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*World Population Year*

**THE POPULATION  
OF  
KENYA - UGANDA -  
TANZANIA**

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

# **THE POPULATION OF KENYA— UGANDA — TANZANIA**

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## PREFACE

This monograph presents the population situation in the area covered by Tanzania, Uganda and Kenya. The material has been prepared at the request of CICRED, as part of its contribution to the objectives of the World Population Year, 1974.

In common with other developing countries of Africa, the East African countries are becoming acutely aware of the importance of rapid population growth and its significance to the attainment of development objectives. It has become increasingly clear that with the current rates of growth and the limited resources, the burden of socio-economic development programmes has become more serious. The search for alternative strategies to development must therefore focus attention on the impact of accelerating growth rate which leads to retardation of the rate of economic and social development.

A number of practical difficulties have had to be faced in gathering data of varying quality in such a large part of the continent. The main objective of the monograph is to present a picture of the demographic condition based on sources of data available. The presentation of the material has been limited by the cost factor which changed considerably after the original plan had been finalised. To reduce costs diagrams and maps which are important for a clearer understanding of demographic conditions have been omitted. In the treatment of the main part of the book it has been necessary to follow the order in which the censuses have been taken.

It is hoped that the material will fill an important information gap in an area of growing importance in the development of Africa. It is further hoped that users of the monograph will seek to acquire the detailed official publications of the last census results as they become available in the different countries of the region.

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# CHAPTER 1

## THE AREA AND ESTIMATES OF POPULATION GROWTH

### Introduction

Geographically the republics of Kenya, Uganda and Tanzania cover a diverse region lying in the central portion of Eastern Africa. The conditions in individual countries are varied and must be taken into account in presenting population information and in formulating policy matters with respect to population.

Uganda in the extreme north-west is a moderately sized country, situated in an inland position. The equator which passes through both Kenya and Uganda divides the country into two unequal portions. Over 90 per cent of Uganda lies to the north of the equator. The total land area of the country is 193,503 km<sup>2</sup> of which approximately 84 per cent lies at an altitude between 900 m and 1500 m. The bulk of the cultivated land lies within this altitudinal range. However, the most populated part of the country lies between 1500 m and 2100 m in the south-western part of the country and on the slopes of Mt. Elgon. A little less than 2 per cent lies above 2,100 m and is mostly forested. At the other extreme 9 per cent of the country lies below 900 m in the lower parts of the rift valley region and in the valley of Albert Nile. Altogether 42,383 km<sup>2</sup> is open water surface, mostly shallow lakes except for Lake Tanganyika.<sup>1</sup>

Kenya, geographically, the most diverse, lies to the east and south-east of Uganda and covers a total area of 582,644 km<sup>2</sup> of which 13,395 km<sup>2</sup> is water surface. In the extreme west of the country is Lake Victoria basin, a closely settled region, lying between 1000 m and 2000 m and draining into the Nile system. The Lake Victoria basin is largely underlain by ancient pre-Cambrian rocks with patches of Tertiary volcanic material in the east and the Mt. Elgon area. Its productive potential is dependent on a favourable rainfall ranging from about 75 cm to well over 180 cm per annum. A region of longstanding agricultural importance, temperature and rainfall conditions favour a wide range of tropical crops especially in the higher areas to the north, east and south-east. Lake Victoria basin is one of the three major population concentrations.

In the west-central portion of the republic is the elevated portion forming the central Rift and Associated Highlands, lying between 900 m to 3500 m. Annual rainfall in this central portion ranges from 50 cm and 125 cm. The highest parts enjoy well over 150 cm a year. The highland region is divided roughly into the eastern and western portions. The

eastern portion is a region of major population concentration. In the western half is a rather moderately populated region important for its contribution to the agricultural output of the Republic. It is the agricultural heart of the rich commercial farming area. The colonial commercial farming activity left a deep mark in the character of this region.

In the extreme north-east of the country is the semi-arid and arid part of Kenya. The population potential is low in this region. It ranges in altitude from about 400 m to 1500 m. The region suffers from serious moisture deficit and undeveloped transport infrastructure. Recurrent drought in the area is a development problem now only being partially met by limited implementation of irrigation programmes.

In the extreme east and facing the Indian Ocean is the coastal region distinguished by its low lying and humid nature. Most of this region is under 900 m. Rainfall decreases rapidly towards the drier interior. The realization of agricultural potential of the region is much affected by the environmental conditions and the poor character of the roads. Lying between the coastal zone and the rich volcanic highlands of the interior is a zone of very low potential rising gradually from the coast westwards. Much of this is game country where agriculture is only possible during the wetter periods.

Tanzania, the largest of the three countries lies wholly to the south of the equator and extends over a varied area some 939,700 km<sup>2</sup> in extent. Most of the country lies above 900 m, but limited portions rise well above 1,500 m. Considerable differences are experienced in the ecological conditions of the Republic. The major ecological units of importance in population study are the mountain lands including the volcanic zones of Mount Kilimanjaro, Meru and Rungwe, the faulted blocks of north Pare, Usambara and Uluguru. Other areas of more varied relief include the Ngara, West Kibondo and Kasulu in the north-west of the country. The second important ecological region covers the lake shore zones and constitutes a distinct population concentration. This is a continuation of the Uganda and Kenya portions of Lake Victoria basin with which it has close cultural affinity.

