



NATIONAL PLANNING COUNCIL

MANPOWER RESOURCES OF
CEYLON 1956-1981

BY

R. M. SUNDRUM, PH.D. (LOND.)

with the assistance of

V. R. RAO., M.SC. (BOMBAY)

and

S. SELVARATNAM, B.A. HONS. (CEYLON)

ANNING SECRETARIAT, COLOMBO, CEYLON

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Bombay, at the request of the Planning Secretariat, Government of Ceylon.

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FOREWORD

THE study on the Manpower Resources of Ceylon, 1956-81 is the second of the series undertaken by the Demographic Training and Research Centre, Bombay for the Planning Secretariat. It forms part of the original request by the Planning Secretariat for a study of future population and manpower trends in Ceylon. The first study "POPULATION PROJECTIONS FOR CEYLON 1956-81" has been published separately.

Projections of the work force are usually beset with many difficulties, particularly those relating to a definition, valid for the projection period, of the economically active population. Assumptions have to be made about several factors closely affected by social and economic changes which are themselves difficult to visualise. Nevertheless estimates of the probable size and composition of the persons who take part in a nation's economic life are important for effective programming. The present study is the first of its kind pertaining to Ceylon and has already proved of considerable use in the preparation of the 10 year Plan.

The Planning Secretariat is much indebted to the Demographic Training and Research Centre, Bombay and to the authors—Dr. Sundram of the Centre's Staff and Messrs. Rao and Selvaratnam—for undertaking this study.

GAMANI COREA,
Director,
Planning Secretariat.

The Planning Secretariat,
Colombo, 11 May, 1959.

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CHAPTER I

INTRODUCTION

A PROJECTION of the population of Ceylon from 1956 to 1981 has been prepared by S. Selvaratnam * at the Demographic Training and Research Centre, Bombay, at the request of the Planning Secretariat of the Government of Ceylon. In connection with that projection, the Planning Secretariat has requested the Centre to study the economic implications, with special reference to manpower resources and utilisation. The present paper is confined to the statistical aspects of the problem and presents a projection of the economically active population up to 1981. This projection is based on the population projections already available and on the basis of the best available data for showing trends in the economically active population in countries of the region which have economic and social conditions similar to Ceylon. The economically active population is further analysed into some components of change.

Chapter 2 of this report brings together the available information on the economically active population of Ceylon in recent times and compares the position in Ceylon with that of a few other countries of the region. There it is pointed out that the 1946 Ceylon data have been used as a basis for projecting the economically active population of Ceylon, as more complete information is available from the Census of Ceylon for that year. In Chapter 3, participation rates for both urban and rural sectors are presented. A breakdown of the available data by urban and rural sectors is considered useful for projecting the economically active participation rates. A number of different methods are available for this purpose, many of them based on an extrapolation of observed trends of participation in economic activity for the country under study. However, sufficient comparable data are not available for Ceylon to attempt such a procedure, or indeed for any other country of the region with economic and social conditions similar to Ceylon. Therefore, the basic assumption underlying the projection presented here is that participation rates will change over time for a variety of economic and social causes, but that the rate of urbanisation may itself be considered an index of these economic and social changes. By allowing for a changing urban-rural proportion of the total population, and even if constant urban and rural participation rates are used, there will be variation in overall participation rates. Even for this model, adequate statistical data are not available and therefore a number of approximations have had to be made. Since data are not available for calculating participation rates for the urban and rural sectors separately in Ceylon, it is assumed that the rates are similar to those of Burma, as given by the Censuses of that country taken in 1953 and 1954, and these separate sets of rates are held constant for the urban and rural populations of Ceylon over the period

* "Population Projections for Ceylon 1956-1981" by S. Selvaratnam, Planning Secretariat, 1959.

of the projection. However, the computations have been made in such a way that, as the required data becomes available for Ceylon, simple adjustments can be made to revise the projections presented in this report.

In Chapter IV, a model is constructed for the process of urbanisation as it may be expected to take place in Ceylon during the next quarter of a century, using whatever information is available from neighbouring countries with more detailed data. The model has the incidental advantage of giving the age structure of the urban and rural population separately at certain dates for which the projection is made. Here again a number of approximations were necessary, but the calculations can be revised when data become available for making better estimates of the constants used in the model. With urban and rural participation rates and a projection of the urban and rural populations, a projection of the working force is obtained. This is presented in Chapter 5, together with an analysis of the growth of the working force into some of the components of change.

In the report by Selvaratnam mentioned above, three projections of the total population were made ; namely High, Medium and Low projections. These projections differ in the assumptions made about the future trend of fertility. In the High projection, the level of fertility is assumed to remain constant upto 1981 ; in the Medium projection, fertility is assumed to decline by 5 per cent. every five calendar years after 1961 ; and in the Low projection, the decline of fertility is assumed to be 10 per cent. every five calendar years after 1961. From each of these projections of the total population, we can now obtain the size of the population of working age, i.e., the population between ages 15 and 64. However, as changes in fertility starting in 1961 will affect the estimates of population over 15 years of age only in the year 1981, the three projections of the population of working age do not differ, except in the last quinquennial period ending in 1981. These projections of the population of working age are given in Table 1.

Table 1
POPULATION OF WORKING AGE IN CEYLON, 1956-1981
(in thousands)

<i>Year</i>	<i>Male</i>	<i>Female</i>
1956	2,730	2,356
1961	3,105	2,736
1966	3,599	3,251
1971	4,156	3,841
1976	4,788	4,502
1981 :		
High	5,536	5,269
Medium	5,510	5,244
Low	5,484	5,218

Although the size of the population of working age does not differ according to the different projections except in 1981, the size of the total population is affected to a greater extent by the different assumptions regarding fertility. Hence the proportion of the population in the working ages varies for the different projections. This is shown in Table 2.

Table 2.
POPULATION OF WORKING AGE AS PERCENTAGE OF
TOTAL POPULATION OF CEYLON, 1956-1981

<i>Year</i>	<i>High</i>		<i>Medium</i>		<i>Low</i>	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
1956	55.47	52.91	55.47	52.91	55.47	52.91
1961	54.68	52.67	54.68	52.67	54.68	52.67
1966	54.80	53.48	55.02	53.71	55.25	53.94
1971	54.33	53.65	55.19	54.54	56.16	55.43
1976	53.28	53.03	55.15	54.93	57.14	56.86
1981	52.23	52.16	55.14	55.11	58.07	58.10

The results for the High projection show the effect of mortality decline alone. As is to be expected, its effect is to reduce slightly the proportion of males in the working ages,* but among females no trend is discernible. By comparison, the results for the other projections, which assume declining fertility, show that, in general, there is a tendency for the proportion of the population of working age to increase. This is because under the assumption of declining fertility, the rate of growth of the total population is reduced, but the population of working age is not much affected during the period under study. Much of the following discussion is based on the absolute figures summarised in Table 1. As there is also not much difference between the proportion of the population of working age based on the three different assumptions regarding fertility, the Medium population projection has been used in the projection of the manpower resources.

* United Nations, "Aging of Populations and its Economic and Social Implications", Population Studies No. 26, New York, 1956, pp. 40-41, and other references given there.

