



1974

World Population Year

**THE POPULATION
OF
INDONESIA**

C. I. C. R. E. D. Series

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TABLE OF CONTENTS

Preface	3
Chapter I. Population Growth	5
Chapter II. Component of Growth	12
Chapter III. Population Composition	22
Chapter IV. Population distribution and Internal Migration	40
Chapter V. The Labour Force	51
Chapter VI. Population Projections	67
Chapter VII. Economic and Social Implications and policy	76
Conclusion.....	91

PREFACE

This country monograph for Indonesia is prepared at the request of CICRED as a part of its contribution to the objective of the World Population year 1974. Never in history has there been a greater concern about world population growth as is demonstrated at present by the countries in the United Nations system.

The terrifying world population explosion is currently very evident in the developing part of the world to which almost all countries in Asia belong. Unless these countries can successfully cope with the population problems before the turn of the century, they will face a desperate situation in their efforts for social and economic development.

Indonesia too is currently engaged in the global battle to contain the accelerating population growth for the success of the development plan.

The articles presented in this monograph are produced by the staff members of the Demographic Institute of the Faculty of Economics, University of Indonesia at Jakarta. The main objective of this report is to present a brief picture of the demographic condition in Indonesia based on hitherto available sources of data. It does not pretend to be complete and impeccable, but the composers do hope that their effort could cast some beaconing lights on the historical, contemporary and prospective population in Indonesia.

Jakarta, September 30, 1973.

Lembaga Demografi F.E.U.I.

CHAPTER I

POPULATION GROWTH

Historical View of the Population Indonesia is the fifth most populous country in the world exceeded only by India, China, U.S.S.R. and U.S.A. Quantitative estimates of the population in this country have been made since the last quarter of the eighteenth century (1775), but the Colonial histographers have been for the most part if not exclusively, concerned with the interests of the colonial power rather than with those of the Colonies' inhabitants. In attempting to acquire the export crops they wanted, the Dutch concentrated initially on levying forced tributes from the Javanese people, later moving to direct management of crop production. Therefore their attention was concentrated on Java and the available data on population growth in Indonesia thus relate almost exclusively to Java. Data for the other islands were primarily limited to guesses and were concerned largely with the areas of Dutch exploitation.

From 1811 to 1816 Dutch rule was interrupted by the British occupation. It was during the British interregnum that Lieutenant Governor Raffles introduced the "land-rent" system, for which population data were collected. For the period between 1775 and 1815, several estimates of the population of Java are available (1). A summary of these estimates would run as follows :

Year	Population of Java	Compiler
c. 1775	2,029,915	Radermacher and Van Hogendorp
1795	3,500,000	Nederburgh
1802	3,647,167	Blecker (1863)
c. 1807	3,770,000	Daendels
1815	4,615,270	Raffles

Source : Nitisastro, Widjojo, *Population Trends in Indonesia*. p. 12.

Since these figures were based on estimation, their reliability mainly depended on the method of estimation. Radermacher and Nederburgh based their estimation on the number of tjtajahs or houses or men, and assumed a fixed

(1) Nitisastro, Widjojo, *Population Trend in Indonesia*. Cornell University Press, Ithaca, New York, 1970.

relation in each of these three cases ; and that the actual methods of estimating the number of tjatjahs, houses, or men were either guesses or not known. Even Raffles' data, which is most often used as a starting point in the discussions on the growth of Java's population, were also questionable. The figures from different regions were compiled not from a census, but from information supplied to the local officer by the village heads. It is questionable whether the village heads would have supplied the correct statistics to the British Colonial Government. The degree of unintentional and deliberate under-reporting was probably high, especially because of the direct relation between the collection of population data and the levying of taxes. Although the data referred to every region of Java, the coverage of a number of regions was very likely far from adequate.

After the end of the British rule in 1816, little of importance occurred in the field of collecting population data. A government regulation stipulated that the village heads keep a register of the inhabitants of their villages and in 1849 the Dutch government began to publish annual data on the population of Java in *Kolonial Verslag* (Colonial report), the yearly report of the Dutch minister of colonies to the Dutch parliament. Warnings appeared in practically every issue that the figures were of limited reliability. The total population and the annual rate of increase in the period 1850-1880 can be observed from the table below :

TABLE I.I. TOTAL POPULATION AND ANNUAL RATE OF INCREASE,
JAVA 1850-1880
(COMPUTED FROM OFFICIAL DATA)

Year	Total Population	Annual Rate of Increase (per 1,000)
1850	9,570,023	22.3
1855	10,916,158	30.5
1860	12,718,717	21.6
1865	14,168,416	29.5
1870	16,452,168	21.7
1875	18,335,778	15.5
1880	19,794,505	

Source: Nitisastro, Widjojo, Population Trends in Indonesia. p. 35.

The colonial reports were indeed correct in their warning that the official data for the period were of limited reliability. The very high growth rate for Java as a whole, which the data indicate, are actually an indication of the deficiencies of the data. When the colonial reports cite a high degree of underreporting at each point of time, this implies that there must have been a much smaller actual rate of increase throughout the whole period. Thus the view that these years witnessed a very rapid population growth, primarily due

to improved health conditions, is not supported by evidence. It seems more likely that little was done in the field of public health during the past century (2).

The year 1880 saw the beginning in Java of what were sometimes called quinquennial population censuses, which were directly related to the system of compulsory labor services. The regulations concerning the collection of population statistics printed in the *Indisch Staatsblad*, 1880, no. 80, stipulated that before the end of those years in which the compulsory labor services were revised, a survey (or enumeration, *opneming*) was to be made of the population, of those persons who were subject to compulsory services and of livestock. This year also marked the beginning of reported figures of the population of the other Indonesian islands, but they are insufficiently reliable to be of any use.

The annual growth rates for the five-year periods between 1880 and 1905 are shown in Table I.2.

TABLE I.2. TOTAL POPULATION OF JAVA AND ANNUAL RATE OF INCREASE
1880-1905

Year	Total Population	Annual Rate of Increase (per 1,000)
1880	19,794,505	16.2
1885	21,467,445	21.6
1890	23,914,564	14.4
1895	25,697,701	22.4
1900	28,746,638	9.2
1905	30,098,008	-

Source : Nitiasastro, Widjojo, *Population Trends in Indonesia*, p. 6 & 54.

Some idea of the reliability of these censuses can be inferred from the above table where the rates of annual increase jump after every five year enumeration. The comparatively low growth rate during the years 1900-1905 was reportedly due in part to the consequences of crop failures and a cholera epidemic.

In 1920 the colonial government conducted a population census for the first time and it was followed ten years after by the 1930 census. According to the 1920 census, the population of Java was 35.0 million, which implies an annual rate of increase of 10 per 1,000 persons during the period 1905-1920. Compared with the official population estimates of growth rates during the previous century, the computed rate of increase between 1905 and 1920 was relatively small. It is quite probable that the influenza epidemic that raged

(2) *Ibid.* p. 42.

through large areas of the world at the end of the First World War had a great impact on Indonesia's population.

The other Indonesian islands were accorded only limited coverage in the 1920 population census. For extensive areas of these islands the population data were based on information supplied by the local heads of administration. It was pointed out that the result of 1920 census for "Other Islands" were much less reliable than the 1930 census figures and that the published population figures for these islands were too small (3). Their unreliability is indicated by the implausibly high annual rates of increase. For these islands as a whole the annual growth rate from 1905 to 1920 was reported to be 42.8 per 1,000 persons, and for some islands it was even higher, Sulawesi being reported to have an annual rate of increase of 86.8 and the group of islands of Nusa Tenggara (including Bali) 78.7 per 1,000 persons.

The 1930 population census incorporated a number of improvements over that of 1920. The census was conducted throughout the entire country, although simpler methods of enumeration were applied in extensive areas outside Java. According to the census, the total population of Indonesia in 1930 was 60.7 million of which 41.7 million lived in Java and 19.0 million in the rest of the country. The census figures imply an annual rate of increase of 17.6 per 1,000 persons in Java during the period 1920-1930 and 28.0 for other islands. The census report contended, however, that such a high rate of growth was "no doubt due to the too low figures of 1920" and asserted that the actual growth rate was probably 15 per 1,000. On the basis of the results of the 1930 census, the 1920 population was re-estimated and a projection made to 1940 under the assumption of a constant rate of increase. (1.5 % growth annually) and identical growth rates for Java and for the other islands. The estimate for 1920 of the population of Indonesia as a whole was 52.3 million of which 35.9 million lived in Java and 16.4 million in the other islands. The official 1940 population estimate for Indonesia as a whole was 70.4 million, for Java 48.4 million and for the other islands 22.0 million (4).

Based on the information supplied by local authorities, the official estimate of population for 1950 was 77.2 million for the whole of Indonesia : 50.5 million for Java and 26.7 million for the islands other than Java. These estimates imply an annual rate of increase during the forties of 9.2 per 1,000 persons for Indonesia as a whole, 4.1 per 1,000 persons for Java and 19.5 per 1,000 persons for the other islands. The estimates for the Indonesian islands other than Java thus appear quite implausible. While it might well be true that during this period Java suffered even more severely from food shortages and population displacements than some of the other islands, it is nevertheless unlikely that the annual rate of population increase in the other

(3) *Ibid.* p. 70.

(4) *Ibid.* 75.

islands could have been almost thirty percent greater than their estimated growth of around 15 per 1,000 persons during the thirties. It seems more likely that, like Java, the other Indonesian islands suffered a decline in their rate of population increase during the decade of the forties.

Sixteen years after the proclamation of independence in 1945 and thirty one years after the last census of the colonial era in 1930, the government of the Republic of Indonesia conducted the first national census on October 31, 1961 which covered the whole area of the Republic of Indonesia. The census gave a total population of 97.01 million persons for the whole country, including an estimate of 758,000 persons for West Irian, which at the time of the census had not yet been liberated. Java island was occupied by almost 70 percent of the total population (62.99 million) with a rate of population growth from 1930 of 21.7 per 1,000 population while the other islands of Indonesia were inhabited by only half of the population of Java (34.02 million) with a slightly higher rate of population growth of 22.5 per 1,000 population. Since internal migration did not have much influence in the growth of the population, the differential in the rate of population growth between Java and the other islands may be due to lower fertility in Java than the other islands.

The Current Population of Indonesia. The second population census was successfully conducted in 1971 and has greatly increased our knowledge about the population of Indonesia in recent years. The census recorded a total population of Indonesia of 119.2 million which included an estimate of 800,000 for the population in the province of West Irian. The rate of population growth during the decade 1961-1971 was 2.08 for the whole country. Compared with the population growth in the 1950's (2.13) it is evident that there has been no significant change in the rate of population growth during the last twenty years. Of the three factors affecting the rate of population growth, births, deaths and migration, it has been observed that migration does not have much impact on population growth in Indonesia. It has frequently been estimated that the death rate in Indonesia has been declining due to the development of medical science in fighting against many causes of death, but so far the extent of mortality decline is unknown because complete and adequate data for the whole area of Indonesia are not available. On the other hand it is probable that the birth rate has not changed significantly during the last twenty years. If this is true, the difference between the birth rate and death rate (natural increase) would have been increasing. However, the census figures show only an insignificant change during the last twenty years ; it is shown that the rate of population growth was quite low in the 1970's compared with the situation in the 1960's. It might be that, like mortality, the fertility rate has also

declined. Another possibility is that the fertility has remained constant but mortality has reached a high level in the sixties.

The age structure of the population of Indonesia in the two successive censuses may also partly explain the quite low rate of growth in the 1970's. If one looks at the percentage distribution of the population in 1961, there were 17.8 per cent males and 17.6 per cent females in the age group 0-4 yet in 1971 these proportions were 16.6 per cent and 15.8 per cent respectively. However the proportion of women in the reproductive age, or age group 15-49 also decreased from 48.8 per cent in 1961 to 47.6 per cent in 1971. In this situation one could expect a declining birth rate during this decade. But since the Family Planning program was only introduced effectively in 1970 and other factors affecting the decline of fertility such as education of women and economic development have not significantly changed the attitude towards a smaller family size, the decline of the birth rate during the decade 1961-71 is still uncertain. It may be that the recorded rate of population growth of about 2.1 per cent between 1961 and 1971 is too low.

The population growth during 1920-1971 which has been described above can be seen from Table I.3.

TABLE I.3. POPULATION GROWTH, 1920-1971.

Year	Java and Madura		Outside Java		Indonesia	
	Pop. (1,000)	Growth (%)	Pop. (1,000)	Growth (%)	Pop. (1,000)	Growth (%)
1920 End of years estimation (1)	35,948	—	16,379	—	52,327	—
1930 Census of October 7	41,718	1.54	19,009	1.54	60,727	1.54
1940 End of year estimation (1)	48,416	1.63	22,060	1.63	70,476	1.63
1950 End of year estimation (2)	50,456	.41	26,751	1.95	77,207	.92
1961 Census of October 31	62,992	2.17	34,026	2.25	97,019	2.13
1971 Census of September 24	76,100	1.94	43,083	2.39	119,183	2.08

(1) C.B.S., "Statistical Pocketbook of Indonesia, 1941."
"The estimate was based on the results of the 1930 Census adding 1.5 % growth annually"

(2) C.B.S., "Statistical Pocketbook of Indonesia, 1962".

Source : Central Bureau of Statistics, "Ulasan Singkat Hasil Sensus Penduduk 1971".
p.2.

Because of the rapid population growth the Government of Indonesia recognizes the population problem as a principal element in long-range development planning to fulfil the aspirations of the Indonesian people. The First Five-year Development Plan, which covers the period 1969 to 1974 includes a special section on Family Planning as a tool to cope with population problems.

CHAPTER II

COMPONENTS OF GROWTH

The growth of population is influenced by four factors, namely fertility, mortality, migration and age structure. The rapid population growth experienced in Indonesia is mostly due to the high level of fertility while on the other hand mortality has been declining because of the development of medical science and improvements in public health. Migration does not significantly affect the growth of population as the numbers of those leaving and entering the country are relatively small.

With regard to the estimation of fertility and mortality in Indonesia, demographers face the problem of inadequacy and inaccuracy of data on vital events. Due to the unawareness of most of the population of the importance and value of the registration of vital events, many births and deaths are not reported. Thus estimates of fertility and mortality level based on registration data are not reliable.

However, with the help of the methods provided in the United Nations' publications it is possible to derive estimates of the level of fertility and mortality from incomplete data.

Fertility Level and Differentials. Based on the new techniques of estimation of basic demographic parameters from incomplete data, certain estimates have been made on current fertility levels in Indonesia.

Statistical data for this purpose is provided by the population census on the number of children ever born. Unfortunately because of the breakdown in processing the 1961 census the only extensive area for which the 1961 and 1971 census fertility data can be compared is the province of East Java. But since this province had a population in 1971 of 25 million, the findings are important even if they cannot be generalized to the whole of Indonesia. The estimated crude birth rate for this region in Indonesia is 42.7 per 1,000 persons (1).

(1) N. Iskandar, *Some Monographic Studies on the Population of Indonesia*, Jakarta.

The latest estimates of recent fertility levels in Indonesia have been made by Si Gde Made Mamas and Geoffrey Mc Nicoll using backward projection of children enumerated in 1971. Although the estimates are rather sensitive to the particular life table assumed, the birth rates obtained in this way indicate an average level of 44 per 1,000 over the decade 1960-1970 (Table II.1) (2).

TABLE II.1. ESTIMATES OF CRUDE BIRTH RATES IN INDONESIA
BY REGION, DECADE OF 1960-1970 (1)

Region	Birth Rate	Region	Birth Rate
Java	42	All Other Islands	48
Jakarta	40	Sumatra	49
West Java	44	Kalimantan	47
Central Java	42	Sulawesi	47
Yogyakarta	37	Other regions	47
East Java	40	Indonesia	44

(1) Average of birth rates estimated by backward projection of 1971 census female population aged 0-4 and 5-9 years, respectively, using survival rates from life tables implied by census retrospective data on child survivorship. Base populations obtained by deflating 1971 total female population to 1969 and 1964, respectively, using the rate of increase estimated from Thompson's Index computed from the 1971 age distribution.

Source: Si Gde Made Mamas & Geoffrey Mc Nicoll, *The Demographic Situation in Indonesia*, New Orleans, April 1973. p. 55.

Some greater precision has been added to backward projection using a technique of estimation developed by Cho and Gnabill, based on the 1971 census tabulations of own children by age of child and mother, with mortality adjustment from census data on children ever born and surviving. This method obtained an estimate of total fertility of 5.5 for the whole of Indonesia during the years 1966-1970 as presented in Table II.2. This table also shows the lower fertility in Java compared with the other islands. The fertility differences between Java and other islands are substantial, comparable to the average urban - rural differential. Within Java, there is a distinct decline in fertility from west to east, found in both urban and rural areas. Elsewhere, Sumatra, Kalimantan and Sulawesi all show high total fertility, while the residual areas are somewhat lower; (it can be guessed because of lower birth rates in Bali and the neighbouring islands of Nusatenggara).

The age structure of the population in the different parts of Indonesia also indicates the existence of differential fertility levels in Indonesia. The

(2) Si Gde Made Mamas & Geoffrey Mc Nicoll, *The Demographic Situation in Indonesia*. A revised version of a paper presented at the Annual Meeting of the Population Association, New Orleans, April 1973.

TABLE II.2. TOTAL FERTILITY RATES BY REGION FIVE-YEAR
AVERAGE 1966-1970.(1)

Region	Urban	Rural	Total
Java	4.7	5.3	5.2
Jakarta	5.1	—	5.1
West Java	5.5	5.9	5.9
Central Java	4.4	5.4	5.3
Yogyakarta	3.9	4.6	4.5
East Java	4.0	4.7	4.6
All other Islands	5.4	6.0	5.9
Sumatra	5.7	6.3	6.2
Kalimantan	5.6	5.7	5.7
Sulawesi	4.9	5.9	5.7
Nusatenggara			
Maluku and Irian Jaya	4.8	5.7	5.6
Indonesia	5.0	5.6	5.5

(1) Cumulated age-specific fertility rates for women aged 15-49 years, preliminary results, computed from 1971 census tabulations of own children by age of child and mother, with mortality adjustment from census data on children ever born and surviving.
Estimates for Java based on final tabulations, estimates for other islands from advance tabulations.

Source : Si Gde Made Mamas & Geoffrey Mc Nicoll, *The Demographic Situation in Indonesia*, New Orleans, April 1973, p. 23.

TABLE II.3. CHILD-WOMEN RATIOS IN INDONESIA,
1961 and 1971 (1)

Region	1961	1971
D.K.I. Jakarta	.710	.707
West Java	.792	.756
Central Java	.768	.695
Yogyakarta	.687	.605
East Java	.677	.620
Java	.737	.684
Sumatra	.902	.819
Kalimantan	.759	.787
Sulawesi	.759	.765
Other Islands	.837	.789
Indonesia	.774	.724

(1) Computed from the age distribution of the population in the Population Census 1961 and 1971.

Source : Central Bureau of Statistics, Jakarta.

child-women ratio – the ratio of children under age 5 to women of child bearing age, which is usually defined as 15-44 – as a relative measure of fertility reflects that Java-Madura has a lower fertility level than the other islands in Indonesia.

The lower fertility observed in Java is distributed fairly evenly by age (Table II.4). The age pattern for the other regions of Indonesia lie intermediate between Java and Sumatra. Rural-urban differences in fertility are accounted for almost entirely by lower urban birth rates below age 25. It can also be noted that the fertility differential between Java and other islands is

TABLE II.4. AGE SPECIFIC FERTILITY RATES BY MAJOR REGION,
URBAN AND RURAL, AVERAGE 1966-1970.
(x 1,000)(1)

Age Group	Java	Sumatra	Kalimantan	Sulawesi	Other Islands	Indonesia
			Urban			
15 - 19	113	104	123	104	77	110
20 - 24	244	266	251	233	227	247
25 - 29	245	294	307	241	287	259
30 - 34	184	255	221	215	190	201
35 - 39	103	154	147	127	97	116
40 - 44	40	59	60	51	59	44
45 - 49	10	16	23	18	22	13
			Rural			
15 - 19	171	158	175	128	112	161
20 - 24	274	317	257	271	261	279
25 - 29	252	306	240	299	273	266
30 - 34	191	247	187	235	227	207
35 - 39	109	149	189	133	160	125
40 - 44	48	68	69	79	75	57
45 - 49	14	24	19	32	40	19
			Total			
15 - 19	159	148	163	124	108	151
20 - 24	268	308	256	265	257	274
25 - 29	251	304	254	290	275	265
30 - 34	190	249	195	232	223	206
35 - 39	108	150	180	132	154	124
40 - 44	47	66	67	75	74	55
45 - 49	13	22	16	29	38	18

(1) Computed from 1971 census advance tabulations of own children by age of child and mother, with mortality adjustment from census data on children ever born and surviving. *Source*: Si Gde Made Mamas & Geoffrey Mc Nicoll, *The Demographic Situation in Indonesia*, New Orleans, April 1973, p. 56.

not due to the difference in age at marriage. The estimate of mean age at marriage derived from proportion of single classified by age that is available in the National Socio-Economic Survey of 1964 and 1969 shows a mean age about two years lower in Java than elsewhere.

Mortality Levels and Differentials. As with data on births, death registration in Indonesia can still not be considered as complete and accurate, despite the existence of regulations concerning burial, for which a special permit from the local government is required. Improvement is on the way but it will still take more years to come to make good estimates of mortality levels based on the reported number of deaths.

Estimates of crude death rates for Indonesia have been made, based on the very scanty data on the number of children surviving from number of children ever born as specified by the age of the mothers. These data were collected during the population censuses in 1961 and 1971. Unfortunately due to political and economic conditions during the 1960's, tabulation of this data for the 1961 census was completed only for the province of East Java and comprised approximately one quarter of the population of Indonesia. The application of the Brass technique gives an estimated crude death rate for East

TABLE II.5. MORTALITY ESTIMATES FOR INDONESIA,
AVERAGE 1961-1971.

Region	Infant Mortality Rate (per 1,000 births)	Life expectancy at birth (years)	Crude death rate (per 1,000)
Java			
Urban	110	52	15
Rural	136	47	17
Total	132	48	16
All other islands :			
Urban	116	51	15
Rural	151	45	18
Total	147	46	17
Indonesia :			
Urban	112	51	15
Rural	141	46	17
Total	137	47	17

Source : Si Gde Made Mamas & Geoffrey Mc Nicoll, *The Demographic Situation in Indonesia*, New Orleans, April 1973. p. 14.

Java at 22.2 per 1,000 and an expectation of life at birth of 39.71 years and 42.5 years for males and females respectively. These expectations of life were equal to mortality level 10 according to the West model life tables in Coale & Demeney's Regional Model Life Tables and Stable Populations.

Derived from 1971 census advance tabulations on children ever born and children surviving by age of mother, mortality estimates for Indonesia have been made by Mamas and Mc Nicoll. Child survivorship rates were adjusted with Brass multipliers and used to infer a Coale & Demeney "West" life table with infant mortality of 137 per 1,000 and expectation of life at birth 47 years for the whole Indonesia. The estimated crude death rates were obtained from life table age - specific death rates and an average of the 1961 age distributions. The crude death rate for Indonesia during 1961-1971 is 17 per 1,000.

Table II.5 above also shows the regional differential in mortality. The somewhat lower apparent death rate in Java than the average for other islands accords with informed opinion. For the 85 per cent of the population living in rural areas, access to health services is considerably easier in Java than in the rest of the country, and some major contributors to mortality such as malaria and tuberculosis are under much greater control in Java. Such factors as these, together with the significant differences in average income and level of education, would also account for the even larger urban-rural differential in mortality.

Regarding the mortality trend in Indonesia, there is a general tendency of declining mortality in the years following Independence up to the late 1960's. For three provinces in Java-East Java, Yogyakarta and Jakarta, it has been observed that child mortality declined by roughly 30 per cent over the decade between the early 1950's and the early 1960's. If accompanied by corresponding changes at higher ages as typified by a model pattern, this would mean a rise of about six years in life expectancy (3). As seen in Table II.6 the prime killer in Indonesia is the category which covers diseases peculiar to early infancy. It seems therefore that the data collected by the Ministry of Health on the causes of death from hospitals in Indonesia probably do not reflect the general situation accurately. Disregarding inaccuracies in diagnosis and in completeness of registration we might infer that the fight against malaria has been successful and has pushed this disease to a lower rank among the causes of death.