The third ecological region in Tanzania extends from the Kenya portion of the coast southwards over the entire coastal stretch of the Republic. This is the zone of the major ports of the country including Tanga, Dar es Salaam and Lindi/Mtwara.

In the centre of the Republic is the plateau extending from Southern Highlands north-eastwards towards the Kenya border. The central plateau is a region of low rainfall. Annual precipitation likely to be exceeded by an 80 per cent probability is 75 centimetres or less. Large portions experience 50 centimetres or less.

Bordering the central plateau to the east is a varied plateau region including Iringa, the plains of Dodoma and the Mbulu and Singida uplands. They form a bridge of more favourable ecological conditions between the southern highlands and the coastal zone to the north-east.<sup>2</sup>

The variety of ecological conditions outlined above underlines the complexity and diversity of population situation and related problems of development in East Africa.

## Historical Position

In general the trend in the size, composition, distribution and prospects of a population can be ascertained by taking two or more censuses at sufficiently long intervals, for the changes to be noticeable. The second method is by maintaining a complete register of vital events such as births, deaths, immigration and emigration.<sup>3</sup> A third method is by sample surveys. The last two methods are still in experimental or research stage in East Africa. The analytical data presented is drawn primarily from the three national censuses which have been taken in the area since 1948.

In response to various policy trends during the early colonial period, census estimates were made of the population of East Africa. However, subsequent counts have shown that these early estimates were guesses which in some cases differed by millions. The first official estimates were made by the two colonial pioneers, Sir Henry Johnston for Uganda in 1900 and Sir Arthur Hardinge for Kenya in 1897. Sir Arthur Hardinge in 1897 estimated the population of what was then the East African Protectorate at 2.5 million. The estimate for Uganda was placed at 4 million in 1900, prior to the territorial transfer of 1902, which added the Eastern Province of Uganda to Kenya.<sup>4</sup>

The earliest estimate for Tanzania in 1913 gave a total African population of about 4.1 million. The estimate was derived from the number of adult male taxpayers multiplied by a factor assumed to represent the proportion of dependents. The most reliable estimate of the period was that of Zanzibar based on actual enumeration. The actual method of how the counts were taken is not known. However, the census taken in 1910 indicated a total population of 197,199 for Zanzibar of whom 114,069 were in Zanzibar island and 83,130 in Pemba.<sup>5</sup> These early estimates, on the whole provide no basis for an accurate assessment of the population size and characteristics at the turn of the century.

Paucity of demographic data in East Africa continued right up to the second World War when the need for more reliable data became more acutely felt. It was not until after the Second World War that the first census was taken in 1948 following the establishment of the East African Statistical Department as one of the services of the East African High Commission. However, even the 1948 Census was not universal in the more difficult and arid parts of northern Kenya. The traditional estimates based on taxpayers were provided by the administration. Table 1.1 gives the estimates by the old methods compared to results of the 1948 Census

TABLE 1.1. AFRICAN POPULATION (ROUNDED TO NEAR 1000)

<i>Country</i>	<i>Last estimates by old method</i>	<i>1948 Census</i>
Kenya	4,055,000 (1946)	5,251,000
Tanganyika	5,838,000 (1947)	7,408,000
Uganda	3,987,500 (1947)	4,918,000

*Source:* J. E. Goldthorpe, op. cit., p. 463.



and Table 1.2 gives the total population of the three countries by major racial divisions.<sup>6</sup> In Zanzibar the 1948 Census recorded a total population of 264,162.<sup>7</sup>

TABLE 1.2. POPULATION TOTALS FROM THE 1948 CENSUSES

	<i>Kenya</i>	<i>Tanganyika</i>	<i>Uganda</i>
African	5,252,753	7,410,269	4,917,555
Non-African	154,846	70,160	40,965
Total	5,407,599	7,480,429	4,958,520

*Source: J. G. Blacker, op. cit. p. 43.*

The 1948 Census was reckoned as a major feat considering problems of manpower. It was subsequently decided largely due to manpower shortage that the later censuses should be staggered. Tanganyika held its general African census in August 1957, Zanzibar in 1958, Uganda in 1959 and Kenya postponed its census to 1962.<sup>8</sup> During this second population count Tanganyika [Mainland] recorded a total population of 8,785,613.<sup>9</sup> This total included 122,929 non-Africans including Somali and 8,622,684 Africans. Zanzibar census in 1958 gave a total population of 299,111. On the basis of these census figures it will be noted that the African population of Tanzania had increased by about 17 per cent over the 1948 figures and that excluding Somalis the non-African population had increased by about 71 per cent on the 1948 figure. The decennial increase for Zanzibar Protectorate between 1948 and 1958 was estimated at 13 per cent.<sup>10</sup>

The second round of census in Uganda taken in August 1959 indicated a total African and non-African population of 6,450,973 and 87,059 respectively. The estimated inter-censal increase for the African population for the period was 31 per cent and that of the non-African, 111 per cent.

