raise the school enrolment ratio beyond 100 per cent, particularly during a period when school attendance and teaching are being improved. On the other hand, some children, because of physical or mental deficiencies, will never be able to complete the statutory school course. It is also possible that the population projection has underestimated the growth in urban population and that some children residing in near-by rural areas attend urban schools.

41/ Anuario General de Estadística, 1957

/Table 37

Table 37

COLOMBIA: SINGLE-YEAR SCHOOL ENROLMENT, BASED ON ECLA PROJECTION AND PUBLISHED SCHOOL STATISTICS (MID-1957)

(In thousands)

Age (years)	Urban		Rural	
	Boys	Girls	Boys	Girls
6	81	88	128	115
7	76	84	125	111
8	72	81	121	107
9	69	77	117	102
10	66	74	113	98
11	63	71	108	94
12	61	69	103	89
13	61	69	98	83
14	61	71	91	76

Table 38

COLOMBIA: SINGLE-YEAR SCHOOL ENROLMENT PERCENTAGE, 1957

Age (years)	Urban		Rural	
	Boys	Girls	Boys	Girls
Under 7 a/	57	56	38	40
7	91	85	42	45
8	93	87	39	42
9	102 b/	92	41	43
10	90	80	32	32
11 and over c/	40	35	14	13

a/ Children enrolled below the age of 7 per 100 children estimated to be 6 years old.

b/ Figure in excess of 100 per cent impossible, reflecting error of estimate.

c/ Children enrolled above the age of 11 per 100 children estimated to be 11-14 years old.

/These rough

These rough estimates indicate that in 1957 more than one-half of the urban children, and nearly 50 per cent of the rural children were already enrolled between their sixth and seventh birthdays. For children aged 7, 8 and 9, urban enrolment ratios were in the order of 90 per cent (greater for boys, but less for girls); rural enrolment ratios at these ages, however, were little more than 40 per cent. The enrolment ratio had already declined at age 10 though, by that age, children could not have completed either the urban or the rural statutory school course. With mandatory completion of the school course being enforced single-year enrolment ratios ought to approach 100 per cent, both in urban and rural areas, at least for children in the 8-11 age bracket.

(c) Primary education: future requirements

The ideal of full primary school attendance by all children of "proper" age - as well as by older children making up gaps in their earlier education - cannot be achieved at once. Many prerequisites must first be met, including the building and physical equipment of schools, the training of teachers, and other measures ensuring regular attendance and successful study as far as the physical and mental capacities of the children will permit.

An assessment of future needs, therefore, depends on assumptions as to how soon, in the more or less distant future, a more nearly ideal condition is to be attained. The making of such assumptions is partly a matter of government policy and partly a matter of detailed study of the targets that can reasonably be achieved and of the means of achieving them.

The figures set out below are based on rough and arbitrary assumptions made not so much for the purpose of obtaining realistic estimates but rather as an illustration of how such estimates, given the knowledge of detailed facts and circumstances, might be arrived at. The assumptions and estimates presented here, therefore, are hypothetical.

In the ECLA projection, the trend in population of "proper" school age, up to the year 1970, is estimated as shown in table 39.

/Table 39

Table 39

COLOMBIA: TREND IN POPULATION OF PROPER SCHOOL AGE

(in thousands)

Year	Urban areas	Rural areas	Total
	Ages 7.5 to 12.5	Ages 7.5 to 11.5	
1958	783	882	1 665
1959	832	894	1 726
1960	882	904	1 786
1961	931	913	1 844
1962	981	919	1 900
1963	1 031	923	1 954
1964	1 083	926	2 009
1965	1 135	929	2 064
1966	1 190	931	2 121
1967	1 245	933	2 178
1968	1 302	937	2 239
1969	1 359	939	2 298
1970	1 418	940	2 358

In 1958, the urban school enrolment ratio is calculated as 116 per cent, and the rural ratio as 66 per cent. Let it be assumed, very roughly, that by 1960 the urban ratio will rise to 120 per cent and the rural ratio to 70 per cent.

Let it be assumed, further, that the 120 per cent enrolment in urban areas represents a peak, attained at a time when single-year ratios, at the "proper" age, have reached nearly 100 per cent. Qualitative improvements, in terms of regular school attendance and successful teaching, would then permit the over-all ratio ("proper" age 7.5 to 12.5) to recede gradually. Thus, somewhat arbitrarily, one might suppose that the ratio becomes 115 per cent by 1965 and 110 per cent by 1970.

For rural areas, let it be assumed that a vigorous Government programme aims at the attainment of a full four-grade education of all children by the year 1970. The enrolment ratio (for "proper" age from 7.5 to 11.5) may then have to rise from 70 per cent in 1960 to 95 per cent in 1965 and to 120 per cent, i.e. the peak, in 1970.

/When these

When these assumptions are applied to estimated future numbers of children of "proper" age, school enrolment will have to develop as shown in table 40.

Table 40

COLOMBIA: ESTIMATED FUTURE NUMBER OF CHILDREN OF "PROPER" SCHOOL AGE

(in thousands)

Year	Urban	Rural	Total
1958[a/]	910	580	1 490
1960	1 058	633	1 691
1961	1 108	685	1 793
1962	1 158	735	1 893
1963	1 206	785	1 991
1964	1 256	833	2 089
1965	1 305	883	2 188
1966	1 357	931	2 288
1967	1 407	980	2 387
1968	1 458	1 031	2 489
1969	1 508	1 080	2 588
1970	1 560	1 128	2 688

a/ Actual enrolment, according to available statistics.

The hypothetical estimates indicate, for each year from 1960 to 1970, an increased annual enrolment of very nearly 50 000 urban and 50 000 rural children in primary schools, or of very nearly 100 000 in the national total. The tasks, however, will be quite different in the two instances. In urban areas, where full attendance at "proper" age has already become fairly general, a considerable expansion of school facilities will be required in view of the expected large increase in the child population. This need will continue beyond 1970. In rural areas, the expected increase in child population is small, but the average exposure of children to schools will have to be doubled from the two-grade system, now widely prevalent, to a four-grade system, while schools will also have to become accessible in areas where they are still few and far between. Once a full course has been made available in all rural areas, further increases in rural school enrolment will be quite small.

/Though nearly

Though nearly equal numbers of additional school children will have to be accommodated in urban and in rural areas, the need for additional school buildings will differ greatly.

In urban areas, there were 3 386 schools in 1938 and 5 594 in 1958. The number of children served by the average urban school rose, in those twenty years, from 90 to 163. As towns increase in size, more children can be taught in the same school though, in various instances, the building may have to be expanded to accommodate more classrooms. With improved urban transportation, children can also reach the same school building over a wider radius; a number of small neighbourhood schools may then sometimes be efficiently replaced by a large consolidated central school. In these and other ways, it is possible that the average number of children served by an urban school will increase further in future years. Conceivably, it may rise to 175 in 1960, 200 in 1965, and 225 in 1970. Closer study might, of course, lead to different estimates, and the rough assumption here made is intended mainly as an illustration.

In rural areas, there were 5 820 schools in 1938 and 11 949 in 1958. In 1938, the average rural school served 55 children. In 1958, it served 49 children. This decrease may have resulted from the establishment of new schools in areas of low population density where the number of children who can be brought together daily in one locale is necessarily small. Since schools are probably still lacking in many regions where the rural population is widely scattered, this same tendency may also continue in the future. On the other hand, it is to be noted that the great majority of rural schools still provide only a two-grade course. When these schools are extended so that four grades can be taught, the number of children served by them will tend to rise substantially. An eventual consolidation of widely scattered small schools may also occur at some future time when motorized transportation becomes possible for large numbers of rural children; however, considering the cost involved, that time may still be remote. These and other considerations may, on balance, produce either a rise or a decline in the average number of children per rural school. Study would be required to determine the most probable trend. For the present illustrative purpose, let it be assumed, quite arbitrarily, that the number of pupils per rural school will still be 50 in the years from 1960 to 1970.

/The assumptions

The assumptions here made indicate the following hypothetical requirements: 6 000 urban and 12 500 rural schools in 1960; 6 500 urban and 17 500 rural schools in 1965; and 7 000 urban and 22 500 rural schools in 1970. New urban schools would have to be opened at the rate of about 100 each year; new rural schools at the rate of about 1 000 each year. At the same time, however, existing schools, both urban and rural, will have to be expanded so as to accommodate additional classrooms. Moreover, the number of classrooms should bear a close relation to the number of available teachers.

The staff or urban elementary school-teachers increased from 7 631 in 1938 to 24 554 in 1958. There were 40 students per teacher in 1938 and 37 in 1958. A decrease in the pupil-teacher ratio is desirable if teaching is to become more effective. A desirable ratio might be one of 30 students per teacher, to be attained by 1970. Accordingly, there may have to be 36 pupils to the teacher in 1960, and 33 in 1965.

The staff of rural school teachers has risen from 6 028 in 1938 to 13 393 in 1958. In 1938, there were 53 pupils per teacher, and in 1958 there were 43. If 30 students per teacher by 1970 is also the target for rural schools, the ratio should be 42 in 1960 and 36 in 1965.

Based on these hypothetical assumptions, the following staff of teachers will be needed: 29 000 urban and 15 000 rural teachers in 1960, 40 000 urban and 25 000 rural teachers in 1965, and 52 000 urban and 38 000 rural teachers in 1970.[42/] Each year, somewhat more than 2 000 additional urban teachers and 2 000 additional rural teachers will be required, a total of over 4 000.

In fact, considerably more than 4 000 persons would have to enter the teaching profession each year. Some additional teachers are needed to replace others who retire from the profession, and a large number of additional teachers are needed if the average standard of the teaching staff is to be raised. This is especially the case in rural areas.

42/ If there is one classroom per teacher, the average urban school would have 5 classrooms in 1960 and 6 classrooms in 1970; the average rural school would have 1.2 classrooms in 1960 and 1.7 classrooms in 1970.

/Thus, in

Thus, in 1957, only 57 per cent of the urban teachers and only 19 per cent of the rural teachers practising their profession in primary schools had any professional qualifications.[43] If a Government programme aims at a fully qualified teaching staff, not only would the existing staff have to be increased, but the present number of uncertified teachers, amounting to almost 10 000 in urban areas and over 10 000 in rural areas, would also have to be either retrained or replaced over the years.

The attainment and maintenance of a qualified teaching staff obviously presents a major budgetary problem. In 1957, the average salary of urban teachers was about 240 Colombian pesos and that of rural teachers about 185 pesos.[44] The teacher-training institutes (escuelas normales) also seem to have been quite unsuccessful in providing full training to any considerable number of candidates.[45]

(d) Regional distribution of school children and school enrolment

The regional population estimates presented in section I of this report, together with the ECLA projection of the population by sex and age groups, have made it possible to make rough estimates of the population of "proper" school age by department, over a period of years, and distinguishing between urban and rural areas.[46] The resulting estimates are not

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43/ According to data in Anuario General de Estadística, 1957.

44/ According to data from same source.

45/ In 1957, the 90 normal schools, with an enrolment of 14 259 students, graduated only 628 candidates who had completed the five-year teacher-training course. If, by 1970, an adequate staff of teachers is to exist, all teachers being fully qualified, then more than 3 000 urban and 3 000 rural teacher candidates would have to graduate each year, i.e. ten times as many as graduated in 1957. If a five-year teacher-training course is to be maintained, the enrolment of the normal schools would have to be more than double that of 1957 even if every candidate, once enrolled, were to graduate successfully.

46/ First, percentages of total population of "proper" school age, in urban and rural areas of each department, were taken from the 1951 census and applied to the estimates of total population, for the same areas, presented in section I of this report. The results were then pro-rated so as to coincide, in the national total, with the population of "proper" school age as estimated for urban and rural areas, in the population projection.

/very reliable,

very reliable, so far as individual departments are concerned,[47] and are therefore not presented here. However, as errors tend to offset each other in larger aggregates, it appears worthwhile to present the results for three large regions of the country, by grouping the estimates for departments.

Three regions are distinguished: a Northern region, consisting of the departments lying to the north of Antioquia and Cundinamarca; a Central region, comprising Antioquia and Cundinamarca; and a Souther region, i.e. the group of departments to the south of Antioquia and Cundinamarca. Estimates of population of "proper" elementary school age, in 1957 and 1965, are presented in table 41.

Table 41

COLOMBIA: ESTIMATES OF POPULATION OF "PROPER" ELEMENTARY SCHOOL AGE BY REGIONS, 1957 AND 1965
(In thousands)

Region	1957	1965	Absolute increase, 1957-65
Urban population aged 7.5 to 12.5 years			
North a/	246	348	102
Centre b/	234	380	146
South c/	251	400	149
Rural population aged 7.5 to 11.5 years			
North a/	291	303	12
Centre b/	220	228	8
South c/	353	391	38
Total population of "proper" age			
North a/	537	651	114
Centre b/	454	608	154
South c/	604	791	187

a/ Departments of Atlantico, Bolivar, Boyaca, Cordoba, Magdalena, Norte de Santander, and Santander.

b/ Departments of Antioquia and Cundinamarca, including Bogota, D.E.

c/ Departments of Caldas, Cauca, Chocó, Huila, Nariño, Tolima and Valle del Cauca.

47/ In particular, there is some doubt as to whether the school statistics distinguish the same urban and rural areas as are defined in the population census. The possible difference in definition may have considerably vitiated some of the calculations for particular departments.

/For the

For the same regions, the school enrolment was reported in 1957 as shown in table 42.

Table 42

COLOMBIA: SCHOOL ENROLMENT BY REGIONS, 1957

(In thousands)

Region	Urban	Rural	Total
North	235	179	414
Centre	303	139	442
South	280	214	494

Enrolment ratios (percentage), accordingly, can be calculated as shown in table 43.

Table 43

COLOMBIA: SCHOOL ENROLMENT PERCENTAGES BY REGIONS, 1957

(In thousands)

Region	Urban	Rural	Total
North	95	62	77
Centre	129	63	97
South	112	61	82

As has been suggested in the foregoing, urban enrolment ratios may rise to 115 per cent in 1965, while rural enrolment ratios may be 95 per cent. Such an educational programme could by 1965 bring about the enrolments shown in table 44.

/Table 44

Figure V

COLOMBIA : POPULATION 15 YEARS OF AGE OR OVER, BY EDUCATIONAL LEVEL

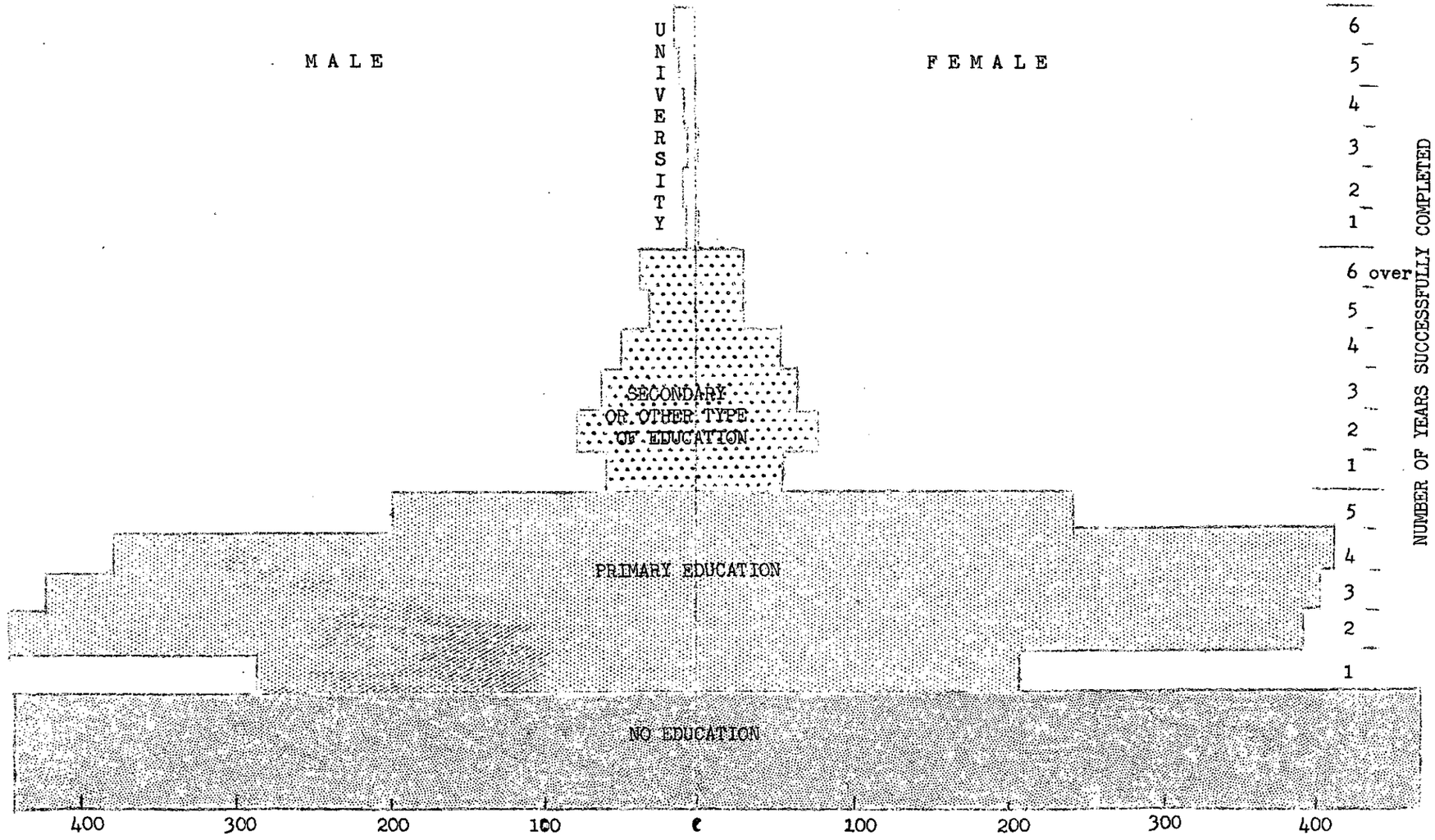

Table 44

COLOMBIA: ESTIMATED SCHOOL ENROLMENT RATIOS, 1965

(In thousands)

Region	Urban	Rural	Total
North	400	288	688
Centre	437	217	654
South	460	371	831

The absolute increases in school enrolment, from 1957 to 1965, which would then have to occur in each of the three regions are shown in table 45.

Table 45

COLOMBIA: REQUIRED ABSOLUTE INCREASES IN SCHOOL ENROLMENT, 1957-65

(In thousands)

Region	Urban	Rural	Total
North	165	109	274
Centre	134	78	212
South	180	157	337

The greatest needs, then, would seem to arise in the South, whereas the needs in the Centre, though considerable, would be relatively less pressing. There are several reasons for this difference.

Child population is increasing rapidly in the urban areas of the Centre, but here the children are already comparatively well provided with schools. In the North, school enrolment in 1957 still lags far behind, but here smaller population increases are to be expected. The combination of rapid population growth and the present unsatisfactory facilities for school children has created the relatively greater shortage in the South.

However, in order to determine the number of schools and teachers required in particular areas, detailed local studies must be undertaken in which the forms of human settlement and the varying population densities are duly taken into account. Schools of different types and perhaps teachers of diversified training will be needed in different areas in accordance with variations in topography and anthropogeography.

/(e) Educational level

(e) Educational level

Figure V, based on data provided by the 1951 census, shows the distribution of Colombia's adult population, i.e. of persons aged 15 years and over, by educational level.

As many as 39.9 per cent of the adult males and 43.7 per cent of the adult females had not completed a single grade of schooling.

Whereas 60.1 per cent of the males and 56.3 per cent of the females had at least got through the first primary grade, only 16.6 per cent of the males and 16.7 per cent of the females had completed all five primary grades. An incomplete primary education - one to four grades - had been obtained by 43.5 per cent of the adult males and 39.6 per cent of the adult females.

Similar observations can be made as regards secondary and higher education. Whereas 8.9 per cent of the males and 7.9 per cent of the females had had at least one year of secondary education, only 2.1 per cent of the males and 1.0 per cent of the females had completed the full six-year course. Only 1.2 per cent of the males and 0.2 per cent of the females had taken at least one year of university studies but probably only a fraction of the latter had ever completed them.

This breakdown confirms not only the limited nature of access to education but also the fact that the successful completion of a school course, once begun, is the exception rather than the rule. While some education is, of course, better than nothing, the wastage involved in an incomplete education is considerable.

The same census data, analysed by age groups, can be used for calculations on availability of education and progress of studies extending far into the past. Thus, individuals aged 15-19 in 1951 should, for the most part, have completed their elementary education or entered into secondary school during the 1940's; those aged 75-79 should have been in a similar phase of their education in the 1880's. The percentage in each age group who have had at least one year of primary schooling can be calculated and the analysis continued as follows: the percentage of those with at least one primary grade who have completed at least two grades, the percentage of those with at least two primary grades who have completed at least three grades, and so forth. These rates of progress, from one grade to the next, expressed in percentages, are presented in table 46.[48/]

48/ Because of lack of comparability, data for age groups under 15 years are not shown.

/Table 46

Table 46

COLOMBIA: SCHOOL PROGRESS RATES (PERCENTAGE) FROM LOWER TO HIGHER GRADES

Sex and age	From no education to 1st grade a/	From 1st to 2nd grade	From 2nd to 3rd grade	From 3rd to 4th grade	From 4th to 5th grade	From 5th grade to secondary or higher education
Males						
15-19	64	87	71	65	57	63
20-24	66	88	76	69	59	63
25-29	65	88	76	70	61	60
30-34	66	87	77	71	62	58
35-39	61	86	76	70	62	58
40-44	59	86	76	71	63	59
45-49	57	86	76	72	63	59
50-54	52	84	75	72	63	60
55-59	50	83	75	72	64	62
60-64	41	81	73	71	62	61
65-69	43	83	75	72	62	59
70-74	37	83	74	71	62	58
75-79	39	83	75	71	61	57
80-84	30	84	76	68	59	52
Females						
15-19	66	90	77	67	57	59
20-24	64	90	79	71	60	59
25-29	61	90	79	71	60	54
30-34	59	90	79	72	60	50
35-39	54	89	78	72	60	50
40-44	50	89	79	73	61	50
45-49	48	90	80	73	61	51
50-54	44	89	80	74	62	51
55-59	44	89	79	74	62	52
60-64	34	88	78	72	60	49
65-69	40	90	81	74	60	48
70-74	32	89	80	73	59	47
75-79	38	91	81	75	59	49
80-84	26	90	77	72	56	46

a/ Fluctuations partly due to inaccurate age statements on the part of relatively uneducated persons.

/The following

The following observations stand out:

1. An increasing proportion of the population has been able to complete at least one grade of primary education. This increase was more rapid for females than for males but seems to have slowed down around 1940.

2. Entrance into secondary and higher education by those with at least five completed grades of primary education has also become more frequent over the years.

3. Progress from one primary school grade to another has shown slight improvement in some instances (e.g. males passing from first to second grade), while it has deteriorated in other instances (especially past the third grade of schooling), but on the whole has changed very little, at least during the past sixty years.