Finally, in discussing recent mortality, mention should be made of the so-called September 30th affair. On October 1st 1965 elements of the communist party of Indonesia attempted a coup in Jakarta and some other centers, which was quickly suppressed by the military.

(3) *Ibid.* p. 16.

TABLE II.6. TEN LEADING CAUSES OF DEATH IN INDONESIA
BY RANK, SELECTED YEARS, 1956-1968.

Cause group	Code (B list) ^a	Rank		
		1956	1960	1968
Diseases peculiar to early infancy	B 42-43-44	1	1	1
Gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn	B 36	10	5	2
Senility without mention of psychosis, ill-defined and unknown causes	B 45	8	4	3
Tetanus	B 17 ^b	9	9	4
Influenza and pneumonia	B 30-31	2	2	5
Heart disease	B 25-26-27-28	7	8	6
Tuberculosis	B 1-2	3	3	7
Malignant neoplasms, of lymphatic and haematopoietic tissues	B 18		10	8
Complications of pregnancy child birth and the puerperium	B 40	6	7	9
Accidents	B 47-48	4	6	10
Malaria	B 16	5		

a. Code refers to the abbreviated list of 50 causes for tabulation of mortality (W.H.O. *Manual of the International Statistical Classification of diseases, injuries, and causes of death*, 6th revision 1948).

b. Detailed List (3 - digit) category, 061.

Source : Departement Keschatan. (Ministry of Health).

For several months afterwards, violent and wide spread reprisals against members of the party and affiliated organizations occurred. Although no basis exists for the accurate estimate, the numbers killed are thought to be in the hundreds of thousands. The crude death rates for 1965 and 1966, if these were known, would probably show an increase of 2 or 3 per 1,000. To the extent that the victims were concentrated by region, age and sex, the local demographic impact would be much greater.

International Migration. In addition to fertility and mortality, migration is an important demographic component, as it can also cause important change within a population.

International migration includes those types of movements which cross the boundaries of a country. For Indonesia, international migration does not significantly affect population growth, because the number of both in-and out-migrants is relatively small when compared to the total population. The data in Table II.7 show the comparison between international migration and total population between 1964 and 1970. It may be concluded that during that period population growth in Indonesia was mainly due to natural increase and not to international migration.

TABLE II.7. NUMBER OF IN-AND OUT-MIGRANTS
AND TOTAL POPULATION IN INDONESIA
1964-1970

Year	Inmigrants	Outmigrants	Net migrants	Total Population (1) (in thousands)	Net migrants as % of total population
1964	48,123	57,405	- 9,282	104,445	0.01
1965	37,451	61,927	- 24,476	106,972	0.02
1966	33,178	50,621	- 17,443	109,593	0.02
1967	68,112	88,133	- 20,021	111,234	0.02
1968	108,918	118,169	- 9,251	115,130	0.01
1969	167,724	165,077	+ 2,647	118,054	0.00
1970	230,164	237,649	- 7,485	121,089	0.01
				115,568(2)	

Source : Directorate General of Immigration of the Republic of Indonesia, Jakarta, and
 (1) Biro Pusat Statistik (Central Bureau of Statistics), *Statistical Pocketbook of Indonesia, 1968-1969*. p. 34.
 (2) Biro Pusat Statistik (Central Bureau of Statistics), Household Registration Preparatory to the General Election, Jakarta, 1970.

Figure II.1 shows a fairly large number of out-migrants in 1957. There were 81,414 persons in that year leaving Indonesia. This large number of out migrants during that year was due to the worsening political situation, and the exodus of Dutch people forced to go back to their home country. There were 29,842 dutch people leaving the country during that year. In 1960 there were 144,955 out-migrants due to the Chinese exodus. With the passage of Law No. 2/1958 those holding a dual nationality – Indonesia and Chinese – had to make a choice between the two. Those who chose the Communist Chinese nationality applied to leave the country. The stream of Chinese leaving for Communist China was increased due to the government regulation No. 10/1959, which prohibited Chinese from operating businesses in rural

areas. The number of Chinese who were permitted to leave the country was 102,297 persons.

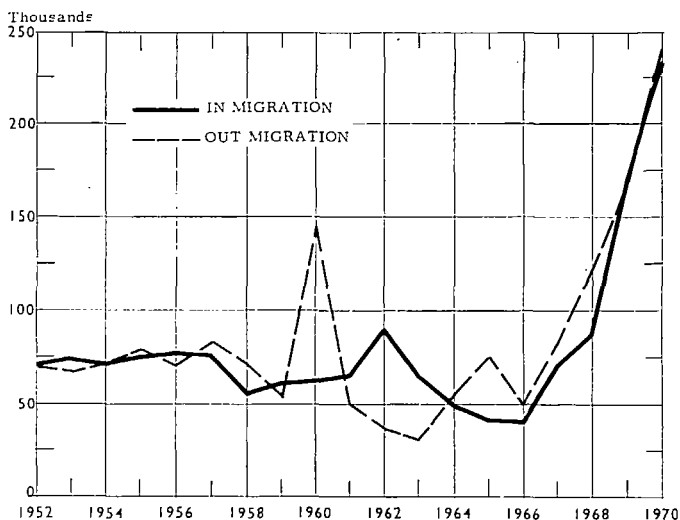


Figure II. 1. - International migration 1952-1970.

Source : Directorate General of Immigration of the Republic of Indonesia, Jakarta.

After 1966 an increase is recognizable in the number of both in-and out-migrants. This phenomenon is attributed to the open political and economic system of the New Order government of President Suharto. In 1967 a law was passed, permitting foreign capital investment in Indonesia. The passage of this law encouraged large numbers of foreigners to come to Indonesia. Moreover, the increasing tourist attraction, improvements in relations with other countries

TABLE II.8. FOREIGN MOBILITY IN INDONESIA
1964-1970

Year	Entering Indonesia	Leaving Indonesia
1964(1)	28,267	12,385
1965(1)	23,495	14,889
1966	19,822	-(2)
1967	33,257	48,894
1968	59,144	61,616
1969	97,103	95,493
1970	140,968	137,464

Note :

(1) not including persons leaving Indonesia for Australia and Zceland.

(2) data not available.

Source :

(1) Biro Pusat Statistik, *Statistical Pocketbook of Indonesia 1964-1967*, Jakarta. p. 21.

Directorate General of Immigration of the Republic of Indonesia, Jakarta.

and international agencies have increased international traffic to and from Indonesia. This increasing trend of foreigners entering and leaving Indonesia is shown in Table II.8.

Chinese made up the major portion of the foreigners who were living in Indonesia. They were generally businessmen. However, due to the deterioration of the political relations between Indonesia and communist China which is claimed to have aided the 30 September 1965 Communist coup, the number of Chinese residents in Indonesia is declining. This can be observed from Table II.9.

TABLE II.9. FOREIGNERS WITH MORE THAN 1,000
RESIDENTS IN INDONESIA BETWEEN
1967-1969

Country of Origin	1967	1968	1969
Communist China	1 083,851	956,228	927,057
Stateless Chinese	31,930	79,921	67,697
India	14,444	10,186	9,661
Arab countries	7,507	7,373	7,690
Netherlands	2,591	2,403	3,059
Pakistan	2,641	2,360	1,993
Japan	1,233	1,277	1,005
U.S.A.	2,013	2,020	1,718
West Germany	1,212	1,309	1,066

Source : Directorate General of Immigration of the Republic of Indonesia, Jakarta.

CHAPTER III

POPULATION COMPOSITION

It is commonly agreed that knowledge of the composition of the population is one of the fundamental requirements for demographic studies. The availability of data on age distribution makes it possible to achieve some insight into the history and the future of vital rates of the population. However, demographers are facing the problem that in many cases age reporting is very inaccurate, especially when individuals do not know their exact ages and are not fundamentally interested in knowing them. Inadequate vital registration is often accompanied by very poor reporting of age in censuses or demographic surveys. This is the situation in many developing countries at present, including Indonesia.

Marital composition, one of the important determinants of the fertility level of a population, plays an important role in determining the growth of the population. In countries where fertility is not controlled, a lower age at marriage will cause a larger number of births and thus lead to rapid population growth. The collected data on marital status indicate that the proportion married of the female population in the childbearing age is about 80 per cent in Java, which is a rather common phenomenon for a traditional society. Early marriage is still experienced in Indonesia; most of the males' first marriages occur between the ages of 20 and 24 years, while for females they are between the ages of 16 and 18 years (1).

A rise in the mean age at marriage can be expected in the future in Java as well as in other parts of Indonesia. A factor which can cause a rise in the age at marriage is an increase in the school attendance rate. An improvement in education will also promote the female emancipation in the household as well as in society and achieve a better social position for women in Indonesia.

Age and Sex Composition. Data on the sex and age structure of the population in Indonesia are available since the census taken in 1961. The census of 1930 gave only sex and age distribution for the

(1) N. Iskandar, *Some Monographic Studies on the Population of Indonesia*. Jakarta, p. 79.

foreigners and some small indigenous ethnic groups, namely Minahasans, Ambonese, Sangirese and Talauders.

Conventional statistics on ages are still to be handled cautiously, especially if those data were collected by the slippery method of estimation by the enumerator. Data on ages were supplied by the household head, or the person concerned. However, in most cases it was probably the enumerator who had a decisive role in estimating the age of respondents. It is not known what proportion of the age reporting consisted of estimates made by the enumerators.

The age structure of the population in Indonesia shows a dent in the age groups 10-19 and 20-24 in both the 1961 and 1971 census age distributions. Two peaks are noticeable for the male population in 1971, namely the ages 25-29 and 35-39, while for the female population it only occurs in the age class 25-29. These irregularities in the age composition are most likely the result of a combination of inaccuracies of age reporting and historical events which have affected births and deaths. In the estimation of the age of a respondent by the enumerator, there appears to be a tendency for the individual to be classified as either older or younger, depending on their physical appearance and marital status. The wars and revolutions prevailing during the forties, which were followed by more stable conditions during the fifties, resulted in a smaller birth cohort during the forties followed by a baby-boom during the fifties. However research is still continuing into the relative significance of these phenomena.

The application of some demographic techniques to test the accuracy of age reporting of the population in Indonesia according to the census in 1971, gives support to the hypothesis that the age reporting in Indonesia is far from accurate.

In 1961 there were 17.8 per cent males and 17.6 per cent females in the age group 0-4 yet in 1971 this proportion was 16.6 per cent and 15.8 per cent. The proportion of women in the reproductive age span, or age group 15-49, has decreased from about 48.8 percent in 1961 to 47.6 per cent in 1971. Therefore it can be expected that there was a decline in birth rate during the decade 1961-1971. As has been mentioned in the previous chapter the decline of birth rate over this decade is still uncertain because the idea towards a smaller family size has not widely spread among the entire Indonesian population.

The decrease as reported by the census in 1971 is caused very likely by under enumeration of young children. This feature is not surprising to experienced demographers. The proportion of children who depend on their parents for their food, clothing, shelter, education, health and care in general

was 44.1 per cent in 1971 and 42.1 per cent in 1961. The census in 1971 presents the following table of the population in Indonesia by islands and broad-age group (see Table III.1). This age profile is not unique to Indonesia, but applies to other developing countries as well.

TABLE III.1. PERCENTAGE POPULATION IN INDONESIA BY ISLAND AND BROAD AGE GROUP IN 1971.

Region	0-14	15-64	65+	Total
Java-Madura	43.2	54.4	2.4	100.0
Sumatra	46.9	50.6	2.5	100.0
Kalimantan	46.0	52.0	2.0	100.0
Sulawesi	45.2	52.0	2.8	100.0
Other islands	43.4	53.6	3.0	100.0
Indonesia	44.1	53.4	2.5	100.0

Bearing in mind that children below age 15 and people at age 65 and over are usually not contributing to the country's production process, but will be mainly the consuming portion of the population, then demographers are accustomed to relate the number of population in these two broad age groups to those who are in the age interval 15-64, which is usually considered as the working ages.

Division of the former two age groups by the latter one will give the ratio of dependency. For Indonesia in 1971, it was 87.3 per cent of the working age groups while it was 86.0 per cent for 1961.

According to the census in 1971 there are in Indonesia more females than males. If the estimated population for West Irian is excluded the total population in Indonesia in 1971 was 118.5 million consisting of 58.3 million males and 60.2 million females. This gives a sex ratio of 96.8 males per 100 females. The sex ratio of the population in Indonesia shows a declining trend during the past five decades as can be read from the Table III.2. This declining sex ratio implies a tendency of lower rate of increase or higher rate of attrition on the males side of the population.

TABLE III.2. POPULATION IN INDONESIA BY SEX FROM 1920-1971

Year	Males	Females	Both Sexes	Sex Ratio
1920	24,549	24,795	49,344	.990
1930	30,005	30,587	60,592	.981
1961	47,881	49,205	97,086	.973
1971	58,279	60,181	118,460(1)	.986

(1) West-Irian Population excluded (estimated at 800,000).

In 1971 there were almost equal numbers of men and women who resided in the urban area of Indonesia. The sex ratio in the rural area however is clearly more heavily female. This can be read from Table III.3. During the intercensal period the increase of the female population in the urban and rural areas was slightly higher than the male population.

TABLE III.3. URBAN AND RURAL POPULATION BY SEX IN INDONESIA
1961 AND 1971 (BY THOUSANDS)

1961	Males	Females	Both Sexes	Sex Ratio
Urban	7,182	7,176	14,358	1.001
Rural	40,656	42,004	82,660	.968
Total	47,839	49,180	97,018	.973
1971				
Urban	10,383	10,382	20,765	1.000
Rural	47,896	49,799	97,695	.962
Total	58,279	60,181	118,460	.968

The sex ratio of the female population in Sumatra has decreased in the past decade, while a slight increase can be observed in the other regions of Indonesia. This could be indicative of the direction of long distance inter-island migration.

TABLE III.4. SEX RATIO OF THE POPULATION IN INDONESIA
BY ISLANDS IN 1961 AND 1971

Islands	1961	1971
Java-Madura	95.7	96.8
Sumatra	101.9	101.5
Kalimantan	101.5	103.2
Sulawesi	97.2	98.0
Other Islands	99.2	101.2

Marital Composition. Statistical data on the marital composition of the population in Indonesia are not yet provided by the results of the census in 1971. However, the several rounds of the National Socio-Economic Sample Survey, starting at the end of 1963, have collected data on the marital status of the population. From these and other fertility surveys a general marriage pattern can be derived.

TABLE III.5. POPULATION BY SEX AND AGE, INDONESIA 1961-1971
(IN THOUSANDS) (*)

Age	1961		1971	
	Male	Female	Male	Female
0 - 4	8,462	8,580	9,653	9,508
5 - 9	7,684	7,639	3,577	9,295
10 - 14	4,319	3,860	7,326	6,902
15 - 19	3,834	3,874	5,643	5,748
20 - 24	3,452	4,339	3,556	4,406
25 - 29	3,821	4,852	4,033	5,009
30 - 34	3,513	3,690	3,664	4,230
35 - 39	3,298	2,956	4,019	4,061
40 - 44	2,422	2,408	3,004	3,026
45 - 49	1,913	1,759	2,399	2,248
50 - 54	1,646	1,725	1,888	1,947
55 - 59	876	795	1,074	1,061
60 - 64	1,027	1,056	1,034	1,189
65 - 69	401	404	535	586
70 - 74	394	425	491	570
75 +	438	466	379	391
Unknown			4	4
Total	47,500	48,828	58,279	60,181

(*) Excluded West Irian.
Source : Central Bureau of Statistics.

Based on statistical data on marital status as provided by the second and fourth round of the National Socio-Economic Sample Survey conducted in 1965 and 1969 by the Central Bureau of Statistics, the inference can be made that in 1965 about 60 per cent of the population of ten years and over in Indonesia are currently married. This percentage decreased to about 56 per cent in 1969. (See Table III.6.).

Estimates of mean age at marriage can be derived from proportions single classified by age, data that are available from the N.S.S. of 1964 and 1969, by applying a method developed by S.N. Agar Wala. The results presented in Table III.7 show a mean age at marriage of 24.2 years and 19.5 years for males and females respectively. The age at first marriage is about two years lower in Java than elsewhere. This difference could be attributed to the higher level of education and literacy in the region outside Java. The same differentials also appear between urban and rural areas.

Gille and Pardoko (1966), asking females in some of the provinces in East Java at which age they first married, found an average of 15.7 years ; based on proportions single in 1963, the average for East Java was calculated by Iskandar as 17.4 years (Iskandar : 1970 ; 75).

TABLE III.6. MARITAL STATUS OF PERSONS 10 YEARS AND OVER IN INDONESIA BY REGIONS, 1965 and 1969.

Region	Never Married	Married	Divorced	Widowed
1965				
<i>Males</i>				
Java Madura	34.4	61.4	1.6	2.6
Outside Java	39.9	56.6	0.7	2.7
Indonesia	36.3	59.7	1.3	2.6
<i>Females</i>				
Java Madura	20.5	60.9	4.1	14.4
Outside Java	31.4	59.8	1.9	8.7
Indonesia	24.3	59.8	3.4	12.4
1969				
<i>Males</i>				
Java Madura	39.54	57.06	0.98	2.42
Outside Java	45.28	52.21	0.67	1.84
Indonesia	41.19	55.67	0.89	2.25
<i>Females</i>				
Java Madura	25.78	57.18	3.33	13.71
Outside Java	35.35	54.14	1.63	8.88
Indonesia	28.50	56.32	2.85	12.34
<i>Source</i> : Biro Pusat Statistik (Central Bureau of Statistics), Jakarta.				

TABLE III.7. MEAN AGE AT MARRIAGE BY SEX AND REGION, AVERAGE 1964-1969.(1)

Region	Males	Females
Java		
Urban	25.8	20.3
Rural	23.6	18.4
Total	24.0	18.8
All other islands	24.6	21.2
Indonesia	24.2	19.5
(1) Expected duration of single life for persons marrying by age 50 and experiencing average marriage rates of the period 1964-1969.		
<i>Source</i> : Biro Pusat Statistik.		

The survey data on the proportions never married indicate that a rise in age at marriage can be expected in the future. The proportions never married rise from 36.3 per cent in 1965 to 41.2 per cent in 1969 for males and from 24.3 percent to 28.5 per cent for females. If so, Indonesia would conform to the current pattern found throughout East and Southeast Asia.

The divorce rate, defined as the percentage of divorces to marriages, is high in Indonesia, but the numbers reported as currently divorced and widowed is not especially high because of the high frequency of remarriage. Remarriage rates for males are apparently higher than for females, because the proportion divorced and widowed in Indonesia is higher for females than for males.

A factor contributing to the high rate of divorce, as has been observed in a survey in some rural areas in Yogyakarta (Mojohuro, Lama and Imogiri), is the prevalence of arranged marriage. The result of the survey showed that 78.5 per cent of the 722 women interviewed were married under the arrangement of their parents. Forty-five per cent of these arranged marriages were never consummated and 90 per cent of them ended in divorce less than one year after the marriage (2).

TABLE III.8. PERCENT OF DIVORCES TO MARRIAGES IN THE MOSLEM COMMUNITY IN INDONESIA, 1950-1969.

Year	Divorce rate %	Year	Divorce rate %
1950	47	1960	50
1951	54	1961	50
1952	57	1962	55
1953	49	1963	48
1954	51	1964	54
1955	51	1965	47
1956	52	1966	46
1957	50	1967	39
1958	52	1968	44
1959	51	1969	31

Source : Central Bureau of Statistics, *Statistical Pocketbook of Indonesia* 1957, 1958, 1959, 1960 and 1968-1969.

Household and Family Composition. The census of 1971 gives the definition of a household as an individual or a group of persons who occupy the whole or part of one housing unit and

(2) Dr Masri Singarimbun & Chris Manning M. Ec., *Masalah Perkawinan dan Perceraian di Mojolama* (Marriage and Divorce in Mojolama), Seminar Paper Institute of Population Studies, Gadjah Mada University, Yogyakarta, September, 1973.

generally share their principal meals (3). According to their characteristics, households are divided into "agricultural household", that is, a household which has one or more of its members as a farm holder and "non agricultural household", a household which has none of its members as a farm holder.

The household listing in 1970 gives total households of 24 million. The ratio of the number of households to the total population of Indonesia gives an average per household of 4.8 persons.

The categorization of Indonesia as an agricultural country is reflected in the composition of households according to their characteristics. Agricultural households make up about 61.74 per cent of the total while the remaining 37.27 per cent are non-agricultural. Among the regions, Java has been found to be more industrialized. The proportion of households engaged in the agricultural sector is lower compared to the other islands. This phenomenon may be due to the fact that more industry is concentrated in Java. The availability of public utilities, infra-structure, a better communication system, raw materials and abundant labour supply have made Java a more favourable location for industry.

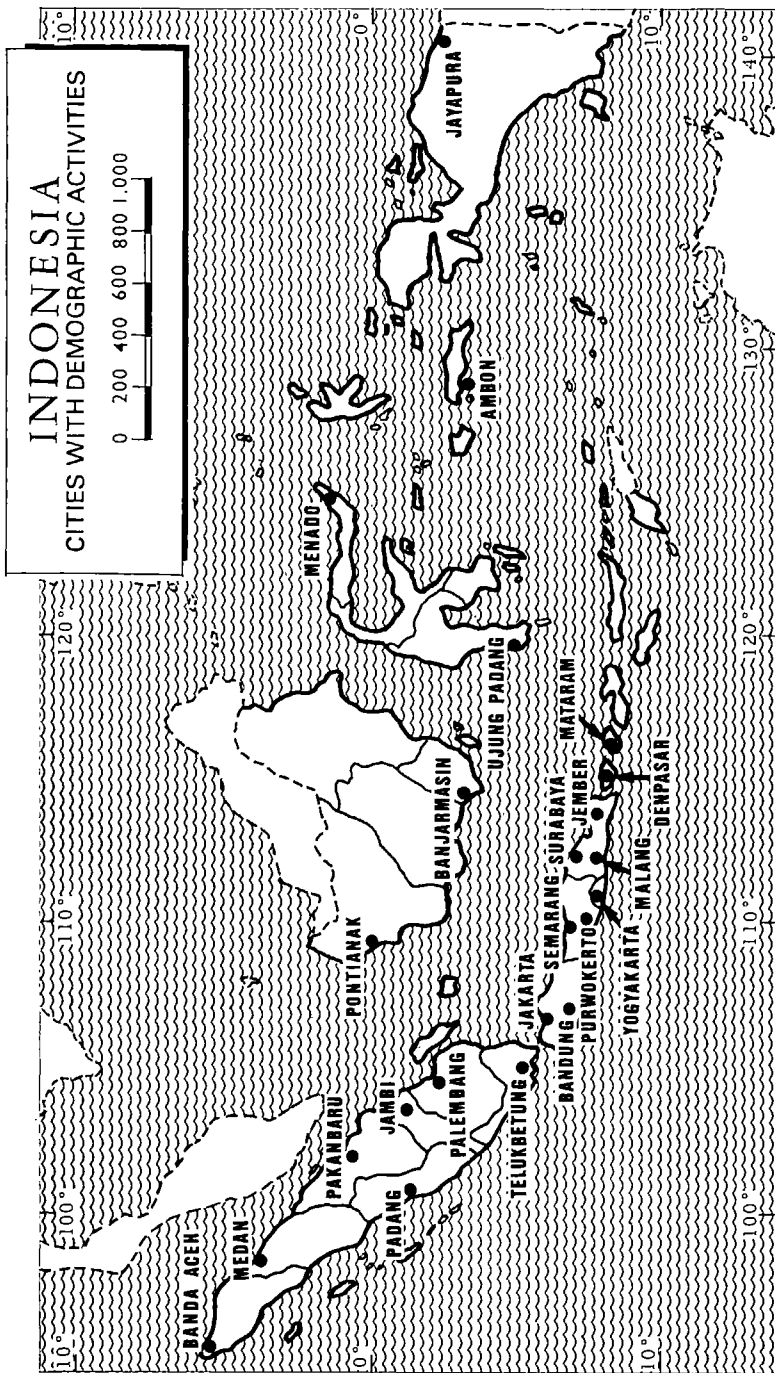
TABLE III.9. NUMBER AND PERCENTAGE OF HOUSEHOLDS BY SECTOR AND REGION, 1970.