CHAPTER II

THE ECONOMICALLY ACTIVE POPULATION OF CEYLON,
1946 AND 1953

DATA on the economically active population of Ceylon are available both from the 1946 and 1953 censuses of Ceylon. Table 3 below shows the gainfully occupied population of Ceylon classified by age and sex. The table also shows the percentage of the population in each age and sex group which is gainfully occupied, i.e., the participation rates.

Table 3.

GAINFULLY OCCUPIED POPULATION OF CEYLON, 1946, BY AGE AND SEX

Age-group	Number			Percent. gainfully occupied (Participation Rate)		
	Males	Females	Total	Male	Female	Total
10-14	58,491	46,011	104,502	14.1	11.8	13.0
15-19	215,663	76,826	292,489	59.2	24.3	43.0
20-24	273,035	74,567	347,692	83.3	23.8	54.2
25-29	291,804	71,104	362,908	95.0	26.3	62.8
30-34	244,747	58,572	303,319	99.3	28.8	67.4
35-39	256,815	64,488	321,303	98.4	31.1	68.6
40-44	180,584	47,091	227,675	99.0	33.7	70.7
45-49	178,806	45,418	234,224	97.5	33.4	70.2
50-59	180,942	48,142	229,084	90.7	30.1	63.8
60-69	109,862	26,114	134,976	88.4	26.0	60.4
70 +	51,775	11,577	63,352	71.1	18.2	46.5
All ages	2,041,524	570,000	2,611,954	57.8	18.2	39.2

The gainfully occupied population of Ceylon was also classified according to urban and rural sectors in 1946. Only the figures for all ages are available, and not for each age group. The data are shown in Table 4.

Table 4.

GAINFULLY OCCUPIED POPULATION IN URBAN AND RURAL SECTORS OF CEYLON, 1946

	Urban	Rural (inclusive of Estates)	Total
Male	399,393	1,642,131	2,041,524
Female	57,077	542,923	570,000
Total	456,470	2,155,054	2,611,524

Table 5 below shows the economically active population of Ceylon in 1953, classified by age and sex. The percent. economically active in each age and sex group is also shown.

Table 5.
ECONOMICALLY ACTIVE POPULATION OF CEYLON, 1953, BY AGE AND SEX

<i>Age Group</i>	<i>Number</i>			<i>Percent economically active</i>		
	<i>Males</i>	<i>Females</i>	<i>Total</i>	<i>Males</i>	<i>Females</i>	<i>Total</i>
10-14	48,885	43,683	92,568	10.3	9.8	10.1
15-19	169,386	94,339	263,725	46.5	27.8	37.5
20-24	321,587	106,878	428,465	81.4	28.7	55.8
25-29	351,018	96,160	447,178	94.5	28.5	63.1
30-34	271,370	71,014	342,384	95.1	30.2	65.7
35-39	280,012	78,412	358,424	95.9	32.2	66.9
40-44	200,666	55,810	256,476	95.3	34.6	68.9
45-49	201,664	56,658	258,322	95.4	35.6	69.8
50-54	149,738	42,483	192,221	93.8	35.9	69.1
55-59	99,362	27,189	126,551	91.2	34.1	67.1
60-64	70,729	20,895	91,624	84.2	30.1	59.7
65+	103,241	30,559	133,800	67.8	23.2	47.1
All ages	2,267,658	724,080	2,991,738	53.1	18.9	36.9

Tables 3 and 5 show that there is a considerable difference between the enumerations of the gainfully occupied population in 1946 and the economically active population in 1953. The Census Report for 1946 has explained that unpaid family workers were excluded from the enumeration of the gainfully occupied population, while such workers were included in the 1953 enumeration of the economically active population. Thus, the 1953 enumeration is closer to the international recommendations on the measurement of the working force. As most unpaid family workers are female, this explains to some extent the greater female participation rate in 1953 as compared with 1946. However, some unpaid family workers are also male, and their inclusion in 1953 should have raised the male participation rate to some extent, other things remaining constant. But the male participation rates are lower in each age group in the 1953 data than in the 1946 data. As a result the overall participation rate for males in 1953 was only 53.1 compared with 57.8 in 1946. It therefore seems that there are other differences of definition in the enumerations of 1946 and 1953, about which we do not yet have complete information.

It may however be the case that participation rates were actually higher in 1946 than in 1953. Immediately following the Second World War, Colombo was the headquarters of the Supreme Allied Command for the South-east Asia Campaign. This may have had the effect of providing higher than usual opportunities for employment. Also overall participation rates may have been higher in 1946 than in 1953, owing to the presence of a larger proportion of immigrants in the former year. This would be the case if the immigrant population had a higher participation rate than the native population.

Comparison of the 1946 and 1953 male participation rates of Ceylon with the rates for certain other countries of the region may provide some basis for determining which set of participation rates in Ceylon appear to be more reasonable to use as basis of the projection. Male participation rates are shown in Table 6 for Burma, the Philippines and India, countries which have data for roughly the same period.

Table 6.
MALE PARTICIPATION RATES FOR SELECTED COUNTRIES

Age-Groups	Ceylon *	Ceylon	Burma †	Burma †	Philip-	India §	India §
	1946	1953	L. F.	C. Y.	pines ‡	1953	1953-54
			1953-54	1953-54	1956		
10-14	14.1	10.3	17.6	21.1	29.6	13.0*	12.0*
15-19	59.2	46.5	57.1	67.2	74.4	76.2	74.5
20-24	83.3	81.4	73.6	85.9	90.6	95.5	93.5
25-29	96.9	94.8	81.2	93.9	96.1	98.1	97.5
30-44	98.6	95.6	82.8	96.2	96.0	97.5	97.1
45-54	95.5	90.5	80.4	94.3	94.9	90.3	90.5
55-64	89.2	88.2	58.0	71.5	84.4		
65 +	77.9	67.8			48.9	54.8	51.2
All ages	57.8	53.1	45.6	53.4	55.8	58.7	58.3
Standardized Rate	57.8	54.4	49.3	57.8	60.1	62.5	61.6

Table 6 shows that the rates obtained from the 1953 Census in Ceylon are low in comparison with those of the other countries of the region which may be considered to have similar economic conditions, with the exception of the L. F. rates for Burma. Complete details are not yet available from the 1953 Census of Ceylon to explain this difference in the level of the participation rates. Therefore the present estimates are made on the basis of the 1946 Census results. It may be possible, of course, that as additional data from the 1953 Census become available, the projection of the working population should be changed to conform to data of that Census.

* In calculating the participation rates for Ceylon 1956, some adjustments have been made to make the age-groups comparable with those of other countries.

† The figures for Burma are estimates for the whole country obtained from the 1953 Urban Census and the 1954 partial Rural Census, by weighting the enumerations in both censuses according to the estimated proportion of the population living in urban and rural areas. For Burma, L.F. refers to the Labour Force definition, which included all those working or seeking work for a week preceding the Census dates in February; and C. Y. refers to the data on "workers during the Census Year", i.e., the year preceding the Census dates.

‡ The Philippines rates are obtained by averaging the results of two surveys taken in May and October, 1956.