This last observation is important. Schools, no doubt, have become accessible to larger segments of the population, as witnessed by increasing enrolment in the first grade. Qualitatively, however, the school system has shown no improvement and may even have deteriorated recently. The system has persistently failed to enable children, once enrolled, to progress from one grade to another.

Statistics on school enrolment up to the year 1958 have already been examined. From about 1950 onward, the total number of school children has increased very rapidly but enrolment in grades higher than the first is still disproportionately low, and the dropping out and repetition rates remain very high. The more recent statistics cannot yet be analysed comparably with the census data on educational levels, but it is doubtful, to say the least, whether the recent increase in elementary school enrolment has led to any qualitative improvement in the educational progress of the children, once they are enrolled.

Qualitative improvement in the completion of a full school course will have to be as extensive as the expansion of school facilities and teaching staff if the great majority of the population is to have the opportunity to complete at least a primary education from 1970 onwards.

/(f) Literacy

(f) Literacy

An examination of census data on literacy, broken down by sex and by age groups above the age of 15 years, suggests that the ability to read and write, for the most part, has been attained through attendance at the first grade of primary school. For groups below 15 years of age, the data do not seem to be comparable.[49/]

The percentage of literates in all the age groups is slightly higher than the percentage of persons who have had at least one grade of approved schooling. The slight excess of literates over those with at least one grade of schooling might be partly accounted for by sporadic school attendance on the part of some. The percentage figures in question are presented in table 47.

Table 47

COLOMBIA: LITERACY RATES, BY SEX AND AGE

Age group	Percentage of literates		Percentage of persons with at least one completed school grade	
	Males	Females	Males	Females
10-14 a/	56	59	53	56
15-19	67	70	64	66
20-24	70	68	66	64
25-29	70	65	65	61
30-34	71	62	66	59
35-39	66	58	61	54
40-44	65	53	59	50
45-49	62	52	57	48
50-54	58	47	52	44
55-59	57	48	50	44
60-64	47	38	41	34
65-69	50	44	43	40
70-74	43	36	37	32
75-79	45	43	39	38
80-84	34	29	30	26

a/ For non-comparability of figures in the 10-14 group, see footnote 49.

49/ One reason for non-comparability may be that even first-grade primary education is still pursued well past the age of 10 and sometimes perhaps also past the age of 15. Another reason may be a misunderstanding of the census questions. Thus, whereas the census enquired into grades of school completed it is possible that in the case of persons of school age, actual school attendance at the time, rather than past achievement, was often considered in the reply. Replies to the question on literacy were possibly also influenced by replies to the question on educational level.

/Since the

Since the great majority of those with one completed school grade may be assumed to be literate, the additional number of literates, for the sake of simplicity, might be referred to as "self-taught" literates.[50] Rates of "self-taught" literacy can be calculated in relation to the number of individuals who have never completed a grade of schooling. Past the age of 15, these rates of "self-taught" literacy are about 10 to 14 per cent for males and 7 to 10 per cent for females. Since the rates decline rather than increase with age it must be concluded that little additional literacy has been acquired past the age of 15.

As in the case of entrance into first grade, literacy has improved a great deal over the long term but the improvement has slowed down in recent years. This circumstance, plus the fact that greater ability to read and write is seldom acquired past the age of 15, are further confirmed by a comparison of census statistics for 1938 and 1951. This comparison is made in two parts.

First, literacy rates are compared for the same generation of persons, thirteen years older in 1951 than they were in 1938. The following literacy rates noted at the two censuses (per cent) are shown in table 48.

Table 48

COLOMBIA: LITERACY RATES BASED ON 1938 AND 1951 CENSUSES

Age		Males		Females	
1938	1951	1938	1951	1938	1951
7-14	20-27	41.7a/	68.4	43.0 a/	66.7
15-29	28-42	64.3	69.0	61.1	60.0
30 and over	43 and over	54.5	55.7	45.3	45.9

a/ For non-comparability of this figure, see footnote 49.

50/ The assumption that literacy in the case of those without a completed elementary grade is "self-taught" in every instance is no doubt inaccurate. In fact, the data suggest that many, and perhaps most, of these apparently "self-taught" literates have attended school at some time or another, though without completing a single grade. To be more specific, of course, some adults having completed first grade may nevertheless have lost their ability to read. Nor is it accurate to ascribe invariably to "self-teaching" the acquisition of literacy by other means.

/Literacy increased

Literacy increased greatly for those aged 7-14 in 1938, and this is perhaps largely due to the fact that prior to 1951 they still had considerable opportunity for additional schooling. For those aged 15-29 in 1938 literacy seems to have increased somewhat among males but not among females. Past the age of 30 increases in literacy have been negligible.

Next, a comparison is made for persons in the same age brackets at the two dates. The literacy rates (per cent) shown in table 49 can be compared:

Table 49

COLOMBIA: LITERACY RATES BY AGE BRACKETS, 1938 AND 1951

Age (at either date)	Males		Females	
	1938	1951	1938	1951
7-14	41.7	42.2	43.0	44.9
15-29	64.3	68.8	61.1	72.3
30 and over	54.5	61.7	45.3	52.7

Holding age constant, literacy has improved among those aged 15 and over as a result of a long past period of expanding school education. However, among those aged 7-14, no significant improvement seems to have taken place. The chief reason for this may very well be that between 1938 and 1951 school enrolment barely kept pace with population growth.

Actually, a slight decline in the literacy rate of the 7-14 year group seems to be indicated by data for rural areas. Holding age constant, a comparison of urban and rural literacy rates in 1938 and 1951 may be made as shown in table 50.

Table 50

COLOMBIA: COMPARISON OF URBAN AND RURAL LITERACY RATES, 1938 AND 1951

Age (at either date)		Urban areas		Rural areas	
		1938	1951	1938	1951
Males	7-14	62.2	61.8	33.8	31.7
	15-29	83.1	86.2	51.4	57.9
	30 and over	75.8	80.6	45.5	50.3
Females	7-14	63.3	63.4	34.1	33.2
	15-29	78.1	81.9	51.4	55.7
	30 and over	64.6	69.3	33.8	37.7

/The absolute

The absolute number of illiterates actually increased between 1938 and 1951. In 1938, 2 220 000 persons aged 15 and over were deemed to be illiterate compared with 2 430 000 in 1951. For those aged 7-14 the corresponding figures were 1 050 000 in 1938 and 1 270 000 in 1951. The number of illiterates aged 15 and over, on the other hand, seems to have remained about the same.

Since 1951 there has no doubt been a major change. With the sharp pick-up in school enrolment which began about 1950, single-year enrolment ratios of about 90 per cent in urban areas and well over 40 per cent in rural areas were achieved by some age groups by 1957. Considering that school attendance on the part of some is intermittent, an even larger percentage of children may now attend school sufficiently to become literate.

In 1951, the following literacy rates prevailed in age groups 15-19: urban boys: 85.7 per cent; urban girls: 83.1 per cent; rural boys: 56.5 per cent; rural girls: 58.6 per cent.

For the same age group, urban literacy rates no doubt increased to well above 90 per cent by 1960, whereas the rural rates may well have risen to nearly 70 per cent. Though literacy, per se, is a very limited qualification, this particular problem is perhaps being gradually solved through the quantitative expansion of the school system.

A calculation for the population aged 15 and over, carried out separately for urban and rural areas, shows little change in the literacy rate of the same generation from 1938 to 1951. As there has been much migration from rural to urban areas, and urban literacy is higher than rural literacy, it may be presumed that the migrants have, to some extent, assimilated urban rates of literacy.[51/]

This observation permits the calculation of future trends in urban and rural literacy, use being made of the ECLA population projection. The following assumptions were made.

1. Literacy of the 15-19 year age group to rise as shown in table 51.

51/ Migration may also have been selective, literate persons having perhaps a greater tendency to move from rural to urban areas than illiterate persons.

/Table 51

Table 51

COLOMBIA: ESTIMATED FUTURE TRENDS IN URBAN AND RURAL LITERACY, BASED ON ECLA POPULATION PROJECTION

(percentage)

	1951	1956	1961	1966	1971
Urban					
boys	85.7	90.0	95.0	97.0	98.0
girls	83.1	88.0	94.0	97.0	98.0
Rural					
boys	56.5	63.0	70.0	80.0	90.0
girls	58.6	65.0	72.0	80.0	90.0

2. Literacy rates of each generation to remain constant while age increases, i.e. literacy rates as observed in 1951 for the 20-24 year group to apply to the 25-29 year group in 1956, and so forth; likewise for generations passing from the 15-19 year group into next higher age groups from 1956 onward.

3. These rates to remain constant in both urban and rural areas despite continued rural-urban migration, i.e. some additional literacy being acquired, at least in the case of migrants, as roughly confirmed by observations for 1938-51.

These assumptions are rather optimistic as regards the future increase in the literacy rate of the 15-19 year group, but a steady expansion of at least minimal school facilities may render this possible. They are pessimistic, on the other hand, as regards additional acquisition of literacy by adults, the prospects of success of special literacy campaigns not being taken into account.[52/] The calculation may serve, nevertheless, for an assessment of the size of the job which would have to be done in an adult literacy campaign.

According to the calculation, the number of illiterates aged 15 and over may develop in accordance with the figures shown in table 52. A gradual decrease in the number of illiterates, from a peak of about 2.5 million in 1960, may occur, although in the absence of a vigorous adult education programme there would still be at least as many illiterates in 1971 as there were in 1938.

52/ One example is the system of Escuelas Radiofónicas de Sutatenza. In 1955, for instance, 109 000 persons, most of them in rural areas, were reported as having registered for broadcast literacy courses (Boletín Mensual de Estadística, October 1955, p. 80).

/Table 52

Table 52

COLOMBIA: POSSIBLE FUTURE NUMBER OF ILLITERATES AGED 15 YEARS AND OVER, BASED ON ECLA POPULATION PROJECTION

(In thousands)

	1938 a/	1951	1956	1961	1966	1971
Urban areas						
Males	150	191	222	241	249	245
Females	276	354	388	412	413	405
Both sexes	426	545	610	653	662	650
Rural areas						
Males	857	924	920	930	905	843
Females	937	969	940	907	870	806
Both sexes	1 794	1 893	1 860	1 837	1 775	1 649
Entire country						
Males	1 007	1 115	1 142	1 171	1 154	1 088
Females	1 213	1 323	1 328	1 319	1 283	1 211
Both sexes	2 220	2 438	2 470	2 490	2 437	2 299

a/ Cabeceras of municipalities, and other localities, according to census data.

/This slow

This slow change in the total number of illiterates, nevertheless, represents considerable progress in literacy for a rapidly growing population. Percentages of literates, in the population aged 15 and over, would rise as shown in table 53

Table 53

COLOMBIA: POSSIBLE FUTURE PERCENTAGE OF ILLITERATES AGED 15 YEARS AND OVER, BASED ON ECLA POPULATION PROJECTION

	1938	1951	1956	1961	1966	1971
Urban areas						
Males	79	84	85	87	90	92
Females	71	76	79	82	86	89
Both sexes	75	79	82	85	88	90
Rural areas						
Males	51	54	56	59	63	68
Females	42	47	50	54	58	64
Both sexes	47	51	53	56	61	66
Entire country						
Males	59	65	68	72	76	81
Females	53	60	64	69	74	79
Both sexes	56	62	66	71	75	80

As a final observation, it is to be pointed out that mere ability to read and write is a modest qualification indeed for purposes of modern manpower needs in an industrialized society. While the population is now becoming overwhelmingly literate, increased attention is to be given to the attainment of what UNESCO has termed "functional literacy", this being the ability to make full use of the arts of reading, writing and arithmetic for most practical purposes in a modern society. To this end, of course, several years of consistent schooling are necessary, depending on the standard to be adopted. Evidently, much progress remains to be made in Colombia despite rapid increases in enrolment at the lowest primary school levels.

/2. Population and

2. Population and manpower

(a) Difficulty of study

The chief difficulty in studying current manpower trends in Colombia results from the non-comparability of definitions used in the various statistical sources. The following sources have been identified:

(i) population censuses of 1938 and 1951;

(ii) industrial censuses of 1945 and 1953 (summarized data) and the census of trade and services, of 1954;

(iii) summary results of industrial surveys based on the 1953 census up to 1957.

Only a population census, or surveys organized on a population basis,[53] can furnish comprehensive data on the entire manpower supply in the nation. In the industrial and trade censuses (industrial and commercial establishments, etc.), only the workers actually employed in the surveyed establishments are recorded, while most of the unemployed, self-employed, family helpers, and all other workers not connected with the identified establishments are inevitably omitted. The same is true for surveys subsequently based on an establishment census.

Unfortunately, only the Colombian population census of 1951 contains comprehensive data on economically active population in accordance with internationally recommended definitions. Data obtained in the 1938 population census can be compared with those of 1951 only in certain respects and for certain categories, and even here the comparison is vitiated by differences of definition. Time trends in the size and composition of manpower, therefore, cannot be estimated with any confidence from a comparison of statistics for 1951 with those for any other date.

53/ In practice, such surveys are conducted on a household basis, preferably from a sample based on a population census. Household samples comprise all economically active individuals except those living outside of households (in institutions; migrant labour; military personnel; etc.). The latter are a minority that can sometimes be estimated from other sources.

/The situation

The situation, in this respect, cannot be substantially improved unless another population census is taken and, provided, of course, that at the next census the concepts used are fairly comparable with those of 1951. Perhaps, still more important, the new census should be so arranged as to provide the much needed sampling basis for periodic manpower surveys which are comprehensive enough to permit the study of any current changes and fluctuations.

(b) Economic activity of the population in 1951

Of a registered population of 11 229 000 in 1951, 3 756 000 persons,[54] all those at least 12 years of age, were tabulated as economically active. The reported economic activity was not necessarily that carried out at the time, but rather that in which the registered person would normally be engaged, whether or not he was so engaged at the time of the census. The economically active population, so enumerated, included 44 000 persons who, at the moment of the census, considered themselves unemployed. These data are to some extent internationally comparable as far as the male population is concerned; with respect to females, the censuses of various countries differ to the extent to which they describe some of their activities as "economic" rather than merely "domestic".

As shown in table 54, 54.7 per cent of all Colombian males and 12.4 per cent of all Colombian females were reported as economically active. Nearly the same percentage of males were economically active in the censuses of other countries with a similar population structure. Relatively fewer females were counted as "economically" active in Mexico and Brazil, the percentage being about the same in Venezuela but markedly higher in Ecuador, Peru and Bolivia.

54/ Population actually enumerated, excluding estimated omission of the census. In the ECLA population projection for Colombia, an economically active population of 3 787 000 persons was estimated for 1951. Since most of the census omissions occurred in rural areas, probably little error is incurred in attributing the excess of the estimate (31 000 persons) to rural areas and to agricultural activities.

/Table 54

Table 54

COLOMBIA: ECONOMICALLY ACTIVE PERSONS PER 100 PERSONS OF THE MALE, FEMALE AND TOTAL POPULATION IN COLOMBIA AND IN CERTAIN OTHER COUNTRIES

Country	Census year	Males	Females	Both sexes
Colombia	1951	54.7	12.4	33.4
Mexico	1950	56.8	8.7	32.4
Brazil	1950	56.4	9.6	33.0
Venezuela	1950	55.0	12.2	33.9
Ecuador	1950	55.6	19.8	37.6
Peru	1940	52.1	27.9	39.9
Bolivia	1950	58.8	42.2	50.3

It is difficult to say to what extent the varying percentages of women reported as "economically" active are due to different economic and social conditions, census definitions or biases in interpreting the census questions. In all these countries, no doubt, women's time is about equally taken up by the provision of goods and services, whether directly in the home or indirectly through the labour market. The time of many women may to a varying extent be divided by activities of both kinds.

As shown in table 55, women's activities are much more often "economic" in urban than in rural areas. This observation, no doubt, corresponds to certain objective facts. On the other hand, in rural as well as urban areas, women's activities are less regarded as being of an "economic" character in the Northern and Central regions than they are in some areas of the South, or in Choco. The variation in male activity rates is much smaller and can be partly explained by differences in demographic structure: there are relatively more young male workers in areas of immigration (urban areas, and in rural areas of Cundinamarca and Valle del Cauca) than there are in areas of emigration (e.g. Boyaca).

/Table 55

Table 55

COLOMBIA: ECONOMICALLY ACTIVE PERSONS PER 100 PERSONS OF THE MALE, FEMALE AND TOTAL POPULATION IN URBAN AND RURAL AREAS OF COLOMBIA FOR THE COUNTRY AS A WHOLE AND FOR EACH DEPARTMENT

Division	Urban areas (cabeceras)			Rural areas (otras localidades)		
	Males	Females	Both sexes	Males	Females	Both sexes
Entire country	53.2	18.3	34.4	55.6	8.1	32.8
Departments:						
Atlantico	53.3	12.6	32.0	52.8	3.4	29.8
Caldas	51.8	12.6	30.7	58.4	4.1	33.5
Antioquia	52.4	16.1	32.6	54.1	4.4	29.9
Bolivar	48.8	12.3	29.1	53.1	4.6	29.7
Magdalena	47.4	11.2	28.1	54.2	5.5	31.4
Valle del Cauca	57.0	16.5	35.8	60.5	5.8	36.2
Norte de Santander	51.4	16.2	32.2	55.7	6.6	32.4
Tolima	52.2	17.1	33.2	56.2	7.2	33.3
Santander	52.9	24.2	37.1	56.8	8.1	33.4
Cundinamarca	56.2	26.7	40.1	55.0	8.3	32.4
Huila	51.5	19.1	33.7	56.0	9.8	34.1
Boyaca	52.3	26.2	37.9	52.9	10.7	31.3
Cauca	52.5	18.7	34.7	54.8	12.6	33.8
Nariño	53.5	25.8	38.5	54.9	20.0	37.3
Choco	44.5	17.8	30.0	52.1	25.8	38.9

/(c) Reported economic

(c) Reported economic activity of the population in 1938

Far more liberal criteria were used in 1938 to determine whether a woman's activity was to be regarded as "economic". As regards the economic activities of men, on the other hand, the totals of both population censuses seem to be quite comparable.

Thus, of a male population of 4 313 000 in 1938, 2 421 000, i.e. 56.1 per cent were reported as being economically active. Of a female population of 4 389 000, a total of 2 067 000, i.e. 47.1 per cent were economically active. Such a high percentage of female "economic" activity also appears in the 1950 census for Bolivia (see above) but bears no logical comparison with Colombian data for 1951.

A slight decrease in the over-all economic activity rate of males, should normally have been expected from 1938 to 1951,[55/] and the percentages for males, 56.1 in 1938 and 54.7 in 1951, thus seem fairly comparable.

(d) Effects of urbanization

Taking men of all age groups, the over-all activity rate in urban areas appears higher (see table 56) because of continuous immigration of young workers. Actually, age group by age group, urban males are somewhat less active economically than rural males, especially at early and at advanced ages. Urban residents have greater opportunity, and also greater need, for broader education, while competitive urban employment conditions either compel or facilitate an earlier retirement from jobs. Also, the small cash budgets earned in rural areas make it necessary for young boys to begin, and for old men to continue to be economically active, however ineffective their activity may then be.

Urban women, age by age, are economically far more active than rural women, at least up to the age of 65 years. In towns and cities, women find opportunities for cash earnings that are rarely encountered in the countryside. Various commodities and services can be purchased for cash in urban areas which rural women are compelled to produce at home on a domestic basis. Since domestic production of some of these items is hardly practicable in the towns, urban women are also in greater need of the cash incomes they earn. Schools being practically accessible to all urban children, the household burdens in towns and cities are lightened somewhat. Better education also influences urban social attitudes, making it acceptable for women to be engaged in a greater variety of activities.

55/ For reasons discussed further on.

/Table 56

Table 56

COLOMBIA: ECONOMICALLY ACTIVE PERSONS PER 100 PERSONS IN EACH SEX-AGE GROUP IN BOGOTA, AND IN THE URBAN AND RURAL POPULATION OF COLOMBIA

Age group	Males			Females		
	Bogota	Urban	Rural	Bogota	Urban	Rural
15-19	68.2	71.8	92.3	30.8	34.8	14.1
20-24	84.9	91.4	98.0	30.7	35.0	14.0
25-34	96.3	96.3	98.4	39.5	27.6	13.2
35-44	97.8	96.9	98.4	34.3	25.2	14.3
45-54	95.3	95.3	97.8	27.7	21.1	15.3
55-64	85.0	88.7	94.9	20.1	16.4	15.1
65 and over	56.9	62.8	77.0	12.3	9.3	11.2

The factors producing different activity rates for urban men and women, as compared with rural areas, are likely to gain more momentum as time progresses. Continued urbanization results in growth of the urban centres themselves and an increasing proportion of the combined urban population is that of big cities. Even in rural areas, commercialization, education, and the social status of women are apt to move somewhat towards the conditions encountered at least in some of the small towns. Accordingly, it is most probable that male activity rates will continue their slow decrease, while those of females will probably increase considerably.

While there are no chronologically comparable statistics to determine the probable trends, some light on this question can be thrown by a study of economic activity rates in relation to education and marital characteristics, according to the census statistics of 1951.

(e) Effect of education

Economic activity rates differ considerably among population segments of varying levels of education. The census data do not permit a comparison of economic activity rates by educational levels in urban and rural areas. Rates for Colombia as a whole are shown in table 57, followed by a presentation of the corresponding rates for Bogota, to provide some indication of the

probable urban-rural differences. The educational groups distinguished here are those deprived of formal education (who have not completed a single grade of elementary school), those with primary education (at least one grade, but not beyond the primary grade, and those of "higher" education (at least one grade beyond primary education).

Table 57

COLOMBIA: ECONOMICALLY ACTIVE PERSONS PER 100 PERSONS IN EACH SEX-AGE GROUP IN POPULATION SEGMENTS HAVING VARYING LEVELS OF EDUCATION (COUNTRY AS A WHOLE)

Age group	Males, by educational level			Females, by educational level		
	None a/	Primary	Higher	None a/	Primary	Higher
15-19	88.7	87.0	39.4	25.3	22.5	24.0
20-24	95.7	98.0	78.3	22.1	22.1	37.8
25-34	96.7	98.5	96.1	19.4	17.9	30.8
35-44	96.8	98.5	98.1	19.5	17.1	28.2
45-54	96.3	97.4	96.6	19.1	15.2	24.4
55-64	92.3	93.6	91.2	17.0	14.2	18.3
65 and over	71.2	73.2	70.2	11.2	7.8	12.3

a/ "None": persons who have not completed a single year of elementary school; "Primary": persons with primary education only (at least one year); "Higher": persons with complete primary education and at least one year of higher education (whether secondary, university, or of other types).

For males, the data show that primary education occasionally delays entry into the economically active group beyond the age of 15, while higher education may sometimes delay it even beyond the age of 25. Otherwise, and up to advanced ages, males with primary education are more active economically than are either the uneducated or those more highly educated.