Region	Farmer	Non farmer	Not stated	Total
Java	9,433,108	6,755,318	141,102	16,329,528
Sumatra	2,625,688	1,218,273	62,955	3,906,916
Kalimantan	627,599	251,592	13,489	892,680
Sulawesi	1,065,234	443,783	10,496	1,519,513
Other Islands	1,113,562	303,857	10,104	1,427,523
Indonesia	14,865,191	8,972,823	238,146	24,076,160
	Percent	Percent	Percent	Percent
Java	57.77	41.37	0.86	100.00
Sumatra	67.21	31.18	1.61	100.00
Kalimantan	70.31	28.18	1.51	100.00
Sulawesi	70.10	29.21	0.69	100.00
Other Islands	78.01	21.29	0.71	100.00
Indonesia	61.74	37.27	0.99	100.00

Source : Central Bureau of Statistics, Jakarta. 1971.

There has been no widespread study of family types in Indonesia but in general it can be said that the Javanese family is a nuclear family rather than

(3) Central Bureau of Statistics.



an extended family (4). Usually, after marriage, the new married couple do not live with their parents; they build a new house near their parents or in some cases they move away from their parents because of economic constraints.

Ethnicity, Race & Religion. Almost every country in the world collects information about selected social characteristics of population. Birthplace, racial or ethnic origins, citizenship, the level of literacy or educational attainment and religion are the items most commonly enumerated. The population census of Indonesia collected the above information but the data on ethnicity has not been collected either in the 1961 or 1971 census. Only in the colonial census in 1930 the population had been separated into two different ethnic groups, that was "indigenous people" and "European people" since the colonial government had more interest in the European people and collected various characteristics of this group.

TABLE III.10. PERCENTAGE OF POPULATION BY SEX AND RELIGION
IN INDONESIA, 1969.

	Islam	Protestant	Catholic	Buddhist	Hindu	Others
Male						
Urban	79.98	6.08	3.42	4.83	0.94	4.75
Rural	88.08	5.05	2.45	0.41	2.29	1.71
Total	86.79	5.21	2.61	1.12	2.08	2.20
Female						
Urban	79.93	7.25	3.30	4.39	1.11	4.02
Rural	88.89	4.72	2.10	0.40	2.12	1.77
Total	87.48	5.12	2.29	1.03	1.97	2.12
Population						
Urban	79.96	6.67	3.36	4.61	1.03	4.38
Rural	88.49	4.88	2.28	0.40	2.21	1.74
Total	87.13	5.17	2.45	1.07	2.02	2.16
Excluded Provinces : Aceh, Riau, Central Kalimantan, South Kalimantan, East Kalimantan, West Nusa Tenggara, Maluku and West Irian.						
<i>Source</i> : Biro Pusat Statistik (Central Bureau of Statistics), <i>SUSENAS TAHAP KEEMPAT - Sifat2 Demografi Penduduk Indonesia</i> (National Survey of Social and Economic Fourth Round - Demographic Characteristics of the Population), Jakarta, 1969.						

(4) Koentjaraningrat, *Manusia dan Kebudayaan di Indonesia*, Djambatan, Jakarta, 1971.

With regard to religion, the Basic Law of 1945 gives a freedom of worship according to their religion to every Indonesian citizen. Thus the atmosphere of Indonesia has provided a large opportunity for the development of every religion.

The statistical data on religion show that Islam has the highest percentage of adherents with about 87.1 per cent of the population of Indonesia (National Socio Economic Survey, 1969). The second biggest religion in Indonesia is Protestant (5.2 %), while Catholic is the third (2.5 %). The rest are Hindu (2.0 %) and Buddhist (1.1 %) and other religions which are not included in the above classification. Table III.10 also indicated that Islam and Hinduism have a higher percentage of adherents in the rural area than in the urban area, while the reverse situation is observable in the other three religions.

It may be that these religions are more widely spread among the rural population than the other religions because they are the oldest religions in Indonesia.

Education. It is widely assumed that a certain minimum level of literacy is required for a population to break out of the vicious circle of a subsistence economy into full participation in the modern world economy based on complex technology and an intricate system of specialization and exchange. The importance of developing education has been realized by the Indonesian government since Independence in 1945. According to the Basic Laws of the Government of the Republic of Indonesia, every citizen has the right to a decent education. Hence, the government has provided wider opportunities for its people to attain an education as the fruit of their struggle for independence.

The progress during the forty years after the first Colonial census was held indicates a rapid increase in the population able to read and write in all the regions of Indonesia. During the Dutch occupation, according to the 1930 census, the percentage of the Indonesian population able to read and write was only 6.4 per cent, while this percentage grew to 31 percent in 1961 and further to 40.4 per cent in 1971, meaning that during these forty years there was an increase of about 34 per cent in the percentage of the population who were literate. The increase is greater among males (36,6 %) than females (31,5 %). The influence of the women's emancipation movement on the proportional increase of females able to read and write is very obvious from these data in which the growth of literacy among females was fifteen-fold while for males it was four-fold. This situation was even more pronounced in Java and Kalimantan. Within Java, the greatest improvements for females have been achieved in East Java where the proportion of females able to read and

write in 1971 grew thirty seven-fold compared to 1930, while the lowest growth rate was for West Java with only thirteen-fold increase.

The data also indicate that Sumatra has the highest proportion of population able to read and write compared to Java (except Jakarta Special Province) and the other islands. The difference between Sumatra and the other islands on the proportion of population able to read and write was striking in 1930 while the data in 1971 showed a lessening difference.

The progress in education can also be observed from the data on the population composition by level of education. The number of population aged 10 years and over in 1971 was 80.4 million. Of this number 41.01 per cent had no education and 58.99 per cent had ever attended education among which 32.97 per cent had not completed primary school, 19.38% had completed primary school and only about 6.64 per cent had junior high school or higher education. In comparison, at the 1961 Census, the proportion of persons who had no education to those aged 10 years and over was 64.86

TABLE III.11. PERCENTAGE OF POPULATION ABLE TO READ AND WRITE
ACCORDING TO SEX AND REGION,
1930-1971

Region	Males			Females			Total		
	1930	1961	1971	1930	1961	1971	1930	1961	1971
Jakarta Special Province		52.87	60.74		34.34	48.29		43.78	54.60
West Java	11.69	38.57	46.69	2.72	25.53	35.16	7.10	31.94	40.84
Central Java	9.98	41.72	47.14	1.14	23.15	30.33	5.47	32.20	38.52
Yogyakarta	8.00	42.87	47.96	.97	19.71	30.99	4.40	31.00	39.22
East Java	8.17	35.90	44.91	.78	17.13	28.93	4.38	26.25	36.66
Java	9.72	39.41	47.15	1.43	22.05	32.28	5.43	30.54	39.54
Sumatra	17.10	44.62	53.65	4.11	28.11	40.47	10.69	36.44	47.04
Kalimantan	9.61	39.40	44.02	.81	20.60	30.03	5.22	30.00	37.11
Sulawesi	12.47	33.36	43.46	5.42	23.64	35.22	8.90	28.42	39.27
Other Islands	8.45	33.71	40.67	3.25	17.36	30.07	5.85	25.51	35.37
Indonesia	10.83	39.45	47.46	2.17	22.76	33.68	6.44	30.99	40.46

Note :

1930 Indonesia only.

1961 & 1971 Total Population.

1930 Percentage of Population able to read and write of total Indonesia population.

1961 & 1971 Percentage of Population 10 years and over able to read and write of total population.

Source : Departement van Landbouw, Nijverheid en Handel, *Volk Stelling 1930*. Batavia, Landsdrukkerij, 1933.

Central Bureau of Statistics, *Population Census 1961*, preliminary figures, 1% Sample Tabulation ; Jakarta 1963.

Central Bureau of Statistics, *Population Census 1971*, preliminary figures, advance table, Jakarta 1972.

per cent. This indicates that during the last ten years there was a decrease in the proportion of persons who had had no education. On the contrary the proportion of those who had completed elementary school rose from 12.37 per cent in 1961 to 19.38 % in 1971 and those who had junior high school or higher education rose from 3.08 per cent in 1961 to 6.64 per cent in 1971.

In each education level the number of males exceeds the number of females and in the category of no education the reverse situation is found (see Table III.12).

TABLE III.12. PERCENTAGE OF POPULATION 10 YEARS AND OVER
BY LEVEL OF EDUCATION AND SEX, INDONESIA, 1961-1971.

Level of Education	1961			1971		
	Males	Females	Total	Males	Females	Total
No education	53.54	75.74	64.86	29.80	51.58	41.01
Not completed						
Elementary School	25.24	14.31	19.67	37.49	29.70	32.97
Elementary School	16.82	8.13	12.37	23.65	15.36	19.38
Junior high School	3.36	1.47	2.39	5.75	2.94	4.31
Senior high school	.91	0.31	0.61	2.82	1.27	2.02
Academy/University	.31	0.04	0.08	0.49	0.15	0.31
<p><i>Source</i> : Central Bureau of Statistics, <i>Population Census 1961</i>, preliminary figures, 1 % sample tabulations, Jakarta, 1963. Central Bureau of Statistics, <i>Population Census 1971</i>, preliminary figures, advance tables, Jakarta, 1972.</p>						

It may be noted that the higher the level of education, the greater is the difference between the proportion of males and females having finished that level of education. Whereas the proportion of males with elementary school was not even twice the proportion of females, at the higher levels the ratio was three to one.

The proportional differences between the sexes is more pronounced when residence is considered. The differences in the rural areas are greater than in the urban areas. It is also interesting to note that the size of population with only elementary school education is larger in rural areas than in urban areas ; 33.8 million compared to 8.3 million. However, among those with education beyond elementary school the reverse is observable. There were 3.09 million urban people with more than elementary school education compared to 2.2 million rural people. (See Table III.13). This difference increases with the increase in the level of education as shown in Table III.14. The size of population 10 years and over with elementary school education is

larger in rural than urban areas but the proportion is larger in urban than rural areas. Also, beyond elementary school, urban areas have a larger proportion than rural areas. The greatest urban-rural difference is between those with an academic or university education, 216 thousand in urban areas compared to only 33 thousand in rural areas.

TABLE III.13. POPULATION 10 YEARS AND OVER BY LEVEL OF EDUCATION, SEX AND RESIDENCE, INDONESIA, 1971.

	No education		Elementary school		More than E.S.	
	abs no.	Percent	abs no.	Percent	abs no.	Percent
Urban						
Males	901,256	2.73	4,408,411	10.47	1,935,900	36.26
Females	2,316,465	7.02	3,900,213	9.26	1,155,060	21.63
Total	3,217,721	9.76	8,308,624	19.73	3,091,050	57.89
Rural						
Males	10,737,248	32.55	19,463,676	46.23	1,602,138	30.01
Females	19,027,645	57.69	14,332,425	34.04	645,898	12.10
Total	29,764,893	90.24	33,796,101	80.27	2,248,036	42.11

Source : Central Bureau of Statistics, *Population Census 1971*, Preliminary Figures, Advance Tables, Jakarta, 1972.

TABLE III.14. POPULATION 10 YEARS AND OVER BY LEVEL OF EDUCATION AND AREA OF RESIDENCE. INDONESIA, 1971.

Level of Education	Urban		Rural		Total	
	abs no.	Percent	abs no.	Percent	abs no.	Percent
No education	3,217,721	22.01	29,764,893	45.23	32,982,614	41.01
Elementary school	8,308,624	56.84	33,796,101	51.35	42,104,725	52.35
Junior high school	2,063,108	14.11	1,399,577	2.13	3,462,685	4.31
Senior high school	811,831	5.55	815,042	1.24	1,626,873	2.02
Academy/University	216,111	1.48	33,417	0.05	249,528	0.31
Total	14,617,395	100.00	65,809,030	100.00	80,426,425	100.00

Source : Central Bureau of Statistics, *Population Census 1971*, Preliminary Figures, Advance Tables, Jakarta, 1972.

In addition to urban-rural differences there are also differences between islands as shown in Table III.15. In general, Sumatra had achieved the greatest progress in educating its population, except at the academy or university level. The proportion of population 10 years and over having

TABLE III.15. PERCENTAGE NUMBER OF POPULATION 10 YEARS AND OVER BY LEVEL OF EDUCATION AND REGION

Region (1)	No school (2)	Not completed elementary school (3)	Elementary school (4)	Junior High School		Senior High School		Academy	University	Total (11)
				General (5)	Vocational (6)	General (7)	Vocational (8)			
Jakarta Special Province	22.32	29.02	26.04	9.24	6.09	2.32	2.56	1.18	1.23	100.00
West Java	39.69	34.35	21.38	2.05	0.79	0.92	0.65	0.09	0.08	100.00
Central Java	44.90	34.54	15.24	2.25	0.79	1.26	0.80	0.12	0.10	100.00
Yogyakarta Special Province	44.49	25.47	18.87	5.06	2.05	2.05	1.43	1.79	0.24	100.00
East Java	47.39	30.40	16.81	2.59	0.90	0.95	0.73	0.13	0.10	100.00
Java & Madura	42.49	32.43	18.25	2.83	1.19	1.13	0.88	0.19	0.17	100.00
Sumatra	29.55	39.72	22.92	4.15	1.29	1.17	0.97	0.15	0.08	100.00
Kalimantan	48.32	28.92	18.75	2.25	0.46	0.94	0.30	0.04	0.02	100.00
Sulawesi	41.52	28.44	21.93	4.14	1.41	1.20	1.14	0.09	0.14	100.00
Other islands	46.54	28.14	19.18	2.96	0.90	1.17	0.88	0.10	0.13	100.00
Indonesia	41.01	32.97	19.38	3.14	1.17	1.14	0.88	0.17	0.14	100.00

Source : Central Bureau of Statistics, *Population Census 1971*, preliminary figures, advance tables, Jakarta 1972.

university or academic education in Indonesia is still very small being only 0.23 per cent in 1971.

The highest proportion is in Java (0.36 %) followed by Sumatra (0.27 %) and Sulawesi (0.23 %). It seems likely that the percentage differences between regions increase with the increase in the level of education. This may be due to the relationship between the level of education and kind of economic activity – the higher the level of education the less is the desire to work in agriculture and related sectors and the scarcity of non-agricultural economic activities in the islands outside Java and Sumatra.

Within Java the highest educational attainment is in Jakarta Special Province. This can easily be understood since educational facilities are better in Jakarta than in other provinces. Moreover it seems that those who had achieved a certain educational level tended to prefer to work in large cities, especially in Jakarta where development activities play a significant role in

TABLE III.16. PERCENTAGE DISTRIBUTION OF THE POPULATION
AT SCHOOL, INDONESIA, 1961-1971

Age	1961			1971		
	Total Population	At School	Percentage	Total Population	At School	Percentage
5	3,296,038	150,539	4.6	3,830,725	0	0.00
6	3,072,613	589,368	19.2	3,941,900	630,368	15.99
7	3,327,457	1,326,070	39.9	3,866,541	1,533,529	39.66
8	2,883,827	1,484,258	51.5	3,820,150	2,132,232	55.82
9	2,743,021	1,556,271	56.7	3,412,839	2,276,944	66.72
10	2,381,428	1,505,256	63.2	3,654,212	2,448,721	67.01
11	1,341,220	972,611	72.5	2,462,534	1,772,634	71.98
12	1,912,346	1,148,829	60.1	3,167,012	1,916,359	60.51
13	1,344,054	737,847	54.9	2,481,272	1,418,804	57.18
14	1,200,364	528,893	44.1	2,462,856	1,078,430	43.79
15	1,794,381	432,137	24.1	2,781,667	872,871	31.38
16	1,223,104	297,231	24.3	2,138,247	644,288	30.13
17	1,333,723	244,895	18.4	2,275,330	479,581	21.08
18	2,211,792	230,225	10.4	2,696,150	450,879	16.72
19	1,145,175	133,457	11.7	1,499,952	269,306	17.95
5 - 9	15,322,956	5,106,506	33.3	18,872,155	6,573,073	34.83
10 - 14	8,179,412	4,893,436	59.8	14,227,886	8,634,948	60.69
15 - 19	7,708,175	1,337,945	17.4	11,391,346	2,716,925	23.85
20 - 24	7,790,965	279,195	3.6	7,961,288	513,524	6.45
25 +	40,158,260	212,780	0.5	46,838,040	201,725	0.43
N.S.	116,751	2,173	1.9	7,865	1,338	17.01
Total	79,276,519	11,832,035	14.9	99,298,580	18,641,533	18.77

Source : Central Bureau of Statistics, Jakarta.

absorbing the flow of urban rural migrants. Next to Jakarta, Yogyakarta Special Province has a high proportion of its population with junior high school education or higher.

The age distribution of population at school in the two successive censuses as shown in Table III.16 gave a clear picture about an increase in the proportion at school at certain ages. The rise at age 9 from 56.7 per cent to 66.7 per cent must mean that the elementary school is retaining a larger number of its pupils for more years. Since the high drop out has been a main concern this is encouraging. But we also note that the peak percentage attending school occurs at age 11, where it is 72 per cent both in 1961 and 1971.

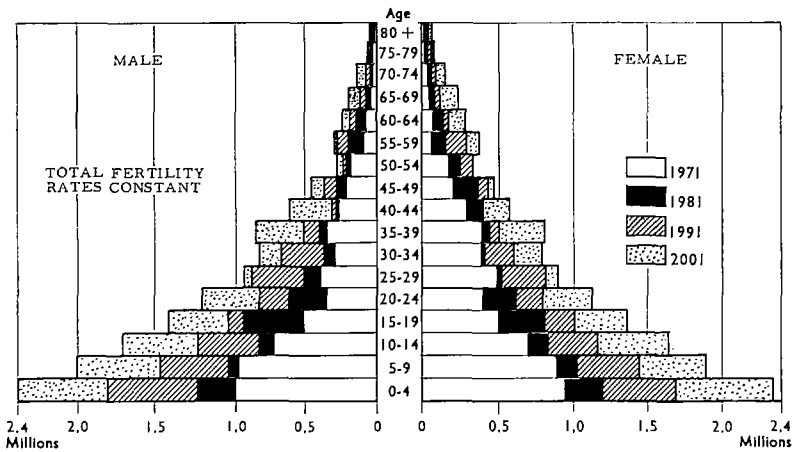


Figure III. 1. ~ Population pyramid for Indonesia 1971 - 2001. Variant I

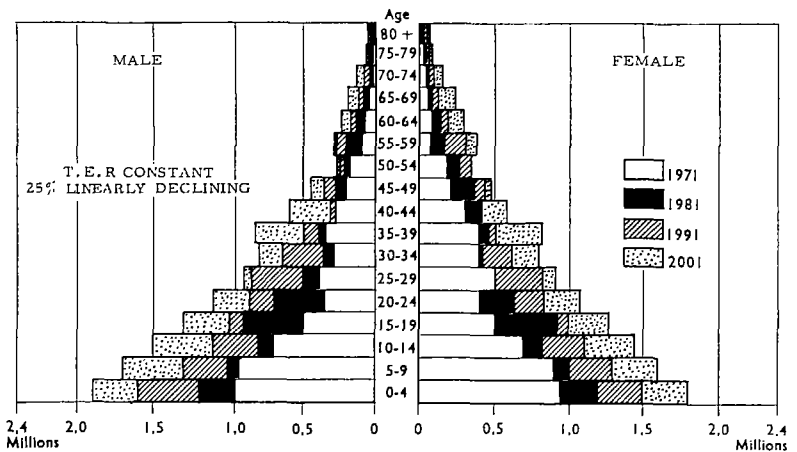


Figure III. 2. ~ Population pyramid for Indonesia 1971 - 2001. Variant II

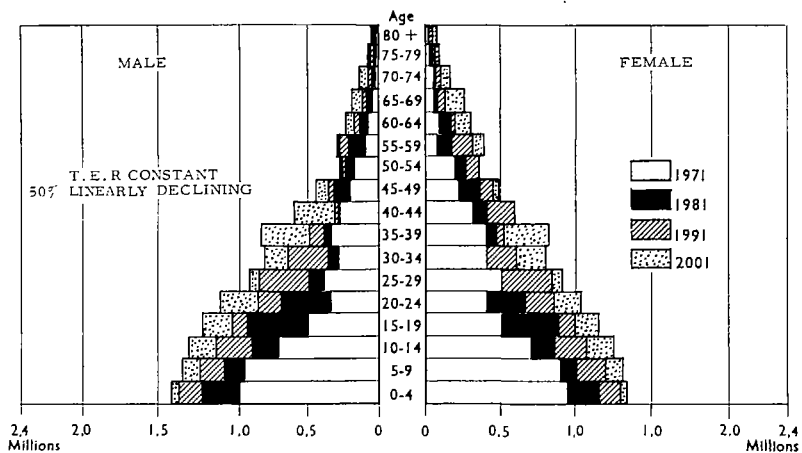


Figure III. 3. – Population pyramid for Indonesia
1971 – 2001. Variant III

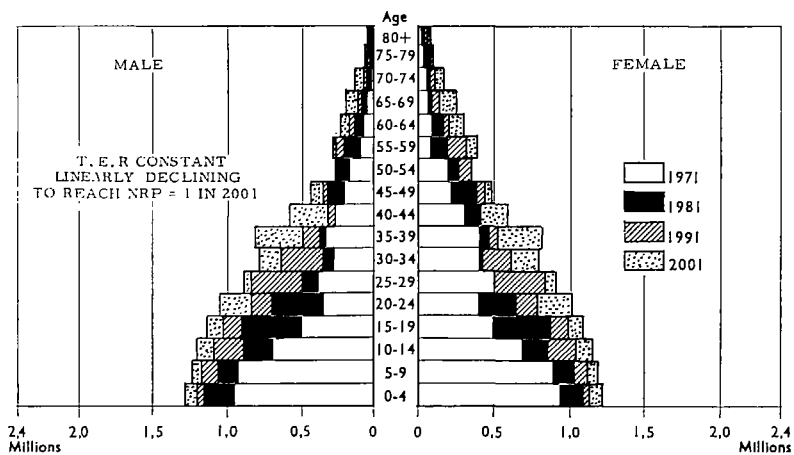


Figure III. 4. – Population pyramid for Indonesia
1971 – 2001. Variant IV

CHAPTER IV

POPULATION DISTRIBUTION AND INTERNAL MIGRATION

Population Distribution. The last two population censuses, conducted successively in 1961 and 1971, have greatly increased our knowledge about the population of Indonesia. According to the census of 1971 the total population of Indonesia was 119.2 million in which was included an estimate of 800,000 for the population in the province of West-Irian.

The uneven geographical distribution of the population in Indonesia however is still noticeable in 1971. This characteristic was observed in earlier population counts and estimates as well. An illustration of the phenomena of maldistribution is presented by the following table (See Table IV.1).

TABLE IV.1. REGIONAL PERCENTAGE OF TOTAL POPULATION
AND AREA, INDONESIA, 1920 to 1971.

Region	% of Total Population				% of Total Area
	1920	1930	1961	1971	
Java	70.9	68.7	64.9	64.2	6.64
Sumatra	12.8	13.6	16.2	17.6	26.69
Kalimantan	3.3	3.6	4.3	4.4	27.17
Sulawesi	6.3	7.0	7.3	7.2	11.23
Other Islands	6.8	7.1	7.3	6.6	28.25
Indonesia	100.	100.	100.	100.	100.

Source : Central Bureau of Statistics Republic of Indonesia, Jakarta.