§ The Indian rates are calculated from data obtained in the 6th and 7th Rounds (R. 6 and R. 7) of the National Sample Surveys, taken in 1953 and 1954. The first figure in each column marked with an asterisk (*) refers to the participation rate for the population under 15 years of age.

|| The standardized rates in the last row have been obtained by using the 1946 Ceylon population as standard population.

Table 6 also shows that the 1946 Ceylon rates conform most closely with the C. Y. enumeration in Burma. In fact the standardized rates are identical. The Burma C. Y. definition included unpaid family workers, while the Ceylon 1946 Census did not. Thus the overall similarity between the two sets of participation rates suggests that the exclusion of unpaid family workers in Ceylon in 1946 has been balanced by the greater rate of economic activity in Ceylon at that time, stimulated by the abnormal employment opportunities immediately following the Second World War.

CHAPTER III

URBAN AND RURAL PARTICIPATION RATES

THE method chosen for projecting the manpower resources of Ceylon depends on distinguishing between urban and rural participation rates. However, data are not available from either the 1946 or 1953 censuses for computing such rates. Therefore, it was necessary to improvise in the absence of such data. It is usual in such cases to 'borrow' the rates from some other country which can be considered to be sufficiently similar. Since among the countries of South East Asia, Burma is the only country for which urban and rural participation rates are separately available on a census basis, the rates from the Burmese Census of Census Year Workers have been taken for application to Ceylon. Actually, considering the similarities of the two countries as compared with Ceylon and any other country of the region, the application of the Burmese urban and rural rates to Ceylon may provide the best approximation to the actual urban and rural participation rates in Ceylon.

The participation rates for the urban and rural sectors of Burma of male census year workers are shown in Table 8.

Table 8

URBAN AND RURAL PARTICIPATION RATES FOR MALE CENSUS YEAR WORKERS IN BURMA 1953-54

<i>Age-group</i>	<i>Urban</i>	<i>Rural</i>
10-14	10.7	22.9
15-19	53.4	69.6
20-24	84.2	86.2
25-34	93.4	93.9
35-44	93.7	96.6
45-54	90.0	95.0
55 +	62.6	73.1
All ages	51.6	54.6

In order to check whether the use of these rates will give a good approximation these rates have been applied to the urban and rural male populations of Ceylon,

according to the 1946 Census, and the results compared with the actually enumerated gainfully occupied population for each age group and for the urban and rural sectors as a whole. The comparison is shown in Table 9.

Table 9

ECONOMICALLY ACTIVE POPULATION OF CEYLON—1946
ACTUAL AND ESTIMATED BY USING BURMESE RATES

Age-group	<i>Economically Active Population</i>			<i>as enumerated</i>
	<i>as estimated by using Burmese Rates</i>			
	<i>Urban</i>	<i>Rural</i>	<i>Total</i>	
10-14	5,999	82,180	88,179	58,491
15-19	35,761	207,114	242,875	215,663
20-24	67,423	213,670	281,093	273,035
25-34	111,797	407,652	519,449	536,551
35-44	77,680	348,258	425,938	437,399
45-54	43,741	227,698	271,439	275,200
55 +	24,603	183,633	208,236	245,185
All ages	367,004	2,670,205	2,037,209	2,041,524
Enumerated	399,393	1,642,131	2,041,524	

The comparison in Table 9 shows that the results obtained by the application of the Burmese urban and rural participation rates to the Ceylon population in 1946 are fairly close to the figures of the working population actually enumerated in the 1946 Census of Ceylon. The approximations overestimate the working population in the younger ages and underestimate the working population in the older ages to nearly the same extent so that the estimate of the total working population agrees very closely. The estimate of the urban working population is lower than the actual for 1946 ; no attempt has been made to correct for this, as the 1946 enumerated figures may be reflecting to some extent the abnormal conditions of urban employment at that time.

For certain purposes of analysing the growth in the economically active population, it is useful to have the participation rates in five year age intervals. A set of

such rates have therefore been derived from the figures given in Table 8 by simple interpolation, adjusted so as to preserve the totals for the original age groups as far as possible. These rates are given in Table 10.

Table 10

URBAN AND RURAL MALE PARTICIPATION RATES BY FIVE-YEAR AGE GROUPS

<i>Age-group</i>	<i>Urban</i>	<i>Rural</i>
10-14	10.7	22.9
15-19	53.4	69.6
20-24	84.2	86.2
25-29	92.6	92.7
30-34	94.4	95.4
35-39	94.1	96.7
40-44	93.1	96.4
45-49	91.3	95.8
50-54	88.3	93.9
55-59	75.0	88.4
60-64	63.7	84.3
65 +	48.7	58.4

CHAPTER IV

URBAN AND RURAL POPULATION OF CEYLON, 1956-1981

In this chapter, the urban population of Ceylon is projected by age and sex from 1956 to 1981, on the basis of a simple statistical model. Such a projection is needed to get estimates of the economically active population by using differential participation rates for urban and rural populations. The data needed for such a projection is, however, extremely deficient in Ceylon. Therefore, assumptions for the projection of the urban population of Ceylon made here are based on the experience of other countries of Asia with similar economic and social conditions.

The rate of urbanisation has been high in the countries of Asia in recent times, the rate of growth of urban populations being more than twice as great as that of the total populations in many instances. This high rate of urbanisation is the result not only of "pull" factors represented by the prospects of better employment opportunities in urban areas, but also by "push" factors due to the low level of economic conditions and sometimes of social unrest in the rural areas. Accelerated population growth which has resulted from recent rapid declines in mortality in many countries has itself tended to increase the importance of the "push" factors towards urban migration from overcrowded rural areas.

Ceylon has so far remained stable at a low level of urbanisation. It may, however, be confidently expected that with the progress of economic and social development on the one hand, and with the rapid growth of population increasing the pressure on the land resources in rural areas on the other, Ceylon will also enter a more rapid phase of urbanisation. Even then, the rate of urbanisation may not be as high in Ceylon as in some of the other countries of the region, as some of the non-economic factors which have induced a high rate of urbanisation in those countries are likely to be less important in Ceylon.

It must also be emphasised that the rate of urbanisation in the future is likely to be much influenced by the emphasis given to the agricultural sector and rural welfare in the programme of economic and social development. The greater the emphasis given to these matters, the smaller will be the effect of the "push" factor behind rural-urban migration. To the extent that Ceylon plans to make a considerable effort to develop its agricultural resources, the rate of urbanisation will be lower.

Some idea of the probable extent of urbanisation in the future is obtained by assuming that the male population in urban areas will increase twice as fast as the total male population over the period of 25 years from 1956 to 1981. This

has been the order of magnitude of the growth of urban population as compared with that of the total population in many countries of Asia during the recent period. In these countries, the rate of urbanisation may be higher in the future. As the rate of urbanisation in Ceylon may be smaller than for these other countries, it is assumed that the rate of urbanisation in Ceylon during the next 25 years will be at the same level as that observed in the other countries in the recent past period.

In the present report, urban population is taken to be the population in areas which would have been classified as urban according to the definition of the 1953 Census of Ceylon. With that definition, the assumption that the growth of the urban male population will be twice that of total male population implies that the proportion of the male population in urban areas will increase from 16.3 per cent. in 1953 to 24.9 per cent. in 1981. It is further assumed that this increase from 1953 to 1981 takes place at an exponential rate, i.e. that urbanisation follows a smooth trend.