Among females, those with comparatively high education are economically the most active and those with primary education the least active. In this connexion, it is to be pointed out that the "higher" education of women, in many cases, is of a special type (other than secondary and academic), designed to prepare them for some particular activity, including activities of a rather "domestic" type.

/The above

The above comparisons concern the population of the country as a whole. As indicated by the same type of data for Bogota, however, there probably are appreciable differences between urban and rural areas as regards the effect of education on activity rates (see table 58).

Table 58

COLOMBIA: ECONOMICALLY ACTIVE PERSONS PER 100 PERSONS IN EACH SEX-AGE GROUP IN POPULATION SEGMENTS HAVING VARYING LEVELS OF EDUCATION (BOGOTA ONLY)

Age group	Males, by educational level			Females, by educational level		
	None a/	Primary	Higher	None a/	Primary	Higher
15-19	91.4	87.2	31.6	76.0	54.2	25.4
20-24	96.5	98.0	63.6	63.5	49.8	43.2
25-34	97.7	98.5	92.9	47.3	38.4	35.1
35-44	97.5	97.9	97.8	39.6	33.3	29.5
45-54	95.1	94.9	95.9	33.3	25.9	23.2
55-64	84.0	84.2	86.3	25.2	17.5	16.0
65 and over	51.1	56.8	61.7	15.1	10.6	9.7

a/ See footnote to table 56.

Uneducated women in Bogota are most active from the earliest ages onward, and far more active economically than in other parts of the country. No doubt, this is largely due to the presence of numerous country girls of minimal or no formal education who perform domestic services in the city. Women with primary education, especially at early ages, are also much more active in Bogota. At any level of education, the economic activity rates of young women in Bogota exceed very greatly those in the rest of the country; the activity rates of older women in Bogota exceed those found elsewhere only to a decreasing extent. It is quite probable that successive generations of urban women, especially in Bogota, have become increasingly disposed to engage in economic activity, hence the high rates at early ages, falling off rapidly with age. In time, the now highly active young women will probably retain more considerable activity rates with advancing age than did the preceding generations. It is not improbable that similar tendencies now characterize urban women also in other Colombian cities.

/Consistent with

Consistent with the figures for Bogota and the data for the entire country, it can be inferred that the effect of education in rural areas on economic activity are quite different. Uneducated young men are probably less active in rural areas, and highly educated men more active than they are on the average for the whole country. Uneducated young women, in rural areas, must exhibit very low activity rates indeed, since the high rates noted in Bogota, and assumed for other towns and cities, are consistent with the low averages noted for the whole country. In rural areas, therefore, activity rates of both men and women may rise as the level of education rises. In urban areas, on the other hand, economic activity rates tend to fall as education increases.

(f) Economic activity and marital status

The data shown in table 59 relate to economic activity rates of men and women according to their marital status. As in the case of education, the relationship among females is the reverse of that among males. Men are found most active when they are married or living in consensual union and least active when they are single. Activity rates of married women, by contrast, are exceedingly low, those in consensual union higher, those of the widowed or separated still higher, and those of single women the highest.

Among men, the differences due to marital status are not so great. It might be inferred, perhaps, that economic activity is to a certain extent a condition for marriage. Without a source of income, a man is not in a position to provide for the upkeep of a family. Hence, when men receive more extensive education, and thereby postpone their entry into the labour force, they may have to delay their marriage.

Women it would seem, are rather prevented by marriage from engaging in extra-domestic activity. Single, widowed or separated women, on the other hand, are enabled, if not also compelled, to earn a livelihood outside the home. With increasing education, more men may have to postpone entry into economic activity and marriage. More women may then remain unmarried, or may marry at a somewhat later age. The economic activity of women may then rise, not only as a result of the higher level of education of the women themselves, but also because of a postponement in marriage. Increased economic activity by women, furthermore, may in some instances enable men to attain a higher level of education.

/Table 59

Table 59

COLOMBIA: ECONOMICALLY ACTIVE PERSONS PER 100 PERSONS IN EACH SEX-AGE GROUP ACCORDING TO MARITAL STATUS

Age group	Males				Females			
	Married	Consensual union	Widowed or separated	Single	Married	Consensual union	Widowed or separated	Single
15-19	92.9	94.0	90.5	84.6	5.2	7.9	24.9	26.9
20-24	98.9	98.4	95.0	94.5	5.7	9.0	30.9	40.8
25-34	98.8	99.1	96.8	95.8	6.8	10.4	37.5	43.2
35-44	98.7	99.1	96.7	95.0	7.3	11.5	35.9	42.1
45-54	97.7	98.6	94.8	92.9	7.0	11.6	26.5	35.4
55-64	94.2	96.5	88.6	86.4	6.0	10.3	18.7	27.6
65 and over	77.6	84.5	58.4	63.2	4.6	8.0	10.0	16.4

/(c) Projection of

(g) Projection of economically active population

A projection of the population of Colombia, broken down by sex and age, is available.[56/] This can be transformed into a projection of the economically active population through the application of sex-age specific economic activity rates. However, as the foregoing analysis suggests, the rates noted in 1951 are unlikely to remain constant.

As no other Colombian statistics are comparable with those of the 1951 census, the presumable changes in economic activity can only be assumed. This assumption should at least be consistent with the above observations.

Notable progress has been made in education, both in urban and rural areas, and this progress is likely to continue, leading to later entry of men into active life. A rapidly increasing part of the urban population is that of the big cities, and the urban conditions, which compel earlier retirement of men from jobs, are likely to be intensified. Increased commercialization and changes in social attitudes lead to greater economic activity by women, especially in urban areas. A considerable rise in female economic activity is to be expected. But it would be illusory to try to determine the magnitude of such future changes by any precise calculation. An element of considered personal judgment cannot be avoided.

In the light of the observed effects of education and marital status, the following future assumptions, however arbitrary, would at least appear fairly reasonable:

(1) the sex-age specific activity rates of the combined urban areas may change, by 1981, from their observed 1951 values to the observed (1951) values for Bogota;

(2) the sex-age specific activity rates of rural areas may change, by 1981, from their observed 1951 values to the arithmetic mean of observed (1951) values for rural and urban areas;

56/ ECLA manuscript of March 1960. In that manuscript, a tentative manpower projection was also made on an assumption that economic activity rates of 1951 remain constant. The latter projection is superseded by the one presented here.

/(3) all these

(3) all these changes may occur in a linear progression;

(4) in addition to these assumptions, made for persons 15 years of age and over, it might be assumed that there will be no future changes in the absolute numbers of economically active persons under 15 years of age, enumerated in 1951 (12 years being the minimum age for which economic activity was reported at that census). This simple assumption is roughly consistent with one of gradually declining activity rates in the 12-14 year age group, to be expected as primary education becomes more nearly universal. Economically active persons aged 12-14 years in 1951 numbered 31 000 males and 26 000 females in urban areas, and 84 000 males and 15 000 females in rural areas.

The changes assumed for activity rates of persons aged 15 and over are shown in table 60.

Table 60

COLOMBIA: ASSUMED CHANGES IN PERCENTAGES OF ECONOMICALLY ACTIVE PERSONS, IN EACH SEX-AGE GROUP OF THE URBAN AND THE RURAL POPULATION, 1951-81

Age group	Urban males		Urban females		Rural males		Rural females	
	1951	1981	1951	1981	1951	1981	1951	1981
15-19	71.8	68.2	34.8	50.8	92.3	82.0	14.1	24.4
20-24	91.4	84.9	35.0	50.7	98.0	94.7	14.0	24.5
25-34	96.3	96.3	27.6	39.5	98.4	97.4	13.2	20.4
35-44	96.9	97.8	25.2	34.3	98.4	97.6	14.3	19.8
45-54	95.3	95.3	21.1	27.7	97.8	96.6	15.3	18.2
55-64	88.7	85.0	16.4	20.1	94.9	91.8	15.1	15.8
65 and over	62.8	56.9	9.3	12.3	77.0	69.9	11.2	10.2

When these assumptions are applied to the population projection, a projection of the labour force is obtained which is summarized by the figures shown in table 61 distinguishing three broad age groups. The results differ from those obtained in a more tentative projection of the Colombian labour force carried out by ECLA in 1960.[57]

57/ See footnote 56. With constant economic activity rates, the labour force of 1981 would total 9 116 000 (7 244 000 males and 1 872 000 females).

/Table 61

Table 61

COLOMBIA: ESTIMATED NUMBER OF ECONOMICALLY ACTIVE PERSONS, BY SEX AND BROAD AGE GROUPS, IN URBAN AND RURAL AREAS, 1951 - 1981

(In thousands)

Sex and age	1951	1956	1961	1966	1971	1976	1981
				Urban population			
Males							
12-24	357	477	592	718	876	1 106	1 333
25-54	614	780	995	1 266	1 585	1 993	2 508
55 and over	100	122	148	180	225	274	341
All ages	1 071	1 379	1 735	2 164	2 686	3 373	4 182
Females							
12-24	208	279	346	441	574	717	967
25-54	195	266	362	479	617	807	1 044
55 and over	24	30	37	46	61	76	100
All ages	427	575	745	966	1 252	1 600	2 111
Both sexes							
12-24	565	756	938	1 159	1 450	1 823	2 300
25-54	809	1 046	1 357	1 745	2 202	2 800	3 552
55 and over	124	152	185	226	286	350	441
All ages	1 498	1 954	2 480	3 130	3 938	4 973	6 293
				Rural population			
Males							
12-24	741	710	748	841	904	906	892
25-54	1 066	1 144	1 196	1 242	1 314	1 425	1 526
55 and over	210	239	267	301	346	384	425
All ages	2 017	2 093	2 211	2 384	2 564	2 715	2 843
Females							
12-24	105	103	113	135	156	171	180
25-54	137	155	177	190	207	223	240
55 and over	27	32	37	45	54	61	69
All ages	269	290	327	370	417	455	489
Both sexes							
12-24	846	814	861	976	060	077	072
25-54	1 203	1 299	1 373	1 432	1 521	1 648	1 766
55 and over	237	271	304	346	400	445	494
All ages	2 286	2 384	2 538	2 754	2 981	3 170	3 332

/Table 61 (Cont.)

Table 61 (Cont.)

Sex and age	1951	1956	1961	1966	1971	1976	1981
			Entire country				
Males							
12-24	1 098	1 187	1 340	1 559	1 780	2 012	2 225
25-54	1 680	1 924	2 191	2 508	2 899	3 418	4 034
55 and over	310	361	415	481	571	658	766
All ages	3 088	3 472	3 946	4 548	5 250	6 088	7 025
Females							
12-24	313	382	459	576	730	888	1 147
25-54	332	421	539	669	824	1 030	1 284
55 and over	51	62	74	91	115	137	169
All ages	696	865	1 072	1 336	1 669	2 055	2 600
Both sexes							
12-24	1 411	1 569	1 799	2 135	2 510	2 900	3 372
25-54	2 012	2 345	2 730	3 177	3 723	4 448	5 318
55 and over	361	423	489	572	686	795	935
All ages	3 784	4 337	5 018	5 884	6 919	8 143	9 625

(h) Growth of

(h) Growth of the labour force

For a 30-year period, the projection indicates an increase in the manpower supply from less than 4 to almost 10 million. Urban manpower, over that long period, would quadruple, while the rural labour force would rise by about one-half. The number of working men would more than double, and that of working women more than treble. Working women in urban areas, in particular, would increase to five times their initial number.

Between 1961 and 1971, the average annual increase in the labour force is about 190 000 (about 130 000 men and 60 000 women). The number of jobs would have to increase at a rate of at least 3 per cent in the nation. Most of the new jobs, almost 150 000 each year, would have to be found in urban areas, though additional employment opportunities in rural areas will also be needed. One-third of the additional urban jobs would have to be taken by women. The largest number of jobs still needed, nevertheless, is for men.

The rising proportion of economically active women can be deduced as follows. For every 100 working men in urban areas, there were 40 working women in 1951, and there may be as many as 50 by 1981. In rural places, there were 13 working women to 100 working men in 1951, and in 1981 there may be 17 such working women. Because of increasing urbanization, the ratio of working women to 100 working men in the nation as a whole rises more steeply, from 23 in 1951 to 37 in 1981.

The age level of the work force is low and will remain so, except for some ageing in rural places, caused by continued emigration of younger working persons. As men tend to start work later and to retire earlier in life, there is an increasing concentration of the work force in the 25-54 year age group, at least in urban areas, but the trend is not very strong. Percentages of workers in the three age groups would shift as follows:

Age group	Urban		Rural		Total	
	1951	1981	1951	1981	1951	1981
12-24	37.7	36.5	37.0	32.2	37.3	35.1
25-54	54.0	56.4	52.6	53.0	53.1	55.2
55 and over	8.3	7.1	10.4	14.8	9.6	9.7

/(i) Dependency burdens

(i) Dependency burdens

By subtracting the estimates of economically active population from the population projection, one obtains estimates of the economically dependent population. Relating the latter to the former, one can calculate the average number of dependents which 100 economically active persons will have to support. These dependency burdens are shown in some further detail in table 62.

Owing to urbanization, and the lower dependency burdens in urban areas,[58] average dependency burdens for the nation as a whole are not changing very significantly; a rise in relative numbers of dependent children is partly counterbalanced by a decrease in the relative number of dependent women (aged 15-64).

In urban areas, the dependency burdens likewise show relatively little tendency to change. Again, the somewhat more numerous children are offset by fewer dependent women of active age. The comparison is rough, as the cost of upkeep of a dependent varies with age and the income of economically working women is usually lower than that of working men.

By contrast, the dependency burden calculated for rural areas tends to rise sharply from about 3 dependents per worker in 1951 to 4.5 by 1981.

In all areas, the burden presented by children is by far the heaviest. The increased economic activity of women may help to maintain the given level of economic support of these children, but the danger is that women, when economically active, can give their children only a much reduced amount of the personal care and attention they need. Many mothers will probably shift part of their burden of child care - as distinct from mere economic upkeep - onto other women who remain economically inactive. The economic activity of some women (e.g. domestic servants and school teachers) also tends to reduce directly this burden of care, as does an increasing attendance of children at schools. To attribute the burden of child care entirely to economically inactive women, no doubt, exaggerates the picture, and this fact must be borne in mind.

58/ Urban dependency burdens are "lower" than the rural ones only in so far as the ratio of numbers of persons is concerned. Actually, the upkeep of dependent persons in urban areas is much costlier than the upkeep of rural dependents. Urban workers, furthermore, sometimes assist in the upkeep of dependent persons who live in rural areas.

/Table 62

Table 62

COLOMBIA: NUMBER OF ECONOMICALLY DEPENDENT PERSONS, BY CATEGORY, PER 100 PERSONS OF THE ECONOMICALLY ACTIVE POPULATION, 1951 - 1981

Dependent group (age)	1951	1956	1961	1966	1971	1976	1981
			Urban population				
Children (under 15)	115	120	121	125	121	122	120
Non-active men (15-64)	7	8	8	8	9	9	9
Non-active women (15-64)	67	64	61	59	54	54	50
Non-active aged persons (65 and over)	6	6	5	5	5	5	5
All dependents	195	198	195	197	189	190	184
			Rural population				
Children (under 15)	214	240	261	269	287	311	347
Non-active men (15-64)	3	3	4	4	5	5	5
Non-active women (15-64)	73	73	72	72	71	70	70
Non-active aged persons (65 and over)	10	11	12	14	16	18	21
All dependents	300	327	349	359	379	404	443
			Total population				
Children (under 15)	175	186	194	194	193	196	198
Non-active men (15-64)	4	5	6	6	7	7	7
Non-active women (15-64)	71	69	67	65	61	60	57
Non-active aged persons (65 and over)	8	9	9	9	9	10	10
All dependents	258	269	276	274	270	273	272

/Nevertheless, in

Nevertheless, in view of the figures in table 63, the burden of child care can rise at an alarming rate, even if school attendance increases as rapidly as has been assumed in the hypothetical calculations of the preceding section of this report. As a result, the standards of child care might deteriorate rather severely with untoward social effects (delinquency, ill-health, etc.). Special measures, e.g. day nurseries for children of working mothers, may become necessary on a very extensive scale.

(j) Adolescents

The considerations affecting educational programmes and manpower are brought together in the group of adolescents, i.e. persons aged about 15-20 years. Since this is generally the age when effective economic activity begins, most of the opportunities for education must find their cumulative fulfilment by those ages. The future qualification of the labour force will be mostly affected by the amount and variety of education with which the 15-19 year age group have been provided. Statistically, this group includes persons between the ages of 15 and not more than 20, i.e. those who are not a day older than 20.

This pivotal age group deserves special consideration also because of its great flexibility. It is particularly at these ages that workers move from rural areas to towns, being still relatively free to change their environment and to begin acquiring skills and work habits which may differ from those of their parents. At later ages, people become increasingly committed to residence in a given locality and to types of occupation or conditions of work which they are increasingly reluctant to change.

According to the projections made here the number of economically active and inactive adolescents would change as indicated by the figures in table 64. As in the case of age group 12-14 (see assumption (4)) in section II, 2(g)), more relevant estimates for the 15-19 year age group could have been made had it been possible to estimate future trends in post-primary education and the effect of such educational trends on economic activity rates. However, the educational projections presented

Table 63

COLOMBIA: SCHOOL CHILDREN AND CHILDREN NOT IN SCHOOL PER 100 WOMEN AGED 15-64 YEARS WHO ARE ECONOMICALLY INACTIVE, 1951 - 1981

Children (aged under 15 and economically inactive)	1951	1956	1961	1966	1971
		Urban population			
In school	46	62	73	73	76
Not in school	126	126	131	139	153
All children	172	188	204	212	229
		Rural population			
In school	25	31	37	47	56
Not in school	266	299	325	333	348
All children	291	330	362	380	404
		Total population			
In school	33	44	54	60	66
Not in school	214	223	237	239	250
All children	247	267	291	299	316

/in section

in section II, 1, are only illustrative and do not correspond to any specific educational plan of the Government. Accordingly - desirable though it would be for the evaluation of mutual effects of educational and employment policy - no such refined projection can be made at the present stage. Instead, activity rates for the 15-19 year age group are retained as they result from assumption (1), (2) and (3) (see section II, 2(g)).

In actual fact, at the 1951 census, all inactive young males, with very few exceptions (e.g. invalids), were reported as "students". If the trend of economic activity at adolescent ages remains as estimed here, there will be a rapidly increasing reservoir of young men whose studies can be continued between the age of 15-19. For such studies to be effective, of course, the earlier primary education of these young persons must be complete. In planning educational policy, the question may well be studied whether the capacity for post-primary studies can be expanded in relation to the estimates for inactive males aged 15-19 years presented here. If not, then perhaps the present labour force estimates would have to be revised accordingly. Important interrelations obviously exist between educational and occupational opportunities.

Virtually the same number of "students" has been reported in the census with respect to young women. Other economically inactive young women (except for a small number of invalids), however, were then reported as engaged in household duties (48 per cent of all women aged 15-19 years in urban areas, and 81 per cent in rural areas). However, only about one-sixth of all women aged 15-19 were then married. Obviously, a majority of those young women engaged in household duties were merely waiting for an opportunity to marry and set up households of their own. It is these young women who make possible large future increases in the female labour force as well as more extended female education. Hitherto many of the poorly educated young women whose prospects of marriage appeared limited drifted into the towns to take jobs as domestics.

/The age

The age group of adolescents is crucial indeed. Adequate training of young persons for precisely those employment opportunities which a growing and changing economy will require is essential. Under favourable conditions, it is these young persons who can rapidly develop a more qualified and diversified labour force, including skills in new and expanding branches of activity and at those levels of responsibility where understaffing is still most acute A large and growing group of ill-prepared, disoriented or disillusioned adolescents, on the other hand, can also pose a threat to the existing social and economic order.

Table 64

COLOMBIA: ESTIMATED NUMBERS OF PERSONS AGED 15-19 YEARS, BY SEX, URBAN AND RURAL RESIDENCE, AND ECONOMIC ACTIVITY STATUS, 1951 - 1981

(In thousands)

	1951	1961	1971	1981
		Economically active		
Urban				
Males	150	254	389	613
Females	94	171	309	495
Rural				
Males	341	372	433	416
Females	48	57	80	92
		Economically inactive		
Urban				
Males	58	106	202	286
Females	177	256	371	494
Rural				
Males	30	47	74	91
Females	292	269	302	283

3. Socio-Economic Composition of Manpower, and its "Autonomous" Projection

In Section 2, the economically active population and dependent groups have been studied of sex, age, marital status, education, and urban and rural residence. In addition to such data, the 1951 census also documents manpower structure by branch of activity, personal occupation, ocupational status (i.e. employer, employee, etc.), and cross-classifications of these three characteristics[59]. Some data of this type have also been furnished by the 1938 census, but the concepts were not quite the same then. Other sources of manpower data, as already pointed out, are less comprenhensive than the population censuses.

While census statistics for 1938 and 1951 are not quite comparable, a more critical comparison of some of the data still permits the approximate calculation of trends in some of the components of manpower. Fragmentary indications from other sources, and estimates which have been made by the Colombian Planning Department using different methods (e.g. estimates of production by economic sector, divided by output per worker), neither prove nor disprove that the calculated 1938-1951 trends have continued in more recent years. It is at least conceivable, though not probable, that they may continue for some time in the future. Actually, through the implementation of plans and recommendations of the Colombian Planning Department, aimed at improvements in economic structure and avoidance of distorting tendencies, it is probable that the development will diverge increasingly from those that can be projected on the basis of past experience.

For the time being, the continuance of past trends is more probable with respect to some manpower segments - those which presumably are subject to greater inertia - than to others. Selecting the trends for these segments and extrapolating them provides, as a result, theoretical trends of other segments by the residual method. This is the type of calculation attempted in the present section.

59/ Cross-tabulations of economic and educational characteristics of manpower were not found. These would have been desirable for the study of the relationships between educational attainments and occupations. When these relationships are known, the economic implications of a given educational plan can be assessed. Likewise, the educational pre-requisites for carrying a given economic plan into effect might be evaluated It is evident that criteria for the linkage between economic and educational policy might be of great value. No such study could be attempted here.

Projections of this type are to be regarded as "autonomous" in the sense that they are calculated, so to speak, in disregard of the possible, or even probable, effects of planning efforts actually being undertaken by the Colombian authorities. Nevertheless, the results of the autonomous projection are of much practical interest. They indicate the extent to which past rates of change in certain segmental trends will have to be modified if unhealthy consequences, in the remaining segments, are to be averted.[60/] It would be more instructive still to compare the autonomous projection with an alternative projection in which certain changes in some of the segmental trends are deliberately introduced as a basis for an assessment of the efforts which are needed to obtain more desirable results in the structure of employment. But it would be hazardous to select the basis for these alternative assumptions without close consultation with the Colombian authorities in the matter of more detailed economic plans and programmes.[61/] Accordingly, only the results of the "autonomous" projection are presented and discussed in this report.

As will be shown, the continuance of certain past trends would result in an ominous increase in precisely those segments of manpower where under-employment, or employment at the lowest levels of productivity, is known to be most widespread. A modification of certain trends, therefore, would seem highly opportune. With a variation of assumptions, of course, other theoretical calculations might be made in which more optimistic results are obtained. The rigid assumptions maintained in the present study - unpleasant as the results may seem to be - have at least the merit of showing what accelerations in some of the component trends are necessary if certain unfortunate consequences are to be effectively circumvented.