Almost two-thirds or 64 per cent of the population in Indonesia is concentrated on the relatively small island of Java, which comprises only 6.6 per cent of the country's area. Java is therefore an over-crowded island with the very high density of 565 per km². In Java, the highest concentration of people is found in the central part of the island, where population density in the province of Central Java (including D.I. Yogyakarta) is 64.7 per km². In the province of West Java (including D.K.I. Jakarta) and East Java, densities are respectively 527 and 539 per km². (see Table IV.2).

TABLE IV.2. POPULATION IN INDONESIA BY REGION
IN 1971

Region	Area km ²	Population (1,000)	Density per km ²
D.K.I. Jakarta	576	4,576	7,944
West Java	49,118	21,633	440
Central Java	34,503	21,877	634
D.I. Yogyakarta	3,140	2,490	793
East Java	47,366	25,527	539
Java-Madura	134,703	76,103	565
Sumatra	541,174	20,813	38
Kalimantan	550,848	5,152	9
Sulawesi	227,654	8,535	37
Other Islands	572,708	7,857	14
Outside Java	1,892,384	42,357	22
Indonesia	2,027,087	118,460(1)	58
(1) Population in West Irian not yet included.			
<i>Source</i> : Central Bureau of Statistics – Republic of Indonesia, Census 1971. Jakarta.			

Other islands of Indonesia are less crowded than Java. The population density in Sumatra is almost equal to Sulawesi at 38 and 37 per km² respectively while Kalimantan and other islands are more sparsely populated with densities of 7 and 14 per km² respectively. The contrast between the density in Java and the other islands of Indonesia is even more conspicuous at 565 and 22 per km² respectively ; that is, there are, per square kilometer, 25 times more people living in Java than the region outside Java.

Behind these differences are sound reasons of geography as well as historical chance. A high proportion of land area in Java can support wet rice cultivation, and an extensive irrigation system permits 25 per cent of rice land to be doubled-cropped (1). Soil fertility is maintained by the mineral content of the streams, a consequence of the many active volcanoes on the island. Except in a few small regions, these advantages are not found elsewhere in Indonesia. It is true that a build-up of capital in agriculture in Sumatra, Kalimantan and Sulawesi and a change from the still prevalent system into permanent field cultivation would undoubtedly enable those islands to support much larger rural populations ; but they are unlikely ever to be able to approach Java in density.

It is hoped that the industrial development which is at present mostly implemented in Java will absorb the abundant labour and thus avoid social and economic pressure in Java, but it may also become a "pull factor" for the

(1) Asian Development Bank, 1969 : 158.

population outside Java. The availability of job opportunities outside of agriculture in the trade and industrial centres in Java are an attraction for the people outside Java. Furthermore, the educational and recreational facilities in most of the big cities in Java attract young people outside Java who are seeking a higher education. Having completed a certain level of education most of them are not willing to go back to their home town but they stay and settle with a job in Java.

If one looks at the geographical distribution of the population of Indonesia during the past and recent decades one can infer that interisland population transfer has been very small. The percentage of population by islands shows a similar pattern during the whole period from 1920 to 1971 (see also Table IV.1). The efforts of governments in transferring the population from Java to the other islands do not seem to have had much impact on the imbalance of population distribution in Indonesia.

With regard to the distribution of population by area of residence, the population residing in the rural areas is larger than that of the urban areas as shown by the two successive censuses. According to the census of 1961, 85.2 per cent of the total population lived in rural areas and only 14.8 per cent in urban areas. These proportions are slightly different in 1971 by which time the urban proportion had increased to 17.5 per cent while the rural proportion decreased to 82.5 per cent. The numbers of males and females residing in the urban part of Indonesia are almost equal, while in the rural areas the number of females exceeds the number of males by almost two million. It can also be noted that during the intercensal period, 1961-71, the increase of the female population in the urban areas was slightly higher than the increase of the male population.

TABLE IV.3. URBAN AND RURAL POPULATION BY SEX
IN INDONESIA 1961-1971 (in thousands)

	Males	%	Females	%	Both Sexes	%
1961						
Urban	7,182	15.03	7,176	14.59	14,358	14.80
Rural	40,656	84.97	42,004	85.41	82,660	85.20
Total	<u>47,839</u>	<u>100.</u>	<u>49,180</u>	<u>100.</u>	<u>97,018</u>	<u>100.</u>
1971						
Urban	10,383	17.82	10,382	17.25	20,765	17.53
Rural	47,896	82.18	49,799	82.75	97,695	82.47
Total	<u>58,279</u>	<u>100.</u>	<u>60,181</u>	<u>100.</u>	<u>118,460</u>	<u>100.</u>

Source : Central Bureau of Statistics, Republic of Indonesia, Jakarta.

Indonesia still maintained its position as an agricultural country. 67 per cent of total households are agricultural households, defined as households in which one or more of the members are farm holders (2), or in other words those households in which the economic life of the members mostly depended upon the agricultural sector.

Internal Migration. Notwithstanding regulations on registration of population movements, at both place of origin and destination, the majority of movements within Indonesia remain unregistered. Even on Java, which usually has a rather good administrative machinery, the data are incomplete and inaccurate. In general the discrepancies in the data are due to the lack of responsibility on the part of the migrants to register. The population censuses have collected information on place of birth and place of residence but, at the time of writing, tables showing these characteristics had not been published. The best available data on migration is the Second National Sample Survey of 1964-1965, which covered all Indonesia except East Nusatenggara, Maluku, West Irian and Jakarta Raya.

TABLE IV.4. MOBILITY OF INDONESIA'S POPULATION
1964-1965

	Percentage of Population living in present desa/town for -					
	less than :				more than :	
	1 year	2 years	3 years	4 years	5 years	6 years
Java (a)						
Urban	3.0	6.0	8.6	10.6	12.1	87.9
Rural	1.2	2.4	3.2	3.8	4.5	95.5
Total	1.4	2.8	3.8	4.6	5.3	94.7
Other Islands(b)						
Urban	2.2	4.6	6.6	8.8	10.1	89.9
Rural	1.7	2.9	3.9	4.7	5.4	94.6
Total	1.8	3.1	4.3	5.2	6.0	94.0
(a) Excluding Jakarta Raya.						
(b) Excluding East Nusatenggara, Maluku and West Irian.						
<i>Source</i> : Geoffrey Mc Nicoll, "Internal Migration in Indonesia, Descriptive Notes", Indonesia. (Cornell University), April 1968, table 2. (Derived from National Sample Survey 1964/1965).						

(2) Central Bureau of Statistics, Household Listing, July-August 1970.

In the Second Social and Economic Survey migrants were defined as those who had resided in the same village, city or municipality for less than five years (3). Table IV.4 derived from this survey demonstrates the remarkable stability of Indonesia's population. Fewer than 6 per cent had moved from a different village or town within the previous 5 years, and in rural areas fewer than 5 per cent. The differences between Java and the other islands in this respect were only slight.

Population movements over the 1960-1964 period showed the relative importance of inter and intra-island migration and rural-urban migration. Internal migration in Java constitutes about 60 per cent of all recorded movements in Indonesia, but most of this is short distance migration, with interprovincial migration accounting for less than 10 per cent of total movements. Internal migration in the other islands is just as significant, when related to their smaller total populations. (See Table IV.5).

TABLE IV.5. PERCENTAGE DISTRIBUTION OF MOVEMENTS(a)
BY CATEGORY OF MOVEMENT AND URBAN-RURAL DESTINATION.

Category	Urban areas	Rural areas	Urban and Rural areas
Internal migration in Java	14.7	45.8	60.5
Internal migration in other islands	7.9	21.3	29.2
Migration from Java to other islands	1.8	6.1	7.9
Migration from other islands to Java	1.4	1.0	2.4
Total	<u>25.8</u>	<u>74.2</u>	<u>100.0</u>
(a) Coverage excludes Jakarta Raya, East Nusatenggara, Maluku and West Irian as destinations.			
<i>Source</i> : Geoffrey Mc Nicoll, "Internal Migration in Indonesia, Descriptive Notes," Indonesia (Cornell University), April 1968, Table 3. Based on National Sample Survey 1964/1965.			

Movement from Java to the other islands is substantially greater than the reverse flow, but it must be remembered that Jakarta was not included as an immigrant area, which serves to understate the size of the flow from the other islands to Java. Even without the inclusion of Jakarta, however, more

(3) Biro Pusat Statistik (Central Bureau of Statistics), Susenas Tahap Kedua Perpindahan Penduduk (Second National Social and Economic Survey Migration), November 1964-February 1965, Jakarta.

than half the immigrants to Java go to urban areas, where as three - quarters of the flow from Java to the other islands is directed to rural areas.

The survey also gave information on the reasons for change of residence. Table IV.6 indicates that a large proportion of migrants sought a new place of residence because they followed the earning members of their families.

TABLE IV.6. PERCENTAGE DISTRIBUTION OF MIGRANTS ACCORDING TO THE REASON FOR CHANGE OF RESIDENCE, INDONESIA, 1964.

Reasons	Numbers (000's)	Percentage
Employment (Voluntary)	1,065	19.6
Employment (Government subsidized)	300	5.5
Study	202	3.7
Marriage	648	11.9
Following Earning members	2,822	51.9
Others	399	7.4
Total	5,436	100.0

Source : Biro Pusat Statistik, SUSENAS II – Perpindahan Penduduk. (Second National Social and Economic Survey), November 1964. February 1965, Jakarta. p. 73.

TABLE IV.7. PERCENTAGE DISTRIBUTION OF MIGRANTS ACCORDING TO AGE, INDONESIA, 1964.

Age	Total Numbers (000's)	Percentage
0 – 9	1,317	24.2
10 – 14	526	9.7
15 – 19	581	10.7
20 – 24	698	12.8
25 – 29	697	12.8
30 – 34	425	7.8
35 – 39	336	6.2
40 – 44	334	6.1
45 – 49	166	3.1
50 – 54	126	2.3
55 +	230	4.2

Source : Biro Pusat Statistik, SUSENAS II – Perpindahan Penduduk. (Second National Social and Economic Survey Migration), November 1964 – February 1965, Jakarta. p. 1.

The next largest proportion of migrants were those who voluntarily sought for employment in the area of destination followed by those who changed their residence because of marriage.

The age structure of the migrants showed that a large proportion were in the age group 0-9 and in the peak of working and marriage ages (age group 14-29). This age pattern is consistent with the reasons for migration given above. (See also Table IV.7).

Transmigration. The high density on Java and Madura and the uneven distribution of the population in Indonesia were the basis for the development of ideas to decrease the population of Java and increase the population on other islands which have a relative shortage of inhabitants. The discrepancy between Java and the other islands is mainly due to the difference in land use and soil fertility which in turn is due to the difference in climate and soil type. The only method considered for decreasing the population of densely populated areas was to move people from Java to other islands like Sumatra, Kalimantan, Sulawesi, Maluku and West Irian. Such ideas had been considered ever since the time of Sir Thomas Raffles (1814) (4) but their implementation was delayed until the time of the minister of Colony, van Deventer, who was known for his formula : education, irrigation and emigration (1899) (5). The Dutch government sponsored movement of people from Java to South Sumatra in 1905 was referred to as "Colonization", This policy was continued after independence and is referred to as "transmigration".

Transmigration after independence was defined as moving man-power from one area to another with the objective of having them settle there and participate in developing the settlement area under government guidance and supervision (guided internal migration) (6).

The motives of the transmigrants are generally economic, demographic, socio-cultural or political. Some movements are related to security and occasionally also to natural disasters like the eruption of Gunung Agung in Bali in 1963. The economic motives of the transmigrants are bound up in the basic economic problems of Java, that is, the impossibility in most areas of significantly raising rural income above their very low levels because of

(4) Sri Edi Swasono, *Transmigrasi dalam Perspektif Pembangunan*. (Transmigration in the Development Perspective) in the daily *Indonesia Raya*, Jakarta, August 3, 1970.

(5) K.J. Pelzer, *Pioneer Settlement in the Asiatic Tropics*, America Geographic Society, Special publication No. 29, New York, 1948, p. 174.

(6) Kamto, Utomo, *Seminar Transmigrasi* (Seminar on Transmigration), Lembaga Ekonomi dan Kemasyarakatan Nasional (the National Economic and Social Research Institute), Jakarta, 1956, p.1.

increasing population pressure on a limited land base. Movement to the other islands therefore is a chance to secure a larger farm and the possibility of a higher income.

Transmigration in Indonesia is a government program but it is not completely executed by the government. There is also specific transmigration, that is transmigration which is implemented in cooperation with projects, whether national, regional or private, and spontaneous transmigration which is financed by the individual and the destination is also determined by the individual. In 1964, as a consequence of inflation, a new self-help system of transmigration was instituted. According to this system, each family is provided with facilities including two hectares of agricultural land and agricultural tools, but the transmigrants have to pay their own way.

Some statistics of transmigration are presented in Table IV.8 and Table IV.9. The 473,454 transmigrants in the 1951-1972 period represented an average annual movement of more than 22,000 people. However, this is a tiny figure compared with the annual population growth of Java.

TABLE IV.8. TRANSMIGRATION ACCORDING TO SETTLEMENT AREA
1951-1972

Settlement Area	Number of Transmigrants	Settlement Area	Number of Transmigrants
Aceh	695	Sulawesi Utara	6,130
Sumatra Utara	10,582	Sulawesi Tengah	13,230
Sumatra Barat	12,890	Sulawesi Selatan	11,176
Riau	2,758	Sulawesi Tenggara	2,928
Sumatra Selatan	139,471	Ambon	1,051
Lampung	208,764	Maluku	238
Banten	5,032	Nusatenggara Barat	1,015
Kalimantan Barat	12,912	Irian Barat	1,015
Kalimantan Selatan	14,623	Bengkulu	469
Kalimantan Tengah	8,006		
Kalimantan Timur	20,199		
		Total	473,454

Source : Department of Transmigration and Cooperatives, Republic of Indonesia, Jakarta.

Although efforts have been made to encourage transmigration to Kalimantan and other areas, Sumatra has remained the destination of most transmigrants. In fact the traditional destinations of South Sumatra and Lampung received 77.3 per cent of all transmigrants leaving Java during this period.

TABLE IV.9. TRANSMIGRATION BETWEEN 1961-1972.

Year	Area of Origin	Area of Destination				
		Sumatra	Kalimantan	Sulawesi	Other Islands	Total
1961	West Java	4,357	686	66		5,109
	Yogyakarta	982	381	-		1,363
	Central Java	6,365	1,965	-	140	8,470
	East Java	2,975	1,156	197		4,327
	Nusatenggara	199	151	-		350
1962	West Java	1,720	1,119	179		3,018
	Yogyakarta	1,333	215	1		1,549
	Central Java	7,406	2,432	2	200	10,040
	East Java	2,800	2,646	-		5,446
	Nusatenggara	604	284	242		1,130
1963	West Java	1,672	165	-		837
	Yogyakarta	617	78	-		695
	Central Java	3,384	238	-		3,622
	East Java	2,388	750	1,448		4,586
	Nusatenggara	5,276	339	-		5,615
1964	West Java	-	683	-		683
	Yogyakarta	4,675	-	-		4,675
	Central Java	5,843	1,706	-		7,549
	East Java	-	59	937		1,046
	Nusatenggara	999	-	-		999
1965	Jakarta Raya	137	-	-		137
	West Java	3,289	767			4,065
	Yogyakarta	7,503	-			7,503
	Central Java	25,154	1,086	302		26,542
	East Java	9,464	2,722	1,617		13,803
	Nusatenggara	-	-	-		-
1966	West Java	251	-	-	-	251
	Yogyakarta	410	373	733		1,516
	Central Java	-	-	-	728	728
	East Java	110	-	463	-	573
	Nusatenggara	-	-	-	-	-
1967	West Java	1,697	-	-	-	1,697
	Yogyakarta	28	-	-	-	28
	Central Java	1,921	5	-	-	1,926
	East Java	953	647	-	-	1,600
	Nusatenggara	-	-	1,015	-	1,015
1968	Jakarta	8	-	-	-	8
	West Java	2,245	-	713	157	3,115
	Yogyakarta	1,653	15	-	-	1,668
	Central Java	3,243	1,207	434	130	5,014
	East Java	2,374	788	94	-	3,256
	Nusatenggara	-	-	-	681	681

1969	West Java	1,028	—	1,144	—	2,174
	Yogyakarta	1,028	18	—	—	1,046
	Central Java	—	298	188	—	486
	East Java	—	39	631	236	906
	Nusatenggara	—	26	—	—	26
1970	West Java	1,671	434	—	—	2,105
	Yogyakarta	3,742	307	1,348	—	5,397
	Central Java	3,527	313	253	—	4,093
	East Java	2,172	1,545	1,009	—	4,726
	Bali	—	—	1,527	—	1,527
1971	West Java	1,593	1,182	229	—	3,004
	Yogyakarta	1,388	230	785	233	2,636
	Central Java	3,078	2,384	487	—	5,949
	East Java	1,600	281	1,614	—	3,495
	Bali	547	—	4,327	—	4,874
1972	West Java	1,615	437	595	—	2,647
	Yogyakarta	2,147	218	374	—	2,739
	Central Java	3,182	937	—	—	4,119
	East Java	1,413	2,258	468	—	4,139
	Bali	645	898	3,683	—	5,226

Source : Department of Transmigration and Cooperatives, Republic of Indonesia, Jakarta.

Urbanization. Urbanization is one of the effects of migration. If the migration stream from the rural areas is directed to the urban areas then a rapid increase of urban population takes place. Urbanization can be defined as : “a process of population concentration which proceeds in two ways – the multiplication of points of concentration and the increase in size of individual concentrations”.

Definitions of “urban” have not remained fixed, making intercensal comparison rather difficult. In the 1920 and 1930 censuses, places of “more or less of urban appearance” with a population of not less than 1,000 were classified as urban ; criteria for establishing boundaries for towns other than municipalities are unknown. For 1961, urban areas comprised municipalities, kabupaten capitals, and other places “with urban characteristics” – as judged by census and local government officials – and population exceeding 20,000. The 1971 census extended this definition slightly by classifying each desa (village) other than those within municipal boundaries as urban or rural on the basis of simple criteria, effectively removing the lower bound of 20,000 on other towns and probably making the census limits for all urban places coincide approximately with the limits of urbanized areas (7).

(7) Si Gde Made Mamas & Geoffrey Mc Nicoll, *Op. Cit.*, p. 37.

However, the rate of urbanization in Indonesia has been rather slow. The proportion of population living in urban areas rose from 14.8 per cent in 1961 to 17.5 per cent in 1971, a rather modest increase when viewed against the doubling (almost) of the proportion urban in West Malaysia (24 % to 46 %) in the space of 20 years to 1970, and the 17 percent increase (36 % to 53 %) in the proportion urban in tropical South America in the same period (8).

The trend of the urban fraction, measured by taking the proportion of population in cities of 100,000 and over, also shows a slight increase from 9.9 per cent in 1961 to 11.4 per cent in 1971. (See Table IV.10).

TABLE IV.10. NUMBER OF URBAN PLACES AND PROPORTION OF POPULATION IN URBAN PLACES, BY MINIMUM SIZE OF PLACE, INDONESIA, 1930-1971.

Size of Place	Number			Percent of Population		
	1930	1961	1971	1930	1961	1971
100,000 +	7	23	29	2.7	9.9	11.4
50,000 +	17	51	(a)	3.8	11.9	(a)
20,000 +	53	127	(a)	5.5	14.4	(a)
(a) 1971 data not yet compiled.						
<i>Source</i> : Si Gde Made Mamas & Geoffrey Mc Nicoll, <i>The Demographic Situation in Indonesia</i> , New Orleans, April, 1973, p. 38.						

(8) Lembaga Demografi (Demographic Institute), "Recent Trends in Urbanization in Indonesia", *Warta Demografi*, monthly news letter, No. 2, February, 1973.

CHAPTER V

THE LABOUR FORCE

The 1971 census results indicate the recent manpower situation in Indonesia. The data collection in this census used the labour force approach and a "time reference" of one week. Manpower is defined as the population aged 10 years and over which was already involved or could be drawn into the economic process. The concept of the economically active population is used as a substitute for the labour force concept. It is further classified into two categories :

1. Labour force
2. Non-labour force

The first category is then classified into employed and unemployed. The second category comprises students, home-makers, income recipients and others. The employed comprises all persons who worked during one week prior to the census date with the intention of earning any income or profit, with a minimum number of two working days ; or those who had a job in which they had already worked but from which they were temporarily absent because of illness or injury, industrial dispute, vacation or other leave of absence or temporary disorganization of work due to such reasons as bad weather or mechanical breakdown. Peasants waiting for harvest or planting time are also included in this category. The unemployed consists of all persons who during the above reference period, were not working but who were seeking work, including those who never worked before.

Age and Sex. In 1971, the total population aged ten years and over was 80,426,425 persons out of which 40,100,070 persons or 49.9 percent belonged to the labour force. As shown in Table V.1, there were 39,048,719 males and 41,377,706 females aged ten and over, out of which 26,832,401 males or 68.72 per cent and 13,267,669 females or 32.06 per cent belonged to the labour force. The percentage distribution of the labour force to population in five-year age groups is shown in the same table.

TABLE V.1. POPULATION, LABOUR FORCE AND PERCENTAGE LABOUR FORCE TO POPULATION IN INDONESIA BY SEX AND AGE IN 1971

Age	Population		Labour Force		Percentage Labour Force to Population	
	Male	Female	Male	-Female	Male	Female
10 - 14	7,326,300	6,901,586	1,338,761	995,090	18.27	14.42
15 - 19	5,642,971	5,748,375	2,761,730	1,646,081	48.94	28.64
20 - 24	3,555,777	4,405,511	2,719,698	1,402,632	76.49	31.84
25 - 29	4,033,202	5,009,212	3,648,929	1,710,071	90.47	34.14
30 - 34	3,664,254	4,229,993	3,378,725	1,599,694	92.21	37.82
35 - 39	4,019,321	4,061,128	3,771,025	1,637,801	93.82	40.33
40 - 44	3,003,532	3,025,816	2,790,181	1,288,819	92.90	42.59
45 - 49	2,398,710	2,248,418	2,198,288	992,945	91.64	44.16
50 - 54	1,887,607	1,946,969	1,661,887	824,278	88.04	42.34
55 - 59	1,073,916	1,061,318	904,760	422,446	84.25	39.80
60 - 64	1,034,044	1,188,885	804,697	392,903	77.82	33.05
65+	1,405,110	1,546,605	850,435	352,823	60.52	22.81
Not Stated	3,975	3,890	3,285	2,086	82.64	53.62
Total	39,048,719	41,377,706	26,832,401	13,268,669	68.72	32.06

Employment Status. The census of 1961 in Indonesia also used the labour force approach but a reference period of six months. Persons who were ten years and over and were working when the census was taken or were working at least two months during the six months prior to the census as well as those who were at that time not working but seeking work were considered as being in the labour force. Table V.2 presents information on the labour force composition in 1971.

TABLE V.2. LABOUR FORCE AND NON LABOUR FORCE (AGED TEN YEARS AND OVER) BY SEX, IN INDONESIA IN 1971

Activities	Male	Female	Both Sexes
Labour force	26,832,401	13,267,669	40,100,070
Non-labour force	12,100,295	27,939,574	40,039,869
Unknown	116,023	170,463	286,489
Total	39,048,719	41,377,706	80,426,425

Source : Central Bureau of Statistics - Republic of Indonesia, Jakarta.

In 1961 the labour force participation rate was 54.1 percent, that is 4.2 percent higher than the participation rate in 1971. One of the difficulties with the modern labour force approach as used in 1971 is that it makes comparison with 1961 extremely difficult. (see Table V.3).

TABLE V.3. PERCENTAGE OF LABOUR FORCE AND NON LABOUR FORCE TO POPULATION 10 YEARS AND OVER, BY SEX IN INDONESIA 1961 AND 1971

Activity	1961			1971		
	Male	Female	Both Sexes	Male	Female	Both Sexes
Labour force	79.8	29.3	54.1	68.7	32.1	49.9
Non-labour force	20.2	70.7	45.9	31.0	67.5	49.8
Unknown	—	—	—	0.3	0.4	0.3
Total	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

The figures show a sharp fall in the percentage of the population in the labour force for males 10 years of age and over from 79.8 percent in 1961 to 68.72 percent in 1971. One can only surmise that this drastic fall in the participation rate was somehow due to the shortening of the reference period from six months to one week. If there is large seasonal employment this would help explain the large difference, even though the 1971 question was supposed to include farmers who were waiting for their crop to come in and persons idle for similar reasons. The drop is shown in all provinces, even in the city of Jakarta, where the rate in 1961 was 76.6 percent and in 1971 was 65.5 percent.