Once the growth of the male urban population has been fixed, the growth of the female urban population is determined by the sex-ratio of the rural-urban migrants. It is here assumed that the rural-urban migration from 1953 to 1981 will have a sex-ratio (number of females per 100 males) of 70. It is convenient for computations to keep this ratio fixed over the period covered by the projection. This assumption, in turn, implies that the degree of urbanisation of females, i.e. the proportion of all females living in urban areas, will increase from about 14 per cent. in 1953 to about 23 per cent. in 1981, and that the sex-ratio of urban population will increase from 76 in 1953 to 88 in 1981. The sex-ratio of 88 in 1981 is consistent with the sex-ratio figures observed in some of the larger Indian states, with comparable degrees of urbanisation. It is recognised that the experience of the Indian states is not quite applicable, as urban population in these states have increased not only as a result of rural-urban migration from within the particular states but from other states as well. This assumption regarding the sex-ratio was, however, adopted for lack of any other more plausible one. It may be mentioned that a sex-ratio of 76 for Ceylon in 1953 appears to be rather low when compared with that found in other countries of this region, and is probably due to the large number of foreign migrants who still remained in Ceylon at the time of the 1953 Census.

A second set of assumptions had to be made regarding the age distribution of the urban population during the period of our projection. Here it was necessary to consider the growth of urban population according to its components, namely : (i) the growth deriving from the natural increase of the urban population ; (ii) the growth occasioned by the fact that certain areas, at one time classified as rural,

become later classified as urban because their populations have increased beyond the figure of 5,000 or because they are considered to have acquired some other urban characteristics ; and (iii) growth due to rural-urban migration.

First we may consider the assumptions made regarding the natural increase of urban population. Here it was assumed that there is no difference between fertility and mortality in urban and rural areas during the period covered in the projection, and that the rate of natural increase in urban areas would be the same as that reported by Selvaratnam in his medium projection of the total population. Clearly, the assumption of no rural-urban differentials in fertility and mortality seems most unlikely. However, the decision was made here since as yet there is not sufficient data to estimate the magnitude of any differentials that exist.*

Next we may consider the assumptions made regarding the growth of the urban population, due to the other two components, namely the growth of urban population by the inclusion, as urban, of areas formerly classified as rural, and the growth of urban population due to rural-urban migration. Here it is assumed that the contribution of these two components is roughly in the ratio of 1 : 3, i.e. the former component contributing to one-fourth and the latter to three-fourths of the growth of urban population, in excess of natural increase. Some data on this subject is available from India. In a study of the growth of population in Indian cities of population 100,000 and over, A. Bose † found that the contribution of these two components was of about equal magnitude. When we consider all urban areas as classified in the Censuses of Ceylon, and not only the large cities, it is to be expected on the one hand, that a larger number of areas would change their status from rural to urban areas, from time to time, and thus contribute to the growth of urban population, but each of these areas would contribute so little that the contribution of this component of growth would be relatively smaller, while on the other hand, rural-urban migration would be relatively greater, as a great deal of such migration might be directed towards the smaller towns. The relative magnitude of the growth due to these two components has therefore been fixed at the ratio of 1 : 3. The greater weight given to rural-urban migration seems also justified by the consideration that the economic and social development that is likely to take place in Ceylon would increase the rate of rural-urban migration.

* An important computational advantage is obtained by this assumption, in estimating the first component of the urban population projection, namely, that due to natural increase. If $u_{x,t}$ is the urbanisation rate in the age-group x to $x + 4$ at time t , then the first component (i) in the next age-group of the urban population at time $t + 5$ can be obtained simply by multiplying the projected total population by the factor $u_{x,t}$. This follows because the urban population and the total population in any one age group survive to the next age group at the same survival rates. The urban population in the age-group 0-4 is obtained by using the child-women ratio (ratio of children 0-4 to women aged 15 to 44) of the total population. The method was not applicable to derive the 1956 urban age-distribution from the 1953 figures, as the interval between the two dates was not exactly equal to five years. The direct method was applied in this case.

† Ashish Bose, "The use of Population Balance Sheets Based on Census Statistics in the Study of Urbanisation in India" A paper submitted to the third Indian Sociological Conference Agra, 1958.

Following this line of reasoning, the estimated increase of urban population due to the inclusion of areas formerly classified as rural is shown for certain periods up to 1981 in Table 11.

Table 11

ESTIMATED GROWTH OF URBAN POPULATION BY INCLUSION OF AREAS
FORMERLY CLASSIFIED AS RURAL, IN CEYLON, 1953-1981

<i>Period</i>	<i>Males</i>	<i>Females</i>
1953-56	9,932	9,168
1957-61	21,526	19,988
1962-66	26,955	25,302
1967-71	32,748	31,128
1972-76	39,033	37,496
1977-81	48,416	46,718

The figures for males in this table were obtained by taking one-fourth of the increase in urban population, not attributable to natural increase. The female figures were obtained by applying the sex-ratio observed in the rural population at the beginning of each of these periods. These total figures were then distributed by age according to the age distribution of the rural population, as estimated for the beginning of each of these periods.

The estimated volume of rural-urban migration during the same period is shown in Table 12.

Table 12

ESTIMATED RURAL-URBAN MIGRATION IN CEYLON, 1953-1961

<i>Period</i>	<i>Males</i>	<i>Females</i>
1953-56	26,693	20,785
1957-61	64,435	45,110
1962-66	80,919	56,651
1967-71	98,901	69,241
1972-76	118,381	82,879
1977-81	146,853	102,812

The male figures in this table were obtained by taking three-fourths of the increase in urban population, not attributable to natural increase, in each period. The female figures for each period were taken as 70 per cent. of the male figures. This is the sex-ratio of migrants which is consistent with the rise in the proportion of females living in urban areas from about 14 per cent. in 1953 to about 22 per cent. in 1981.

For projecting the urban population by age, data were required not only for the total numbers of male and female rural migrants into urban areas, but also for their age distributions. No such data were available from Ceylon; therefore, certain Indian data were used for deriving the age-distributions. Using the census survival method, Agarwala* has estimated the age distribution of the migration into some large cities of India. On the basis of the average of these age-distributions, the age-distribution of male and female rural migrants into the urban areas of Ceylon was assumed to be as shown in Table 13. This age-distribution is assumed to be true of the rural-urban migration throughout the period covered by the projection.

Table 13

ESTIMATED AGE DISTRIBUTION OF RURAL-URBAN MIGRATION IN CEYLON, 1953-1981

<i>Age-Group</i>	<i>Males</i>	<i>Females</i>
10-14	10	11
15-19	20	22
20-24	30	30
25-29	25	22
30-34	10	10
35-39	5	5
All ages	100	100

The assumptions made about the growth of urban population in Ceylon may be briefly summarised as follows :

- (1) The proportion of males living in urban areas will increase exponentially from about 16 per cent. in 1953 to about 25 per cent. in 1981.
- (2) The sex-ratio (females per 100 males) of rural-urban migration is 70. This implies that the degree of urbanisation (i.e. the proportion of total population living in urban areas) of females will increase from about 14 per cent. in 1953 to about 23 per cent. in 1981, and that the sex-ratio of urban population will grow from 76 per cent. in 1953 to 88 per cent. in 1981.
- (3) The natural increase of the urban population is assumed to be according to the same fertility and mortality conditions as were assumed for the total population in Selvaratnam's medium projection.
- (4) The increase of the urban population by including areas formerly classified as rural is as given in Table 11. The age-distribution of the population thus added to the urban population during each five year period corresponds to the age distribution of rural population at the beginning of the period.
- (5) The increase of urban population by rural-urban migration is as given in Table 12. The age distribution of such migration is as given in Table 13.