60/ Some arbitrariness cannot be avoided even in the "autonomous"projection, as the results depend on the selection of trends for independent extrapolation,others being determined as residuals. The variables selected here for extrapolation are the ones with relatively better statistical data and relatively greater inertia.

61/ The Demographic Work Group in Colombia is in consultation with the Planning Department as regards possible alternative assumptions. Naturally, it would be desirable also to consider carefully the financial and educational implications of any alternatives, so far as locally available data and knowledge permit.

/The projections

The projections presented in this section are intended to serve this rather speculative purpose. They should not be regarded as estimated of the most likely course of future developments. They should rather serve as an approximate gauge of needed expansions in some particular employment sectors in order to prevent an excessive expansion of other sectors of activity where employment or income levels are especially low.

Before proceeding to the projections, attention is first given to certain details in the composition of manpower according to the 1951 census and to corresponding statistics of the 1938 census and other sources. The interpretation of the projection depends on some of these considerations.

(a) Occupational composition, 1951

In the 1951 census, the following numbers, out of an economically active population of 3 756 000 persons, were tabulated according to ten groups of personal occupations:

Agricultural workers, fishermen, hunters, lumbermen, etc: 1 995 000 (1 898 000 men and 97 000 women). It is evident that the restrictive census criteria of 1951 recognized the "economic" character of the activities of farm women in only a relatively few cases.[62] It is known that there are some agricultural or related workers with considerable specialized knowledge or level of responsibility, though many are rather uneducated and unskilled. Some indications are provided by the 1951 classification according to ocupational position: 334 000 agricultural workers, etc. were classified as employers, 487 000 as self-employed (i.e. "working on own account"),278 000 as unpaid family helpers, 22 000 as salaried workers, 827 000 as wage workers, and 47 000 not classified in any of these categories. But, in the absence of a very detailed study, the relation of these social categories to levels of skill and responsibility is, at best, conjectural.

Artisans, factory operatives, etc: 569 000 (412 000 men and 157 000 women). Of this total, 400 000 were employed in manufacturing, 105 000 (mostly men) in building, and a smaller number in commerce, transport and services. It is probable that most of the 169 000 self-employed persons and 15 000 family workers in this occupational group should be

62/ At the 1938 census, 1 593 000 women were recognized as active in agriculture, but the criterion then used was very liberal.

regarded as artisans, while most of the 317 000 wage workers (257 000 men and 60 000 women) are factory or building workers. Again, this occupational group combines a wide range of skills on which the census provides little information.

Service personnel: 397 000 persons (83 000 men and 314 000 women). It can be presumed that a majority of the rather large number of women are domestics. Service personnel in receipt of salaries numbered 346 000 of whom 54 000 were men and 291 000 women, while the occupational status of 28 000 service persons (24 000 men and 4 000 women) was not classifiable.

Executive personnel, administrators, directors: 216 000 (182 000 men and 33 000 women). The category would seem surprisingly large, if it were not for the considerable number of persons whose responsibility is not of great scope. Thus, 100 000 persons of this administrative group were engaged in commerce, very nearly one-half of the entire manpower was devoted to commerce, and it is quite probable that many among them were managers of small establishments, e.g. retail shops. With respect to occupational position, only 23 000 persons in this managerial group were employers, while 132 000 were self-employed and 51 000 were salary-earners. The commercial "managers", most probably, in many instances operated only a one-man establishment.

Office personnel: 90 000 (66 000 men and 24 000 women). Most of these persons (84 000) were salary-earners. The employment of office personnel is an index of the rationalization of business and industry. Office personnel constituted the following percentages of manpower engaged in each major branch of activity: 0.04 per cent in agriculture; 3.7 per cent in mining; 2.6 per cent in manufacturing; 0.8 per cent in building; 7.3 per cent in public utilities; 9.2 per cent in commerce; 11.7 per cent in transport and communications; 4.4 per cent in services; and 9.4 per cent in other activities. Evidently, the degrees of rationalization vary tremendously among the economic sectors. This type of occupation might offer large opportunities, particularly for women, and in industries which undergo increasing rationalization.

/Professional and

Professional and technical personnel: 87 000 persons (55 000 men and 32 000 women). Again, the majority (62 000) are salaried employees, while 15 000 are self-employed. This occupational group represents a great variety of specializations, again probably at widely varying levels of competence. The professional and technical personnel constituted only 0.015 per cent in agriculture, 0.13 per cent in mining, 1.3 per cent in manufacturing, 0.8 per cent in building, 0.2 per cent in public utilities, 2.0 per cent in commerce and 1.0 per cent in transport and communications. A majority of the professional and technical personnel, namely 72 000 persons, however, exercised activities that were of a service character.

General labourers: 77 000 persons (66 000 men and 11 000 women). It is to be assumed that these persons constitute a mostly unskilled group. Of the men, 33 000 were found in transport and 18 000 in building; of the women, 9 000 were in services.

Transport workers: 74 000 persons, nearly all of them men, of whom 50 000 were salaried workers and 16 000 self-employed.

Sales personnel: 63 000 persons (43 000 men and 20 000 women) of whom 43 000 were salaried employees and 16 000 self-employed.

Workers in mines, quarries, etc: 48 000 persons (33 000 men and 15 000 women), including 16 000 self-employed (8 000 men and 8 000 women).

Others not classifiable elsewhere: 141 000 persons (134 000 men and 7 000 women). Of this number, 48 000 were engaged in providing services, 23 000 in agriculture, 10 000 in manufacturing and 9 000 in commerce; 39 000 persons in this group could not be classified by branch of activity. Whereas 43 000 such persons were employed for wages and 18 000 for salaries, the occupational position of 77 000 likewise remained unclassifiable.

(b) Occupational status composition, 1951 (i.e. employers, employees, etc.).

Data on the composition of manpower by occupational status are more directly relevant to certain socio-economic considerations. In particular, a distinction should be made between two broad segments of manpower: the work-contract segment, and the segment working on a basis other than cash contracts.

/The persons

The persons working for wages and salaries[63] are at once identifiable as that part of the labour force covered by the term "employment" in business accountancy. Statistics on wage levels, on pay-rolls in industrial establishments, etc., directly concern this sector of the work force. Changes in the "employment level" of the corresponding business establishments affect precisely the number of active workers earning wages and salaries. Whereas these contract workers, as individuals, vary in productive efficiency, and their labour is not always utilized to the best economic effect, there is at least, in most instances, a minimum level of productivity consistent with continuing employment; if a person falls below this level, business accountancy no longer justifies the payment of a wage or salary and the contract must be terminated.

The work-contract system, as an economic segment, also involves the group of employers. The ratio of employers to wage and salary workers can be roughly indicative of the average size of establishments though sometimes, e.g. in the case of a partnership or of sub-contracts, there can be more than one employer within the same establishment. In another respect, the status of "employer" may be a merely incidental function in relation to some kinds of labour, e.g. as regards the employers of domestic servants, whose principal economic function, identified in the census, may be of an entirely different character.

Most workers outside the work-contract system are identified in the census as "workers on own account", i.e., self-employed, to which must be added the reported number of their unpaid family helpers. In addition, it is probable that a majority of those reported at the census as of "other or unspecified status" - unless temporarily unemployed wage and salary workers - are also outside the work-contract system; the status of contractual workers should normally be more easily identifiable.

63/ Ordinarily, wage contracts are for predominantly manual labour and on short terms (by the week, day or hour), while salary contracts are for labour involving more intellectual effort and on longer terms (e.g. by the month). However, some types of manual labour, e.g. domestic servants, are also engaged on salary contracts. Also, various difficulties of census definitions and response biases of the enumerated population must be borne in mind. Many persons, might be engaged in intermittent activities, sometimes working for a wage and at other times on their own account, and there can be variations in the emphasis they give to one or another aspect of their activities on the occasion of the census.

/In the

In the segment of "self-employed" and associated positions, hardly any limits apply to the degree of labour efficiency, productivity or employment level. A person constrained to earn his living outside the system of work contracts will persist in doing so no matter how small his opportunity for a remunerative gain. Nevertheless, some persons working on their own account (e.g. professionals or technicians) posses very advanced skills in frequent demand and short supply, and may attain considerable incomes. These, however, are distinctly in the minority except perhaps in a highly developed economy or in a population with a universally high degree of education. As for the remainder of the self-employed, family helpers, etc., the degree of employment or under-employment, and resulting incomes, can fall to very low levels, there being little protection of their economic security.

Large pockets of under-employment can be suspected to exist among labour outside the system of work contracts, especially when their numbers tend to accumulate and competition becomes excessive. Especially in urban areas, where the provision of many necessities of life depends on cash transactions, precarious conditions of individual and social survival can result from such a state of affairs.

In rural areas and in agriculture, where the primary sources of subsistence are closer at hand, the role of cash transactions in securing a livelihood is less decisive. Some self-employed farmers may ensure their livelihood even with a minimum of cash provided that their land resources are sufficient. The living conditions of some under-employed rural workers also may be somewhat less precarious where the basic necessities for living are sometimes accessible on terms other than buying on the market.

Of a labour force of 3 756 000 persons in 1951, the following numbers were reported in various occupational situations:

Employers: 386 000 persons (361 000 men and 25 000 women). A great majority of these employers, namely 335 000 persons (315 000 men and 20 000 women) were agriculturists, hunters, fishermen, etc. It is probable that their levels of living comprise a very wide range. The next largest groups of employers were office personnel (i.e. office managers) numbering

/only 23 000,

only 23 000, and artisans, factory operatives, etc., numbering 18 000. It is evident that the number of large-scale employers, in any type of activity, could only have been rather small. With respect to the main branches of activity, 335 000 employers are found in agriculture, as against only 19 000 in manufacturing and 13 000 in commerce.

Self-employed (i.e. "working on own account"): 890 000 persons (728 000 men and 161 000 women). Again, a majority, namely 487 000 persons, were agriculturists, followed by 169 000 artisans or factory workers (probably mostly artisans), 26 000 service personnel, 16 000 sales personnel, and 15 000 professionals and technicians. According to branch of activity, 488 000 were engaged in agriculture, 152 000 in manufacturing, 102 000 in commerce, 50 000 in services, 19 000 in transport and communications, 16 000 in mining and quarrying, 15 000 in building, and 48 000 in other activities not classified.

The 890 000 self-employed were aided by 311 000 unpaid family helpers, consisting of 277 000 men and 34 000 women. Most of the family helpers, namely 278 000 are found in agriculture.

Work-contract labour totalled 1 972 000 persons, classified as 1 239 000 wage workers (or "workers") and 733 000 salary workers (or "employees"). Among the wage workers, only 88 000 were women. Because of the extensive group of female domestic servants, the 372 000 salaried women constituted a majority among the salary workers and, in fact, a majority among all women reported as "economically" active. The largest group of wage workers, numbering 818 000 (including only 24 000 women) is found in agriculture, followed by 215 000 (of which 53 000 are women) in industry, 98 000 (mostly men) in building, 31 000 (nearly all men) in transport and communications, and 27 000 (nearly all men) in mining and quarrying. The largest group of salary workers, numbering 484 000 (of which 372 000 are women) is found in the services, followed by 71 000 (mostly men) in transport and communications, 64 000 (of which 19 000 are women) in commerce, and 44 000 (of which 10 000 are women) in manufacturing.

Workers of other or unspecified status: totalled 197 000 (177 000 men and 20 000 women), including 75 000 in agriculture, 38 000 in services, 18 000 in manufacturing, and 40 000 in other or unspecified branches of activity.

/The above-listed

The above-listed categories permit the division of the labour force into a work-contract sector and a remaining sector, by a grouping of employers, wage and salary workers in the first group, and of self-employed, family helpers, and those of other or unspecified status into the second group. The absolute and relative size of the two sectors in each branch of activity is shown by the figures in table 65.

Table 65

COLOMBIA: NUMBERS OF ECONOMICALLY ACTIVE PERSONS, BY BRANCH OF ACTIVITY, DISTINGUISHING THE SECTOR OF CASH CONTRACTS AND THE REMAINING SECTOR, AND RELATIVE NUMBERS IN THE TWO SECTORS, 1951

Branch of activity	Numbers in each sector (in thousands)			Per cent in each sector a/	
	Work contracts	Remaining sector	Total	Work contracts	Remaining sector
Agriculture, forestry hunting and fishing	1 182	841	2 023	58	42
Mining, quarrying, etc.	36	25	61	59	41
Manufacturing	278	183	461	60	40
Building	109	24	133	82	18
Public utilities	10	0	10	93	7
Commerce	88	116	204	46	54
Transport and communications	103	27	130	79	21
Services	509	89	598	85	15
Other activities	45	90	135	33	67
All activities	2 358	1 398	3 756	63	37

a/ Percentages computed from unrounded data.

In commenting on these figures, it is necessary to point out that the apparently high proportion of work-contract occupations in services is largely conditioned by the presence of numerous female domestic servants. The low ratios of work-contract occupations in commerce and in other activities are noteworthy. In agriculture, work-contract occupations appear almost as frequent as in other branches of activity but, as will presently be shown, this is due to a large group of agricultural employers

/and a

and a comparatively small group of wage and salary employees. Shown in table 66 are the number of wage and salary workers per employer, and the number of family helpers and persons of other or unspecified status per self-employed person, in each branch of activity:

Table 66

COLOMBIA: NUMBER OF WAGE AND SALARY WORKERS PER EMPLOYER, AND OF FAMILY HELPERS AND PERSONS OF OTHER OR UNSPECIFIED STATUS PER SELF-EMPLOYED PERSON, BY BRANCH OF ACTIVITY, 1951

Branch of activity	Wage workers	Salary workers	Both	Family helpers	Others or unspecified	Both
	per employer			per self-employed		
Agriculture, etc.	2.44	0.86	3.30	0.57	0.15	0.72
Mining, quarrying, etc.	34.87	10.00	44.87	0.48	0.11	0.59
Manufacturing	11.43	2.34	13.77	0.09	0.12	0.21
Building	39.67	2.84	42.51	0.04	0.63	0.67
Public utilities	64.75	55.88	120.63	0.00	1.51	1.51
Commerce	0.85	4.94	5.79	0.06	0.07	0.13
Transport and communications	13.16	30.45	43.61	0.01	0.37	0.38
Services	2.12	61.33	63.45	0.04	0.77	0.81
Other activities	3.03	4.05	7.08	0.05	0.05	0.10
All activities	3.21	1.90	5.11	0.35	0.20	0.55

From these figures, it may be noted that commercial organizations is most thorough in public utilities, there being 121 cash workers for one employer. The figure appearing under services is misleading since the employers of the numerous domestic servants do not appear in the census in this function, which is only incidental. Organization, or average size of establishment, appears comparable in the cash sectors of mining, building and transport, with 42 to 45 employed persons per employer in each instance. By comparison, the smallest employers are those in manufacturing, commerce and, finally, agriculture; since some large enterprise exist in these branches of activity, the great majority of enterprises must be still smaller than the average.

/The ratio

The ratio of family helpers to self-employed persons is considerable only in agriculture and extractive industries.

(c) Composition by sector of activities, 1938 and 1951

Roughly comparable data on economically active males by major branch of activity are obtainable from the two population censuses. For simplicity, the branches will be grouped into the three main sectors which have now become classical in economic studies. The Primary Sector will be regarded as the sum of activities reported in 1951 under agriculture, forestry, hunting and fishing; and under extractive industries.[64] The Secondary Sector will be composed of manufacturing, building and public utilities.[65] The Tertiary Sector will be taken to comprise the remaining activities, namely: commerce, transport and communications, services and other activities.[66]

Data on females not being comparable at the 1938 census, it will be roughly supposed, as a first approximation, that the number of females in each sector have increased in somewhat the same proportions as the number of males. The number of males reported in each of these three sectors, and the corresponding average annual rate of increase for the 13-year period, are shown in table 67.

Table 67

COMOMBIA: NUMBER OF ECONOMICALLY ACTIVE MALES BY SECTOR OF ACTIVITIES 1938 AND 1951, AND AVERAGE ANNUAL RATE OF INCREASE, BY SECTOR. (NUMBER IN THOUSANDS; RATES IN PER CENT PER YEAR)

Sector	1938	1951	Rate of increase
Primary	1 810	1 975	0.7
Secondary	264	445	4.1
Tertiary	347	634	4.7

The slow rate of increase, 0.7 per cent per year, in the primary sector results from a slight decline in mining and quarring (52 000 males in 1938 and 45 000 in 1951) and a quite moderate increase in agriculture, etc., from 1 748 000 in 1938 to 1 930 000 in 1951. The latter increase

64/ All activities listed under Primary Production at the 1938 census.

65/ All activities listed under Transforming Industries at the 1938 census.

66/ Services, Liberal Activities, and Other Activities at the 1938 census.

/seems to

seems to have occurred at an average rate of 0.76 per cent per year but, in actual fact, probably at a somewhat higher rate when the census omissions in rural areas in 1951 are taken into account. Since, during the same period, the rural population increased from 6 168 000 to an enumerated 6 863 000, i.e. , at an average rate of 0.82 per cent per year, it would seem fair to say that the agricultural labour force increased at very nearly the same rate as the rural population. The extractive industries (mining, quarrying, etc.) are affected by fluctuations Hence, it would seem reasonable to suppose that the past trend indicates very nearly equal rates of increase for the primary sector of activities and for the rural population.

The increase in secondary activities can be assimilated rather closely with that in urban population. The urban population was enumerated as 2 534 000 in 1938 and as 4 366 000 in 1951, an average annual increase of 4.3 per cent, rather comparable with the 4.1 per cent increase in secondary employment of males and, possibly, a slightly more rapid increase in secondary employment of females. Secondary activities are, in fact, largely concentrated in urban areas, or emanate from these to sorrounding rural areas, and a fairly constant ratio of secondary activities to urban population might reasonably be expected.

The tertiary sector is, in fact, more widespread in urban than in rural areas, but it comprises various activities which do not depend so much on an urban location. This sector, furthermore, is ancillary to both primary and secondary activities and yet relatively independent of the materials produced in both. Very often, however, under-employment accumulates precisely in this sector, as numerous persons, otherwise without an occupation, attempt to offer services which require the possession of a minimum of skill, capital or materials. Hence, to a certain extent though not entirely, the growth of the economically active population in the tertiary sector as a whole can be regarded as the residual which remains after the absorption of given numbers of workers in the primary and the secondary sectors.

In the population projection it is assumed that the rural population will increase from 1951 onward, at a constant rate of one per cent per year. The urban population, in which the remaining population growth is absorbed, was calculated to grow at rates averaging 5.3 per cent in 1951-56,

/5.0 per cent

5.0 per cent in 1956-61, 4.6 per cent in 1961-66, 4.5 per cent in 1966-71, and 4.4 per cent in 1971-76 and 1976-81. To simplify the reasoning, it will now be assumed that from 1951 onwards the economically active population of the primary sector will grow at a constant rate of one per cent per year; that of the secondary sector at a constant 5 per cent per year; and that the remainder of the growth of manpower will be absorbed by tertiary activities.

(d) Projection of manpower by three sectors of activity, 1951-1981

The combined manpower, as projected in the preceding section (Section B) will increase rapidly, from about 3.8 million in 1951 to about 9.6 million in 1981. If the growth in the tertiary sector is to be regarded as the residual, estimates for that sector are obtained by subtraction of estimates for the primary and secondary sectors, for which annual growth rates of one, and five per cent respectively have been assumed. The results shown in tables 68 and 69 are obtained.

Table 68

COLOMBIA: ECONOMICALLY ACTIVE PERSONS (BOTH SEXES) BY SECTOR OF ACTIVITIES, 1951-1981, ACCORDING TO STATED ASSUMPTIONS

(In thousands)

Sector	1951	1956	1961	1966	1971	1976	1981
Primary	2 113	2 221	2 334	2 453	2 578	2 710	2 848
Secondary	604	771	984	1 236	1 578	2 014	2 570
Tertiary	1 067	1 345	1 700	2 195	2 763	3 419	4 207
Total manpower	3 784	4 337	5 018	5 884	6 919	8 143	9·625

Table 69

COLOMBIA: PERCENTAGE OF ECONOMICALLY ACTIVE PERSONS (BOTH SEXES) IN EACH SECTOR OF ACTIVITIES, 1951-1981, ACCORDING TO STATED ASSUMPTIONS

Sector	1951	1956	1961	1966	1971	1976	1981
Primary	55.9	51.3	46.6	41.7	37.3	33.3	29.6
Secondary	16.0	17.7	19.5	21.0	22.8	24.7	26.7
Tertiary	28.1	31.0	33.9	37.3	39.9	42.0	43.7
Total manpower	100.0	100.0	100.0	100.0	100.0	100.0	100.0

/The results

The results obtained for future dates can be compared with actual data for some other countries that are already more urbanized or industrialized than Colombia. Thus, in Cuba, the percentages in primary, secondary and tertiary activities, at the 1953 census, were 42.0, 19.9 and 38.1 respectively; in Chile in 1952 the percentages were 34.8, 23.7 and 41.5; and in Argentina in 1947 they were 25.7, 27.3 and 47.0. In the foregoing calculation, the composition of Colombian manpower would be similar to that of Cuba (1953) by 1966, that of Chile (1952) by 1976 and that of Argentina (1947) several years after 1981. In short, based on the experience of other countries the assumptions made in the present projection lead to results which are at least plausible.

The estimates imply that, of the annual gain of 190,000 workers during 1961-1971, about 24 000 would enter into primary activities, 60 000 into secondary activities and 106 000, i.e., decidedly the majority, into tertiary activities.

(e) Cash-contract and other workers

(i) In primary activities: The 1951 census reported in agriculture, forestry, hunting and fishing 794 000 male and 24 000 female wage workers, and 25 000 male and 4 000 female salary workers; in mining and quarrying, there were 26 000 male wage workers and 7 000 male salary workers, the numbers of female cash-contract workers being very small. Altogether, 882 000 wage and salary workers in primary activities were reported, of which 852 000 were male.

The 1938 census reported 787 000 male wage workers and 9 000 male "employees"[67] in agriculture, forestry hunting and fishing; and 36 000 male wage workers and 4 000 male "employees" in mining and quarrying. Altogether, the reported male wage and salary labour in primary activities was 836 000.

Since fluctuations occur in the mining industry, perhaps the agricultural wage and salary force alone should be compared, i.e., 796 000 males

67/ Salary workers, at both censuses, appear under the heading of "employees". However, it is probable that numerous persons reported in 1938 under the somewhat imprecise category of "Dueños, directores, patrones, gerentes" included some managerial or supervisory personnel also engaged on salaried contracts. Hence, the category of "employees", at the 1938 census, is in most cases probably an under-statement of the number of salaried personnel.

in 1938 and 819 000 in 1951. However, under-reporting of salary workers in 1938 makes it more significant to confine the comparison to wage workers: 787 000 males in 1938, and 794 000 in 1951. For a 13-year period, this is a negligible increase. In fact, it appears as though the number of wage and salary employments in agriculture or, generally in primary activities, has remained virtually stationary. One possible explanation is that the seekers of any additional wage or salary jobs, in rural areas, usually move to urban areas or to different types of employment.