TABLE V.4. PERCENTAGE OF LABOUR FORCE TO POPULATION IN INDONESIA BY URBAN AND RURAL, SEX AND AGE IN 1971

Age	Males		Females	
	Urban	Rural	Urban	Rural
10 - 14	8.55	20.35	7.71	15.94
15 - 19	32.92	53.35	17.44	31.59
20 - 24	67.02	79.47	23.57	34.03
25 - 29	88.74	90.90	25.14	35.93
30 - 34	94.16	91.75	28.09	39.73
35 - 39	94.89	93.62	30.63	42.25
40 - 44	93.11	92.85	34.56	44.14
45 - 49	88.88	92.19	32.56	46.37
50 - 54	83.35	88.96	31.33	44.46
55 - 59	70.95	87.11	30.22	41.79
60 - 64	58.20	80.96	23.75	34.58
65 +	40.95	63.91	14.50	24.40
Unknown	82.64	0.00	53.62	0.00
Total	61.23	70.42	22.45	34.15

Source: Central Bureau of Statistics - Republic of Indonesia, Census 1971, Jakarta.

The participation rate for males was twice as high as that for females. Non-labour force consists of students, home-house-workers and it can be expected that the proportion of home-house-workers among females was much higher than among males. Figures on labour force participation rates in the rural areas for males as well as females indicate higher levels than in urban areas as shown in table V.4. Participation rates in each age group in the rural areas were higher than in urban areas, with the exception of males aged 30-44.

Employment and Unemployment in 1971. The census 1971 provided data on employment and unemployment in Indonesia. From the total labour force of 40,100,070 persons aged ten years and over, 39,210,112 persons or 97.8 percent were employed. In the case of females, only 13,026,442 were employed making up one third of total employed persons. Almost 890 thousand or 2.2 percent of the labour force were classified as unemployed. Included in the unemployed part of the labour force were those who did less than two days of work for pay or profit and were seeking work. About 408 thousand persons were classified as seeking work for the first time. The 1971 census indicates a smaller level of unemployment than in 1961. In 1971, the rates were 2.42 percent for males and 1.82 percent for females. While in 1961 they were 4.8 percent and 7.0 percent for males and females respectively. Because of the changes in definition, it is very difficult to compare the results of the two censuses.

TABLE V.5. EMPLOYED PERSONS IN INDONESIA BY
SEX AND AGE IN 1971

Age	Males	Females	Total
10 - 14	1,291,372	967,586	2,258,958
15 - 19	2,601,850	1,588,826	4,190,676
20 - 24	2,565,781	1,359,996	3,925,777
25 - 29	3,571,668	1,680,025	5,251,693
30 - 34	3,329,110	1,582,599	4,911,709
35 - 39	3,724,885	1,616,786	5,341,671
40 - 44	2,759,717	1,275,909	4,035,636
45 - 49	2,170,035	986,766	3,156,801
50 - 54	1,637,499	817,314	2,454,813
55 - 59	894,507	418,926	1,313,433
60 - 64	792,910	383,798	1,176,708
65 +	841,230	345,825	1,187,055
Not Stated	1,306	2,086	5,192
Total	26,183,670	13,026,442	39,210,112

Employed persons by age and sex in 1971 are shown in table V.5. Table V.6 shows the percentage of employed and unemployed persons to total labour force by age and sex in 1971.

Compared with the rural areas, the unemployment rate in the urban areas is much higher, that is 4.84 percent in urban areas compared to 1.75 percent in rural areas. It can be seen in table V.7 that one seventh of the

TABLE V.6. PERCENTAGE OF EMPLOYED AND UNEMPLOYED PERSONS TO LABOUR FORCE BY AGE AND SEX IN 1971

Age	Employed		Unemployed	
	Male	Female	Male	Female
10 - 14	96.46	97.24	3.54	2.76
15 - 19	94.21	96.52	5.79	3.48
20 - 24	94.34	96.96	5.66	3.04
25 - 29	97.88	98.24	2.12	1.76
30 - 34	98.53	98.93	1.47	1.07
35 - 39	98.78	98.72	1.22	1.28
40 - 44	98.91	99.00	1.09	1.00
45 - 49	98.71	99.38	1.29	0.62
50 - 54	98.53	99.16	1.47	0.84
55 - 59	99.87	99.17	1.13	0.83
60 - 64	98.54	97.68	1.46	2.32
65 +	98.92	98.02	1.08	1.98
Not Stated	94.55	100.00	5.45	100.00
Total	97.58	98.18	2.42	1.82

TABLE V.7. EMPLOYED PERSONS IN INDONESIA BY URBAN AND RURAL SEX AND AGE IN 1971

Age	Males		Females	
	Urban	Rural	Urban	Rural
10 - 24	98,383	1,192,989	90,447	877,139
15 - 19	345,842	2,256,008	186,006	1,402,820
20 - 24	503,551	2,062,230	197,018	1,162,978
25 - 29	676,265	2,895,403	203,525	1,476,500
30 - 34	638,154	2,690,956	192,174	1,390,425
35 - 39	592,146	3,132,739	201,905	1,414,881
40 - 44	471,481	2,288,236	165,684	1,110,225
45 - 49	343,533	1,826,502	115,214	871,552
50 - 54	251,526	1,385,973	97,139	720,175
55 - 59	130,676	763,831	54,604	364,322
60 - 64	80,051	712,859	38,817	344,981
65 +	81,795	759,435	35,348	310,477
Not Stated	3,106	0	2,086	0
Total	4,216,509	21,967,161	1,579,967	11,446,475

employed persons aged ten years and over were in the urban areas, made up of 4,216,509 males and 1,579,967 females. Employed persons in rural areas consisted of 21,967,161 males and 11,446,475 females.

Industry and occupation. The distribution of the Indonesian population into the diverse industrial groups is in agreement with typical patterns of many developing countries. Types of industries in a country can be grouped in two classical ways :

- I. Using the section where the economic activity takes place, we can make the following nine groups of industry :
 1. Agriculture, forestry, fishing etc.
 2. Mining and quarries.
 3. Manufacturing.
 4. Electricity, gas and water.
 5. Construction.
 6. Trade, banking and insurance.
 7. Transport and communication.
 8. Financing.
 9. Community/Services.
- II. According to the type of goods produced the following distinction can be made.
 - a. Primary industry is that section of industry which produces raw materials for the manufacturing industry.
This section is also called extractive industry and includes agriculture, forestry, fishing, mining and quarries.
 - b. Secondary industry uses the raw materials produced in the primary industry for the production of various kinds of goods. To the secondary industry belong usually manufacturing, construction, gas, water and electricity production.
 - c. The third group is called tertiary industry and produces all kinds of services with the purpose of raising the place and time utility of the goods produced for the ultimate consumers.

Table V.8 shows the distribution of employed persons among the different types of industries. For the country as a whole, about 63.18 percent of those employed in 1971 were engaged in agriculture and less than 7.5 percent in manufacturing sectors. Trade accounted for 10.49 percent. The

percentage of persons employed in all non-agricultural pursuits, excluding trade and services, amounted to only 16 percent.

TABLE V.8. EMPLOYED PERSONS (10 YEARS AND OVER)
BY INDUSTRY AND SEX, IN 1971

Industry	Employed		
	Male	Female	Both Sexes
Agriculture, hunting, forestry and fishing	16,876,008	7,896,222	24,772,230
Mining and quarrying	84,327	5,889	90,216
Manufacturing	1,515,428	1,416,224	2,931,652
Electricity, gas and water	36,271	1,717	37,988
Construction	727,336	9,673	737,009
Trade, restaurants and hotels	2,330,760	17,825,568	4,113,328
Transport, storage and communication	898,377	17,604	915,981
Financing, insurance, real estate and business services	79,255	16,130	95,385
Community, social and personal services	2,862,873	1,060,441	3,923,314
Activity not adequately defined	773,035	819,974	1,593,009
Total	26,183,670	13,026,442	39,210,112

Source : Central Bureau of Statistics – Republic of Indonesia.

Compared with the other islands, Java had the lowest percentage of persons engaged in agriculture (58.7%) and on the other hand it had the highest percentage in trade and services. Sulawesi had the highest percentage of persons engaged in manufacture (10.15%) compared with the other island and it had 64 percent in the agricultural sector. For the other islands including Sumatra and Kalimantan more than 70 percent of employed persons were engaged in agriculture, while the rest were almost equally distributed among mining, construction and transportation. As can be expected from developing countries, in all regions of Indonesia the vast majority of the employed persons find their living in agriculture (63.18%) but their contribution to the gross domestic product is only 45 percent. This phenomenon is due to the fact that Indonesia has an agricultural economy.

The 1961 census has shown that the percentage of employed persons engaged in the agricultural sector was 72 percent, about nine per cent higher than in the 1971 census. But on the other hand the percentage engaged in

manufacture and trade increased from 1961 to 1971. (See table V.9 and table V.10).

TABLE V.9. PERCENTAGE OF EMPLOYED PERSONS (AGED TEN YEARS AND OVER) ENGAGED IN DIFFERENT ECONOMIC ACTIVITIES BY REGION, INDONESIA, 1961

Economic Activity	Java & Madura	Sumatra	Kalimantan	Sulawesi	Other Islands	Indonesia
Agriculture (a)	68.0	78.4	80.2	77.2	83.6	71.9
Mining (b)	0.1	1.0	0.2	0.2	0.1	0.3
Manufacturing	6.8	2.8	3.2	4.8	4.2	5.7
Construction	2.0	1.5	1.2	1.1	1.2	1.8
Electricity (c)	0.1	0.3	0.1	0.1	0.1	0.1
Trade (d)	7.8	5.4	4.9	4.3	3.2	6.7
Transportation (e)	2.3	2.1	1.7	1.9	0.8	2.1
Services	11.0	6.7	6.4	8.1	4.7	9.5
Other and unknown	1.9	1.8	2.1	2.3	2.1	1.9

(a) Includes forestry and fishing
 (b) Includes quarrying
 (c) Includes water and gas
 (d) Includes banking and insurance
 (e) Includes storage and communication

Source : Based on Biro Pusat Statistik, Sensus Penduduk, 1961 –
 Seluruh Indonesia (Angka2 Sementara Hasil Pengolahan 1 % Sample) (Population Census, 1961–All Indonesia (Preliminary Figures, 1 Percent Sample Tabulation) (Jakarta, 1963).

TABLE V.10. PERCENTAGE OF EMPLOYED PERSONS (10 YEARS AND OVER) BY INDUSTRY AND REGION IN 1971

Industry	Java & Madura	Sumatra	Kalimantan	Sulawesi	Other Islands	Indonesia
Agriculture	58.65	72.77	72.70	64.47	75.30	63.18
Mining	0.12	0.81	0.19	0.04	0.02	0.23
Manufacturing	8.87	2.69	2.47	10.15	6.80	7.48
Electricity	0.10	0.07	0.15	0.05	0.12	0.10
Construction	1.99	1.61	1.52	1.61	1.99	1.88
Trade	12.72	6.79	5.69	6.85	4.62	10.49
Transport	2.48	1.95	2.78	3.41	0.75	2.34
Financing	0.28	0.20	0.12	0.22	0.10	0.24
Community, services	10.92	8.40	7.93	9.85	6.79	10.00
Others	3.87	4.71	6.45	3.35	3.51	4.06
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source : Ulasan singkat hasil Sensus penduduk 1971.
 B.P.S. page 13.

TABLE V.11. EMPLOYED PERSONS IN INDONESIA BY AGRICULTURAL AND NON-AGRICULTURAL INDUSTRIES,
RURAL AND URBAN, BY SEX IN 1971.

Industry	Urban				Rural				Total									
	Male		Female		Male		Female		Male		Female		Total					
	No.(1)	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%				
Agri-cultural, hunting, forestry and fishing	474	1.2	126	0.3	600	1.5	16,402	41.8	7,770	19.8	24,172	61.6	16,876	43.0	7,896	20.1	24,722	63.1
Non-Agri-cultural	3,743	9.5	1,454	3.7	5,197	13.2	5,565	14.2	3,676	9.4	9,241	23.6	9,308	23.7	5,130	13.1	14,438	36.8
Total	4,217	10.7	1,580	4.0	5,797	14.7	21,967	56.0	11,446	29.2	33,413	85.2	26,184	66.7	13,026	33.2	39,210	100.0

Note : For population ten years of age and over.
(1) Number in thousand.

Source : Computed from 1971 Population Census of Indonesia, Central Bureau of Statistics.

TABLE V.12. PERCENTAGE OF EMPLOYED PERSONS IN INDONESIA BY AGRICULTURAL AND
NON AGRICULTURAL INDUSTRIES, RURAL AND URBAN AND SEX IN 1971.

Industry	Urban			Rural			Total		
	Male		Total	Male		Total	Male		Total
	%	%	%	%	%	%	%	%	
Agricultural	11.2	8.0	10.0	74.7	67.9	72.3	64.5	60.6	63.2
Non Agricultural	88.8	92.0	90.0	25.3	32.1	27.7	35.5	39.4	36.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

From table V.9 it is clear that the percentage of the population who were employed in agriculture was higher than in any other sector in each region but if we compare with the 1961 census, all regions show a decreasing percentage in agriculture from 1961 to 1971. (See also table V.10).

Java showed the smallest percentage in agriculture in both 1961 and 1971 with a drop from 68.0 in 1961 to 58.6 in 1971. We have both a fall in the size of the agricultural labour force and in the agricultural fraction of the labour force.

In the attempt to see what has been happening one can look at statistics for Java from two intermediate sample surveys. The fraction of the male labour force employed in agriculture in Java in the four years were :

1961	68.0
1964	69.3
1967	66.8
1971	58.6

TABLE V.13. EMPLOYED PERSONS BY OCCUPATION AND SEX
IN INDONESIA IN 1971

Occupation	Employed persons					
	Male		Female		Both Sexes	
	Number	Percent	Number	Percent	Number	Percent
Professional, Technical and related workers	597,806	2.28	272,659	2.09	870,465	2.22
Administrative and managerial workers	1,096,102	4.19	262,599	2.02	1,358,701	3.47
Clerical and related workers	1,105,981	4.22	137,872	1.06	1,243,853	3.17
Sales workers	2,255,774	8.62	1,763,268	13.54	4,019,042	10.25
Services workers	851,463	3.25	634,900	4.87	1,486,363	3.79
Farmers	16,052,451	61.3	7,669,219	58.87	23,721,670	60.50
Production and related workers, transport equipment operators	3,204,644	12.24	1,477,701	11.34	4,682,435	11.94
Others	1,019,449	3.89	808,224	6.20	1,827,673	4.66
Total	26,183,670	100	13,026,442	100	39,210,112	100

Source : Central Bureau of Statistics, Republic of Indonesia, Jakarta.

Since one index of development is the movement of the labour force from agriculture to secondary industry, it would be gratifying to be able to say that during the ten years Indonesia had moved about one fifth of the way to the position of the advanced countries, and that the move was especially rapid in the four years from 1967 to 1971. That statement would be excessive, however as there seems no way at the moment of assessing the effects of changes in the definition of the labour force.

As mentioned earlier there were 24,772,230 persons or 63.18 percent of the employed persons engaged in agriculture in 1971. Among these, 24,172,386 persons or 61.65 percent were in rural areas and only 599,844 persons or 1.53 percent were in urban areas (see table V.11 and table V.12).

Among the 85 per cent of employed persons who were in the rural areas, 61.7 per cent were employed in agriculture and 23.6 per cent were in other industries. Of the 15 per cent of the total number of employed persons who

TABLE V.14. PERCENTAGE EMPLOYED PERSONS (10 YEARS AND OVER)
BY OCCUPATION AND REGIONS IN INDONESIA 1971

Occupational Groups	Java and Madura	Sumatra	Kalimantan	Sulawesi	Other Islands	Indonesia
1. Professional, Technical and related workers	2.13	2.45	1.55	2.95	2.27	2.22
2. Managerial and Executive workers	4.34	1.88	1.57	1.86	1.84	3.47
3. Clerical workers	3.42	2.66	2.59	3.14	2.47	3.17
4. Sales workers	12.51	6.49	5.53	6.61	4.22	10.25
5. Services	4.71	2.44	1.79	1.67	1.48	3.79
6. Farmers, Fishermen, Hunters lodgers and related workers	55.15	71.42	72.12	63.51	74.16	60.50
7. Production process and related workers, and transport workers	13.30	7.41	7.84	15.34	9.87	11.94
8. Other (workers not classifiable by occupation)	4.44	5.25	7.01	4.92	3.69	4.60
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source : Central Bureau of Statistics, Republic of Indonesia, Jakarta, Census 1971.

were in urban areas, 1.5 per cent were employed in agriculture and 13.3 per cent in other industries.

The percentage of the employed persons, either male or female, engaged in agriculture in the rural areas was much higher than in the urban areas i.e. 74.7 per cent for males and 67.9 per cent for females in rural areas as compared to 11.2 per cent for males and 8 per cent for females in urban areas (see table V.11). In this respect, the 1961 census shows a similar pattern. The percentage distribution of employed persons in Indonesia by agricultural and non agricultural industries, rural and urban and sex can be seen in the following table. The 1971 census showed occupation as well as industry and the proportion in the occupation agriculture was about the same as in the industry agriculture, 61.3 per cent for Indonesian males, 58.87 per cent for females and 60.5 per cent for both sexes. One looks with some interest through the following table of occupations to see how professional workers stand, and finds that they make up 2.2 per cent of total employed persons. Managers and executives are 3.5 per cent, administration and similar occupations are 3.2 per cent. Trading occupations are 10.2 per cent, operators in transport, etc., are 11.9 per cent.

The numbers and the percentage of employed persons by occupation and sex in Indonesia can be seen in table V.13 and table V.14 shows the occupational distribution by regions in Indonesia in 1971.

Status. The 1971 census tabulations of manpower in Indonesia according to occupation and status show that almost 14,787 thousand or 39.31 per cent of the employed persons in 1971 were workers on own account, 1,433 thousand (3.81 %) employers, 12,536 thousand (33.32 %) employees and 8,861 thousand (23.56 %) unpaid family workers. Table V.15 shows the numbers of employed persons during the census week by industry, status and sex in 1971 and table V.16 shows the percentage of employed persons during the census week by status and sex in 1971.

The percentage of employed persons by type of industry and status can be seen in table V.17 and table V.18.

The agricultural sector contained the highest percentage of employed persons ten years and over in each occupational status being 70.54 %, 67.36 %, 45.64 % and 86.38 % for own account workers, employers, employees and unpaid family workers respectively. Among own account workers, 19.37 per cent were in trade and about 10 per cent were in other sectors, while employers in trade and manufacture showed the rather high values of 11.38 per cent and 8.72 per cent respectively. After agriculture, the two largest percentages for employees were 25.73 per cent in services and 12.33 per cent in manufacturing.

TABLE V.15. EMPLOYED PERSONS DURING THE CENSUS WEEK BY INDUSTRY, STATUS AND SEX IN 1971

Industry	Sex	Own Account Workers	Employer	Employee	Unpaid family Workers	Total
1. Agriculture	Male	8,588,574	751,127	3,889,276	3,647,031	16,876,008
	Female	1,842,410	214,156	1,832,068	4,007,588	7,896,222
	Both Sexes	10,430,984	965,283	5,721,344	7,654,619	24,772,230
2. Mining	Male	4,234	1,291	78,028	774	84,327
	Female	0	286	4,315	1,288	5,889
	Both Sexes	4,234	1,577	82,343	2,062	90,216
3. Manufacturing	Male	301,039	96,851	1,024,388	93,150	1,515,428
	Female	487,168	28,117	520,971	379,968	1,416,224
	Both Sexes	788,207	124,968	1,545,359	473,118	2,931,652
4. Electricity	Male	1,933	1,237	32,858	243	36,271
	Female	523	0	1,194	0	1,717
	Both Sexes	2,456	1,237	34,052	243	37,988
5. Construction	Male	73,674	33,604	593,501	26,557	727,336
	Female	512	355	7,723	1,083	9,673
	Both Sexes	74,186	33,959	601,224	27,640	737,009
6. Trade	Male	1,593,526	118,682	419,434	199,118	2,330,760
	Female	1,270,107	44,449	140,706	327,306	1,782,568
	Both Sexes	2,863,633	163,131	560,140	526,424	4,113,328
7. Transport	Male	185,189	29,020	662,848	21,320	898,377
	Female	1,772	1,531	13,201	1,100	17,604
	Both Sexes	186,961	30,551	676,049	22,420	915,981
8. Financing	Male	1,559	1,810	74,760	1,126	79,255
	Female	279	458	15,165	228	16,130
	Both Sexes	1,838	2,268	89,925	1,354	95,385
9. Community	Male	322,708	91,036	2,368,105	81,024	2,862,873
	Female	111,693	18,953	857,220	72,575	1,060,441
	Both Sexes	434,401	109,989	3,225,325	153,599	3,923,314
Total		14,786,900	1,432,963	12,535,761	8,861,479	37,617,103
Males		11,072,436	1,124,658	9,143,198	4,070,343	25,410,635
Females		3,714,464	308,305	3,392,563	4,791,136	12,206,468

TABLE V.16. PERCENTAGE EMPLOYED PERSONS DURING THE CENSUS WEEK BY STATUS AND SEX IN 1971

	Workers on own account	Employers	Employees	Unpaid family worker	Total
Male	43.57	4.43	35.98	16.02	100
Female	30.43	2.53	27.79	39.25	100
Total	39.31	3.81	33.32	23.56	100

Source : Computed from Central Bureau of Statistics, Jakarta.

TABLE V.17. PERCENTAGE DISTRIBUTION OF EMPLOYED PERSONS DURING THE CENSUS WEEK BY STATUS IN 1971

Industry	Own account workers	Employer	Employee	Unpaid family workers	Total
Agriculture	42.10	3.90	23.10	30.90	100
Mining	4.69	1.75	91.27	2.29	100
Manufacturing	26.89	4.26	52.71	16.14	100
Electricity	6.47	3.26	89.64	0.64	100
Construction	10.07	4.61	81.58	3.75	100
Trade	69.62	3.97	13.62	12.79	100
Transportation	20.41	3.33	73.81	2.45	100
Financing	1.93	2.38	94.27	1.42	100
Service	11.07	2.80	82.21	3.92	100
Total	39.31	3.81	33.32	23.56	100

From the table it seems that wage earners were concentrated in urban areas while in rural areas the proportion of unpaid family workers was much higher or more than three times the proportion in cities. Comparison with the 1961 census is not possible because tabulations of occupation and occupational status were not made from that census with the exception of the special Province of the Capital Jakarta Raya. In Jakarta 23.0 per cent of the employed persons in 1961 were own account workers, only 1.9 per cent were employers, 67.1 per cent employees, 1.7 per cent unpaid family workers and 6.3 per cent others and unknown, (see table V.20).

The Indonesian Department of Labour conducted a sample survey of the labour force in 1958 and some data from that survey on the status of the workers in rural and urban areas of Java is given in table V.21.

TABLE V.18. STATUS OF EMPLOYED PERSONS BY TYPE OF INDUSTRY

	Agriculture		Mining		Manufacturing		Electricity		Construction		Trade		Transport		Financing		Service		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Own account Employer	70.54		0.03		5.33		0.02		0.50		19.37		1.26		0.01		2.94		100	
Employee	67.36		0.11		8.72		0.09		2.37		11.38		2.13		0.16		7.68		100	
Unpaid family worker	45.64		0.66		12.33		0.27		4.80		4.47		5.39		0.72		25.73		100	
	86.38		0.02		5.34		0		0.31		5.94		0.25		0.02		1.73		100	

TABLE V.19. WORKERS BY STATUS, RURAL AND URBAN, IN INDONESIA IN 1971.