* S. N. Agarwala, "A Method Estimating Decade Internal Migration in Cities from Indian Census Data". *Indian Economic Review*, February, 1958, Vol. IV., No. 1, pp. 59-76.

On the basis of these assumptions, the urban population has been calculated in five-year age groups from 1956 to 1981 at five year intervals, and the results are given in the appendix to this report. (See Appendix Table I). The rural population by age is then obtained by subtracting the projected urban population from the projected total population. (See Appendix Table II). Certain aspects of the results are briefly described here. Table 14 shows the projected male and female urban populations, and the proportions that each of these represent of the total.

Table 14
ESTIMATED URBAN POPULATION OF CEYLON, 1956-1981

Year	Urban Population (in 000s)			Percentage of Total Population		
	Male	Female	Total	Male	Female	Total
1953	723	555	1,278	16.3	14.0	15.2
1956	832	656	1,487	16.9	14.7	15.9
1961	1,032	835	1,867	18.2	16.1	17.2
1966	1,293	1,060	2,353	19.8	17.5	18.7
1971	1,612	1,351	2,963	21.4	19.2	20.3
1976	2,006	1,711	3,717	23.1	20.9	22.0
1981	2,485	2,156	4,633	24.9	22.7	23.7

The growth of the urban population can be divided into three components (i) natural increase ; (ii) inclusion of areas formerly classified as rural ; and (iii) rural-urban migration. The relative contribution of each of these components to the population is shown in Table 15.

Table 15
COMPONENTS OF GROWTH OF URBAN POPULATION, 1953-1981

- (A) Natural Increase.
(B) Inclusion of areas formerly classified as Rural.
(C) Rural-Urban Migration.

Period	Males				Females			
	(A)	(B)	(C)	Total	(A)	(B)	(C)	Total
1953-56	63.5	9.1	27.4	100.0	70.2	9.1	20.7	100.0
1957-61	57.1	10.7	32.2	100.0	63.6	11.2	25.2	100.0
1962-66	57.8	10.5	31.7	100.0	63.7	11.2	25.1	100.0
1967-71	58.4	10.3	31.3	100.0	65.5	10.7	23.8	100.0
1972-76	60.0	9.9	30.1	100.0	66.6	10.4	23.0	100.0
1977-81	59.3	10.1	30.6	100.0	66.4	10.4	23.1	100.0

This table shows that natural increase plays a greater part in the growth of the female urban population than for the male urban population, as is only to be expected. In both cases, natural increase accounts for more than half of the growth of urban population. Except for the period 1953-56, the relative magnitudes of the three components are fairly stable in the case of both males and females.

As the present projection of the urban population has been based on many assumptions, some of which were made on the basis of rather slender statistical evidence, some test of internal consistency of the results seems called for, particularly in regard to the age distribution of the urban population. A simple measure has therefore been devised, which may be called an index of urban age-structure. The proportion of the total population which is classified as urban may be called the degree of urbanisation. In the same way, we may calculate the proportion of urban to total population in each age-group, which may be called age-specific urbanisation rates. The degree of urbanisation is then an average of these age-specific rates. It follows that if the age-specific rates are expressed as percentages of the degree of urbanisation, then the average of these percentages, which may be referred to as age-specific urbanisation coefficients, is 100. The index of urban age-structure is then defined as the mean deviation of these coefficients, and may be used as a measure of the extent to which the urban age distribution deviates from the total age distribution. The deviations of the coefficients from 100 should be strictly weighted according to the populations concerned in the corresponding age-groups, but in our calculations uniform weights have been used to simplify the calculations, as this procedure does not appear to affect the results unduly.

In general, it may be expected that this index would be higher, the higher the degree of urbanisation and the higher the rate of rural migration, especially considering the characteristic effect of the latter to swell the urban numbers in the middle age groups. However, it seems likely that after a certain stage has been passed in the progress of urbanisation, those index may decline as the urban population tends to be stable in its age-structure. Table 16 shows the index separately computed for males and females during the period covered by the projection.

Table 16
INDEX OF URBAN AGE STRUCTURE

<i>Year</i>	<i>Male</i>	<i>Female</i>
1953	15.6	7.4
1956	15.9	5.9
1961	17.9	6.6
1966	18.5	10.4
1971	17.7	12.0
1976	17.3	13.6
1981	16.4	14.2

These values appear consistent with the values obtained for a number of the larger Indian States, data from which were used in making certain assumptions about the urbanisation in Ceylon. The male index is higher than the female, indicating that the female age distribution is less disturbed by the abnormal age-structure of rural migration. The male index also declines after a time in accordance with our expectation. There is some irregularity in the movement of the female index, which is mostly due to the initial conditions. On the basis of these results, we conclude that the urban population projections afford a plausible model.

CHAPTER V

THE ECONOMICALLY ACTIVE POPULATION OF CEYLON, 1956-1981

In the preceding chapters, male urban and rural participation rates have been derived and estimates have been obtained of the urban and rural population of Ceylon up to 1981. Given these data, it is now possible to estimate the economically active male population of Ceylon up to 1981. These estimates are given in Appendix Table III. In Table 17, the total figures of the male economically active population are given in numbers to the nearest hundreds and as percentages of the total populations.

Table 17

ESTIMATED ECONOMICALLY ACTIVE MALE POPULATION, CEYLON, 1956-1981

Year	Economically Active Males (000s)			Percentage of Total Population		
	Urban	Rural	Total	Urban	Rural	Total
1956	467	2,139	2,606	56.12	52.25	52.91
1961	570	2,405	2,975	55.24	51.77	52.40
1966	711	2,722	3,432	55.16	51.81	52.47
1971	877	3,087	3,965	54.69	52.09	52.64
1976	1,082	3,492	4,574	54.15	52.25	52.68
1981	1,332	3,928	5,260	53.76	52.26	52.64

Table 17 shows that the proportion of the total male population classified as economically active varies little during the period covered by the projection. It shows, also, that the overall participation rate is higher for the urban population than for the rural. This, of course, is to be expected, since the urban population in our model is being replenished constantly with rural migrants, most of whom are in the working ages. This has the effect of rendering the urban age distribution economically more favourable.

Table 17 shows, however, that the urban participation rate declines steadily throughout the period covered by the projection, while the rural rate declines up to 1961 and rises thereafter. Part of this difference can be explained by the changing age-structure of the male population of Ceylon. This is demonstrated clearly by the

results obtained from applying a constant set of participation rates for the whole country throughout the period. This is shown in Table 18, where the overall participation rate for the whole island is calculated by applying the 1946 rates and the 1953 rates respectively.