Other primary occupational status categories of the 1938 census do not seem at all comparable with those of the 1951 census. If the number of wage and salary earners has not increased, it is probable that the number of employers likewise has not changed substantially.[68] Accordingly, it is probable that any increase in primary occupations, from 1938 to 1951, must have been reflected for the most part in an increase in numbers of self-employed agriculturists and their unpaid family assistants.

It would be most enlightening to possess corroborative information which indicates whether such economic and social changes have, in fact, occurred in rural employments. It would be interesting to know, furthermore, in which areas of the country, or under which types of cultivation, these changes have been most pronounced. Perhaps the results of the 1959-1960 agricultural enumerations (Directorio Agropecuario) will furnish some pertinent evidence, and perhaps there are also some other sources of relevant information.

It is possible, on the other hand, that the criterion used in the two censuses diverged so much as to forbid comparison. Agricultural labour relationships are complex and not easily defined with precision by any simple criterion.

However this may be, the available data suggest almost constant numbers of wage and salary workers. Accordingly, and for the lack of other information, let it be assumed that the number of these workers, as well as of their employers, also remains constant from 1951 onward.[69] In

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68/ Of course, a previously smaller number of employers could, on an average have employed larger numbers of wage and salary workers.

69/ Let it be recalled that the projections here made are not positive estimates of the probable future course of events. They are, rather, extrapolations of trends from past observations whose consequences will presently be examined.

/relation to

relation to the estimates already made, an increase in other workers (self-employed, family helpers, etc) will result as shown in table 70. True, too little is known about changes in agricultural structure to lend much significance to this calculation.

Table 70

COLOMBIA: ESTIMATED NUMBER OF WAGE AND SALARY WORKERS, EMPLOYERS AND OTHER ACTIVE PERSONS, OF BOTH SEXES, IN PRIMARY ACTIVITIES, 1951-1981

(In thousands)

Type of workers	1951[a]	1956	1961	1966	1971	1976	1981
Wage and salary	895	895	895	895	895	895	895
Employers	341	341	341	341	341	341	341
Self-employed etc.	877	985	1 098	1 217	1 342	1 474	1 612
Total, primary	2 113	2 221	2 334	2 453	2 578	2 710	2 848

a/ Including an allowance for census under-enumeration in rural areas.

The result of such a trend is a rapid increase in the number of self-employed workers and family helpers. Thus, during 1961-1971, about 24 000 such persons would be added annually to the labour force, the increase being at an annual rate near 2 per cent. Such a development might, in fact, occur, in relation to spontaneous and programmed land settlement and reform; the number suggested annually by the above figures is rather large and the consequent social transformation of agriculture would be quite significant. The self-employed farmers, and their active family helpers, would have to become a majority during the 1960's. It would be necessary, furthermore, that an increasing proportion of such a growing number of independent farmers become efficient market producers. The ratio of the farming population to the total population is a diminishing one. Hence - aside from balances of international trade and industrial uses of some farm products - the average rural worker has to produce food for more and more consumers in the nation as a whole.

/(ii) In secondary

(ii) In secondary activities: Two industrial censuses were taken in Colombia, one in 1945 and one in 1953. The latter has also been followed up by repeated surveys with results published, at least, up to 1957. A census of commerce and services was taken in 1954. All these censuses and surveys, however, were taken on a basis of economic establishments, and exclude certain categories of the economically active population making comparison difficult.[70] Accordingly, the basic information for a comprehensive calculation still depends mostly on the population census of 1938 and 1951.

At the population census of 1951, the following members of work-contract employees were encountered in manufacturing (including public utilities, but not including building): 167 000 male and 53 000 female wage workers and 38 000 male and 10 000 female salary workers, for a total force of 286 000 persons, of whom 205 000 were males.

The corresponding[71] numbers in 1938 were: 86 000 male and 64 000 female wage workers, and 16 000 male and 5 000 female "employees". These data, however, require adjustment before they can be compared with the 1951 data. First, in three of the reported industries[72] incomparably large numbers of females were then returned as "economically" active,

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70/ The industrial censuses exclude industrial establishments below a specified minimum size. They also seem to have omitted some industries (e.g. building materials and repair shops) included in the population censuses. Labour not connected with a definite establishment, or temporarily unemployed, is not found in an establishment census. To a lesser extent these reservations also apply to the census of commerce. In the census of services, the omission is particularly great since numerous services are performed outside any fixed establishment. The surveys conducted after the 1953 industrial census may have a downward bias, as is doubtful whether new establishments, or establishments that were below minimum size in 1953 but have since then increased, have in all instances been included. By contrast, the coverage of a population census is exhaustive and omissions, if any, are only in the nature of a general under-enumeration, without systematic exclusion of any particular category.

71/ At the 1938 census, twenty-six branches of industry (including public utilities and building) were listed, identified by consecutive numbers from 6 to 31. Of these, Nos. 29, 30 and 31 relate to the building trades and are not included here.

72/ Nos. 18 (animal and vegetable fibres), 27 (tailoring, etc.) and 28 (hat-making).

/and it

and it may be suspected that, by the standards of 1951, their activity was usually more of a "domestic" character. Second, as already noted in primary activities, the reported number of "employees" was an under-statement of the numbers of wage workers. After some rough adjustments[73] the wage and salary force in manufacturing in 1938 may be estimated as follows: 86 000 male and 27 000 female wage workers and 20 000 male and 5 000 female salary workers for a total force of 138 000 of whom 106 000 were males. If the estimate is comparable with the 1951 data, the increase from 138 000 in 1938 to 286 000 in 1951 would have occurred at an average annual rate of 5.8 per cent.

The wage and salary force recorded at the 1945 industrial census was 135 000 (of whom 90 000 were males) while at the 1953 industrial census the corresponding number was 181 000. The 1957 survey recorded a total of 217 000. Though not comparable with the population censuses, these figures might be comparable with one another[74] and might be roughly representative of all manufacturing activities. If so, an increase from 1945 to 1957 at an average annual rate of 4.1 per cent would seem to be indicated; during 1953-57, the rate may have average 4.5 per cent. If the recent surveys failed to include some new establishments, the true rate of increase may perhaps have been even slightly higher.

In building, the 1951 census reported 105 000 male wage and salary workers, while the 1938 census reported 77 000 male wage workers and "employees". Female wage and salary labour in the building industry has remained very small. There may be some inaccuracies in the comparison but, in any event, a much lower rate of average annual increase is indicated than in the case of manufacturing. However, as is known, the building industry is subject to wide short-term fluctuations. The trend in manufacturing, on the other hand, may be more nearly indicative of the general trend in secondary activities.

73/ Retaining the reported numbers of males in all industries (6 to 28) and assuming a ratio of females to males in industries Nos. 18, 27 and 28 equal to the ratio in the remaining industries. Also, assuming the same ratio of salary workers to wage workers as in 1951, as further confirmed by the industrial census of 1945.

74/ At the 1945 census, industrial establishments with an annual output of less than 6 000 Colombian pesos were excluded. At the 1953 census, industrial establishments were excluded if they employed less than five workers or if their annual output was less than 24 000 pesos

/The trend

The trend in manufacturing activities has been estimated as 5.8 per cent during 1938-51 and 4.5 per cent during 1953-57. Applying the latter rate to 1951-57, one obtains an average rate of 5.4 per cent per year for the entire period from 1938 to 1957. This rate is as high as the estimated rate of increase in urban population around 1951, and higher than the increases in urban population estimated for subsequent periods. Let it be assumed, then, that wage and salary employments in all secondary activities continue to increase at this average rate which, admittedly, is high.

The number of secondary employers, 21 000 in 1951, is comparatively small and probably increasing less rapidly than that of the wage and salary force since there is probably a tendency for the average size of establishments to increase. Since an accurate estimate of the number of employers is not being sought, let it be assumed that their number increases at an annual rate of 3 per cent, which might be plausible. Together with estimates of the total secondary labour force already made, the present assumptions result in the figures presented below.

Table 71

COLOMBIA: ESTIMATED NUMBER OF WAGE AND SALARY WORKERS, EMPLOYERS, AND OTHER ACTIVE PERSONS, OF BOTH SEXES IN SECONDARY ACTIVITIES, 1951-1981

(In thousands)

Type of workers	1951	1956	1961	1966	1971	1976	1981
Wage and salary	375	488	635	826	1 074	1 397	1 817
Employers	21	24	28	32	37	43	50
Self-employed, etc.	208	259	321	378	467	574	703
Total, secondary	604	771	984	1 236	1 578	2 014	2 570

The calculation suggests, for the 1961-1971 period, an annual increase of 45 000 in the number of cash-contract workers, but also a continued increase, of about 15 000 each year, in the number of self-employed (including family helpers, etc.).

/The industrial

The industrial product of the cash-contract sector, because of more efficient organization, is far greater than that of the remaining segment. To maintain an increase at the annual rate of 5.4 per cent in the wage and salary force, this product will have to grow at a still higher annual rate. Otherwise, the product per worker would not rise and the level of remuneration could scarcely improve.

As is known, a large part of the considerable group of self-employed industrial workers are craftsmen who, with an increasing industrial output, are likely to become displaced by the competition. Others among the self-employed, e.g. persons engaged in mechanical repairs, may well prosper while the product of manufacturing industries is rising. The composition of the group of self-employed by occupations and levels of skills, therefore, would have to change rapidly and substantially, not only to make up for the unemployment of artisans whose competition with large-scale industries is becoming impossible, but also to provide auxiliary goods and services which the growth of industry makes increasingly necessary. Extensive programmes of training, re-training, apprenticeship and guidance may become necessary to help bring about the changes in the structure of the self-employed work force engaged in secondary activities.

(iii) In tertiary activities: In the category of transport and communications,[75] wage and salary workers (both sexes) numbered 49 000 in 1938 and 101 000 in 1951. The separate numbers of wage workers and salary workers (or "employees" in 1938) are difficult to compare, and it is probable that this branch of activities, as a result of motorization, has undergone a considerable structural change. On the other hand, as in other activities, the number of "employees", in 1938, may be an understatement of the number of salary workers. At any rate, given the undoubted development of this branch of activities, a doubling in the wage and salary force from 1938 to 1951 may easily have occurred.

Commercial wage workers (both sexes) numbered 6 000 in 1938 and 11 000 in 1951, but it is doubtful that the "employees" in commerce, numbering 22 000 in 1938, can be compared with a salaried personnel of 64 000 in commerce in 1951. More probably, the commercial "employees" of the 1938

75/ Activities listed under numbers 32-37 in the 1938 census.

/census should

census should be compared to the sales personnel in commerce (according to the occupational classification) reported in 1951, which numbered 44 000. Again, the accuracy of the comparison is in doubt, but it appears likely that the wage and salary force in commerce, like that in transport, has doubled. Because of the inter-relations between commerce and transport, proportionate increases in both activities may be nearly the same, unless there should occur a large differential gain in efficiency in the one activity as compared with the other.

The number of female domestic servants is not directly provided by either of the two censuses. While they may be over-estimates, comparable figures may be as follows: 206 000 in 1938 and 304 000 in 1951.[76/] The number of female domestic servants, then, would have increased at an average annual rate near 3.0 per cent. Since there has been a large increase in numbers of females in service activities, generally, this rate of increase in female domestic service appears at least plausible. The actual number of female domestic servants, however, was probably smaller, as the same category may include other service workers of a non-professional type, e.g. auxiliary hospital personnel, etc. On the other hand, there were also undetermined numbers of male domestic servants.[77/] Conceivably, there was some compensation of numbers. For the lack of better information, then let it be assumed that the above-mentioned numbers of females are equivalent to numbers of domestic servants of either sex.

After subtraction of these rough estimates pertaining to domestic services, the remaining wage and salary force in "services" is reduced to 107 000 persons in 1938[78/] and 196 000 in 1951. However, definitions may have changed so that some persons reported in "services" at one census may have been reported in "other activities" at the other. Perhaps these

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76/ 1938: females reported in category 60 of activities, and female service personnel reported in agriculture; 1951: female service personnel (occupational classification) reported as engaged in "services" (classification of branches of activity).

77/ 60 000 male "servants" were counted in 1938, of whom 36 000 were in agriculture.

78/ Wage and salary force in categories 39-51.

estimates are comparable for "services" and "other activities" combined, but not including domestic service: 137 000 in 1938[79] and 235 000 in 1951. The rate of increase, in this combined group, would have averaged about 4.2 per cent.

The tertiary wage and salary force has thus been divided into three groups with apparently different rates of increase, none of which could be determined accurately: those in transport, communications and commerce, doubling in 13 years, seem to have grown at a rate of 5.4 per cent; those in domestic service, at 3 per cent; and those in other services and other activities combined, at 4.2 per cent. For all three groups combined, an increase from about 431 000 in 1938 to 716 000 in 1951 seems to have occurred, i.e. at an annual rate of very nearly 4 per cent. Let this rate be retained in the present calculation. As for the small number of tertiary employers (28 000 in 1951), an annual rate of 3 per cent might be more appropriate to allow for a gradual rise in the average size of establishments.

Table 72

COLOMBIA: ESTIMATED NUMBER OF WAGE AND SALARY WORKERS, EMPLOYERS, AND OTHER ACTIVE PERSONS, OF BOTH SEXES, IN TERTIARY ACTIVITIES, 1951 - 1981

(In thousands)

Type of workers	1951	1956	1961	1966	1971	1976	1981
Wage and salary	716	871	1 060	1 290	1 569	1 909	2 323
Employers	28	32	37	43	50	58	67
Self-employed, etc.	323	442	603	862	1 144	1 452	1 817
Total, tertiary	1 067	1 345	1 700	2 195	2 763	3 419	4 207

The most disturbing result of these various assumptions - presently to be re-examined - is a very rapid and accelerating growth in the number of self-employed persons in tertiary activities (see table 72). While some of them, of course, provide skilled services in great demand, they constitute only a minority.[80] Some other are independent businessmen, including

79/ Including category 61 (activities not properly defined).

80/ 19 000 persons were counted in the "liberal professions" in 1938. In 1951, there were 15 000 self-employed professionals and technicians and 6 000 of "other or unspecified status".

/some with

some with an appreciable turn-over of goods, but probably many, such as street vendors, whose turn-over is very small.[81/] Many, finally, offer a profusion of petty services involving little skill and far in excess of demand. There is little doubt that a considerable part of the tertiary self-employed (including family helpers and those of "other or unspecified status") are chronically under-employed.

According to the calculations, the tertiary labour force outside the system of work-contracts would be growing at an extraordinary rate, e.g. almost doubling in the ten years from 1961 to 1971 (an average rate of nearly 7 per cent). It is unlikely that the more highly productive minority among them, such as skilled technicians, or persons conducting a sizeable one-man business, can absorb a significant part of this growth. The logical consequence then is a disastrous growth in the number of under-employed persons suffering from increasing competition in the offer of goods or services in little demand.

(f) Comparison of results of the theoretical calculations

All the foregoing calculations are theoretical. They depend on assumptions which must be re-examined in the light of their results. The principal results are assembled in the table below with respect to 1961 and 1971, a distinction being made between the work-contract segment of the labour force (employers, wage workers and salary workers) and the remaining segment (self-employed, unpaid family helpers, and those of "other or unspecified status").

81/ In 1951, there were 102 000 self-employed persons in commerce, in addition to 6 000 family helpers and 7 000 persons of "other or unspecified status". At the 1954 census of commerce, a total of 104 118 establishments were surveyed, with a combined sales turnover of 7 826 000 Colombian pesos, and a wage and salary personnel of 81 337 persons. Of these, 49 954 establishments were in the retail grocery trade ("abarrotes"), employing only 12 197 workers and employees, with a sales turn-over of only 860 000 pesos.

/Table 73

Table 73

COLOMBIA: CALCULATED MANPOWER, 1961 AND 1971, BY MAJOR BRANCHES OF OF ACTIVITY, WITH DISTINCTION OF THE CASH-CONTRACT SEGMENT AND THE REMAINING SEGMENT, AND AVERAGE ANNUAL INCREASE, 1961-1971

(In thousands)

	1961	1971	Average annual increase, 1961-1971 (thousands)	(Annual per cent rate
Primary activities				
Work-contract segment	1 236	1 236	0	0.0[a]
Remaining segment	1 098	1 342	24	2.0
Total, primary	2 334	2 578	24	1.0[b]
Secondary activities				
Work-contract segment	663	1 111	45	5.4[a]
Remaining segment	321	467	15	3.8
Total, secondary	984	1 578	60	5.0[c]
Tertiary activities				
Work-contract segment	1 097	1 619	52	4.0[a]
Remaining segment	603	1 144	54	6.6
Total, tertiary	1 700	2 763	106	5.0
All activities, combined				
Work-contract segment	2 996	3 966	97	2.8
Remaining segment	2 022	2 953	93	3.9
Total labour force	5 018	6 919	190	3.3

a/ Assumed according to observations from censuses.

b/ Assumed according to the rate of increase in rural population, in the population projection.

c/ Assumed according to the approximate rate of increase in urban population, in the population projected.

Manpower as a whole, during 1961-1971, would be increasing at a rate of 3.3 per cent. This is more than the rate of population growth, according to the population projection (2.9 per cent per year), because of increasing economic participation of women, especially under conditions of rapid urbanization. The average annual increase in manpower is 190 000 persons.

While primary activities have been assumed to increase in proportion to the rural population, and secondary activites approximately in proportion to the urban population - as resulting in the population projection - the

/increase in

increase in tertiary activities is obtained as a residual.[82] This increase would occur at a rate of 5.0 per cent per year, or an annual addition of 106 000 workers, i.e. a majority of all workers added to the labour force. Only 24 000 workers would be added annually in the primary sector and 60 000 in the secondary sector.

To assume that primary activities grow at a faster rate than the rural population would seem unreasonable. Of course, the population projection itself, where a continued 1 per cent growth in rural population was assumed, might be at fault. Nevertheless, since the rural population was recorded as growing no faster in preceding periods, there appeared no reason for assuming an acceleration in its growth. The tendency in many countries is for rural population increases to slow down rather than to accelerate. Of course, it remains quite possible that, as a result of decisive changes in rural and agrarian structure a larger annual absorption of rural employment can take place. If the absorption is to be considerably greater than the 24 000 projected here, the induced changes in agrarian structure, presumably, would have to be no less considerable.

There appears little prima facie reason for assuming that secondary activities will grow faster than the urban population. Let it be recalled that all the population of localities greater than 1 500 inhabitants has been classified as urban. As big cities grow in size, activities that are ancillary to industry, i.e. certain tertiary occupations, tend to grow more rapidly than the strictly industrial activites. True, there may be some compensation through the growth of modest and small-scale industry in small towns, or the fostering of certain industrial activites, e.g. food processing which can be widely dispersed. A faster increase in secondary activities than in urban population would require a certain spread of industrial processes into small towns and rural areas where employment of this type, at the present time, is rather scarce.

82/ Of course, different extrapolations might have been made, e.g. through extrapolation of past trends in, say, the primary and the tertiary sector, while the secondary is derived as a residual, etc. However, those procedures would not rest on such plausible assumptions. Actually, estimates which have been made independently by other methods (e.g. industrial output and output per worker, etc.) have led to results for recent dates which do not differ much from the present calculations.

/An accelerated

An accelerated residual growth of tertiary activites, therefore, is an almost inevitable outcome unless measures can be put into effect which permit more rapid absorption of labour in primary and secondary employment than the projected rates of growth in rural and urban population. As the comparison with statistics for Cuba, Chile and Argentina indicates, the calculated future re-distribution of activities among the primary, secondary and tertiary sectors is, in fact, quite plausible, to judge by the experience of countries with somewhat more developed economies than that of Colombia.

The plausibility of the future re-distribution among the contract sector and the remaining sector of employment is more open to question.

As regards the structural change of manpower within the primary activities, a significant interpretation cannot be given while there is so little knowledge of structural relationships within agriculture. A constancy in the work-contract segment seemed suggested by census statistics of doubtful comparability. Social and economic conditions vary widely among the rural areas of the country and it is not certain that the census concepts have been well adapted to reflect the changes which occur in the course of time. There appears a tendency for self-employed farmers to become more numerous. Such a tendency might be consistent with developments in the fields of land settlement and other re-distributive reforms.

The structural change calculated for the secondary activities also can reasonably be expected. It is particularly in this group that the criteria of business accountancy become increasingly dominant. Also, small manufacturing businesses, such as one-man shops employing no wage workers, are declining as a result of competition. According to the calculations, 67 per cent of secondary employments would be in the cash-contract sector in 1961 and 70 per cent by 1971.

While the results considered so far may be plausible, the crux of the problem lies in the possible changes of the tertiary sector.

Even here, it will be recalled, the growth of cash-contract employment in transportation and commerce was assumed to equal the high rate found

in manufacturing and building.[83] A fairly high rate of growth also seemed indicated for cash-contract employment in "services" other than domestic services. Domestic services seem to have been increasing more slowly, if the figures that were compared are comparable enough. The increase in numbers of domestic servants might, of course, proceed at a higher rate, but this could hardly be regarded as a satisfactory solution of the employment problem.

A review of the various assumptions makes it difficult to escape the conclusion that - unless there is a marked modification of some past trends, and a very significant increase in the efficiency of industry and supporting services - the segment of tertiary activities outside the system of cash-contracts will increase at a rapid rate, implying an even more rapid growth in the ranks of certain categories of workers among whom under-employment is most prevalent. A considerable effort will therefore have to be made if under-employment is not to become more widespread than it already is.

(g) Necessary modification of past trends

It is evident that this last-mentioned consequence of certain past trends should be strenuously avoided. This can only be done if larger numbers of workers can be absorbed within other segments of the economy than the continuance of past trends permits. How many such workers would have to be absorbed?

The question cannot be answered precisely since the calculations have been carried forward from data for 1951, whereas we are already beyond the year 1961. It is not known whether the past trends, as calculated here, have in fact persisted from 1951 to 1961.

83/ There is some room for speculating whether, as a result of greater productivity of industry, the ratio of remunerative cash-contract employment in commerce transportation and some other supporting services to corresponding industrial employments might not increase significantly in time. Such a rise in efficiency both in industry and in supporting services, however, would require heavy financial as well as educational investments.

/Nor is

Nor is there any objective criterion as to a desirable rate of growth in the problematic segment of tertiary self-employed and related categories. Some growth in the productive minority among them, i.e. those who independently perform services in great demand, is of course desirable. As regards the remainder, an absolute decrease might well be desired. But such an objective is unattainable in the foreseeable future. What increase in the results of the under-employed is permissible under present conditions? There is no objective answer to such a question.