Region	Own account workers		Employers		Employees		Unpaid family workers		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Urban	1.466.208	26.5	216.258	3.9	3.404.076	61.6	443.708	8.0	5.530.250	100
Rural	13.320.692	41.5	1.216.705	3.8	9.131.685	28.5	8.417.771	26.2	32.086.853	100
Total	14.786.900	39.3	1.432.963	3.8	12.535.761	33.3	8.861.479	23.6	37.617.103	100

TABLE V.20. PERCENTAGE OF EMPLOYED PERSONS BY STATUS IN
JAKARTA BY SEX IN 1961

	Workers on own account	Employer	Employee	Unpaid family workers	Others and unknown	Total
Males	25.3	2.1	65.3	1.1	6.1	100
Females	13.8	1.1	74.3	3.2	7.6	100
Total	23.0	1.9	67.1	1.7	6.3	100

TABLE V.21. PERCENTAGE OF WORKERS BY STATUS IN
JAVA IN 1958

Region	Workers on own account	Employer	Employee	Unpaid family workers	Total
Urban	29.4	2.7	63.3	4.6	100
Rural	31.2	8.1	29.1	31.6	100
Total	31.0	7.5	32.5	29.0	100

Source : Ekonomi dan Keuangan Indonesia, Vol. XVI No. 1, 1963.

CHAPTER VI

POPULATION PROJECTIONS

This chapter aims to assess the future size and sex-age composition of the population in Indonesia for the period 1971-2001. The 1971 population census data is used as the base data. The future size and composition of the population will depend on the specific assumption made on the trend of fertility and mortality function. Migratory movements are assumed to have no meaningful influence on the future growth of the population in Indonesia as a whole. Any error in any one of these assumptions will affect the projected population.

Errors could easily slip into these estimates from several sources such as : (1) errors in the size and composition of the initial population, (2) Errors in mortality level and trend, (3) Errors in fertility level and trend, (4) Errors in excluding migratory influences, (5) Errors in assumption on sex ratio at birth, (6) Errors in non-reckoning with migratory influences, etc.

TABLE VI.1. POPULATION OF INDONESIA BY SEX AND 5 YEARS AGE GROUPS, BASED ON THE CENSUS IN 1971, (IN THOUSANDS)

Age group	Males	Females
0 - 4	9.652	9.509
5 - 9	9.578	9.295
10 - 14	7.327	6.902
15 - 19	5.643	5.749
20 - 24	3.556	4.406
25 - 29	4.033	5.010
30 - 34	3.665	4.230
35 - 39	4.020	4.061
40 - 44	3.004	3.026
45 - 49	2.399	2.249
50 - 54	1.888	1.947
55 - 59	1.074	1.061
60 - 64	1.034	1.189
65 - 69	535	586
70 - 74	491	570
75 +	379	391
Total	58.279	60.181

It is not claimed that the estimated population will be exactly equal to the ones presented in this study for the related periods, but what is claimed for is that under the given assumptions the magnitude of deviation will be not significant. It is realized fully that revisions of these projections are to be made as soon as more and better data on level and trend of vital events become available.

The population projections made have thus to be taken as tentative estimates.

The base population in the unadjusted size and sex-age structure of the population in Indonesia as recorded by the population census in 1971 (see table VI.1).

One mortality assumption is made throughout these projections. It was assumed that the West family of the Coale-Demeney model life tables would be applicable to Indonesia. Furthermore that mortality level 11 would apply to the population in Indonesia in 1971 for which life expectancy at birth for females equals 45.0 years. This life expectancy at birth would increase in a conventional way, namely one level every 5 years, thus giving a female life expectancy at birth of 60.0 years in 2001 (see table VI.2).

TABLE VI.2. ESTIMATED AND PROJECTED LIFE EXPECTANCY AT BIRTH FOR INDONESIA BY SEX

Year	Life expectancy at birth in given year	
	Male	Female
1971	42.12	45.00
1976	44.52	47.50
1981	47.11	50.00
1986	49.56	52.50
1991	51.83	55.00
1996	54.14	57.50
2001	56.47	60.00

Barring political and natural calamities, many kinds of assumptions can be made on the future trends of fertility in Indonesia of which we will depict four different types.

The first assumption is that there will be no changes in fertility level and pattern during the whole period of projection from 1971 to 2001. This had to be interpreted that age specific birth rates remain constant over the entire period.

The second assumption is that Total Fertility Rate remains constant during the first quinquennial period (1971-76) and then declines linearly by 25 per cent by the final interval (2001-2006). The age pattern of fertility also

changes linearly to one slightly more peaked. The ultimate age pattern was chosen as one that was half way between the percentage distribution implied by the base fertility rates and the percentage distribution on the United Nations low fertility broad-peak pattern, as demonstrated by table VI.3. The third assumption is that Total Fertility Rate remains constant during the first interval and then declines linearly by 50 per cent by the final five year period. The age pattern of fertility changes linearly to fit the distribution implied by the U.N. low fertility broad-peak pattern in the final interval.

TABLE VI.3. ESTIMATED AGE SPECIFIC BIRTH RATES FOR INDONESIA

Age group, females	1971 - 1976	U.N. Low fertility broad peak pattern (percent)	25 percent TFR decline 2001 - 2006	50 percent TFR decline 2001 - 2006	NRR = 1.00 2001 - 2006
15 - 19	.128	5.9	.074	.034	.028
20 - 24	.297	30.4	.243	.176	.145
25 - 29	.283	30.7	.240	.178	.147
30 - 34	.231	19.3	.170	.112	.092
35 - 39	.146	10.0	.098	.058	.048
40 - 44	.063	3.4	.038	.020	.016
45 - 49	.010	0.3	.005	.002	.001
Total Fertility rate	5.790	100.0	4.340	2.900	2.391

The fourth assumption is that Total Fertility Rate remains constant during the first interval and then declines linearly to reach a level that would produce a net reproductions rate (NRR) of 1.0 in the final interval. The age-pattern of fertility changes as under the third assumption. Data on sex ratio at birth for the population in Indonesia are not available. Observations in countries with good birth statistics show that the sex-ratio at birth usually ranges between 104-107 per thousand. The general assumption is that a sex ratio at birth of 105 males per hundred females can be considered as the normal pattern. This will also be applied in the population projections for Indonesia.

The result of the four types of projections for Indonesia is presented in the Appendix III, IV, V and VI.

An Estimation of the Growth of the Labour Force in Indonesia.

The size and composition of the population are generally recognized as influences on the level of production expenditure. For socio-economic planning purposes, data on the labour force,

economic activity, employment, unemployment and underemployment, occupational distribution status of employed persons, etc. , are very important. The main sources of data on the labour force are the census in 1930, the labour force sample survey in Java in 1958, the 1961 census and the 1971 census. To study the trend in labour force growth and development of human resources we must use these very limited and sometimes inaccurate data. Both censuses, 1961 and 1971, used the labour force approach but a difference in the time reference so that the changes in definition make it very difficult to compare the results of the two censuses. Based on these data, estimates should be made on the future number of the population in the working age groups and the size of the labour force. These estimates can supply information on the presumed number of new entrants into the labour force in the future so that plans can be evolved and measures taken to utilize the aggregate labour force effectively and efficiently.

If the national family planning program which was adopted in 1969 in Indonesia is carried out vigorously and continuously until the targeted future lower fertility level is reached, it will of course affect the projected size and age composition of the future labour force. Using the labour force participation rates according to the 1971 census results as a basis and assuming a future pattern of labour force participation rates as shown in table VI.4, with linear change between 1971 and 2001, the future size age and sex composition of the labour force can be estimated.

TABLE VI.4. LABOUR FORCE PARTICIPATION RATES
1971 AND 2001

Age	1971		2001	
	Male	Female	Male	Female
10 - 14	18.27	14.42	0	0
15 - 19	48.94	28.64	52.1	48.3
20 - 24	76.49	31.84	85.2	66.6
25 - 29	90.47	34.14	93.7	51.5
30 - 34	92.21	37.82	95.1	49.1
35 - 39	93.82	40.33	95.8	52.4
40 - 44	92.90	42.59	95.9	55.3
45 - 49	91.64	44.16	95.5	54.2
50 - 54	88.04	42.34	93.8	50.5
55 - 59	84.25	39.80	88.7	45.9
60 - 64	77.82	33.05	81.5	39.1
65 +	60.52	22.81	55.7	21.1
Not stated	82.64	53.62		

This pattern of the labour force participation rates assumes that the future labour force will be affected by advancement in education and economic growth. A higher level of education will corrode old traditions and

customs. Progress in education and modernization will certainly increase efficiency and productivity and especially increase the labour force participation rates of females which are lower in Indonesia than in developed countries.

Appendix VII shows that in 2001 according to projection variant I there will be 100,408 thousand in the labour force, out of which 61,525 would be males and 38,883 females. If the fertility level declines linearly from 1976 to NRR equal to one by the year 2001 (variant IV) the size of labour force will be lower than variant I at 95,922 thousand consisting of 59,098 thousand males and 36,824 thousand females. This is shown in Appendix VIII. The age and sex distribution of the future labour force according to variant I and variant IV are shown in Appendix VII and VIII.

An Estimation of The Future Growth of The Urban and Rural Population. The census of 1971 used as the definition of urban areas a combination of administrative and quantitative criteria. All municipalities, regency capitals and other towns of the same level with a population of not less than 30,000 inhabitants were considered as urban areas.

Many other countries have used quantitative standards for the distinction between urban and rural areas. This method will also be applied in estimating the future urban and rural population in Indonesia. Only concentrations of population in cities and towns with 10,000 or more inhabitants will be considered as urban areas. Utilizing this standard, it has been observed that despite wars and revolution in the past half century, the urban as well as the rural areas of Indonesia have experienced a significant absolute increase in population. The urban population growth has tended to accelerate, following almost the same pattern as Japan, but at a lower level (1).

Assuming that industrialization and socio-economic development in general will engender rapid urbanization, one can expect for Indonesia in the years ahead a heavier flow of rural population into the cities and towns than was the case in the past.

Suppose that the rapid growth of the urban population in Indonesia continues in the future along a logistic curve, the proportion of the urban population to the total population will certainly continue to increase.

Among the many alternative estimates of growth in total population, only two will be chosen : first, the population resulting from a constant fertility schedule together with a slowly declining death rate, so that at the

(1) N. Iskandar, *Some Compositional Differences Between The Urban and Rural Population in Indonesia Around 1960*. Lembaga Demografi Fakultas Ekonomi Universitas Indonesia, Jakarta.

end of this century the female life expectancy at birth will be 60.0 years ; and second the population that would result from a successful family planning program so that after 1976 the fertility rate would decline linearly and reach an $NRR = 1$ in the year 2001, while the mortality follows the same course as in the first estimates.

The distribution of population between urban and rural areas in Indonesia according to these two assumptions is presented in table VI.5 and VI.6. With a rapid growth of urban population and uncontrolled fertility the population of Indonesia in 2001 will be about evenly distributed among the urban and rural areas, i.e. about 134 million in the urban area and 139 million in the rural sector.

TABLE VI.5. ESTIMATED URBAN AND RURAL POPULATION IN INDONESIA FROM 1971 – 2001 UNDER THE ASSUMPTION OF HIGH POPULATION PROJECTION AND RAPID GROWTH OF URBAN POPULATION

Year	High Projection total population	Percentage Urban total population	Urban Population	Rural Population
1971	118,459	22.3	26,416	92,043
1976	133,836	25.2	33,727	100,109
1981	151,963	27.6	41,942	110,021
1986	174,419	32.3	56,337	174,096
1991	201,566	37.9	76,394	125,172
1996	233,882	43.0	100,569	133,313
2001	272,543	49.0	133,546	138,997

TABLE VI.6. ESTIMATED URBAN AND RURAL POPULATION IN INDONESIA FROM 1971 – 2001 UNDER THE ASSUMPTION OF LOW POPULATION PROJECTION AND RAPID GROWTH OF THE URBAN POPULATION

Year	Low projection total population	Percentage urban to total population	Urban Population	Rural Population
1971	118,459	22.3	26,416	92,043
1976	133,836	25.2	33,727	100,109
1981	149,446	27.6	41,247	108,199
1986	166,161	32.3	53,670	112,491
1991	183,377	37.9	69,500	113,877
1996	200,104	43.0	86,045	114,059
2001	215,296	49.0	105,495	109,801

A country experiencing rapid urban growth has to cope with the difficult problem of the improvement and the expansion of urban facilities and urban employment. Lack of capital and critical skills are serious impediments to the creation of highly productive employment opportunities. On the

other hand new rural employment opportunities are scarce, there is already much underemployment and modernization might reduce the need for agricultural labour and aggravate the employment problem.

If Indonesia succeeds in the execution of its socio-economic development and a successful family planning program cuts fertility in half by the end of this century, then it will reduce the growth of the urban and rural population by identical amounts : 29 million in each case--by the year 2001, according to our assumptions.

Estimating the future growth of school -- The main source of data used in going population. estimating the school-going population is the census of 1971. It is obvious that the Census results have suffered from the defects of under enumeration of persons in the age group 0-4 and misclassification of ages in the higher age groups. We will suppose that these inaccuracies in specific age reporting will not affect unduly the numbers in the school ages of 5-19 years.

The estimate of the future school age population is based on the population projection made previously. The projection of school-going population will be made only for five age groups, namely 5-6 years, 7-13 years, 14-16 years, 17-19 years and 20-24 years, at five year time intervals for Indonesia as a whole from 1971 to 2001.

Starting with the estimated school attendance rates by age and sex as reported by the census in 1971, it is assumed that Indonesia will continue to make rapid progress in the field of education and that at the end of this century it will reach school attendance rates that are on a par with those in advanced countries, and that the advancement will proceed in a linear way. The school attendance rates achieved in the year 2001 will be 92 per cent for males and females in the age group 5-6 years ; 99.8 per cent for males and females in the age group 7-13 years, 61.1 per cent for males and 49.4 per cent

TABLE VI.7. SCHOOL ATTENDANCE RATE BY SEX AND AGE GROUP
1971 - 2001

Age	1971 (*)		2001	
	Male	Female	Male	Female
5 - 6	8.2	8.0	92.0	92.0
7 - 13	61.0	57.0	99.8	99.8
14 - 16	40.8	29.2	61.1	49.4
17 - 19	25.4	12.2	25.4	12.2
20 - 24	11.0	2.8	11.0	2.8

(*) Based on the Population Census of 1971.

for females in the age group 14-16 years ; 25.4 for males and 12.2 for females in the age group 17-19 years and 11.0 per cent for males and 2.8 per cent for females in the age group 20-24 years. These age groups are chosen because they correspond to the ages at which students are supposed to be at different levels of the education system.

TABLE VI.8. ESTIMATED SCHOOL ATTENDING POPULATION FOR INDONESIA 1971 – 2001. (HIGH POPULATION PROJECTION IN THOUSANDS)

Age	1971	1976	1981	1986	1991	1996	2001
Female							
5 – 6	310	785	1,600	2,526	3,856	5,516	7,588
7 – 13	6,365	8,150	9,212	11,984	15,211	19,581	24,802
14 – 16	1,048	1,507	1,936	2,120	2,751	3,452	4,424
17 – 19	410	461	639	612	710	820	975
20 – 24	123	156	183	242	233	276	320
Male							
5 – 6	324	800	1,642	2,593	3,965	5,671	781
7 – 13	7,140	8,780	9,714	125,688	15,838	20,245	2,536
14 – 16	1,546	2,169	2,622	2,791	3,586	4,442	561
17 – 19	790	1,023	1,387	1,299	1,514	1,751	2,088
20 – 24	390	600	765	984	930	1,108	1,285

TABLE VI.9. ESTIMATED SCHOOL ATTENDING POPULATION FOR INDONESIA FROM 1971 – 2001. (LOW POPULATION PROJECTION) (IN THOUSANDS)

Age	1971	1976	1981	1986	1991	1996	2001
Female							
5 – 6	310	785	1,580	2,194	2,998	3,762	4,376
7 – 13	6,365	8,150	9,250	11,559	13,092	15,001	16,593
14 – 16	1,048	1,507	1,935	2,136	2,670	2,978	3,400
17 – 19	410	461	639	610	720	757	804
20 – 24	123	156	183	242	233	276	288
Male							
5 – 6	324	800	1,622	2,253	3,083	3,862	4,502
7 – 13	7,140	8,780	9,755	12,123	13,631	15,511	17,039
14 – 16	1,546	2,159	2,621	2,813	3,479	3,830	4,314
17 – 19	790	1,023	1,389	1,294	1,534	1,617	1,722
20 – 24	390	153	765	984	930	1,108	1,159

The two population projections made previously, namely the high projection (Variant I) with constant fertility and slowly declining mortality and the low projection (Variant I), with a successful family planning program and a decline in fertility starting after 1976, are used to estimate the number of persons in the appropriate school age group. The results are presented in the following tables VI.8 & VI.9.

CHAPTER VII

ECONOMIC AND SOCIAL IMPLICATIONS AND POLICY

The Economic Development. The five year National Development Plan, 1969-1973, is the strategy for the economic development in this country. The plan has identified three strategic sectors, namely agriculture, industry and mining, and infrastructure.

The economic situation can be characterized by the following improvements. A substantial increase has occurred in agricultural output. In 1960-1965 the annual rate of growth in its agricultural sector was 1.4 per cent, but in 1966-1971, the rate increased to 3.3 percent. Furthermore, since the beginning of the five year National Development Plan (1969-1973), the rate of growth of this sector increased to 4.9 percent per annum. This shows the rapid development of the agricultural sector. The increased rate of growth in this sector was caused by rapid development in forestry output and paddy production. Being an agriculture economy, trends in food and other agricultural products are still the major determinants of growth in the economy as a whole, since agricultural activities contribute almost 50 percent of the National Domestic Product and provide employment for about 63.18 percent of employed persons. According to the result achieved in 1971, it can be seen that Indonesia's effort to increase rice production has been remarkably successful because of the increased use of fertilizer, new seed varieties, plant protection materials, plus the extension of the area planted and an increased labour input. Contributions to fertilizer subsidy and a large scale production credit program improved the distribution of physical inputs.

The sectors indicating the most rapid progress are mining, industry, construction, trade and banking. The rate of growth in the mining sector was 11.3 percent annually between 1968 and 1971 mainly because of the development in the oil sector, but increased production was also evident in other mining such as bauxite, nickel and iron sands. The industrial sector indicated an average annual increase of 10.5 percent in 1969-1971, which occurred mainly in large industry with the use of foreign investment and joint ventures.

Furthermore, changes in this sector can be characterized by the following :

- an increase in the volume of production and quality.
- an increase in the exports of domestically produced goods.
- an increase in private domestic investment.
- a change in the composition of imports : imports of consumer goods have been decreasing while imports of raw materials and intermediate goods have been increasing.

The construction sector has increased rapidly by about 21.3 per cent annually from 1969 to 1971 because of the *government investment in infrastructure* sector, and also because of the development of the industrial sector. The trade and banking sectors also indicated rapid progress, their rates of growth being 11.8 per cent and 23.5 per cent respectively between 1969 and 1971.

If we look at the use of the Gross Domestic Product, it is evident that investment has increased very rapidly. In the 1960-1965 period, the annual rate of growth of investment was about 5.7 per cent but in 1966-1971 it was 14.0 per cent. During the first three years of the Five Year National Development Plan, 1968-1971, the increase was more rapid at about 16.8 per cent annually. Investment has been the main factor in the increase of the Gross National Product. The other factor is the increase in the export sector. During 1966-1971, exports increased by 8.5 per cent annually and for the three years, 1969-1971, by 14.4 per cent. The outcome of this progress has been an increase in the import of material goods especially capital equipment, intermediate goods and other raw materials. These imports have proved very useful in increasing the Gross National Product.

With Indonesia's present per capita income of about \$ 100 per year and the rapid population growth, the government is aware of its population problem. The rate of growth of Gross National Product during 1960-1971 on the basis of 1960 constant prices was about 3 per cent annually, while the 1961-1971 annual rate of population growth was about 2.1 per cent. Thus the increase of per capita income was only 0.9 per cent annually. During the last three years, 1969-1971, the average rate of growth of GNP was about 7 per cent and the rate of population growth was about 2.1 per cent so that the increase of per capita income was 4.4 per cent annually. For this reason the Indonesian government gives the family planning program a high priority in the overall development program as family planning is expected to cause a decline in fertility in the future. If the family planning program is successful, it will slow the growth of the total population and the per capita income will increase.

The problem of the developing country still remains : to reduce the population growth and increase the growth of Gross National Product. Using the 1969 Gross National Product on the basis of 1960 constant prices and the

1961 census, the economic benefits of slowing population growth can be estimated. The economic and demographic conditions in 1969 were :

G.N.P.	Rp. 504.6 (billion)
Income per capital	Rp. 4,241 (\$ 94)
Investment	Rp. 54 (billion)
Investment/G.N.P.	10.7 percent
Capital estimated at about	Rp. 1,716 billion
Population	119 million
Workers	35,894 (thousand)

For the economic growth estimation we want to reach economic development through the growth of Gross National Product increasing linearly from 7 per cent in 1971 up to 12 per cent in the year 2001, assuming that :

- Elasticity of G.N.P. with respect to capital (u) = 0.35
- Elasticity of G.N.P. with respect to labour (V) = 0.65
- Annual rate of technological progress 1.5.
- Capital output ratio 3.4
- Income (G.N.P.) coefficient in the consumption function (c_y) = 0.80
- Equivalent consumer coefficient in the consumption function (c_p) = 0.92
- Equivalent consumer weights for Indonesia, for the projection using weights of 0.75 for those under 15, 0.9 and 1.0 for those ages 15 to 64, for males and females respectively and .5 for those older than 64. These assumptions are constant throughout the period 1971 to 2001.
- High population projection : (1) Constant level of fertility from 1961 to 2001. Constant level of mortality from 1961-1976 slowly declining from 1976-1981 and from 1981-2001 declining at a rate which gives an annual rise of life expectancy at birth of 1/2 year.
- Low population projection : (1) Constant level of fertility from 1961 to 1981, and thereafter linearly declining by 2 per cent per annum to 2001. Constant level of mortality from 1961 to 1976 and from 1976 to 2001 declining at a rate which gives an annual rise of life expectancy at birth of 1/2 year.

If the family planning program is successful in 1976 it will influence the total population in 1981 and the labour force in 1996, if we assume that the population aged below 15 years do not enter the labour force. Using the standard Cobb-Douglas production function and according to the above assumptions, projection of the G.N.P. in 2001 will become 8,620 billion rupiah and the per capita income will be 39,244 rupiah or \$ 866 in the low

(1) N. Iskandar, *Some Monographic Studies on the Population in Indonesia*, Lembaga Demografi, Jakarta. p. 167.

population projection, and become 30,571 rupiah or \$ 675 in the high population projection. These figures can be seen in Table VII.1. For the achievement of these G.N.P. projections, foreign assistance is needed.

TABLE VII.1. ECONOMIC GROWTH IN 1981 AND 2001.

	1981		2001	
	High	Low	High	Low
Population (in thousands)	161,406	158,633	181,962	219,761
G.N.P. (in billion rupiah)	1,171	1,171	8,620	8,620
Per capita income :				
in rupiah =	7,254	7,384	30,571	39,224
in \$ (*) =	160	163	675	866
Employed persons (in thousands)	51,557	51,557	98,170	93,497
Capital (in billion rupiah)	5,819	5,819	225,521	247,000
Unemployment (in thousands)	2,110	2,110	3,036	2,892
Savings (in billion rupiah)	220.6	220.8	1,609.1	1,609.4
Saving/G.N.P. (percentage)	18.83	18.86	18.67	18.67
Capital per employed persons (in thousand rupiahs)	112.9	112.9	2.297	2.643
Rate of economic Development	9 %	9 %	12 %	12 %
Source : Lembaga Demografi, <i>Beberapa Keuntungan Sosial Ekonomis Karena Reduksi Fertilitas</i> , (Social Economic Benefits due to fertility Reduction), Jakarta, 1973, p. 29. (*) \$ 1 § Rp. 45.28 with constant prices 1960.				