Table 18
OVERALL PARTICIPATION RATES IN CEYLON, 1956-1981
UNDER VARIOUS ASSUMPTIONS

<i>Year</i>	<i>According to present projection</i>	<i>Applying 1946 rates</i>	<i>Applying 1953 rates</i>
1956	52.9	53.1	50.3
1961	52.4	52.5	49.6
1966	52.5	52.6	49.6
1971	52.6	52.9	49.9
1976	52.7	53.1	50.1
1981	52.6	53.3	50.3

This table shows that the effect of the changing age structure is to cause the proportion of economically active males to decline up to about 1961 and thereafter to increase. This is shown to be the case in the rural sector according to the present projections, as shown in Table 17. In the case of the urban population, the decline in the overall participation rate up to 1961 may be attributed to the same factor namely the changing age-structure of the total population. The decline in the urban participation rate after that time is probably due to the fact that the urban age-distribution becomes less and less abnormal compared with the age-distribution of the total population, as shown by the index of urban age structure (see Table 16). This would tend to reduce the advantage of urban population in having a higher rate of participation in economic activity than the rural population. This factor outweighs the tendency of the changing age structure of the total population after 1961 to raise the participation rate.

In studying the growth of the economically active population in Ceylon, a number of components may be considered, namely : (i) that due to entries into the working force ; (ii) that due to withdrawals from the working force by deaths ; and (iii) that due to withdrawals from the working force by retirement or emigration. A method of calculating the contribution of these components in the growth of the economically active population is described in a United Nations Study.* This method assumes only one entry and one withdrawal per worker, i.e. that there is no entry followed by withdrawal and subsequent re-entry. Further, the calculations give only the net entry or net withdrawal for each age-group, whichever is the positive term. In applying the method, the survivors of the economically active population from one period to the next were calculated, using the life table for the periods, assumed in the projection of the total population. The difference between the economically active population at one point of time and their survivors at the next point of time

* United Nations—op. cit.; P: 57

is attributed to withdrawals from the working force by deaths. Next, the difference between the economically active population at one point of time and the survivors from the preceding point of time was calculated for each age-group. If positive, this difference was assumed to be the number of entries. If negative, it is assumed to be the number of withdrawals from the working force by retirement or emigration. The numbers per year of entries and withdrawals by deaths and retirement are given in Table 19 separately for the urban, the rural and the total populations. It should be noted that the number of entries and withdrawals shown in the table for the total population is not the same as the sum of the corresponding figures for the urban and rural populations. Withdrawals from the rural working population and entries into the urban working population cancel each other to some extent.

Table 19
CHANGE IN NUMBERS OF ECONOMICALLY ACTIVE MALES ACCORDING
TO COMPONENTS CEYLON, 1956-1981

<i>Period</i>	<i>Entries</i> (00's)	<i>Withdrawals by</i>		<i>Total</i> <i>Change</i> (00's)
		<i>Deaths</i> (00's)	<i>Retirement</i> (00's)	
<i>Urban</i>				
1956-61	1,251	-146	- 73	1,032
1962-66	1,683	-172	-109	1,403
1967-71	1,994	-201	-123	1,669
1972-76	2,445	-265	-136	2,044
1977-81	3,004	-299	-204	2,500
<i>Rural</i>				
1956-61	3,830	-806	-361	2,663
1962-66	4,635	-892	-577	3,166
1967-71	5,239	-1,003	-580	3,656
1972-76	5,817	-1,132	-637	4,048
1977-81	6,365	-1,265	-742	4,358
<i>Total</i>				
1956-61	5,068	-952	-421	3,695
1962-66	6,170	-1,064	-538	4,568
1967-71	7,173	-1,204	-643	5,326
1972-76	8,192	-1,396	-704	6,092
1977-81	9,319	-1,564	-897	6,858

Table 20 shows the components of growth of the economically active male population as annual rates per 1,000 of the economically active population at the beginning of each period.

Table 20
RATES OF CHANGE OF ECONOMICALLY ACTIVE MALE POPULATION
BY COMPONENTS, CEYLON, 1956-1981

<i>Period</i>	<i>Entries</i>	<i>Withdrawals by</i>		<i>Total</i>
		<i>Deaths</i>	<i>Retirement</i>	
<i>Urban</i>				
1956-61	53.58	-6.26	-3.12	44.20
1962-66	59.04	-6.04	-3.80	49.18
1967-71	56.12	-5.66	-3.46	47.00
1972-76	55.72	-6.04	-3.10	46.58
1977-81	55.54	-5.54	-3.78	46.22
<i>Rural</i>				
1956-61	35.82	-7.54	-3.38	24.90
1962-66	38.54	-7.42	-4.80	26.32
1967-71	38.50	-7.36	-4.26	26.86
1972-76	37.68	-7.34	-4.12	26.22
1977-81	36.46	-7.24	-4.26	24.96
<i>Total</i>				
1956-61	38.90	-7.30	-3.24	28.36
1962-66	41.48	-7.16	-3.62	30.70
1967-71	41.80	-7.02	-3.74	31.04
1972-76	41.32	-7.04	-3.54	30.74
1977-81	40.74	-6.84	-3.92	29.98

Tables 19 and 20 show clearly a high rate of growth of the urban working population, due to a high rate of entry into the working force, influenced, of course, by the amount of the rural-urban migration. The rate of withdrawal from the rural working force is higher than from the urban working force, because of the migration from the rural to the urban areas. The rate of withdrawal by deaths is lower in the urban population, as this population has a greater proportion in the middle age groups where the death rates are low.

The rates of change of the economically active population by components shown in Table 20 may be compared with the results obtained for populations at different

levels of fertility and mortality, and at different stages of economic development. These results are given in the United Nations study referred to above and are reproduced in Table 21.

Table 21

RATES OF CHANGE BY COMPONENTS OF ECONOMICALLY ACTIVE POPULATION UNDER DIFFERENT CONDITIONS OF FERTILITY AND MORTALITY

A : Expectation of life at birth — 50 years ; GRR = 3

B : Expectation of life at birth — 50 years ; GRR = 2

C : Expectation of life at birth — 70 years ; GRR = 3

D : Expectation of life at birth — 70 years ; GRR = 2

(In each case, the subscript 1 refers to underdeveloped country activity rates, and subscript 2 refers to developed country activity rates)

<i>Population Type</i>	<i>Entries</i>	<i>Deaths</i>	<i>Retirement</i>	<i>Total</i>
A—1	41.0	-10.9	- 1.3	28.8
A—2	41.0	-10.2	- 2.9	26.9
B—1	30.3	-13.8	- 2.4	14.3
B—2	31.4	-12.1	- 6.0	13.3
C—1	43.7	- 4.9	- 1.3	37.4
C—2	43.7	- 4.2	- 3.9	35.6
D—1	32.7	- 7.1	- 2.7	22.9
D—2	33.7	- 5.6	- 6.2	22.0

Demographically, Ceylon may be classified as being situated between population Types A and C. It has an expectation of life between 60 and 70 years and a gross reproduction rate close to 3. The level of the rates for the various components appears closer to those of developed country rates ; this is perhaps due to the fact that we have tried to approximate to the results of the 1946 enumeration of the economically active population, which excluded unpaid family workers. The analysis of the growth of the economically active population by components, shown in Tables 19 and 20 depends to a considerable extent on the approximations that had to be made at various stages of the projection. It is however believed that they indicate the probable levels of the various rates fairly closely.