If further increases in that particular segment are to be avoided then, as suggested in the preciding figures, some 54 000 additional persons annually would have to find remunerative activities of a different type. This number is greater than the calculated annual additions to the work-contract force in either secondary or tertiary activities and far greater than the calculated increase in agricultural manpower. An absorption of workers in secondary activities at twice the calculated rate would demand a stepping-up of manufacturing and related activities at a phenomenal pace, requiring huge capital investments. A faster increase in the tertiary wage and salary force is contingent on a considerable rise in the productivity of industry; otherwise, it might severely depress the levels of earnings of the persons already engaged in those activities. A faster absorption of labour in agriculture can scarcely be accomplished without far-reaching reforms in that sector.

Economic development targets will have to take full cognizance of the need for manpower absorption in large numbers of activities where levels of employment and remuneration are at least tolerable. Other economic targets, such as the rise in the global national product, might ultimately be defeated in large increases in the number of under-employed result in corresponding increases in social tensions. High productivity of some sectors and widespread employment in sectors having tolerable productivity levels, are two interrelated goals. Balanced planning is necessary so that undue attention to productivity in one sector does not tend to depress employment in another, and vice versa. The main task perhaps is that of creating the conditions which prevent an undue accumulation of tertiary activities which are not of the cash-contract type.

/4. Population Growth

4. Population Growth and Housing Problems

(a) Estimates of the type suggested by the Pan American Union

The Pan American Union has made an evaluation of the scale of housing needs for the twenty Latin American republics, using for this purpose population estimates and other data related to the year 1951.[84/]

First, taking the quality of buildings into account, the existing (i.e. 1951) housing shortage was estimated. Available data indicated that, on a Latin American average, 45 per cent of all dwellings in metropolitan areas (cities with 100 000 or more inhabitants), 25 per cent in other urban areas, and 80 per cent in rural areas, were so poor as to require complete replacement. In addition, 40 per cent of metropolitan and 50 per cent of other urban dwellings were in great need of extensive repairs.

If Colombian conditions in 1960 were no different from the 1951 Latin American average, the percentages suggested by the Pan American Union would indicate the following dimension for the Colombian (1960) housing shortage:

To be replaced: 225 000 metropolitan[85/] 130 000 other urban and 960 000 rural dwellings; and

To be repaired: 200 000 metropolitan, and 260 000 other urban dwellings.

Needed annual construction and repair was calculated, for all of Latin America, in the above sources, by making the following assumptions:

(a) allowing a 30-year period for overcoming the existing shortage, through constructing annually 3.33 per cent of the number of dwellings needing total replacement, and repairing 3.33 per cent of those in need of extensive repair;

(b) allowing for gradual replacement of dwellings in "good" condition, as a provision against deterioration in the course of time; this requires annual construction of 1 per cent of existing "good" dwellings in metropolitan areas, and of 2 per cent of "good" dwellings in other urban, and in rural areas;

84/ Problems of Housing of Social Interest, Pan American Union, Washington, D.C., 1954.

85/ Cities which had 100 000 or more inhabitants at the 1951 census: Barranquilla, Bogota, Bucaramanga, Cali, Cartagena, and Medellin.

/(c) allowing for

(c) allowing for demographic increase in metropolitan, other urban and rural areas.

When these assumptions are applied to the Colombian (1960) population and housing estimates, the following results are obtained.

Annual construction:

(a) 8 000 metropolitan, 4 000 other urban and 32 000 rural dwellings to replace those now in poor condition;

(b) 1 000 metropolitan, 3 000 other urban and 5 000 rural dwellings against deterioration of those in "good" condition; and

(c) 28 000 metropolitan, 22 000 other urban and 12 000 rural dwellings to provide for the rate of demographic increase.

Annual repair:

(a) 6 000 metropolitan and 8 000 other urban dwellings.

In this way - not including repairs - the annual construction of 37 000 metropolitan, 29 000 other urban, and 49 000 rural dwellings would be needed in 1960, for a national total of 115 000 new dwellings. With the continuing population growth, a larger number of constructions would be required in each subsequent year. It is to be noted that the demographic factor alone accounts for three-quarters of the construction needs in urban regions, but only for one-quarter in the rural areas. The average condition of rural housing, to be sure, is even more deplorable, but rural population increases are considerably slower.

(b) Problems of policy

The housing needs are enormous, the cost of meeting them high, and financial resources are limited. The resulting policy problems have been summarized in six main points at the National Housing Seminar held in Bogota in 1955.[86/] At least two of these points are of demographic relevance, namely:

> "Three - The following dilemma arises: Is it better to have a total solution for the benefit of a few or an intermediate solution for the benefit of many? The present capacity of the ICT (Instituto de Crédito Territorial) clearly precludes an over-all, complete solution of the problem.

86/ Instituto de Crédito Territorial, Una política de vivienda para Colombia, 1955, pp. 38-39

/"Five - Particular

"Five - Particular attention should be given to the serious problem created for ICT constructions in cities by the high cost or urban land."

The above-quoted third point raises the problem of criteria for the selection of limited objectives to which existing funds can be applied. A decision as to the most relevant criterion, in the last resort, is a matter from which arbitrary judgement can hardly be completely eliminated. The degree of urgency varies among areas and population segments, and it also varies among particular aspects of the housing deficiency (e.g. poor roofing, water supply, etc.). The cost of meeting needs in particular areas, or in relation to particular aspects, also varies. Furthermore, there is a variation in the extent to which additional, or latent, resources can be mobilized to improve housing conditions in various areas or under various aspects with contributions by private investment, self-help, mutual aid, or communal-action schemes, so that the residual cost to public agencies can be reduced. To the extent that this can be determined, policy should be directed at those objectives where a maximum of needs can be met at a minimum residual public cost. The weighing of costs and the urgency of needs require investigations which combine economic, technological, sociological and, also, demographic criteria.

The fifth policy problem referred to above points at the specially high costs of urban housing. Incidentally, not only housing, but other costs such as transportation, water supply, etc., are also apt to be highest in the big cities. But the existing migratory tendencies lead precisely to a most rapid increase in particularly serious urban housing problems, and those of other related costs. If migrants could be induced to move more often to areas other than the big cities, the size of this type of problem might be reduced somewhat. However, this would involve policy considerations outside the housing field, such as inducements for a decentralization of economic enterprise, etc. In the absence of the latter type of policy, there is no alternative but to face up to the growing urban problems.

(c) Estimates of the Corporación Nacional de Servicios Públicos

One highly relevant criterion for a housing policy is the avoidance of certain forms of over-crowding of dwellings. One way of measuring the extent of over-crowding is to compare the number of families with the

number of dwelling units. Where the latter are significantly less numerous than the former, it is evident that a sharing of dwellings by one or more families must often occur. The policy objective can then be to make dwellings eventually numerous enough so that sharing of the same dwellings by two or more families is no longer necessary.

True, this criterion does not take into account the physical condition of existing dwellings, lack of floor-space, sanitary facilities, or adequate building material, etc. Nor is the rate of deterioration of existing dwellings, of any quality, taken into account. But, the needs being so great in relation to the means, attention to these additional problems may be regarded as of secondary concern in relation to the priority given to the objective of reducing the state of over-crowding.

Adopting this criterion, the CNSP (Corporación Nacional de Servicios Públicos) has estimated the housing deficit of 1951 according to data from the censuses of population and housing of that year, and calculated subsequent changes in the deficit according to estimates of population growth and statistics on building permits.[87] The claim is not made that the estimates are highly accurate. Since the needs are so great and can only partially be met, policy can be guided by estimates which are at least reasonable approximations. The relative simplicity of the method of estimation, furthermore, is an additional advantage, making it possible to define the problem in rather simple terms which, nevertheless are concrete and relevant. Of course, there can be several sources of error in the CNSP estimates[88]

87/ Déficit y Demanda de Vivienda en Colombia, Corporación Nacional de Servicios Públicos, Departamento de Vivienda, Estudios Socio-económicos No. 3, 1956.

88/ At the 1951 censuses, the number of families and the number of dwelling units may have been ascertained with varying accuracy; for instance, dwellings initially destined for use by one family may have been partitioned, for the purposes of two or more families, by various adaptations, making it difficult to ascertain whether they should still be regarded as single dwelling units, or rather as two or more separate dwellings. Another source of error may be that statistics on building licences do not reflect accurately the number of new dwellings which have been constructed: some dwellings are being erected illegally and their number is difficult to estimate; additional dwellings may also have been created, in relation to existing ones, through various adaptations. The estimates of population growth, finally, are those made by DANE (Departamento Administrativo Nacional de Estadística) on the basis of extrapolation of rate of growth calculated from the censuses of 1938 and 1951; in the case of urban areas, where there are no statistics showing the rates of (cont.)

/but it

but it is probable that the order of magnitude of the problem to be dealt with, under the given criterion, has been assessed fairly correctly.

In the CNSP study, it was noted that in 1951 there were 1 161 000 rural families, as compared with 1 212 000 rural dwellings (not all of them occupied). To be sure, rural housing suffers from the severest deficiencies in the size and quality of dwellings and the provision of sanitary facilities. However, the need for two or more families to share the same dwelling, as it seems, arises rather rarely. Nor is it likely that a large need of this kind will arise in the foreseeable future, rural population increases being comparatively slow. From the standpoint of the CNSP criterion, then, a housing deficit in rural areas hardly exists. The making up of the rural deficiencies is not an objective for agencies whose policy is based on this criterion, though it might very well form part of other policies, such as community development, land reform, basic rural education, etc.

In urban areas, by contrast, there were, in 1951, 779 000 families, accommodated in only 663 000 dwellings (not all of them occupied). By the CNSP criterion, then, there was an absolute deficit of at least 116 000 dwellings.

More detailed examination showed that this deficit is mostly confined to towns having at least 10 000 inhabitants. There were 56 such towns in the 1951 census to which, for special reasons, the CNSP study added 8 other towns with a population of less than 10,000 but likely to have significant housing problems. In these 64 towns combined, 518 000 families, in relation to 402 000 dwellings, again represented an absolute deficit of 116 000.

Very nearly 100 000 of this total urban deficit was found in no more than sixteen of the larger cities and towns,[89] including deficits amounting to 44 000 in Bogota, 14 000 in Cali, 9 000 in Barranquilla, 6 000 in Medellin, and 4 000 each in Bucaramanga and Cartegena, i.e., a total of about 81 000 in the six cities which had 100 000 or more inhabitants in 1951.

88/ (Cont.) migration, it would be difficult to proceed in any other manner and the estimates obtained for the larger cities, incidentally, do not differ much from those made in the present report (Part I, Section C).

89/ Bogota, Cali, Barranquilla, Medellin, Bucaramanga, Cartagena, Ibague Pasto, Palmira, Pereira, Buenaventura, Girardot, Armenia, Barrancabermeja, Tulua and Cucuta.

By 1965, according to the calculations, the deficit of the sixteen towns and cities would have risen to 153 000 (57 000 in Bogota, 26 000 in Cali, 17 000 in Barranquilla, 13 000 in Medellin, 7 000 in Bucaramanga, and 5 000 in Cartagena, i.e., 125 000 in the six major cities alone).

This series of estimates has been continued further.[90] In the sixteen cities and towns combined, the housing deficit may have attained 247 000 by the end of 1959. From that date onward, the operations of the Instituto de Crédito Territorial have expanded and are expected to increase further. It is hoped that by 1964, a year when as many as 40 000 dwelling units are to be erected with the aid of the ICT, and allowing for an annual construction of 16 000 to 19 000 dwelling units by private builders and other agencies, the deficit of the sixteen towns and cities will cease to grow further, having reached a total of about 275 000 units.[91] Of course, many years will then have passed since the population and housing censuses of 1951, making it less certain that the calculation can be very accurate.

(d) Coincidence of CNSP and PAU estimates

Reference is made, again, to estimates of Colombian housing needs obtained by applying the method of calculation suggested by the Pan American Union. According to these, about 66 000 urban dwelling units - 37 000 metropolitan and 29 000 other urban - would have to be built in 1960, and an additional 14 000 urban units - 6 000 metropolitan and 8 000 other urban - would have to be repaired. The criteria relate to the quality of existing housing, rather than to a measure of over-crowding.

According to the projection of the CNSP estimates, about 45 000 dwelling units would have to be erected in 1960 in the sixteen towns and cities, in which most of the over-crowding occurs, if the number of over-crowded units is not to increase further; by 1964, stabilization of the number of over-crowded dwellings in the sixteen towns and cities may require the annual construction of 56 000 units.

90/ Colombia, Consejo Nacional de Política Económica y Planeación; Departamento Administrativo de Planeación y Servicios Técnicos, Plan Cuatrienal de Inversiones públicas Nacionales - 1961-1964, p.341.

91/ Ibid., p.349

/The criteria

The criteria of the two sets of calculations differ, but the order of magnitude is very nearly the same, allowing for the difference in concepts. It may be said that the annual construction of some 60 000 to 70 000 units in all urban areas combined, in the 1960-1964 period, can be adequate for either of two purposes: it may suffice to prevent a further increase in the number of dwellings in which two or more families must live jointly; and it may suffice for a programme of long-range renewal and improvement in the general quality of urban dwellings. The order of magnitude of the CNSP calculation might thus be fairly realistic.

Many aspects of the housing problem would, of course, still remain unsolved. Even the present urban deficit, in terms of over-crowding, should eventually be reduced. Large-scale improvements are needed in terms of floor space, number of rooms, water, sewerage, electric light, etc. The rural housing deficiencies, finally, would still have to be taken into account, at least as part of some other policy programmes aimed at improvements in rural levels of living.

Furthermore, in view of certain housing policy problems[92/], the consideration of possible alternative criteria for a housing policy - which inevitably can only be selective - should not be ruled out.

(e) Housing deficit by size of community, 1951

Using again the CNSP criterion (dwellings which must be shared by families), it is clear from the 1951 census data that this type of over-crowding is directly related to the size of the community (see table 74).

Table 74

COLOMBIA: NUMBER OF OCCUPIED DWELLINGS, WHETHER BY ONE FAMILY OR MORE THAN ONE FAMILY, AND PERCENTAGE OF DWELLINGS OCCUPIED BY MORE THAN ONE FAMILY, BY SIZE OF COMMUNITY, 1951

Communities (inhabitants)	Occupied dwellings (total)	Dwellings occupied by one family	Dwellings occupied by two or more families	Percentage occupied by two or more families
Bogota	72 882	53 416	19 466	26.7
Medellin	45 726	41 753	3 973	8.7
200-300 000[a/]	62 554	49 415	13 139	21.0
100-200 000[b/]	45 530	20 125	4 405	18.0
10-100 000	171 766	146 697	25 069	14.6
Smaller towns[c/]	241 075	222 496	18 579	7.7
Rural areas	1 101 516	1 061 846	39 670	3.6
Total	1 720 049	1 595 748	124 301	7.2

a/ Barranquilla and Cali.
b/ Bucaramanga and Cartagena.
c/ 1 500 to 10 000 inhabitants.

92/ See the questions in relation to footnote 85/

The bigger the town or city, the more prevalent the phenomenon. One notable exception is Medellin where this form of over-crowding, apparently, was not so very frequent despite the city's large size.

The data used here indicate the number of actually occupied dwellings and the numbers of dwellings occupied exclusively by one family. The remaining dwellings are occupied by two or more families. In the nation as a whole, there were 1 720 000 occupied dwellings, of which 1 596 000 were occupied by only one family and 124 000 by two families or more. Since the families who had to share dwellings numbered 336 000, the share dwellings, on an average, accomodated 2.7 families each. While 7.2 per cent of all occupied dwellings were shared, 17.4 per cent of the families inhabiting these dwellings lives there on a basis of sharing. In Bogota, sharing had to be done by 48.5 per cent of all families, there being an average of 3.5 families per shared dwelling.

From the figures, it will be noted that the percentage of shared dwellings rises rather systematically with the size of the community, except that not so many dwellings are being shared in Medellin.

The progressive rise in the percentage of shared dwellings as the size of the community increases, however, can be the result of several interrelated factors, especially the following:

(a) the greater attraction to migrants and, therefore, more rapid growth, of big cities as compared with small towns;

(b) the higher building costs and greater difficulties in the acquisition of building terrain in big cities, as compared with small towns; and

(c) the fact that big-city dwellings, on an average, are much larger than those of small towns and rural areas.

The variations in sizes of dwellings with size of community can be brought out by considering the percentage of dwellings with six or more rooms (see table 75). Such dwellings, evidently, can be large enough to permit tolerable housing conditions for two, possibly even three families, so long as suitable accommodations, e.g. partitions or separate entrances, can be made, without changing the character of the sub-divided dwellings as a single dwelling unit according to census definitions.

/Table 75

Table 75

COLOMBIA: OCCUPIED DWELLINGS HAVING SIX OR MORE ROOMS AS PERCENTAGES OF ALL DWELLINGS, BY SIZE OF COMMUNITY, 1951

Bogota	43.4
Medellín	39.7
Barranquilla-Cali	32.8
Bucaramanga-Cartagena	35.1
Towns, 10-100 000	18.0
Towns, under 10 000	19.9
Rural areas	6.4
Colombia, total	14.0

Seen from this standpoint, the severity of conditions under which dwellings are being shared by two or more families is not the same in big cities and in small towns.

It is possible that a concentration of building efforts in some of the larger cities has already somewhat altered the distribution of shared dwellings among communities of varying size, noted in 1951. It is at least conceivable that, as a result of special efforts to improve housing conditions in the big cities, even more migrants are attracted to these, rather than to smaller centres, as a result of which the big-city housing conditions, in turn, tend to be further aggravated. The possible effect of the housing policy on population movements should not be discounted and there might be some cause for a wider dispersal of public housing investments, including a relatively greater effort in some of the smaller towns.

(f) An alternative measure of over-crowding: persons per room

Urban dwellings are generally larger than rural ones, while families are on an average smaller in the big cities than in small towns or villages. Accordingly, very different results are obtained when over-crowding is measured in terms of number of persons per room. Of the 1 720 049 dwellings in Colombia in 1951, 1 389 500 were occupied at a density of less than three persons per room, whereas in 330 549 dwellings three or more persons per room were crowded together. By this measuring rod, then, 19.2 per cent of

/all dwellings

all dwellings were "over-crowded" (see table 76). True, the rooms vary in floor space, and the space required by children may be less than that required by an adult; also, in a very large dwelling, there is more flexibility in the use of space even though the average density of occupancy is the same. In a cold climate, available space within the dwelling is more important than in a warm climate. Nevertheless, a density of three or more persons per room must be regarded as undesirably high under almost any conditions.

Measured in these terms, the extent of over-crowding is especially great in rural areas and also in big cities, but considerably less in small and middle-sized towns. Some rural migrants might improve their housing status more considerably if they moved to small towns rather than into big cities. Again, the conditions in Medellín appear rather exceptional, given the size of that city.

Table 76

COLOMBIA: NUMBER OF OCCUPIED DWELLINGS AND NUMBER OF PERCENTAGE OF DWELLINGS OCCUPIED AT A DENSITY OF THREE OR MORE PERSONS PER DWELLING, BY SIZE OF COMMUNITY, 1951

Communities (inhabitants)	Occupied dwellings (total)	Dwellings with less than three persons per room	Dwellings With three or more persons per room	Percentage with three or more persons per room
Bogota	72 882	62 189	10 693	14.7
Medellin	45 726	43 496	2 233	4.9
200-300 000[a]	62 554	52 091	10 463	16.7
100-200 000[b]	24 530	20 126	4 404	18.0
10-100 000	171 766	151 928	19 838	11.5
Smaller towns[c]	241 075	217 057	24 018	10.0
Rural areas	1 101 516	842 616	258 900	23.5
Total	1 720 049	1 389 500	330 549	19.2

a/ Barranquilla and Cali

b/ Bucaramanga and Cartagena

c/ 1 500 to 10 000 inhabitants

(g) Other housing aspects

Two aspects have been considered so far: the doubling-up of families within one dwelling and the insufficient number of rooms.

Other criteria may also be relevant in a housing policy, such as inadequate building material, or the lack of sanitary or other installations.

The 1951 census revealed that 25 per cent of urban and 68 per cent of rural dwelling houses had earthen floors, and that 19 per cent of urban and 60 per cent of rural dwelling houses had roofs of straw or similar material. The incidence in the use of building materials varied among regions, and their use may have varying significance in relation to climate and other conditions. Efforts to provide better floors and roofs might well be a policy objective, especially in those rural areas where this is a serious problem and marked improvement might be accomplished at comparatively small cost.

The census also showed other housing deficiencies. Of 100 urban dwellings, 30 were still without a facility for human waste disposal (whether private, a latrine, or a shared facility), 33 lacked access to running water (whether applied indoors or outdoors) and 36 were not equipped with electric light. For rural dwellings, the corresponding percentages were 89, 90 and 96 respectively. Because of differences in living conditions, the rural needs for such facilities may not be so great, but it is evident that the resulting sanitary problems can be very serious in urban areas.

To the extent that new urban housing units, meet certain minimum standards, the average condition of buildings and facilities may be improving.

(h) Summary

Urban housing policy in Colombia is guided by the criterion of an excess in the number of families in relation to the number of dwellings. The resulting estimated housing shortage is highly concentrated in urban areas, most particularly in a small number of big cities. The calculations on which the policy is based are probably fairly realistic. Errors of calculation, nevertheless, are bound to accumulate with time and many years have passed since the taking of the 1951 censuses. With a new census, a re-assessment based on new data will no doubt increase the accuracy of the estimates.

/The needs

The needs calculated on this basis coincide fairly closely with needs that might be calculated by a method suggested by the Pan American Union, where the physical condition of the buildings, rather over-crowding is the main criterion. One reason for the near coincidence is that, in urban areas, the rate of population growth is in any event the dominant factor in the housing situation.

An alternative measure of over-crowding, based on the number of persons per room, indicates a tremendous housing deficit in rural areas and, also, a more considerable deficit in small towns than appears when the criterion is the number of families per dwelling. The reason for this is that large dwellings, e.g. those of six or more rooms, are more frequently encountered in the big cities than in the small towns, and are rare in rural places. On this score, it might be said that the present housing policy favours the big cities to a relatively greater extent than would seem indicated by the persons-per-room criterion which, probably, is a closer approximation to the problem of floor space. The needs for floor space, in relation to traditional living conditions, however, are probably more intense in towns and cities than they are in the countryside.

Migrants are attracted to the big cities in disproportionate numbers, and the public cost arising from big-city housing problems are probably disproportionately high. It may well be that economic policy also reinforces the tendency towards a very high degree of concentration of activities in the big cities.

Housing policy, of course, would have to be co-ordinated with general economic policy. A wider dispersal of industrial enterprise, for example, might well justify a corresponding dispersal of the currents of rural-urban migration and a corresponding adjustment of the criteria of housing policy. Housing policy itself, incidentally, might contribute to the general force of local attraction and repulsion which motivate the intensity and direction of migratory movements.

Whereas the use of simple criteria is advantageous in the formulation of a policy directed at a large problem only part of which can be solved, other objectives should not be lost sight of. For instance, even in urban

/areas, a

areas, a large proportion of housing units are still of such primitive construction and so deficient in appliances as to impair considerably the prospect for sanitary improvement. The relief of over-crowding is not an exclusive objective, and there should also be improvement in terms of roofs, floors, running water, sanitary appliances and electric light.