Food Problem in Indonesia. One of the basic problems in the economic development of any country in the 20th century is the problem of providing proper food for the population. In order to increase the efficiency of labour, to raise the health standard and to promote the general well-being of the population, it is necessary to provide for every person an adequate food supply with nutritional contents. Food problems in the developing countries including Indonesia become acute in the initial stages of economic development because the demand for food increases due to two reasons :

1. rapid population growth
2. rise in the per capita income.

If there is more purchasing power in the hands of people who are already underfed and undernourished, it leads to a large increase in demand for food. Food supply must increase at a higher rate than the population.

Data on public health in Indonesia show that nutritional problems rank second to communicable diseases as health problems. At present, the main nutrition problems are :

1. General nutritional deficiency, particularly caloric in certain areas.
2. Protein caloric malnutrition, particularly in vulnerable groups i.e. pregnant mothers and children.
3. Vitamin A deficiency, particularly for children, which is the main cause of blindness.
4. Iodine deficiency, which is found in the mountainous areas all over the archipelago.
5. Results of the latest survey indicate that nutritional anaemia exists widely and is related to the nutritional and health status, particularly in the group of pregnant women.

Another indicator for the prevalence of nutritional deficiency is the mortality rate at the ages 1-4 years. Various surveys have shown that among babies born to mothers, 10 per cent never reached the age of 1 year while 20 per cent never reached the age of 4 years. (1)

TABLE VII.2. NET FOOD SUPPLY PER CAPUT PER DAY IN 1961-1963

	Quantity (grams)	Calories	Protein (grams)
Cereals	350	1255	25.7
Potatoes & other starchy food	329	350	3.1
Sugar & sweets	19	73	0.2
Pulses, Nuts & Seeds	22	91	3.3
Vegetables	—	—	—
Fruits	41	17	0.2
Meat	14	30	2.0
Eggs	3	4	0.3
Fish	13	16	2.2
Milk	2	2	—
Fats & Oils	13	119	—
Total animal/protein	—	—	4.5
Total		1980	38.2

Source : F.A.O. Year book 1967, United Nations.

(1) The Population of Indonesia, A Country Statement by N. Iskandar. page 55.

The Social Economic Survey in 1964 showed that 52 per cent of all mortality cases in rural areas and 42.3 per cent in urban areas are deaths of children under 5 years. Food supply and food consumption also reflect nutritional deficiency. Generally 60 per cent of the calorie and protein consumption come from cereals, and the remaining 40 per cent consist of potatoes and other starchy foods, sugar and sweets, pulses, nuts and seeds, vegetables, fruits, meat, eggs, fish, milk, fats and oils. The net food supply per capita in 1961-1963 was estimated by the Food and Agricultural Organization. It is shown in Table VII.2.

The protein and calories availability year by year did not vary too much during the period of 1961-1970, taking into account the population increase, the average figures for protein being 39.2-47 grams/day/caput and calories 1693-2099/day/caput.

Future Requirements. Population projections for Indonesia using the 1961 census as a basis up to year 1991 are available under two alternative assumptions regarding mortality and fertility. (1) The two alternative assumptions are as follows :

Projection A : Constant fertility (a sex age adjusted birth rate of 45 births per 1,000) and rapidly declining mortality (an increase in life expectancy at birth of 5 years in every five-year period, starting with an initial expectation of life at birth of 42.5 years).

Projection B : Declining fertility from an initial level of the sex-age adjusted birth rate of 45 births per 1,000 in 1966-1971 to 31.8 births per 1,000 in 1986-1991 and rapidly declining mortality.

Age distributions are also available. The results show that projection A gives a high estimate of population while projection B gives a low estimate of population. (See Table VII.3).

For projecting the future food requirement, total projected population was converted into adult consumer equivalent. For this purpose it was assumed that the coefficient requirement of an adult male (aged 21 years and about) is 1.0 and adult female as .9. The coefficient requirements of other ages are 1.0, .8, .7, .6, .5 and .4 for age groups 12-20, 9-11, 7-8, 5-6, 3-4 and 0-2 respectively. Future food requirements for the adult consumer equivalents for projections A and B were calculated under alternative assumption as follows :

(1) Widjojo Nitisastro, *Population Trends in Indonesia*, Cornell University Press, Ithaca, New York, 1970. page 204.

TABLE VII.3. PROJECTION TOTAL POPULATION AND ANNUAL RATE OF INCREASE FOR INDONESIA, 1961-1991.

Year	Projection A (Constant Fertility, rapidly declining Mortality)		Projection B (Declining Fertility and rapidly declining Mortality)	
	Total Population (in 1,000)	Annual rate of increase (per 1,000)	Total Population (in 1,000)	Annual rate of increase (per 1,000)
1971	122,520	25.2	121,666	22.3
1976	138,787	29.8	136,012	24.9
1981	160,916	33.8	153,956	26.4
1986	190,217	35.6	175,702	26.0
1991	226,978		202,057	

Source : Widjojo *Population Trends in Indonesia*, Cornell University Press, Ithaca and London, Published in 1970. pp. 250-256.

TABLE VII.4. TOTAL FOOD REQUIREMENTS UNDER ASSUMPTION OF CONSTANT CONSUMPTION PATTERN AND INCREASING CALORIES INTAKE

Projection A					
Year	Adult equivalent consume (in 000's)	Calories	Calories required per day (in 000's)	Calories required per year in millions	Production required in thousands metric ton
1971	102,019	2,120	216,280	78,942	47,188
1976	109,028	2,190	238,771	87,161	52,095
1981	133,393	2,260	301,468	110,036	65,775
1986	155,930	2,330	363,433	132,653	79,294
1991	185,172	2,400	444,413	162,211	96,963
Projection B					
Year	Adult equivalent consume (in 000's)	Calories	Calories required per day (in 000's)	Calories required per year in millions	Production required in thousands metric ton
1971	101,663	2,120	215,526	78,667	47,024
1976	114,700	2,190	251,193	91,685	54,805
1981	129,599	2,260	292,894	106,906	63,904
1986	147,385	2,330	343,407	125,344	74,925
1991	170,285	2,400	408,684	149,170	89,167

Assuming that the consumption pattern will remain the same, but the caloric content will increase from the level of 1961-1963 that is 1980 calories per caput per day to 2400 calories during the period 1971-1991. 1980 calories per caput per day or 722,700 calories per year is about equal to a per capita net food supply of 243 kilograms per year. Calories requirements for the years 1971, 1976, 1981, 1986 and 1991 were calculated by linear interpolation. Total food required under the above assumptions for different years for both population projections are given in Table VII.4. If the aim is to improve the consumption standard gradually (i.e. from 1980 calories in 1962 to 2,400 calories in 1991) the lower limit for increase in food supply is 112 per cent and the higher limit is 131 per cent. In short it means that if food supply increases steadily at the rate of more than 3 per cent, the target of 2,400 calories per caput will be achieved in 1991.

Health. One of the aims of development is to improve the quality of human life and this in turn includes better health and education. Increased life expectancy and medical goals are also essential to the economic development of a nation. The improved economic well-being of a family is usually reflected in the improved health and education of its members and in their increasing innovation of new methods of production.

The health condition of the Indonesia population has not reached a satisfactory level yet. The unsatisfactory health conditions are found not only in rural areas but also in urban areas and healthy living is not generally accepted as yet. The policy and the efforts in health planning are particularly aimed at the increase of efficiency, improvement and spreading of health services among the population. With the increase of the government's health services, as indicated by the increased percentage in the health budget, some improvements have been achieved, especially in the field of communicable diseases: small-pox and framboesia are under control, cholera eradication activities have expanded, health facilities such as hospitals, polyclinics, maternal and childhealth centres and multipurpose health centres, where integrated curative and preventive health services are carried out, have been developed, and the field of family planning, though at a relatively early stage, has achieved a noteworthy result. For the fiscal year of 1971-1972 the family planning unit of the department of health exceeded the target for family planning clinics and new acceptors.

Education. The rapid growth in the requirements for educational facilities is a serious problem for the government. On the one hand the high rate of population growth increases the number of population in the school age group. Due to limitations on the educational budget, educational facilities are not expanding at the rate at which the school age population is increasing.

The increase in numbers of the population in school age group indicate that large sums from our national budget will have to be allotted for educational purposes. The government therefore has given a strong support to the national family planning program to achieve the reduction in fertility. A successful family planning program will result in slowing down the growth of numbers of students. In turn, it will release funds, otherwise needed to increase the quantity of educational facilities to enable improvements in the quality of education or to develop sectors of the economy other than education.

Demographic Knowledge. In 1969 there were very few people in Indonesia working in the field of demography. Demographic expertise was especially scarce in the provinces. Therefore during 1970/1971 the Demographic Institute of the University of Indonesia in Jakarta was holding a series of one semester courses on demography for university teachers from universities throughout Indonesia. These formed the first part of a carefully designed strategy to upgrade the standard of demographic expertise on Indonesia. The second part of the strategy is a series of four one-year courses on demography in 1972, 1973, 1974 and 1975.

During 1970/1971 a total of 34 lecturers from all parts of Indonesia have been trained. After returning to their home universities they have begun to give courses in population to their students and to embark on data collection and research into the population of their regions .

The one-year training program started in 1972 in which 18 lecturers have been trained. At the end of 1973 the work in the field of demography will be strengthened when 18 lecturers from all parts of Indonesia return to work with their colleagues.

Considering the enormous population problem which Indonesia is facing, the Government has decided to incorporate population education in the educational system, in school and out of school as well.

The objectives of such education are the following :

1. To create knowledge and awareness of causes of rapid population growth and the interaction of population growth and development in improving society's welfare.
2. To create knowledge and awareness of the causal relationship between family size and quality of life in the family and community.
3. To create rational and responsible behaviour for the well-being of the nation and the world as well.
4. To create rational and responsible behaviour for preserving and promoting man's environment.

Furthermore for the goal of the National policy in family planning the Government made a strong appeal for increased activity in the field of family planning. The National Family Planning Coordinating Board is responsible to the State Minister of People's Welfare. The national program also utilizes health centers, doctors and midwives as well as the private Family Planning Associations like Indonesian Planned Parenthood Association.

Housing problems in Indonesia. Housing is one of the primary needs of human beings. In urban areas of Indonesia housing construction has been left behind by the rapid growth of the population due to both natural increase and urbanization. Social unrest among the people might increase if they do not have access to adequate housing and other services, such as electricity, water supply, health services, educational and recreational services.

The Family Planning Program, if successful in lowering the rate of population increase, will ameliorate the housing situation in the future. In this part, we will not discuss land policy or housing policy, but we will rather explain how fertility reduction affects the number of houses demanded *in urban areas*. To calculate the housing needs in Indonesia, we make use of the following three components :

- (1) Construction of housing to meet the population increase within a five year interval.
- (2) Replacement of housing.
- (3) Deficit of housing at a certain time.

Housing problems in Indonesia can be divided into :

- (1) housing problems in urban areas and
- (2) housing problems in rural areas.

Urban centers at the moment cannot cope with the rapid increase of population, due to both natural increase of the initial population and in-migration from other areas. Increasing population puts pressure on the social and economic facilities of the cities, as the cities become more crowded and congested. The consequences are the rapid proliferation of slums and the breakdown of electricity, water, and traffic systems.

The need for houses in rural areas is not as pressing as in urban centers, although high rates of birth are increasing housing needs. This pressure is not so serious in rural areas, however, because of the social-philosophy in rural communities of "gotong royong", or helping each other as part of a big family effort. The people, generally, own their houses. The survey of the Directorate of Public Housing indicates that about 94 % of rural dwellings are

owned by the peasants. Therefore, the problems lie in the lack of technical quality, the privacy aspects, and the unhealthy environs which need to be somehow supervised by the government in order to raise the standard of living.

As we noted above, population increase is faster than housing construction. This is because of inadequate funds to build the houses to cope with the rapid increase of the population. The movement of the rural population to the urban areas, results in a rate of growth of the urban population which is much higher than both the growth rate of rural and the total population. The growth of urban population in Indonesia from 1920 is shown in Annex 1. It is assumed in this table that concentrations of population in cities and towns with 10,000 or more inhabitants are considered as urban areas. However, urban areas in the 1971 census are defined as cities and towns with populations of 20,000 or more inhabitants. In the period from 1930 to 1961 the urban population increased by 8.2 per cent annually, while in the period 1920 to 1930 the growth rate was 5.5 per cent. However, from 1961 to 1971 the growth rate was only 3.4 per cent. This does not mean that the urban population increase was actually lower than the percentage increase between 1930 and 1961, because the basis for the figures is identical. Besides, the rural areas are tending to increase in 1971, due to the new resettlements, transmigrations, and the growth of small towns as centers for logging in Sumatra, Kalimantan and other islands.

Participation Rate. The Housing Construction Research Institute in Bandung has estimated that the total number of houses of adequate standard in 1961 was 17.5 million. However, the number of houses needed for the total population is 22.0 million. The first number gives us a house/population ratio of 0.180. The population census of 1961 indicated an average of 4.4 members per household or a household/total population ratio of 0.227. In urban areas there was an average of 4.9 members per household (0.2041). Therefore, in projecting future housing needs, we have to use these or some alternative household/population ratio. Dr. Stephen Enke assumes that the ratio in urban areas in the developing countries is around 0.20. This means that on average a family has 5 members living in the one house.

The ideal situation would be to have one house for each household, or in other words a participation rate in urban areas of 0.2041 for each household with 4.9 members. But the Housing Construction Research Institute estimates that in the urban areas one house is inhabited by 1.67 households. In other words, it has 8 members instead of 4.9 members, or stated as a participation rate, 0.125. The deviation of 0.0791 ($0.2041 - 0.125$) means a lack of housing which has to be met as soon as possible.

The lack of houses cannot be overcome in a short programme, but only gradually within successive 5 year intervals. The main objective is to meet the need for each family to get a house. Theoretically, we have to increase the participation rate from 0.125 to 0.2041.

House Construction due to the population increase. The demand for housing construction is increasing, due to the increase in population. The higher the natural increase, the bigger the demand for housing for the next twenty years (1). The mean age of marriage in Indonesia is 17.90 years for females and 23.60 years for males. Thus we assume that after twenty years, children will get married and look for a job and a house.

If we lower the number of births, we will eventually reduce the number of newlyweds needing houses.

The increase in houses needed because of population growth can be calculated, by multiplying the total population by the participation rate. We assume that the participation rate is 0.125 from the year 1961 to 1971. The total population is shown on the first row of Annex 2 and Annex 3 from the year 1961 to 2001. Second row is the participation rate (every 5 years interval). By multiplying the participation rate by the total population we get the total number of houses needed.

Replacement to current housing. Data on replacements to the current housing are not available. However, we have tried to get the rate of depreciation by judging from the ages of the buildings. Based on these ages, we are able to estimate the depreciation rate for both rural, urban and total housing, as attached in Annex 4. The 1961 census gave details about 4 categories of construction: (i) permanent; (ii) semi permanent I; (iii) semi permanent II and (iv) temporary. Each category has its own "life expectancy"; some based on the strength of the building and some based on tastes. Therefore, we assume that a "permanent" building lasts for 40 years; semi permanent I lasts 25 years; semi permanent II lasts 15 years and temporary buildings last 5 years.

The replacement rates for 5 years intervals in rural areas are much higher than others, due to the bigger amount of semi permanent and temporary buildings (89% compared with 64,6% for urban areas).

(1) N. Iskandar, *Some Monographic Studies on the Population in Indonesia*, Jakarta, Lembaga Demografi Fakultas Ekonomi Universitas Indonesia, 1970, pp. 75-76.

Construction to meet the current deficit. The census of 1961 showed the following distribution of houses in

Indonesia :

Urban Areas : permanent	= 18.6 %
semi-permanent I	= 16.8 %
semi-permanent II	= 43.7 %
temporary	= 20.9 %
Rural Areas : permanent	= 3.8 %
semi-permanent I	= 6.5 %
semi-permanent II	= 53.2 %
temporary	= 36.5 %

Thus in urban areas, permanent and semi permanent I housing constituted 35.4 % of the total stock, but in rural areas only 10.3 per cent. The main need is to raise the proportion of houses falling within these 2 categories.

By 1971, based on the comparison of the participation rate of 0.2041, and the participation rate of 0.125, there will be a deficit of about 2,206,890 houses. This number can be derived by subtracting from 5,694,390 houses (assume ideally one house for 4.9 members), the actual existing number of 3,487,500 houses. If the government wants to remove this deficit within the next 15 years, it will be necessary to build an average of 145,777 houses per annum until 1986.

Total Houses needed. By adding the three components discussed above we can find the total requirement for additional houses which will occur yearly. The total demand on housing is clearly recognized by adding those components and comparing the rapid growth of urban population to the medium growth of urban population. In Annexe 5 and 6 this requirement is shown separately for projections of rapid and moderate growth of the urban population.

In 1971, we estimate that Indonesia will have to provide about 1,920,496 houses under rapid growth assumption ; this includes the deficit in 1971. Requirements will increase tremendously. In 1981 the figure becomes 3,936,917 houses, and 11,001,336 houses in the year 2001. On the other hand, in the projection of medium growth of population the total demands are lower : 1,821,100 houses in 1971, increasing to 3,167,725 houses in 1981, and 5,583,094 houses by the year 2001.

Investment Cost. The cost of building a house of minimum standards with healthy environs is an average of \$400 per person. This represents a space of 10 square meters per person at a construction cost of

\$ 40.— per square meter. This approximates to the average construction cost in Africa-Asia of \$ 30.— per square meter. (1) However, the construction cost for each city differs. In the rural areas, the construction costs are much cheaper than in urban areas, due to both the free labor sometimes available (“gotong royong”) and the ease of obtaining materials in these areas. The Public Housing Directorate estimates the construction cost in rural areas is one-fifth of that in urban areas.

To estimate the construction costs we simply multiply the construction cost per house by the number of houses required. We compare the construction costs under the assumptions of rapid growth in urban population and medium growth in urban population in Annex 6.

By the year 1971 there is a deviation of about \$ 282,276,000.—, and in 1981 the difference has increased to \$ 1.131.906.000.—. By the year 2001 the gap increases to \$ 13,785,552,000.— (Annex 7).

In conclusion, these projections of the number of houses needed and the cost incurred, indicate the savings which can be realized in the housing field as a result of the family planning program and urbanization control.

The funds saved can be directed for other economic development purposes. This will have a multiplier effect for the population welfare. Increased welfare might in turn have a reverse effect toward a small size of family. These two positive results will accumulate toward the economic benefit of the country.

Funds saved in urban areas might be used for city development, to create more modern and orderly cities, and partly for rural development purposes.

Population Policy as Element in Social and Economic Development. The present government of Indonesia is completely aware that the population is growing more rapidly than the economy, which hampers the capital formation for development.

The First Five Year Development Plan (REPELITA I) recognizes that the current rapid increase of the population, schoolgoing population and the work force combined with unequal geographic distribution, is resulting in high unemployment in some parts of the country and labour shortage in others.

In facing these problems, the formulation of a family planning program constitutes a long range policy, the influence of which can be felt after 10 to 15 years.

(1) Enke's estimate.

A successful Family Planning Program can decrease the number of populated areas. This will enable an upward shift of the savings function, which will in turn broaden employment and investment opportunities. Funds which were spent for dependents can be used for the maintenance of the health and welfare of a strong and active working labour force. With regard to the imbalance in geographical population distribution with overpopulation and labour surplus in Java and Madura, the transmigration program, planned and linked to development activities in the other islands, will speed up the growth of wealth at the macro and micro level. In the long run it will also contribute to some reduction in population increase in Java.

CONCLUSION

Comparison of the 1961 and 1971 Census results suggests that the rate of population growth in Indonesia is slightly less than had earlier been estimated : 2.1 per cent per annum. However, it is likely that the rate of increase at the moment is higher than this. Even if the rate were only 2.1 per cent per annum, this rate, if continued, would be enough to double the population in only 33 years.

There is an imbalance in the distribution of population in Indonesia. The islands of Java, Madura, and Bali are extraordinarily densely populated, and their populations are certain to grow large in coming years because of the inability of migration flows to the outer islands to remove more than a small proportion of the natural increase. Any further growth of population in these densely-settled islands is a cause for concern, and therefore the government has given strong support to the national family planning program in its efforts to reduce birth rates and rates of population growth.

However, family planning will take time to have major effects on population growth rates. Meantime, through the 1970's, the government must force the implications of the following inevitable trends : a rapid growth of the labour force (more rapid than the growth of the total population, because of the especially large numbers of young people expected to enter the labour force due to assumed peculiarities in the Indonesian age distribution) ; a rapid growth in numbers of school-age population, which will make it difficult for Indonesia to achieve rapid increases in levels of literacy and percentages receiving post-primary education ; rapid increases in numbers of family units being formed, mainly through the marriage of young couples, with its inevitable effect on housing requirements ; and continued increases in the number of babies born, meaning increasing needs for maternal and child health facilities.

Only through imaginative and dedicated planning can Indonesia hope to raise the welfare of its population during the next decade in the face of these very real challenges. However, the country is facing the task with confidence that success is possible.

APPENDIX I

PERCENTAGE DISTRIBUTION OF MIGRANTS ACCORDING TO
LAST AND PRESENT PLACE OF RESIDENCE IN RURAL AREAS OF
JAVA AND MADURA, 1964

Last Place of Residence	Present Place of Residence					Total numbers Java-Madura (in 000's)
	West Java	Central Java	Yogyakarta	East Java	Java-Madura	
Jakarta	0.1	0.1		0.6	0.3	7
West Java	90.6	2.8	0.3	0.2	27.3	685
Central Java	2.8	91.4	1.6	2.8	32.3	811
Yogyakarta	-	1.0	5.2	0.0	1.9	48
East Java	0.1	1.9	2.2	94.2	34.5	868
Total Java Madura	93.6	97.2	92.2	97.8	96.3	419
Other Islands and Abroad	6.4	2.8	7.8	2.2	3.7	94
Total	100.0	100.0	100.0	100.0	100.0	
Total numbers (in '000)	726	825	77	885	2513	2513

Source : Biro Pusat Statistik, *Susenas II Perpindahan Penduduk*
(Second National Social Survey) November 1964-1965, L Jakarta, p. 67.

APPENDIX II

PERCENTAGE DISTRIBUTION OF MIGRANTS ACCORDING TO
LAST AND PRESENT PLACE OF RESIDENCE IN URBAN AREAS OF
JAVA AND MADURA, 1964

Last Place of Residence	Present Place of Residence					Total numbers Java-Madura (in 000's)
	West Java	Central Java	Yogyakarta	East Java	Java-Madura	
Jakarta	8.8	1.9	3.2	0.8	3.6	31
West Java	71.1	3.8	3.2	2.2	23.4	204
Central Java	6.1	78.4	48.4	10.3	26.7	232
Yogyakarta	1.5	2.9	35.5	-	2.4	21
East Java	3.4	2.9	3.2	74.2	33.2	289
Java Madura	90.9	89.9	93.5	87.5	89.3	777
Other Islands and Abroad	9.1	10.1	6.5	12.5	10.7	93
Total	100.0	100.0	100.0	100.0	100.0	870
Total numbers (in '000)	263	208	31	368	870	870

Source : Biro Pusat Statistik, *Susena II Perpindahan Penduduk*
(Second National Social Survey) November 1964. February 1965, Jakarta, p. 66.