It should be mentioned that no attempt was made to project the female working population in Ceylon by the same methods as used for projecting the male working population. Such a projection would have involved major problems arising out of the method of defining economically active females and in specifying the conditions of their participation in economic activity. Data for Ceylon were insufficient and that from other countries could not be used for making assumptions, since definitions vary so much between countries, in the case of the female working force. A simple method can be used to project the female working population by applying either the

1946 or the 1953 participation rates to the total projected female population, without distinguishing between the urban and rural sectors. Table 22 gives the estimated female working population under these two assumptions.

Table 22
ECONOMICALLY ACTIVE FEMALE POPULATION CEYLON, 1956-1981

<i>Year</i>	<i>Participation Rates Assumed</i>			
	1946		1953	
	<i>Number</i> (000's)	<i>Percentage of</i> <i>Total female</i> <i>population</i>	<i>Number</i> (000's)	<i>Percentage of</i> <i>Total female</i> <i>population</i>
1956	746	16.8	806	18.1
1961	877	16.9	945	18.1
1966	1,037	17.1	1,121	18.4
1971	1,219	17.3	1,321	18.6
1976	1,425	17.4	1,546	18.6
1981	1,665	17.5	1,805	18.7

As participation rates are held constant in each case, this table shows the effect of the changes in the age-distribution on the overall participation rates. The 1953 rates give higher values, because they are based on a definition of economically active females, which includes unpaid family workers. Both series show that the age structure of the total female population changes in such a way as to render it economically more favourable.

CHAPTER VI

CONCLUSION

A projection of the working population of a country is beset with many more difficulties than a projection of the total population. A total population projection has to allow only for trends in fertility and mortality (in cases where migration can be neglected) and these factors are ordinarily affected only by gradual changes. Further, the experience of other countries can be drawn upon to a great extent in making assumptions about the future trends of fertility and mortality in a particular country.

In the case of the economically active population, there is first the problem of a definition of economically active persons, which can be assumed to hold throughout the period covered by a projection. Then, it is necessary to take account of economic and social changes which affect the participation rates, and which are difficult to anticipate as they depend greatly on the types of policy actions which are undertaken in the country. One of the simplest approaches to projecting the participation rates is to extrapolate past trends in such rates into the future. Apart from the fact that assumption that past trends will continue in the future may not be valid for Ceylon, which has embarked upon an active programme of planned economic and social development, this approach could not be undertaken in this study, because past age-specific participation rates are not available for Ceylon, or indeed for any other country of the region on a comparable basis. It has therefore been necessary to apply a different method in the present study.

The projection presented here depends on a model of the probable future pattern of urbanisation in Ceylon upto 1981. On the basis of this model, differential participation rates borrowed from the rent experience of Burma were applied to get estimates of the economically active population by age. The urban participation rates are generally lower than the rural participation rates ; in fact, when applied to the total population of Ceylon, they yield a figure for the economically active population which is smaller by about 10 per cent. But, as may be seen from Table 18 on page 14, the use of different participation rates has made little difference to the size of the total economically active population, as compared, for example, to the estimates obtained by using the 1956 rates throughout. It must therefore be concluded that the changes in the size of the economically active population of Ceylon will be dominated by the growth of the total population itself, and that variations in the participation rates are of less significance. In other words, the relative increase in the economically active population will be of the same order of magnitude as the relative increase of the total population.

The estimates of the urban and rural components of the economically active population are subject to a larger measure of uncertainty. As has been mentioned before, the rate of urbanisation will depend very heavily on the nature and effectiveness of the economic measures taken toward industrial development in urban areas

and agricultural development in rural areas. According to the present model, while the total economically active population is approximately doubled between 1956 and 1981, the urban component is nearly trebled, while the rural component increases by a little over 80 per cent. Unlike some of the other densely populated countries of the region, there is a greater amount of presently unutilised land resources in Ceylon, which can be brought under cultivation and on which a larger rural population can find employment. This is taken into account in estimating that 80 per cent. of the growth of the rural population may find employment in rural areas. Even so, the task of bringing the extra land resources into cultivation is likely to involve considerable investment in irrigation, land clearing operations, &c. Further, even assuming that such a large proportion of the growth of the rural population can be retained on the land, this implies a trebling of the urban labour force for which non-agricultural employment has to be found.

It is important also to note that the growth of the labour force during the next 25 years is already implicit in the present age-distribution of the population of Ceylon. Any decline in the level of fertility that may take place hereafter will not have any effect during the next 25 years, but only afterwards. The immediate benefit to be obtained from a decline in fertility is in the direction of reducing the youth dependency burden of the country. Ceylon is therefore faced with the problem of creating employment opportunities for a labour force which is growing at a rate sufficient to double itself in the next 25 years. This is a major task facing government and people of Ceylon, and one requiring their utmost efforts to find a satisfactory solution.

APPENDIX

Table I

URBAN POPULATION OF CEYLON BY AGE AND SEX, 1953-1981

(Rounded to nearest thousand)

Age-group	Year						
	1953	1956	1961	1966	1971	1976	1981
	<i>Males</i>						
0-4	94,000	119,000	142,000	174,000	223,000	282,000	344,000
5-9	74,000	87,000	119,000	143,000	176,000	226,000	285,000
10-14	68,000	74,000	95,000	130,000	160,000	193,000	245,000
15-19	70,000	71,000	89,000	113,000	152,000	187,000	226,000
20-24	80,000	78,000	91,000	114,000	145,000	191,000	235,000
25-29	74,000	88,000	95,000	113,000	141,000	176,000	231,000
30-34	61,000	74,000	94,000	102,000	123,000	153,000	188,000
35-39	48,000	61,000	78,000	99,000	108,000	130,000	162,000
40-44	43,000	46,000	61,000	91,000	99,000	108,000	130,000
45-49	34,000	41,000	45,000	59,000	90,000	99,000	108,000
50-54	27,000	32,000	40,000	45,000	58,000	89,000	98,000
55-59	18,000	24,000	31,000	39,000	44,000	57,000	86,000
60-64	12,000	15,000	22,000	29,000	37,000	41,000	54,000
65-69	9,000	10,000	14,000	20,000	26,000	33,000	37,000
70-74	5,000	7,000	8,000	11,000	16,000	21,000	28,000
75-79	3,000	4,000	5,000	6,000	8,000	12,000	16,000
80 and over	3,000	2,000	3,000	5,000	6,000	8,000	12,000
All ages	723,000	833,000	1,032,000	1,293,000	1,612,000	2,006,000	2,485,000
	<i>Females</i>						
0-4	91,000	116,000	138,000	169,000	216,000	273,000	333,000
5-9	72,000	83,000	115,000	138,000	171,000	219,000	277,000
10-14	60,000	71,000	89,000	124,000	149,000	184,000	235,000
15-19	54,000	62,000	82,000	104,000	142,000	171,000	211,000
20-24	50,000	60,000	76,000	101,000	126,000	170,000	206,000
25-29	48,000	54,000	71,000	90,000	120,000	147,000	196,000
30-34	39,000	47,000	60,000	77,000	98,000	130,000	159,000
35-39	32,000	39,000	49,000	63,000	82,000	103,000	136,000
40-44	27,000	30,000	39,000	50,000	64,000	82,000	104,000
45-49	21,000	26,000	30,000	39,000	50,000	64,000	83,000
50-54	19,000	20,000	25,000	30,000	38,000	50,000	64,000
55-59	13,000	16,000	20,000	25,000	31,000	38,000	50,000
60-64	10,000	12,000	16,000	19,000	24,000	30,000	37,000
65-69	8,000	8,000	10,000	14,000	17,000	22,000	28,000
70-74	5,000	6,000	7,000	8,000	12,000	14,000	18,000
75-79	3,000	4,000	5,000	5,000	6,000	8,000	11,000
80 and over	3,000	2,000	3,000	4,000	5,000	6,000	8,000
All ages	555,000	656,000	835,000	1,060,000	1,351,000	1,711,000	2,156,000