In rural areas, the housing deficiencies are overwhelmingly of a qualitative nature and improvement of those conditions would necessarily have to be included among the objectives of any project aimed at progress in rural levels of living. The need for better housing, no doubt, would intensify in relation to better rural education, or modifications in agricultural processes.

III. CONCLUSIONS

1. Substantive conclusions

(a) High total rate of population growth

Allowing for probable omissions in the 1951 census, the average annual rate of population growth during 1938-51 was 2.5 per cent.[93] From 1951 to 1961 the average rate was probably between 2.8 and 2.9 per cent, and it is likely that the rate will remain about the same for the remainder of the sixties.[94]

This rate of growth is high compared with the past, but no higher than the annual rate of 3 per cent or more which can now safely be estimated for Ecuador, Mexico and Venezuela. This is a high rate in view of the great effort required to effect an even more rapid rise in the gross national product.

The estimated annual growth rate of the gross national product (at constant prices) was 4.1 per cent during 1939-49 and 4.5 per cent during 1950-59. The targets for the present national investment plan for 1961-1964 assume an annual growth rate of the gross national product of 5.5 per cent, with a less likely alternative assumption of a 6.5 per cent rate. These represent the observed and expected rates for aggregate national income.

In relation to population growth the growth rate of per capita income was only between a 1.5 and 1.6 per cent during 1950-59, and may be 2.6 (or alternatively 3.6) per cent during 1961-64 if both national investment and population growth are as assumed. Since the thirties there has been no significant increase in the per capita income growth, but there may be such an increase from about 1960 on if the present investment plans can be carried out.

In view of the great effort necessary to effect an annual growth rate of 5.5 per cent in aggregate national income, the resultant growth of 2.6 per cent in per capita income is a modest achievement. At that rate it will take twenty-seven years of sustained strenuous effort to double per capita income,

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93/ There was a rapid decrease in death rates, mainly from 1954 on, which raised the annual growth rate from approximately 2.2 per cent in about 1938 to approximately 2.8 per cent by about 1951

94/ Death rates are expected to decrease further, while a decrease in the average national birth rate may result from continued rapid urbanization.

/and by

and by that time total income would have to be more than quadrupled, since the population would have more than doubled. A four-fold increase in the national product in order to double the average per capita income represents an enormous task. Even on the alternative assumption that aggregate income increases at a sustained rate of 6.5 per cent, it would take twenty years to double per capita income.

This does not imply that direct action must be taken to influence the demographic growth rate; it is merely that the facts of population growth cannot be disregarded in relation to the prospects of improving levels of living.

Most of the increase in the population growth, especially in the late forties, has been due to lower death rates.[25/] Naturally, everything possible has to be done to improve the nation's health, and there are still large areas where better sanitation, eradication of parasites, improved care of infants and small children and greater availability of competent and effective medical services can further reduce mortality. In a youthful population like that of Colombia the death rate may then fall to a very low figure.

If the population growth rate is not to increase, there must be a corresponding decrease in the birth rate. Since this rate is lower in urban than in rural areas, it is possible, though not certain, that in a period of rapid urbanization the average national birth rate might decrease to almost the same extent as the death rate. This is why no appreciable increase in population growth is indicated in the population projection during either the fifties or the sixties.

A sharper decline in the birth rate, sufficient to reduce the demographic growth rate despite a falling death rate, would require a more profound change in attitudes towards family formation than have so far been observed in Colombia. Any such change would involve traditional social and moral standards which may be no less valued than a rise in income. As long as

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25/ The possible demographic effects of immigration are no cause for concern. Immigration into Colombia has never been significant in relation to demographic growth and, moreover, immigrants with special skills or knowledge can make a contribution to the national economy which is far in excess of their effect on the number of inhabitants.

there is no clear evidence of a widespread desire for less frequent births and smaller families, it is difficult to envisage any form of public action that could effect a reduction in the population growth. Such a trend might emerge later as a by-product of changed ways of living due to higher incomes, better education and related changes in the social environment, but experience in other regions of the world indicates that considerable time would elapse before there was any major reduction in the birth rate.

Consequently a high rate of population growth must be assumed in the foreseeable future, and there is no alternative to achieving economic and social development at a speed and in a manner that will ensure visible improvement in the national welfare despite a rapid population increase.

(b) Population distribution

The population is very unevenly distributed over the national territory. The intendencias and comisarías of the lowlands to the east of the Eastern Cordillera comprise half of the land surface of Colombia, but little over 2 per cent of the total population. In the western half of the country, the average number of inhabitants per square kilometre in the various departments range from about 3 in Choco and 10 in Magdalena to about 100 in Caldas and Cundinamarca and nearly 200 in Atlantico. Because of Colombia's complicated topography population densities calculated in relation to natural regions would be more significant, and would probably result in even sharper contrasts.

A redistribution of the population is now leading to more rapid growth in the southern and coastal departments than in the departments of the north or the interior of the country. However, there is an increasing migration to the large cities, and the departments that include these cities are now those with the most rapid population growth. Departments in which the population growth was higher than for the country as a whole were, from 1912 to 1938, Valle del Cauca, Atlantico, Magdalena, Caldas, Tolima and Bolívar, and from 1938 to 1951, Valle del Cauca, Atlantico, Cundinamarca, Magdalena, Caldas and Huila.[96/] Probably only Valle del Cauca, Atlantico, Cundinamarca and Antioquia now have a growth rate higher than the national average. It is

96/ According to estimates by Lemieux, which take into account varying degrees of census under-enumeration in various regions.

estimated that these four departments may have to absorb a population increase of 1.3 million during 1960-65, out of a total increase of 2.2 million in the country's population. Either economic development would have to be largely concentrated in these four areas, or a less concentrated internal migration would have to be encouraged, in conjunction with arrangements to facilitate better absorption of migrants in other regions.

Migratory movements both influence and are influenced by uneven regional rates of economic development; the effects are likely to be cumulative, and short-term solutions can give rise to long-term problems. This is a question that calls for intensive study.

(c) Urbanization

A variety of economic and social problems come into sharper focus in the light of the comparative rates of population growth for large cities, medium-sized and small towns, and rural areas. If the redistributive population trends threaten to interfere with the orderly process of economic and social development, remedial action may be called for.[97]

There was rapid urbanization during 1938-51. According to the censuses, 620 000 persons lived in cities of over 100 000 in 1938, as against 1 697 000 in 1951.[98] Towns with populations of between 20 000 and 100 000 accounted for 499 000 persons in 1938 and 870 000 in 1951.[99] In the same two years smaller towns represented a population of 1 415 000 and 1 799 000 respectively, whereas the rural population increased from 6 168 000 to 6 863 000. In view of probable omissions from the 1951 census, the annual increase in the rural population may be estimated as less than 1 per cent, whereas the total urban population increased at an average rate of about 4.3 per cent.

It seems reasonable to base the population projection on the assumption that the average annual increase in the rural population will continue to be 1 per cent, the remainder of the national population growth being absorbed by the urban areas. This implies that the rural population may rise from

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97/ See sub-section (h) on repercussions on economic and social policy.

98/ In 1938 only Bogotá, Medellín and Barranquilla were in this class; by 1951 Cali, Cartagena and Bucaramanga were also included.

99/ In 1938 there were 13 such towns, and in 1951 there were 22.

7 million in 1951 to 8 million in 1964. The urban population, on the other hand, may increase from 2.5 million in 1938 and 5 million in 1953 to 10 million by 1968,[100] doubling every fifteen years.[101] Within the urban population the growth rate is likely to be higher in large cities than in the smaller towns. As the latter grow, more and more of them enter the large-city category, and hence the growth rate in that category accelerates further compared with that in the small towns, even though the rate in those towns is higher than in the rural areas.

It is likely that the total population of cities with over 100 000 inhabitants in 1960 will be 3.5 million, and that the corresponding figure for 1965 will be 4.8 million.[102] The total population of towns of between 20 000 and 100 000 inhabitants[103] may rise to 1.3 million in 1960 and 1.6 million in 1965; the increase in the small-town population would be from 2.2 million to 2.4 million, and in the rural population from 7.7 million to 8.1 million.

When the comparison is confined to the same cities, grouped according to the size attained at a particular date, the results are somewhat different.[104] The total population at different dates of cities grouped according to their estimated sizes in 1960 are shown in table 77.

100/ According to ECLA, Projection II. An alternative projection, Projection I, was made on the assumption that the rate of increase in urban population would be much the same as in the past, the remainder of the population growth being absorbed by the rural areas. The rural population growth would then increase somewhat faster, attaining 8 million in 1958 and 9 million in 1966, and the urban population would attain 10 million by 1970. In Projection I, the urban population would begin to exceed the rural population in 1963, and in Projection II in 1969.

101/ In Projection I, which implies a temporary acceleration in the growth of the rural population, the second doubling of the urban population, from 5 million in 1954 to 10 million in 1970, would require 16 years.

102/ Cities that attain this category between 1951 and 1960 would be Pereira, Manizales, Cucuta and Palmira. Between 1960 and 1965 Armedia, Ibague and Pasto are also likely to enter this category.

103/ There would be 32 such towns in 1960, and 39 in 1965.

104/ In Section 3, I, a different basis of comparison is used; cities and towns are grouped according to their sizes at the dates in question, and the groups do not consist of the same cities and towns on both dates.

/Table 77

Table 77

COLOMBIA: TOTAL POPULATION, AT DIFFERENT DATES, GROUPED ACCORDING TO THEIR ESTIMATED SIZES IN 1960

Size in 1960 (Number of inhabitants)	Number of localities	1938 (Census)	1951 (Census)	1960 (Projection)	1965 (Projection)
100 000 and over	10	1 010	1 987	3 490	4 506
20 000-99 999	32	418	797	1 347	1 706
1 500-19 999	not known	1 106	1 582	2 229	2 679
Under 1 500 (rural)	...	6 168	6 863	7 705	8 094
Total		8 702	11 229	14 771	16 985

It is estimated that between 1960 and 1965 the population of the 10 largest cities will increase by 1 million, out of a total population increase of 2.2 million. In fact the estimated increase from 1 118 000 to 1 457 000 for Bogota alone almost equals the estimated increase for the entire rural population, in a national territory where many natural resources are still not in intensive use.

While the rates of the natural population increase are comparable in cities, in towns, and in the countryside, migratory gains during 1960-65 would be about 500 000 in the 10 largest cities, 150 000 in the thirty-two medium-sized towns, and about 100 000 in the large number of small urban centres. There is probably a certain turnover of population in small towns, through an influx of rural immigrants that is partly counterbalanced by an emigration of small-town residents to the larger towns and cities. In relation to the existing population, the annual net migratory gain is about 3 per cent in the large cities, 2 per cent in medium-sized towns and 1 per cent in small towns, whereas in the rural population there is a loss of about 2 per cent annually as a result of migration.

/(d) Calculable

(d) Calculable effects of diverse migratory tendencies

If migration to the cities is to be regarded as an independent variable, economic and social development must be so geared that the rapid increase of large cities can be coped with. The economically most dynamic industries - many of them located in the large cities - require a high ratio of capital per worker; the costs of housing and other essential services in cities are high; and the educational facilities needed for the cultural and social integration of migrants in cities are considerable.

The intensity and direction of migratory movements, on the other hand, might be significantly influenced by policies affecting the comparative social and economic conditions in the respective environments. Whether policies of this type can be drawn up whose implementation will be consistent with a satisfactory rate of over-all economic growth, and with the freedom of movement, association and enterprise of the individual, poses another set of questions to which we shall return later. For the moment, let us consider briefly the range of population changes that might result from an alteration of migratory tendencies.

Population estimates for 1960 and 1965 (see the preceding table) have been made by applying the "apportionment method" to analytically projected numbers of the urban and rural population.[105/] On the whole this means that migratory tendencies will continue as observed in the past. But the assumption can be varied. To illustrate the effects of altered migratory patterns, we may consider the following alternatives:

I. All migratory movements to come to a standstill from 1960 onward, there being no net transfer of population among communities of different size;

II. Rural-urban migration to be intensified so that no further increase in rural population results after 1960; the migrants to be re-distributed among large, medium and small towns in the proportions already estimated; and

III. Rural-urban migration to continue at the rate already estimated, but migrants to be redistributed equally among the large, medium and small towns.

105/ As explained in Section I, 3.

As compared with the estimates already presented, assumptions I and II represent two rather extremem situations: assumption III represents the estimates already made, except that migratory balances are allocated differently. The approximate results, and the estimates already made, are shown in table 78.

Table 78

COLOMBIA: ESTIMATED POPULATION IN 1965 BASED ON ASSUMPTIONS I, II AND III

Population category in 1960	Population in 1960	Population in 1965 according to:			
		Assumption I	Estimates already made	Assumption II	Assumption III
Centres of:					
100 000 and over	3.5	4.0	4.5	4.8	4.3
20 000-99 999	1.3	1.6	1.7	1.8	1.8
1 500-19 999	2.2	2.6	2.7	2.7	2.8
Rural population	7.7	8.8	8.1	7 7	8.1
Total	14.8	17.0	17.0	17.0	17.0

If, as in assumption I, the populations of the various localities increase only through the difference between births and deaths, the increase in large-city populations (totalling 4.0 million) would be comparatively moderate. However, it would be difficult to accommodate an increase of the rural population from 7.7 million to 8.8 million in only five years without a deterioration in rural levels of living.

If, as in assumption II, the rural population does not increase, migratory trends being what they are the population of large cities would increase from 3.5 million to 4.8 million, or nearly 40 per cent, in only five years. It would be difficult to avert an aggravation of the economic and social problems of the large cities.

/If large

If large cities and medium and small towns each absorb a migratory increase of about a quarter of a million, as in assumption III, the problem of population absorption in both the rural areas and the large cities would be somewhat smaller, but an appreciable expansion would be needed in the economic capacity of medium and small towns, where population increases of between a quarter and a third would have to be accommodated within five years. The social cost of this alternative might be less than that of the other sets of assumptions, but there would have to be a corresponding adjustment of economic policies and programmes and a wider dispersal of administrative supervision.

Incidentally, a redistribution of migrants among towns and cities of different size categories would also affect the regional population distribution. The departments of Valle del Cauca, Atlantico, Cundinamarca and Antioquia might then have a somewhat slower population growth, while some other departments would grow rather more rapidly.

These theoretical calculations, needless to say, are very sketchy and only intended to indicate roughly the order of magnitude of the effects of different migratory trends.

(e) Education

While Colombia has no lack of institutions of higher learning, there are still serious deficiencies in primary education. From about 1950 onwards primary school enrolment increased very rapidly, but it does not yet represent the completion of the primary school course by all children.

In 1957 there were 300 000 urban and 350 000 rural children in the first primary grade, but 100 000 urban children and only 5 000 rural children in the fourth grade. This great discrepancy is due to widespread dropping-out, absenteeism, repetitions, and the lack of schools in rural areas, where the education provided rarely covers more than two primary grades. Over-crowded classrooms, short hours, overworked teachers and the inadequate training of many of the teachers doubtless all contribute to this situation, in addition to the social and economic handicaps of many of the children.

In urban areas enrolment now corresponds closely to the number of children who would have to be in school on the assumption that every child

successfully completes the five-year course; since this assumption is not valid, urban enrolment may have to increase further if at least a substantial majority of children are to complete the course.

In 1958 the enrolment in rural areas represented two-thirds of the children who would have to attend school if every child completed at least a four-year course successfully.

If completion of the five-year and four-year courses (the latter in rural areas) is to be ensured for virtually all children by 1970, the school system will have to expand to the extent of an annual increase of 50 000 in urban school enrolment and another 50 000 in rural enrolment, the building of about 100 urban and 1 000 rural schools a year, and annual increases of 2 000 urban teachers and 2 000 rural teachers. Functional literacy might then become nearly universal from about 1970 on.

In addition, however, there must be some provision for specific forms of non-academic education, beyond the functional literacy level, if there is to be an increased supply of workers at intermediate levels of skill and responsibility. Because of the shortage of workers with some supervisory or executive capacity, much of the time of persons with advanced training is wasted on activities for which no suitable staff are available, and at the same time, large numbers of workers with limited skills cannot be employed to good effect because of the lack of reliable staff to supervise and co-ordinate their work.

Many of the young workers in the cities are recent rural immigrants. It has not been established whether or not they are better educated, on the whole, than the rest of the rural population. If they are not, their successful integration into the economic life of the city will pose many a thorny problem. If, on the other hand, they represent rural inhabitants of above-average education, it is to be feared that very few persons who are at least functionally literate will remain in the rural areas, and without them it will be difficult to consolidate progress in projects for rural betterment such as community development, co-operatives, and land distribution and settlement.

It is likely that in 1961 about 150 000 workers will have been added to a labour force of 5 million; in 1971 a labour force of nearly 7 million is likely to increase by another 230 000 workers. The average annual increase of 190 000 in the labour force during the sixties will represent 150 000 new urban workers and 40 000 new rural workers. Most of the new jobs will have to be found in urban areas.

Entrants into the labour force are normally in the 15-19 age group. As a result of the more nearly universal exposure of children to schooling, in urban areas about 95 per cent of this age group are now literate, in the sense of knowing at least the rudiments of reading and writing, and in the rural areas 70-75 per cent. Functional literacy, meaning the ability to make full use of this knowledge, is achieved by a very much smaller percentage. In urban areas about 100 000 males and 250 000 females aged 15-19 can be expected to be not yet economically active, and thus there might still be an opportunity, through apprenticeship, adult education, etc., to remove some of the more serious educational handicaps of young people before they become fully absorbed in earning their living.

(f) Manpower

As a result of urbanization, commercialization and education women tend to become more economically active, and although there is a corresponding tendency for men to begin economic activity later in adolescence and retire somewhat earlier, the increase in the female labour force causes a growth of the combined labour force that is faster than the demographic growth rate.

As so much time has passed since the last population census, it has become difficult to estimate changes in the sectoral composition of the labour force. Observations for the 1938-51 period suggest that manpower tends to increase in the primary industries (agriculture, mining) at a rate similar to that of the increase in the rural population, and in the secondary occupations (manufacturing, building, handicrafts) at a rate closer to that of the increase in the urban population. The annual rate of increase in the rest of the labour force, which constitutes the tertiary sector (transport, commerce, services) may now be 5 per cent.

An examination of the census data for 1951, and simple considerations of business accountancy, suggest that a minimum level of employment or productivity must necessarily be maintained for those in the work-contact system (employers and wage and salary earners), whereas there is hardly any limit to the under-employment possible among most of the self-employed, unpaid family helpers, and workers in ill-defined categories. Consequently the distinction between these two categories of manpower is of great social and economic significance, though subject to a number of reservations.106/

An extrapolation of past trends suggests that there may be little change in the number of agricultural wage earners, although it is, of course far from clear what social change in rural areas would be involved. The estimated considerable increase in the numbers of self-employed farmers might be consonant with a policy of redistribution and resettlement of the land. (If such a policy gained momentum, a somewhat greater increase in manpower might be retained in agriculture.)

Extrapolation of past trends suggests a fairly rapid expansion in secondary (manufacturing, etc.) activities of the sork-contract type (wages and salaries); the remaining increase, in this sector, in self-employed secondary workers such as artisans, repair men, etc., would be appreciable, though small in comparison with that of the wage and salary earners.

These various extrapolations leave a large residual increase in the tertiary (service, commerce) sector, especially in those types of service activities where there are no wage and salary contracts. There is no doubt that it is in this group of workers that under-employment is generally most widespread. Theoretical calculation suggests an annual increase of nearly 7 per cent in this group. The self-employed service workers (and such associated categories as small traders) may constitute 12 per cent of the

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106/ Labour relationships in agriculture may vary in many respects, not adequately described in a population census; domestic servants, although usually engaged on a monthly-wage basis, do not necessarily achieve a high level of productivity, and self-employed doctors, lawyers, etc., may be highly productive and earn considerable incomes. However, the principles of accountancy in a competitive business establishment would make it impossible to maintain indefinitely on a wage or salary basis a worker for whom there was not sufficient work.

total labour force for 1961, the proportion increasing to nearly 17 per cent by 1971. The theoretical calculation gave little grounds for belief that there would be a significantly faster rate of manpower absorption in other sectors, leading to a reduction in the growth rate in this category. If the aim is to prevent an alarmingly rapid increase in the numbers of the chronically under-employed, it may be necessary to consider giving greater emphasis in economic development to labour-intensive types of activity.

Full weight must be given to the fact that the nucleus of wage labour in the heavily capitalized dynamic industries is small. Even if such industries grow rapidly as a result of considerable additional investment, the direct increase in employment will be small, while competition may eliminate appreciable numbers of less capitalized, and hence less efficient, industrial producers. It is true that the growth of high-yield industries can eventually generate much other employment in ancillary fields, and that the growth in income may provide additional employment for producers of goods and services for direct consumption, but it is some time before these redistributive effects are fully felt, whereas the rate of increase in the total available labour force is very rapid.

Agrarian reform may permit a somewhat greater absorption of rural labour in agriculture and, less directly, in food-processing industries and related commercial and other services. But as rural poverty is so widespread, land use is still largely extensive, and many rural areas are so remote from the economic pulse of urban developments, it is doubtful how far the rural exodus could be slowed down by this means.

Since educational shortcomings will inevitably persist for some time, it might be useful to consider a more intensive development of medium and small towns. In the smaller towns modest capital investment might create considerable employment at productivity levels higher than those generally found in the rural areas, though lower than those associated with large-scale industrialization. The educational requirements for such work would be fairly modest, and the work itself might serve as a training ground and

facilitate the cultural transition of rural people aspiring to living conditions of the urban type.[107] Strenghtening of the medium and small town economies might help to close the gap between the two sharply contrasted worlds of the large cities and the rural areas. The development of rural areas far from large cities but near smaller centres would be facilitated, and there could be more rapid economic consolidation of land reform measures; small town transforming industries might also become supplementary users of basic products of industries in the larger centres, and economic growth would have more penetrating effects throughout the country.

The question arises of whether a wider spread of industries with a lower capital/labour ratio could effect a considerable increase in employment. Labour-intensive industries would naturally tend to be on a smaller scale, and productivity levels, at least initially, would be comparatively modest. They might be so planned and developed that progressive increases in efficiency would be possible in time. In view of the existing shortage of domestic capital, such efforts might entail some sacrifice in the desired rapid expansion of the capital-intensive dynamic sectors, but this might be justified if it prevented any worsening of the social problems related to under-employment. Incidentally, the labour-intensive industries might with advantage be distributed among many smaller cities and towns in the light of calculable overheads, some aspects of which might thus be reduced. However, the administrative requirements of such a dispersed industrial programme might be considerable, and administrative competence might become the scarce factor, imposing narrower limits on the programme than those imposed by the budgetary resources available.

(g) Housing

It may be appropriate to single out urban housing problems as a separate objective of a national housing policy. Although rural housing conditions are deplorable, they may have to be considered in conjunction with other programmes and projects aimed at improving rural levels of living. The

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107/ Care would naturally have to be taken that the small-town industries fostered were not those incapable of further development, but those of a type susceptible of further expansion and rationalization of the processes involved.

extent to which the rural population is sensitive to its housing problem probably depends partly on awareness of the possibilities of self-help or communal action in a number of fields, of which housing is only one.