POPULATION PROJECTION FOR INDONESIA (Variant I)
(in thousands)

Age	1971	1976	1981	1986	1991	1996	2001
FEMALE							
0 - 4	9,509	11,081	12,618	14,850	17,382	20,180	23,548
5 - 9	9,295	8,873	10,429	11,985	14,219	16,770	19,602
10 - 14	6,902	9,082	8,693	10,246	11,804	14,036	16,590
15 - 19	5,749	6,740	8,893	8,533	10,082	11,643	13,875
20 - 24	4,406	5,574	6,557	8,676	8,349	9,895	11,459
25 - 29	5,010	4,246	5,393	6,365	8,450	8,161	9,704
30 - 34	4,230	4,805	4,090	5,214	6,177	8,232	7,980
35 - 39	4,061	4,036	4,606	3,937	5,040	5,995	8,022
40 - 44	3,026	3,854	3,849	4,412	3,788	4,870	5,817
45 - 49	2,249	2,853	3,652	3,664	4,219	3,637	4,695
50 - 54	1,947	2,091	2,667	3,432	3,460	4,001	3,466
55 - 59	1,061	1,767	1,991	2,453	3,174	3,218	3,742
60 - 64	1,189	924	1,554	1,694	2,192	2,856	2,916
65 - 69	586	973	766	1,301	1,432	1,870	2,460
70 - 74	570	435	734	586	1,007	1,121	1,481
75 +	391	516	429	602	596	854	1,077
total	60,181	67,849	76,842	87,950	101,370	117,340	136,431
MALE							
0 - 4	9,652	11,315	12,926	15,259	17,889	20,801	24,306
5 - 9	9,578	8,992	10,636	12,266	14,591	17,219	20,151
10 - 14	7,327	9,372	8,821	10,458	12,086	14,403	17,027
15 - 19	5,643	7,167	9,189	8,667	10,296	11,919	14,228
20 - 24	3,556	5,469	6,968	8,959	8,472	10,089	11,707
25 - 29	4,033	3,421	5,282	6,753	8,712	8,264	9,871
30 - 34	3,665	3,860	3,290	5,099	6,545	8,474	8,066
35 - 39	4,020	3,482	3,688	3,157	4,915	6,335	8,235
40 - 44	3,004	3,778	3,293	3,506	3,016	4,720	6,111
45 - 49	2,399	2,783	3,525	3,091	3,309	2,862	4,502
50 - 54	1,888	2,176	2,544	3,245	2,863	3,084	2,683
55 - 59	1,074	1,660	1,930	2,276	2,922	2,596	2,814
60 - 64	1,034	900	1,407	1,652	1,962	2,540	2,274
65 - 69	535	806	712	1,125	1,333	1,600	2,090
70 - 74	491	375	575	514	823	986	1,197
75 +	379	430	337	442	461	651	849
Total	58,278	65,987	75,121	86,469	100,196	116,542	136,111
Both Sexes							
Both Sexes	118,459	133,836	151,963	174,419	201,566	233,882	272,543
Assumption : 1. Closed population. 2. Mortality							
e_0^o Female = 45.0 year in 1971							
e_0^o Female = 60.0 year in 2001							
3. Fertility : Constant T.F.R. N. Iskandar, Lembaga Demographi FEUI.							

POPULATION PROJECTION FOR INDONESIA (Variant II)
(in thousands)

Age	1971	1976	1981	1986	1991	1996	2001
FEMALE							
0 - 4	9,509	11,081	12,084	13,623	15,269	16,825	18,386
5 - 9	9,295	8,873	10,429	11,478	13,043	14,731	16,343
10 - 14	6,902	9,082	8,693	10,246	11,304	12,876	14,573
15 - 19	5,749	6,740	8,893	8,533	10,082	11,150	12,728
20 - 24	4,406	5,574	6,557	8,676	8,349	9,895	10,974
25 - 29	5,010	4,246	5,393	6,365	8,450	8,161	9,704
30 - 34	4,230	4,805	4,090	5,214	6,177	8,232	7,980
35 - 39	4,061	4,036	4,606	3,937	5,050	5,995	8,022
40 - 44	3,026	3,854	3,849	4,412	3,788	4,870	5,817
45 - 49	2,249	2,853	3,652	3,664	4,219	3,637	4,695
50 - 54	1,947	2,091	2,667	3,432	3,460	4,001	3,466
55 - 59	1,061	1,767	1,911	2,453	3,174	3,218	3,742
60 - 64	1,189	924	1,554	1,694	2,192	2,856	2,916
65 - 69	586	973	766	1,301	1,432	1,870	2,460
70 - 74	570	435	734	586	1,007	1,121	1,481
75 +	391	516	429	602	596	854	1,077
Total	60,181	67,849	76,308	86,215	97,582	110,293	124,362
MALE							
0 - 4	9,652	11,315	12,379	13,998	15,714	17,343	18,978
5 - 9	9,578	8,992	10,636	11,747	13,385	15,125	16,801
10 - 14	7,327	9,372	8,821	10,458	11,574	13,212	14,957
15 - 19	5,643	7,167	9,189	8,667	10,296	11,415	13,052
20 - 24	3,556	5,469	6,968	8,959	8,472	10,089	11,212
25 - 29	4,033	3,421	5,282	6,753	8,712	8,264	9,871
30 - 34	3,665	3,860	3,290	5,099	6,545	8,474	8,066
35 - 39	4,020	3,482	3,688	3,157	4,915	6,335	8,235
40 - 44	3,004	3,778	3,293	3,506	3,016	4,720	6,111
45 - 49	2,399	2,783	3,525	3,091	3,309	2,862	4,502
50 - 54	1,888	2,176	2,544	3,245	2,863	3,084	2,683
55 - 59	1,074	1,660	1,930	2,276	2,922	2,596	2,814
60 - 64	1,034	900	1,407	1,652	1,962	2,540	2,274
65 - 69	535	806	712	1,125	1,333	1,600	2,090
70 - 74	491	375	575	514	823	986	1,197
75 +	379	430	337	442	461	651	849
Total	58,278	65,987	74,575	84,688	96,304	109,295	123,691
Both Sexes	118,459	133,836	150,882	170,904	193,885	219,587	248,053
<p>Assumptions : 1. Closed population 2. Mortality :</p> <p>e_0^o female = 45.0 year in 1971 linear increase to e_0^o female = 60.0 year in 2001</p> <p>3. Fertility :</p> <p>Constant T.F.R. in 1971 - 1976 and thereafter linear decline of 25 % by the year 2001. N. Iskandar, Lembaga Demografi FEUI.</p>							

POPULATION PROJECTION FOR INDONESIA (VARIANT III)
(in thousands)

Age	1971	1976	1981	1986	1991	1996	2001
FEMALE							
0 - 4	9,509	11,081	11,558	12,392	13,122	13,469	13,400
5 - 9	9,295	8,873	10,429	10,978	11,865	12,660	13,083
10 - 14	6,902	9,082	8,693	10,246	10,812	11,713	12,524
15 - 19	5,749	6,740	8,893	8,533	10,082	10,664	11,578
20 - 24	4,406	5,574	6,557	8,676	8,349	9,895	10,496
25 - 29	5,010	4,246	5,393	6,365	8,450	8,161	9,704
30 - 34	4,230	4,805	4,090	5,214	6,177	8,232	7,980
35 - 39	4,061	4,036	4,606	3,937	5,040	5,995	8,022
40 - 44	3,026	3,854	3,849	4,412	3,788	4,870	5,817
45 - 49	2,249	2,853	3,652	3,664	4,219	3,637	4,695
50 - 54	1,947	2,091	2,667	3,432	3,460	4,001	3,466
55 - 59	1,061	1,767	1,911	2,453	3,174	3,218	3,742
60 - 64	1,189	924	1,554	1,694	2,192	2,856	2,916
65 - 69	586	973	766	1,301	1,432	1,870	2,460
70 - 74	570	435	734	586	1,007	1,121	1,481
75 +	391	516	429	602	596	854	1,077
Total	60,181	67,849	75,781	84,484	93,764	103,216	112,439
MALE							
0 - 4	9,652	11,315	11,839	12,733	13,504	13,884	13,832
5 - 9	9,578	8,992	10,636	11,235	12,176	12,998	13,450
10 - 14	7,327	9,372	8,821	10,458	11,070	12,019	12,853
15 - 19	5,643	7,167	9,189	8,667	10,296	10,917	11,873
20 - 24	3,556	5,469	6,968	8,959	8,472	10,089	10,723
25 - 29	4,033	3,421	5,282	6,753	8,712	8,264	9,871
30 - 34	3,665	3,860	3,290	5,099	6,545	8,474	8,066
35 - 39	4,020	3,482	3,688	3,157	4,915	6,335	8,235
40 - 44	3,004	3,778	3,293	3,506	3,016	4,720	6,111
45 - 49	2,399	2,783	3,525	3,091	3,309	2,862	4,502
50 - 54	1,888	2,176	2,544	3,245	2,863	3,084	2,683
55 - 59	1,074	1,660	1,930	2,276	2,922	2,596	2,814
60 - 64	1,034	900	1,407	1,652	1,962	2,540	2,274
65 - 69	535	806	712	1,125	1,333	1,600	2,090
70 - 74	491	375	575	514	823	986	1,197
75 +	379	430	337	442	461	651	849
Total	58,278	65,987	74,035	82,912	92,380	102,017	111,423
Both Sexes							
Both Sexes	118,459	133,836	149,816	167,396	186,144	205,233	223,861
<p>Assumptions : 1. Closed population 2. Mortality :</p> <p>e_0° female = 45.0 year in 1971 linear increase to e_0° female = 60.0 year in 2001</p> <p>3. Fertility :</p> <p>Constant T.F.R. in 1971 - 1976 and thereafter linear decline of 50 % by the year 2001. N. Iskandar, Lembaga Demografi FEUI.</p>							

POPULATION PROJECTION FOR INDONESIA (Variant IV)
(in thousands)

Age	1971	1976	1981	1986	1991	1996	2001
FEMALE							
0 - 4	9,509	11,081	11,375	11,956	12,346	12,269	11,658
5 - 9	9,295	8,873	10,429	10,804	11,447	11,911	11,918
10 - 14	6,902	9,082	8,693	10,246	10,641	11,300	11,783
15 - 19	5,749	6,740	8,893	8,533	10,082	10,496	11,170
20 - 24	4,406	5,574	6,557	8,676	8,349	9,895	10,330
25 - 29	5,010	4,246	5,393	6,365	8,450	8,161	9,704
30 - 34	4,230	4,805	4,090	5,214	6,177	8,232	7,980
35 - 39	4,061	4,036	4,606	3,937	5,040	5,995	8,022
40 - 44	3,026	3,854	3,849	4,412	3,788	4,870	5,817
45 - 49	2,249	2,853	3,652	3,664	4,219	3,637	4,695
50 - 54	1,947	2,091	2,667	3,432	3,460	4,001	3,466
55 - 59	1,061	1,767	1,911	2,453	3,174	3,218	3,742
60 - 64	1,189	924	1,554	1,694	2,192	2,856	2,916
65 - 69	586	973	766	1,301	1,432	1,870	2,460
70 - 74	570	435	734	586	1,007	1,121	1,481
75+	391	516	429	602	596	854	1,077
Total	60,181	67,849	75,598	83,875	92,399	100,687	108,217
MALE							
0 - 4	9,652	11,315	11,652	12,285	12,706	12,647	12,034
5 - 9	9,578	8,992	10,636	11,058	11,747	12,230	12,252
10 - 14	7,327	9,372	8,821	10,458	10,895	11,595	12,094
15 - 19	5,643	7,167	9,189	8,667	10,296	10,745	11,455
20 - 24	3,556	5,469	6,968	8,959	8,472	10,089	10,554
25 - 29	4,033	3,421	5,282	6,753	8,712	8,264	9,871
30 - 34	3,665	3,860	3,290	5,099	6,545	8,474	8,066
35 - 39	4,020	3,482	3,688	3,157	4,915	6,335	8,235
40 - 44	3,004	3,778	3,293	3,506	3,016	4,720	6,111
45 - 49	2,399	2,783	3,525	3,091	3,309	2,865	4,502
50 - 54	1,888	2,176	2,544	3,245	2,863	3,084	2,683
55 - 59	1,074	1,660	1,930	2,276	2,922	2,596	2,814
60 - 64	1,034	900	1,407	1,652	1,962	2,540	2,274
65 - 69	535	806	712	1,125	1,333	1,600	2,090
70 - 74	491	375	575	514	823	986	1,197
75+	379	430	337	442	461	651	849
Total	58,278	65,987	73,848	82,286	90,978	99,417	107,079
Both Sexes	118,459	133,836	149,446	166,161	183,377	200,104	215,296
Assumption : 1. Closed population, 2. Mortality : e_0^o female = 45.0 year in 1971 linear increase to e_0^o female = 60.0 year in 2001 3. Fertility : Constant T.F.R. in 1971 - 1976 and there after linear decline to NRR = 1.00 by the year 2001.							
N. Iskandar, Lembaga Demografi FEUI.							

APPENDIX VII

LABOUR FORCE BY SEX AND AGE GROUP, INDONESIA
IN 1971 - 2001. ACCORDING TO VARIANT I,
(IN THOUSANDS)

Sex and Age Group	1971	1976	1981	1986	1991	1996	2001
MALE							
10 - 14	1,339	1,427	1,074	959	736	439	-
15 - 19	2,762	3,546	4,594	4,379	5,256	6,148	7,413
20 - 24	2,720	4,263	5,532	7,242	6,972	8,449	9,974
25 - 29	3,649	3,113	4,836	6,218	8,069	7,699	9,249
30 - 34	3,379	3,578	3,065	4,775	6,161	8,017	7,671
35 - 39	3,771	3,278	3,484	2,993	4,676	6,048	7,889
40 - 44	2,790	3,529	3,092	3,310	2,892	4,503	5,860
45 - 49	2,199	2,568	3,275	2,892	3,117	2,714	4,299
50 - 54	1,662	1,937	2,289	2,950	2,631	2,863	2,517
55 - 59	905	1,411	1,655	1,968	2,548	2,283	2,496
60 - 64	805	706	1,112	1,316	1,575	2,054	1,853
65 +	851	839	957	1,209	1,500	1,830	2,304
Total	26,832	30,195	34,965	40,211	46,133	53,047	61,525
FEMALE							
10 - 14	995	1,092	836	739	568	338	-
15 - 19	1,646	2,151	3,129	3,282	4,208	5,242	6,702
20 - 24	1,403	2,097	2,847	4,270	4,593	6,016	7,632
25 - 29	1,710	1,572	2,153	2,725	3,862	3,966	4,998
30 - 34	1,600	1,908	1,701	2,266	2,801	3,887	3,918
35 - 39	1,638	1,709	2,043	1,825	2,438	3,020	4,204
40 - 44	1,289	1,723	1,802	2,160	1,935	2,590	3,217
45 - 49	993	1,308	1,735	1,802	2,145	1,910	2,545
50 - 54	825	914	1,202	1,593	1,653	1,966	1,750
55 - 59	423	721	833	1,051	1,392	1,444	1,718
60 - 64	393	315	545	611	813	1,088	1,140
65 +	353	433	429	547	656	822	1,059
Total	13,268	15,943	19,255	22,871	27,064	32,289	38,883
Both Sexes							
Total	40,100	46,138	54,220	63,082	73,197	85,336	100,408

APPENDIX VIII
LABOUR FORCE BY SEX AND AGE GROUP, INDONESIA
IN 1971 - 2001. ACCORDING TO VARIANT IV.
(IN THOUSANDS)

Sex and Age Group	1971	1976	1981	1986	1991	1996	2001
MALE							
10 - 14	1,339	1,427	1,074	9,559	6,635	3,536	0
15 - 19	2,762	3,546	4,594	4,379	5,256	5,542	5,968
20 - 24	2,720	4,263	5,532	7,242	6,972	8,449	8,992
25 - 29	3,649	3,113	4,836	6,218	8,069	7,699	9,249
30 - 34	3,379	3,578	3,065	4,775	6,161	8,017	7,671
35 - 39	3,771	3,278	3,484	2,993	4,676	6,048	7,889
40 - 44	2,790	3,529	3,092	3,310	2,892	4,503	5,860
45 - 49	2,199	2,568	3,275	2,892	3,117	2,717	4,299
50 - 54	1,662	1,937	2,289	2,950	2,630	2,863	2,517
55 - 59	905	1,411	1,655	1,968	2,548	2,283	2,496
60 - 64	805	706	1,112	1,316	1,575	2,054	1,853
65 +	851	962	957	1,209	1,500	1,830	2,304
Total	26,832	30,318	34,965	48,811	52,031	55,541	59,098
FEMALE							
10 - 14	995	1,092	836	739	512	272	0
15 - 19	1,646	2,151	3,129	3,282	4,208	4,725	5,395
20 - 24	1,403	2,097	2,847	4,270	4,593	6,016	6,880
25 - 29	1,710	1,572	2,153	2,725	3,862	3,966	4,998
30 - 34	1,600	1,908	1,701	2,266	2,801	3,887	3,918
35 - 39	1,638	1,709	2,043	1,825	2,438	3,020	4,204
40 - 44	1,289	1,723	1,802	2,160	1,935	2,590	3,217
45 - 49	993	1,308	1,735	1,802	2,145	1,910	2,545
50 - 54	825	914	1,202	1,593	1,653	1,966	1,750
55 - 59	423	721	799	1,051	1,392	1,444	1,718
60 - 64	393	315	545	611	813	1,088	1,140
65 +	353	433	429	547	658	822	1,059
Total	13,268	15,943	19,221	22,871	27,010	31,706	36,824
Both Sexes							
	40,100	46,261	54,186	71,712	79,041	87,247	95,922

ANNEXE 1
URBAN POPULATION IN INDONESIA

Year	Total population	Urban population	Percentage of urban population to total population	Average increase on population	
				Urban	Rural
1920	49,344,000	2,808,000	5.7	.055	.021
1930	60,727,000	4,362,000	7.2	.082	.014
1961	97,085,000	15,482,000	15.9	.034	.020
1971	118,460,000	20,765,000	17.5	-	-

ANNEXE 2
ESTIMATED INCREASE OF HOUSING IN THE URBAN AREAS UNDER THE ASSUMPTION
OF RAPID GROWTH IN THE YEAR 1961-2001.

	1961	1966	1971	1976	1981	1986	1991	1996	2001
1. Urban population.	16.500.000	22.300.000	27.900.000	35.800.000	43.800.000	56.600.000	72.600.000	88.800.000	107.800.000
2. Participation rate.	0,125	0,125	0,125	0,14	0,155	0,170	0,185	0,20	0,2041
3. Users population.	2.062.500	2.787.500	3.487.500	5.012.000	6.789.000	9.622.000	13.431.000	17.760.000	22.001.980
4. Users population under the assumption 0,2041.	3.367.650	4.551.430	5.694.390	7.306.780	8.939.580	11.552.060	14.817.660	18.124.080	22.001.980
5. Houses needed.	2.062.500	2.787.500	3.487.500	5.012.000	6.789.000	9.622.000	13.431.000	17.760.000	22.001.980
6. Diff. users pop.		725.000	700.000	1.524.500	1.777.000	2.833.000	3.809.000	4.329.000	4.241.980
7. Add. new houses.		725.000	700.000	1.524.500	1.777.000	2.833.000	3.809.000	4.329.000	4.241.980
8. Total users pop.	4.850.000	4.850.000	6.275.000	8.499.000	11.801.000	16.411.000	23.053.000	31.191.000	39.761.980
9. Replacement.	824.000	824.000	1.066.750	1.444.915	2.006.170	2.789.870	3.919.010	5.302.470	6.759.536
10. New houses.	1.549.500	1.549.500	1.920.496	3.123.162	3.936.917	5.622.870	7.728.010	9.631.470	11.001.516

ANNEXE 3

ESTIMATED INCREASE ON HOUSING IN THE URBAN AREAS UNDER THE ASSUMPTION OF MEDIUM GROWTH IN THE YEAR
1961 - 2001.

	1961	1966	1971	1976	1981	1986	1991	1996	2001
1. Urban population	16.500.000	21.200.000	25.900.000	31.400.000	36.800.000	43.100.000	49.300.000	55.700.000	62.100.000
2. Participation rate	0,125	0,125	0,125	0,14	0,155	0,17	0,185	0,20	0,2041
3. Users population	2.062.500	2.062.500	3.237.500	4.396.000	5.704.000	7.327.000	9.120.000	11.140.000	12.674.610
4. Users population under the assumption 0,2041	3.367.650	4.326.920	5.286.190	6.408.740	7.510.880	8.796.710	10.062.130	11.368.370	12.674.610
5. Houses needed.	2.062.500	2.650.000	3.237.500	4.396.000	5.704.000	7.327.000	9.120.000	11.140.000	22.001.980
6. Diff. users pop.		587.500	677.500	1.158.500	1.308.000	1.623.000	1.793.500	2.020.000	1.534.610
7. Add. new houses		587.500	677.500	1.158.500	1.308.000	1.623.000	1.793.500	2.020.000	1.534.610
8. Total users pop.		4.712.500	5.971.500	7.723.500	10.100.000	13.031.000	16.447.500	20.260.500	23.814.610
9. Replacement		801.125	1.000.875	1.312.995	1.717.000	2.215.270	2.796.000	3.444.285	4.048.484
10. New houses		1.388.623	1.821.100	2.614.220	3.167.725	3.838.270	4.589.575	5.464.285	5.583.094

ANNEXE 4

REPLACEMENT RATE FOR HOUSING IN INDONESIA, URBAN AND RURAL AREAS

	Percentage housing urban (1)	Percentage housing in rural (2)	Total (3)	Umer tahun (Age) (4)	% umur % of age (5)	Urban pop. Attrition rate (6)	Rural pop. Attrition rate (7)	Total (8)
1. Permanent	.186	.038	.058	40	.025	.00456	.00095	.00145
2. Semi permanent I	.168	.065	.079	25	.04	.00672	.00260	.00316
3. Semi permanent II	.437	.532	.519	15	.06	.02622	.03192	.03114
4. Temporary	.209	.365	.344	5	.20	.07939	.07300	.06880
						.07939	.10847	.10455

Source : Biro Pusat Statistik, Sensus Penduduk Republik Indonesia 1961 ;
Febr. 1965, Serie. R.T. II.

Formula : Replacement Rate : $1 - (1 - \text{Attrition rate})^5$

ANNEXE 5

ESTIMATED HOUSES NEEDED IN THE URBAN AREAS UNDER ESTIMATED THE ASSUMPTION OF RAPID GROWTH

	1966	1971	1976	1981	1986	1991	1996	2001
1. Replacement	824,500	1,066,750	1,444,915	2,006,170	2,789,870	3,919,010	5,302,470	6,759,536
2. Deficit in the year 1971		735,630	735,630	735,630				
3. Housing construction due to population increase	725,000	700,000	1,524,500	1,777,000	2,833,000	3,809,000	4,329,000	4,241,000
4. Total new houses	1,549,500	2,502,380	3,705,045	4,518,800	5,622,870	7,728,010	9,631,470	11,001,516

ANNEXE 6

ESTIMATED HOUSES NEEDED IN THE URBAN AREAS UNDER THE ASSUMPTION OF MEDIUM GROWTH.

	1966	1971	1976	1981	1986	1991	1996	2001
1. Replacement	801,125	1,000,875	1,297,695	1,717,000	2,215,075	2,796,075	3,444,285	4,048,484
2. Deficit in the year 1971		682,867	682,867	682,867				
3. Housing construction due to population increase	587,500	677,500	1,158,500	1,308,000	1,623,000	1,793,500	2,020,000	1,534,610
4. New houses	1,388,623	2,361,242	3,139,062	3,707,867	3,838,270	4,589,575	5,464,285	5,583,094

ANNEXE 7

CONTRAST OF INVESTMENT COST FOR HOUSING CONSTRUCTION IN URBAN AREA UNDER THE ASSUMPTION OF HIGH AND MEDIUM PROJECTION, 1961 - 2001.

Interval	Projections (millions of dollars)		Difference (millions of dollars) (A - B)	Ratio A/B	Percentage difference 100 (A/B - 1)
	High (A)	Low (B)			
1966	3,099,000	2,777,246	321,754	1.11	11.1
1971	5,004,760	4,722,484	282,276	1.05	5.4
1976	7,410,090	6,270,124	1,131,966	1.20	20.1
1981	9,037,600	7,415,374	1,622,226	1.24	24.2
1986	11,245,740	7,676,540	3,569,200	1.46	46.4
1991	15,456,020	9,179,150	6,276,870	1.68	68.3
1996	19,262,940	10,928,570	8,334,370	1.76	76.2
2001	22,003,032	11,166,188	10,836,844	1.97	97.0

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