APPENDIX

Table II

RURAL POPULATION OF CEYLON BY AGE AND SEX, 1953-1981

(Rounded to nearest thousands)

Age	1953	1956	1961	1966	1971	1976	1981
	<i>Males</i>						
0-4	668,000	693,000	763,000	848,000	944,000	1,067,000	1,191,000
5-9	488,000	604,000	670,000	743,000	830,000	927,000	1,051,000
10-14	395,000	457,000	590,000	655,000	723,000	811,000	904,000
15-19	320,000	369,000	440,000	569,000	630,000	693,000	775,000
20-24	299,000	306,000	342,000	411,000	534,000	588,000	642,000
25-29	289,000	288,000	286,000	318,000	382,000	500,000	545,000
30-34	245,000	270,000	277,000	276,000	304,000	366,000	483,000
35-39	222,000	233,000	262,000	268,000	266,000	294,000	354,000
40-44	187,000	209,000	228,000	243,000	263,000	261,000	288,000
45-49	166,000	177,000	203,000	223,000	236,000	256,000	254,000
50-54	134,000	153,000	169,000	195,000	215,000	228,000	247,000
55-59	94,000	117,000	144,000	160,000	184,000	203,000	216,000
60-64	70,000	81,000	106,000	132,000	146,000	170,000	187,000
65-69	53,000	59,000	70,000	92,000	115,000	128,000	148,000
70-74	35,000	40,000	46,000	53,000	74,000	92,000	103,000
75-79	20,000	23,000	28,000	33,000	40,000	53,000	66,000
80 and over	24,000	14,000	21,000	28,000	33,000	40,000	53,000
All ages	3,709,000	4,093,000	4,645,000	5,248,000	5,919,000	6,677,000	7,507,000
	<i>Females</i>						
0-4	651,000	675,000	740,000	822,000	915,000	1,035,000	1,154,000
5-9	470,000	584,000	650,000	718,000	804,000	899,000	1,018,000
10-14	376,000	437,000	572,000	636,000	704,000	788,000	880,000
15-19	312,000	349,000	423,000	554,000	616,000	680,000	759,000
20-24	302,000	299,000	331,000	402,000	529,000	586,000	644,000
25-29	282,000	292,000	283,000	313,000	379,000	506,000	557,000
30-34	220,000	258,000	281,000	273,000	302,000	367,000	491,000
35-39	188,000	206,000	250,000	273,000	265,000	295,000	357,000
40-44	152,000	175,000	201,000	244,000	268,000	260,000	289,000
45-49	128,000	143,000	170,000	196,000	239,000	262,000	254,000
50-54	101,000	118,000	137,000	164,000	187,000	232,000	255,000
55-59	71,000	88,000	112,000	131,000	161,000	179,000	223,000
60-64	57,000	63,000	82,000	104,000	120,000	151,000	170,000
65-69	43,000	48,000	55,000	72,000	92,000	106,000	134,000
70-74	30,000	33,000	38,000	44,000	58,000	74,000	87,000
75-79	19,000	20,000	23,000	26,000	30,000	40,000	53,000
80 and over	21,000	10,000	16,000	20,000	24,000	26,000	35,000
All ages	3,423,000	3,798,000	4,361,000	4,993,000	5,693,000	6,485,000	7,460,000

APPENDIX

Table III

ECONOMICALLY ACTIVE MALE POPULATION OF CEYLON BY AGE, 1956-1981

(Rounded to nearest thousands)

<i>Age-group</i>	1956	1961	1966	1971	1976	1981
			<i>Urban</i>			
10-14	8,000	10,000	14,000	17,000	21,000	20,000
15-19	38,000	47,000	60,000	81,000	100,000	121,000
20-24	66,000	77,000	96,000	122,000	161,000	198,000
25-29	81,000	88,000	104,000	130,000	163,000	214,000
30-34	70,000	89,000	97,000	116,000	145,000	178,000
35-39	57,000	73,000	93,000	102,000	122,000	152,000
40-44	42,000	57,000	85,000	92,000	101,000	121,000
45-49	38,000	41,000	54,000	82,000	90,000	99,000
50-54	28,000	36,000	40,000	51,000	79,000	86,000
55-59	18,000	23,000	29,000	33,000	43,000	65,000
60-64	10,000	14,000	18,000	24,000	26,000	34,000
65 and over	11,000	15,000	20,000	28,000	36,000	45,000
All ages	467,000	570,000	710,000	878,000	1,087,000	1,333,000
			<i>Rural</i>			
10-14	105,000	135,000	150,000	166,000	186,000	207,000
15-19	255,000	307,000	396,000	438,000	482,000	539,000
20-24	264,000	295,000	355,000	461,000	507,000	554,000
25-29	267,000	265,000	294,000	354,000	463,000	505,000
30-34	258,000	264,000	263,000	290,000	349,000	461,000
35-39	225,000	253,000	259,000	257,000	286,000	342,000
40-44	202,000	219,000	234,000	254,000	251,000	273,000
45-49	169,000	194,000	214,000	226,000	245,000	244,000
50-54	144,000	159,000	183,000	202,000	214,000	232,000
55-59	103,000	128,000	141,000	163,000	180,000	191,000
60-64	68,000	90,000	111,000	123,000	143,000	158,000
65 and over	79,000	97,000	122,000	152,000	182,000	215,000
All ages	2,139,000	2,406,000	2,722,000	3,086,000	3,488,000	3,901,000
			<i>Total</i>			
10-14	113,000	145,000	164,000	183,000	207,000	227,000
15-19	293,000	354,000	456,000	519,000	582,000	660,000
20-24	330,000	372,000	451,000	583,000	668,000	752,000
25-29	348,000	353,000	398,000	484,000	626,000	719,000
30-34	320,000	353,000	360,000	406,000	494,000	639,000
35-39	282,000	326,000	352,000	359,000	408,000	494,000
40-44	244,000	276,000	319,000	346,000	352,000	394,000
45-49	207,000	235,000	268,000	308,000	335,000	343,000
50-54	172,000	195,000	223,000	253,000	293,000	318,000
55-59	121,000	151,000	170,000	196,000	223,000	256,000
60-64	78,000	104,000	129,000	147,000	169,000	192,000
65 and over	90,000	112,000	142,000	180,000	218,000	260,000
All ages	2,606,000	2,976,000	3,432,000	3,964,000	4,575,000	5,254,000