A number of criteria might be selected for determining the extent of housing needs in urban areas, and one such criterion adopted for the guidance of official housing policy in Colombia is over-crowding, as measured by the ratio of families to available dwellings. The use of a simple criterion has the advantage of ensuring comparative ease of application, a clear objective, and ability to verify how far the objective is being attained. It has been calculated, probably quite realistically, that in addition to an estimated 16 000 to 19 000 dwellings built annually by private and other agencies, the public subsidy for about 40 000 urban dwellings a year might be adequate to ensure that after 1964 there would be no further increase in the number of urban dwellings shared by two or more families.

The housing deficit, as officially defined, is concentrated mainly in a small number of large cities. However, it should be noted that the average size of dwellings in such cities is comparatively large, while the average size of urban families is comparatively small. An alternative way of assessir overcrowding, more directly related to the problem of floor space, might be the number of persons per room. On the basis of this criterion the housing shortage in large cities is great, but it is also quite considerable in many smaller cities and towns. Official policy can be said to favour the large city more than considerations of floor space would seem to warrant.

There are also considerable deficiencies in urban areas in roofing, flooring, water supply, sanitary facilities and electricity supply. A housing policy is conceivable that would also give some priority to these considerations. In addition, account should be taken of deficiencies in the municipal services of street paving and lighting, sewage systems, public transport, etc. In many if not most respects the improvement of housing conditions involves much greater unit costs in large cities than in small towns, and consequently the migratory trend towards the large cities involves considerable increases in social overhead costs.

/Lastly, housing

Lastly, housing policy itself might indirectly affect migratory movements. With priority given to large-city projects, a partial relief of the housing shortage in large cities might encourage even more migrants to move to these areas, with the further effect that housing conditions in large cities would then tend to deteriorate once more. Thus there may be some grounds for a housing policy in which the needs of the many small towns are also given a certain weight.

(h) Repercussions on economic and social policy

From the demographer's standpoint, as adopted in this report, every human being is a comparable unit; consequently the importance of each problems must be weighted by the number of persons whose material welfare is at stake. It is true that the problems are of varying weight as regards their financial implications, but in human terms it is the social nature of national development problems that stands out.

Social improvement and economic growth are interdependent. A social plan that disregards economic requirements is as doomed to failure as an economic plan that wholly ignores social circumstances and pressures. A combination of viewpoints can contribute to the formulation of plans in which economic progress is strengthened by concurrent social improvement, and vice versa.

While social improvement aids the economy and economic gains brighten the social prospect, there appear to be some key spheres of action where progress can be achieved simultaneously in both fields. Exclusive concentration on either a social or an economic objective is likely to leave unsolved so many problems that the objective itself is threatened, whereas if a given course of action can bring a number of different problems nearer solution, the results are more likely to be self-sustaining and remain viable in the long run.

On the basis of this strategic principle, and in the light of the demographic findings, the concluding part of this report now explores the possibility of discerning some areas where combined public action might produce self-sustaining results.

The demographic aspects of major problem areas have now been reviewed, in particular as regards:

1. The high over-all rate of national population growth;
2. The even more rapid growth of cities, especially the large cities;
3. Educational deficiencies;
4. The absorption of manpower at tolerable levels of productivity;
5. Housing shortages.

These several aspects are all interrelated.

The generally rapid growth in population tends to slow down the improvement in the economic status of the individual. While national output rises, it must be redistributed over a constantly increasing number of individual shares. Population growth is not in itself susceptible to direct public action with absence of public or group attitudes permitting or favouring the limitation of families. The rapid increase in the population of Colombia, on the other hand, accentuates the need for speedy growth and redistribution of the national product so that the individual citizens, despite their growing numbers, can enjoy appreciable improvement in their well-being.

While general population growth is so rapid and rural areas cannot absorb additional inhabitants at a similar rate, rapid urbanization is an inevitable consequence. Expectations, traditions and other contributing factors make migrants prefer to try their luck in the large cities, hence the increasing concentration of the urban population in a limited number of large centres with the most rapid growth. Up to a point, urbanization and concentration are necessary and even stimulating in the general process of commercialization, industrialization and the economic, social and cultural progress of the nation. But there are many reasons to suspect that in Colombia the intensity of migration to the large cities is excessive in relation to the rate of this general process. In large cities, furthermore, leading industries depend on high ratios of capital per worker employed, educational requirements are considerable, and the costs of housing and essential municipal services are high. At the same time the abundant natural resources in a vast extent of territory, often at great distance from the cities, are not yet in extensive use. There is the further risk that rapid

economic and social change in large cities, coupled with stagnation in small towns and in the countryside, will continue to widen the economic, social and cultural gaps between the respective environments, thereby increasing the disparities in a not yet highly integrated national structure.

Educational deficiencies are a case in point. Despite nearly universal enrolment of urban primary school children, many still fail to complete the primary curriculum. In rural areas the deficiency is far greater. If only the best educated persons emigrate from rural areas, few will remain who can participate effectively in projects aimed at improving rural levels of living. At the same time, many immigrants to the cities are poorly prepared for successful integration in urban economic and social life. Vigourous efforts over a long period may gradually reduce these gaps. Meanwhile the children who now fail to complete their primary education will constitute a poorly educated segment of the labour force for many decades to come.

Manpower absorption is lowered by the high ratio of capital per worker in high-yield industries, in which large investments are made. Even though such industries grow very rapidly, large numbers of workers accumulate even faster in those occupations where chronic under-employment is known to be most wide-spread. The redistributive effects of growing income from high-yield industries may be slow to appear in the face of such increases in the economic wastage of human beings. The prospects of manpower absorption at satisfactory productivity levels in agriculture are comparatively limited. This makes it a crucial question whether, with comparatively small investment, at least tolerably productive employments can be created for large numbers, e.g., through the fostering of numerous small-scale industries, modestly productive at first but with some prospects of further increases in productivity. Tolerably remunerative jobs might then be found in which the educational requirements are also comparatively modest, in keeping with the existing and prospective educational attainments of large numbers of the population.

The improvement of housing conditions is most urgent in the large cities, where it also involves the relatively highest costs. But the improvement of large-city conditions generally, whether in housing or other matters, in turn reinforces the established preference of migrants to move in that direction and thereby further aggravates the problems or increases the costs of their long-term solution.

All these considerations together suggest that one strategic area where more than one problem can be attacked by the same action, and national coherence and integration can be strengthened and the gaps between extremes of development and under-development closed, might be the more intensive development of the medium-sized and small towns.

In the review of the above-mentioned demographic features, it was also noted that there is much interdependence between education, manpower qualification, manpower absorption, the ability to pay rent or otherwise finance a dwelling, etc. An economic plan will fail if the manpower qualifications required are more ambitious than those which the educational system can provide. The social aspirations of workers will be severely frustrated if for educational or other reasons they are prevented from attaining an economic status which they have been led to expect. Moreover, with constantly changing economic and social conditions the working careers of individuals will have to be adjusted repeatedly as the future unfolds: a narrowly technica education will not provide that broader culture which is needed for flexible adjustment to inexorable change.

A related problem is that of geographic displacements resulting from expectation of individual economic and social betterment.

There is a marked convergence of all these problems in adolescents or those in the 15-19 age group. If basic education has not been completed by then,and no vocational orientation or guidance is obtained, it will be increasingly difficult to make up for the resulting personal inadequacies in later years when these individuals are fully engaged in earning a living.

/It is

It is also at these ages, or shortly after, that persons most frequently move from rural to urban areas.

Thus two spheres in which combined public action promises to be most strategically effective, and to have the most integrative results, have been identified. In short, in economics and social programmes emphasis should be given to:

(a) the possibilities of extending the economic capacity of small and medium-sized towns, and of inducing migrants to move to these, rather than to the large cities; and

(b) all possible effort to consolidate the education, orientation and guidance of young persons about to embark on full economic activity, in particular those aged about 15-19 years.

The detailed policy plans and programmes by which action in these two strategic spheres is to be implemented lie outside the demographer's horizon, but he can emphasize that from the standpoint of national demographic structure and dynamics these are the two key areas in which combined action promises to produce the most consolidating results. It is up to other experts to relate these objectives to those already firmly implanted in national planning, and to the ways and means of determining priorities and embarking on practical measures.

2. Statistical and demographic needs

(a) The statistical basis of the present report

This report has been prepared almost entirely on the basis of published Colombian statistics available at the ECLA Office in Santiago. Additional statistics and more relevant detailed knowledge are, no doubt, available in Colombia. As it is hoped that another Colombian population census will soon be taken, the estimates made in this report will eventually have to be revised within the light of up-to-date information.

Most of the data used in this report are from the Colombian population and housing census of 1951. Despite the known defects in enumeration, these data are, thus far, unique as an authentic source of information regarding many structural details of the population. Since the errors of census omission have also been investigated, they can be taken into account for analytical purposes.

The 1951 census is valuable not only as a description of conditions existing at that time, but also because it contains internal evidence of the dynamics that indicate past and probable future trends. This use of the census data is all the more important as there are deficiencies in the series of current statistics which restrict their use for a year-by-y follow-up of the trends.

The current registration of births and deaths is deficient, but the extent of the deficiency can be evaluated in relation to census data. By thus allowing for defects in registration the levels and trends in birth rates and death rates can be reconstructed reasonably well. The population projection by sex and age groups is probably fairly accurate.

It is less certain that changes in population distribution, by regions, or by urban and rural areas, could be estimated so reliably. There is no source of data on internal migration other than the indications provided by the 1951 census. If migratory tendencies have changed in the meantime, statistical evidence of it is totally lacking. But given the general momentum of these tendencies, and the absence of events likely to have changed them considerably, it may be that the errors resulting from the extrapolation of earlier trends are not substantial.

/The current

The current statistics on school enrolment are so detailed and comprehensive that the changing rates of progress of school-age children can be calculated with considerable accuracy. Census data on literacy and educational attainment round out the picture of the educational situation.

The trend in economic activity rates of the population has been estimated from the internal evidence of the 1951 census, as there are no comparable data for any other date from which the trend can be calculated more directly, but in view of what is known of other countries, the projection of the economically active population is probably quite realistic.

Unfortunately no such positive estimates could be made for the sectoral composition of manpower. For a number of segments, the trends between 1938 and 1951 could be calculated roughly from a critical comparison of some of the data of the censuses of those two years, account being taken also of other data (e.g. industrial censuses). The extrapolations by broad groups of activities give structures resembling those of some other countries, which make this calculation seem more plausible. Even so as there are no comparable statistics for a more recent date the calculation yields only theoretical figures. However, the theoretical estimates are useful in assessing how far trends would have to change from their past momentum if certain undesirable consequences are to be prevented. More positive estimates than those of the "autonomous" projection of sectors of manpower would of course serve as a much better guide for employment policy, but for this purpose a thorough analytic study would be required on the basis of frequent and detailed statistics obtainable only by repeated manpower surveys (see below, Special investigations).

The 1951 census likewise is fundamental for the current assessment of the housing situation. It is dubious whether current statistics on building licenses are a reliable indicator of the rate at which new dwellings are being erected, nor can the current population estimates for particular towns and cities be very accurate. It remains probable that the current housing needs can still be assessed at least as a rough order of magnitude.

/In these

In these several ways, the accuracy with which the demographic aspects of current problems can be calculated varies greatly from one subject to another. In addition, it is necessary to study the interrelations between these several aspects. The latter kind of study could not be carried to great depth in the absence of findings from detailed investigations designed to explore those relationships.

It has not been calculated what educational attainments result from given rates of school entry and progress in school; what educational attainments are necessary for given occupations; and what manpower qualifications are required for future economic development. In addition there are important interrelations, not yet explored, between the extension of education, the age of entry into the labour force, internal migration, family formation and housing needs. It has not been possible to measure degrees of employment or underemployment in various segments of the labour force, nor have the varying characteristics of manpower been distinguished as between large cities and smaller towns. Indirect inferences have been drawn in these several respects, but have not been solidly substantiated by more searching quantitative analysis.

The substantive conclusions of this report are quite probably valid as qualitative statements, but lack some of the detailed quantitative content needed for criteria governing a policy for the allocation of resources for economic and social projects in more specific terms. For this purpose much further study is needed, with the collaboration of economists and social planners.

It is to be hoped that many new data permitting further study will be furnished at the next population census. Additional data, especially those illustrating some of the interrelations and interdependence of factors, would have to be obtained in intensive surveys designed for the purpose. Other sources of statistics would also have to be developed or improved. A team of national experts in demographic and related analysis would be required to carry out the required studies, that would develop its work programme through interdepartmental consultations, in accordance with specific policy needs and with the statistics that can be obtained.

/(b) The new

(b) The new census data required

The taking of a new census of population and housing has become very necessary. Indefinite extrapolation of out-dated statistics causes an accumulation of errors, and many important estimates can no longer be reliably made after a lapse of ten years. There is an equal need to secure detailed data on the complex interrelations between land, workers, and work contracts in agriculture; it is unlikely that these can be adequately described by replies to the standard questions of a population census, and the attempt made in 1951 to combine the population census with an agricultural census was a failure. A detailed agricultural enquiry has long been needed for the formulation of criteria for agricultural policy.

Two additional provisions are required for a useful population census. Firstly, the enumeration should be followed by a sample survey to investigate the accuracy of the enumeration: while no census is ever wholly accurate, it is essential, for analytical purposes, to have an estimate of the extent of census errors. Secondly, the enumeration areas have to be so organized, and results so compiled, as to provide an efficient framework for sampling purposes; certain interesting cross-classifications, too cumbersome to carry out for the whole of census returns, can then be secured at any time on an ad hoc basis, from a sample of the returns; and future special investigations can then be organized on the basis of the sampling frame provided by the census.

With respect to detail of definitions and tabulations, a majority of the concepts used in 1951 should be retained, firstly, because the data presented for the 1951 census have already proved to be of inestimable value, and secondly, because the calculation of time trends and international comparisons can only be valid when the data are comparable.

In a number of respects, however, the new census might introduce useful additions or modifications, to the extent that the census budget and other considerations of convenience make this possible. Possible innovations worthy of consideration are indicated below.

/Some population

Some population data might be presented in relation to natural or socio-economic regions of the country which in certain respects may be more significant for purposes of analysis than are the major administrative divisions. Also, subdivisions of the urban population into two, or even three, categories would be highly desirable: there are great and important differences in population characteristics as between large cities, medium-sized towns, and the very numerous small towns with the minimum population limit of 1 500 inhabitants; a convenient scheme might be to distinguish, for example, between centres with populations of 100 000 and over, 20 000 - 99 999, and 1 500 - 19 999.

In addition, it would be of great interest to study rural settlement patterns, distinguishing between agglomerated and dispersed rural population. This would be of particular importance in relation to education problems, community development and land reform. To some extent this might be achieved by identifying the headquarters of corregimientos in the outlying parts, but a more scientific criterion might be preferable.

It would be useful to ask women of appropriate ages about the number of children they had born tabulating the results by age, marital status, migratory status, urban or rural residence (specifying, e.g. the large cities and small towns) and educational and economic characteristics. This would be a valuable supplement to the not very adequate information secured from birth registers. Such information is needed for an analysis of factors which influence fertility as a basis for the formulation of assumption in population projections.

Very careful consideration should be given to the treatment of migration in the census, since this is the only available source of data on this important phenomenon of internal population change. Most useful, for analytic and estimating purposes, would be a question on place of residence five years prior to the census, rather than on place of birth. This would make it easier to calculate the dynamics of migratory population change, within a given period. The previous place of residence should also be classified as "urban" or "rural"; the difficulty of classification would be much reduced if "urban" origins were regarded as relating to the more limited group of towns and cities above a minimum size (e.g. 20 000 and over).

For the better study of manpower qualifications and utilization, two important contributions might be made in a new census. Firstly, a question might be asked relating to degrees of employment (whether hours worked in a week, days in a month, incomes earned in a week, or some other criterion thought to be most relevant and convenient); where detailed cross-classifications become cumbersome, the census material on degrees of employment would retain its value if provision were made for the utilization of samples of the census returns. The other contribution might be a cross-tabulation of educational attainment with occupations, by urban and rural residence and, perhaps, also some other cross-tabulations of educational and economic criteria.

(c) Assessments and improvements required in vital statistics

According to analytical estimates, the registration of births and deaths, which has improved substantially in recent years, is still deficient. The degree of deficiency varies by area, and in some areas the registers may now have become virtually correct. The nature of the deficiency is complicated bacause of delays in registration, births and deaths among migrants, and possible duplication of the registration of some events. In addition the accuracy of the detail supplied in the birth and death certificates, e.g. diagnosed or otherwise ascertained causes of death, etc., still leaves room for substantial improvement. Analytic studies can ascertain the areas where improvement is most needed, and can establish estimates of the true frequency of the vital events, allowing for the statistical deficiencies. Additional experiments can help speed up the process of improvement in the reliability of vital registration.

One method of studying the accuracy of birth registration is to compare civil registration data with baptismal records. A matching procedure, where identical events are singled out in both sets of records would be theoretically the most efficient procedure, but might prove to be rather complicated for practical purposes. An analytic procedure would consist in estimating, in addition to recorded baptisms, the numb

/of childre

of children born who do not survive until the first opportunity for official baptism. The varying delays between date of birth and date of baptism can be studied from the baptismal records. During these delays there is a risk of pre-baptismal death, distributed according to the rates of infant and child mortality by month of age. Civil infant death registration must be expected to be incomplete, especially in the case of infant deaths occurring shortly after birth; but this deficiency can be estimated in relation to theoretical age curves of infant mortality.

It is more difficult to investigate the general levels of omissions in death registration. The rate of inter-censal population increase, in a refined calculation, should be very nearly identical with the difference between the average birth rate and the average death rate. Rate of survival over the inter-censal period can also be calculated in respect to particular age groups in one census, and groups which are older by the corresponding number of years in the next census.

There are additional methods for estimating the accuracy of death registration in relation to the accuracy of birth registers, where it can be presumed that incomplete death registration occurs in those areas or localities where birth records are likewise deficient. In areas similarly situated, the ratio of deaths to births may be similar. In these and other ways, calculations may help identify those areas where death registration is still noticeably incomplete.

Experiments might also be made in selected registration areas, note being taken of the effects of qualitative improvement in personnel, or forms and instructions modified to suit criteria of local convenience. If improved registration can be carried into effect in a group of areas which constitute a representative sample, correction factors can be obtained for adjustment of deficient results of registration in other areas.

Various cros-tabulations of the results of vital statistics would be analytically useful. Deaths by sex and age, by medically certified cause and by cause otherwise certified, and births by age of mother, might be of added interest when tabulated separately for large, medium-sized and

small towns, centres of corregimientos and other rural areas. It would be of particular interest to ascertain in relation to births, if possible, the interval time since the preceding birth or, in the case of a first birth, the interval since marriage.

(d) Other conventional statistics

The needs for a housing census and an agricultural census have been indicated. Similarly, there is a need for current statistics on housing construction, school enrolment, etc., and for a great variety of other statistics that in relation to demographic analysis can furnish important background information important in formulating the criteria for economic and social programmes. It is not within the competence of the demographer to discuss the merits of particular statistical series, beyond saying that it would be useful, in each instance, to make the relevant tabulations and concepts coincide as closely with those of the population census as the circumstances permit. Statistical coordination would also extend to censuses of industry, commerce, services, etc.

(e) Special investigations

Many surveys and investigations have already been undertaken in Colombia by a variety of public and private agencies. Co-ordination might make possible a better analytic use of such surveys than has been achieved thus far. Surveys can often serve as vehicles for the simultaneous or successive collection of a variety of items of information, not all of them of direct interest to the same agency. Inter-agency consultation should be intensified so that maximum use can be derived from the surveys being planned.

Comprehensive surveys, representative of the conditions of the people, can only be effected when the sampling is organized on a population basis. For practical purposes sampling is most efficient when based on households. The efficient sampling of households, in turn, is facilitated when the population census establishes a useful sampling frame, consequently particular attention should be given to these possibilities in the organization of the census.

/Once established

Once established a sampling of households can be maintained, with minor adjustments from time to time, over an extended period, permitting frequent repetition of surveys at reduced cost per individual survey. A periodic survey operating, for instance, by successive quarterly rounds, would be an opportune vehicle for information on numerous important matters, as a continous follow-up on the census, and as a supplement on detailed items which cannot be secured directly by a census.

The study of manpower characteristics should be a principal feature of such a periodic survey. Employment conditions vary seasonally, and sometimes abruptly, and any adequate study depends on periodic follow-ups. However, the number of questions which have to be maintained unchanged in each survey round - because of possibly important seasonal variations - can be sufficiently limited to enable the same survey to serve as a vehicle for occasional, ad hoc information on many other items. Among these internal migration would seem to deserve relatively high priority; questions concerning change of residence, and others which would be important for significant cross-classifications, might perhaps be inserted once a year. In the remaining survey rounds a variety of other matters might be investigated relating, for example, to publich health, school attendance, housing conditions, family budgets, and so forth.

This does not preclude the organization, when possible, of more intensive special-purpose surveys where more particular problems, or problems of particular localities, are studied in greater depth in relation to all the governing factors.

Lastly, some surveys can be carried out on the basis of existing records; e.g., an attempt might be made to ascertain migratory movements from data recorded on death certificates.

(f) Institutionalization of demographic research

Public bodies have not yet become fully aware of the services which demographic analysis can render in the determination of objectives and criteria in economic and social policies. One reason for this is that no permanent office furnishing this type of information, has yet been established. A working group for demographic analysis was formed early

in 1961 under the auspices of DANE and the Departamento Administrativo Nacional de Planeación, and its work programme is being drawn up with the advice of a United Nations technical assistance expert in demography, in consultation with ECLA and with the Demographic Research and Training Centre (CELADE) in Santiago, Chile. It is to be hoped that the capacity, initiative and technical experience of this group will eventually be sufficiently strengthened to provide a permanent service of demographic and related research for the national agencies engaged in economic and social planning and policy-making in Colombia.

An important function of the national demographic service would be to maintain constant close liaison with the various governmental and private agencies that supply statistics and that have varying interests in the findings of demographic and related research. Inter-agency consultation will make it possible to secure statistical data of the greatest analytic relevance, and to ascertain what types of studies and reports would be of most value to the several policy-making agencies.

In addition to persons especially competent in the techniques of demographic analysis the national demographic service also requires personnel, or close liaison with personnel, versed in a variety of economic and social fields, so that the co-ordination of demographic findings with studies of economic and social interest can be ensured. Reports should be prepared, either at regular intervals or from time to time, setting forth the practical use of findings, the findings themselves, and the methods by which they have been obtained. The results would then be enlightening to the policy-makers, while there would be full assurance that they had been obtained with scientific objectivity.

It is the hope of ECLA that the present report, tentative though it must be, will help to illustrate the uses of demographic analysis and make some small contribution to promoting the establishment of a permanent national demographic service in Colombia, and perhaps in some other countries where a need is felt for demographic information as a background for economic and social development policy.