In Kenya the second census gave a total population of 8,636,263 including 2,629 persons in transit. Ethnic breakdown indicated a total African population of 8,365,942, 176,613 Asians, 55,759 Europeans, 34,048 Arabs. In addition 3,901 persons were classified under Others. The total non-African population had therefore increased to 270,321. Global increases suggested a rise of approximately 60 per cent among the African population.<sup>11</sup>

Availability of data from the second round of censuses in East Africa provided an opportune moment for a more accurate estimate of the growth trends in the different countries of the region. In Uganda prior to the 1959 census, the annual growth rate of the total population of Uganda was estimated at 1.5 per cent per annum. But at the time of the second round of census in 1959 the overall growth rate was estimated at 2.5 per cent. This level of growth was maintained largely as a result of immigration from the neighbouring countries of Rwanda, Burundi, Kenya and partly from Tanzania. Allowing for the immigration element, the population growth rate was estimated at 2.2 per cent per annum suggesting a doubling time of 32 years.<sup>12</sup> Blacker (1972) indicated that a comparison of estimated birth and death rate suggested a natural rate of increase of 2.2 per cent per annum.<sup>13</sup>

However, the overall rate of increase of 2.2 per cent per annum obscured important regional variations. The highest inter-censal increase on a district basis was in Kigezi which had 3.2 per cent per annum. A similarly high rate of increase was in the neighbouring district of Ankole which recorded a rate of 2.9 per cent per annum at the time of the second round of census. The districts with the lowest rate of natural increase were Bunyoro with an increase of 0.7 per cent per annum, Mubende, 1.3 per cent and Teso with only 1.2 per cent per annum. Most of the districts in the Eastern Province of Uganda had recorded above average rates of natural increase.<sup>14</sup>

In Kenya a variety of methods have been used to estimate the rate of population growth for the different racial groups from a comparison of the 1948 and 1962 census data. In the case of the Asian population, census totals for 1948 and 1962 revealed a higher rate of growth attributed to a high rate of immigration and a substantial rate of natural increase estimated at 2 to 2.5 per cent per annum in 1962.<sup>15</sup> Using data on both births and deaths, the rate of natural increase for the European population was estimated at 2 per cent per annum.<sup>16</sup> Immigration played a major role in the trend of European population. In the case of the Arab population the rate of natural increase was estimated at 2.5 per cent per annum.<sup>17</sup>

Estimates of the rate of growth of the African population of Kenya at the time of the second round of censuses have been derived, first from a comparison of the 1948 and 1962 census data, second by fitting stable population models to the 1962 age distribution and finally from estimates of the rate of natural increase based on fertility and mortality data.<sup>18</sup>

Estimates of the rate of growth based on inter-censal increases proved difficult to make because of frequent change in administrative boundaries. Further the problem of varying degrees of coverage made some of the increases more doubtful. Allowing for the problems of enumeration, the rate of growth of the African population of Kenya (excluding the Northern Province) between 1948 and 1962 was considered to lie somewhere between 2.5 and 3 per cent per annum. A figure of 2.8 per annum was taken as a likely approximation. Data on fertility and mortality indicated rates of natural increase of between 23 and 33 per thousand. But the most plausible estimates for the early 1960's was considered to lie somewhere between 27 and 31 per thousand or 2.7 and 3.1 per cent per annum.<sup>19</sup>

Information available for Tanganyika at the time of the 1957 census suggested a rate of growth of 1.75 per cent per annum. But the difference between the estimated birth rate of 46 per thousand and a death rate of 24 or 25 per thousand gave a natural increase just in excess of 2 per cent per annum. In the case of Zanzibar, the estimated average birth and death rates for the total population of the two islands were 35 and 21 per thousand respectively, suggesting a natural growth rate of 1.4 per cent per annum.

However, the use of census data for estimation of the rate of population growth between the first and the second national censuses also suffers from errors arising from under-enumeration. An examination of the 1948 and 1957 census data revealed an under-enumeration of 1.9 to 3.6 per cent in 1948 and 5.4 to 6.3 per cent in 1957. At the district level rates of growth were affected by spatial inter-change of population. Net in-migration and out-migration are important factors which complicate the estimation of rates of growth at sub-national level. In comparing the factors of population

change, Hirst (1972) found that the net migration districts showed a greater range of percentage changes (83.9 to 2.4) than the fertility group of districts (36.0 to 18.2).<sup>20</sup>

Summing up the position in East Africa, Blacker (1972) concluded that at the time of the 1960 round of censuses the rates of population growth in the region ranged from about 2 per cent per annum in Tanzania to nearly 3 per cent in Kenya.<sup>21</sup>

### Current Population Growth

With the completion of the third round of censuses in East Africa in August 1969, it became possible to review some of the earlier problems of estimated population growth rates in the region. Tanzania, the first of the three countries to organise a third national census in 1967 recorded a total population of 12,313,469 including 354,815 persons resident in Zanzibar.<sup>22</sup> The Uganda third census in August of 1969 gave a total population of 9,548,847 of whom 9,456,466 (99.0 per cent) were Africans.<sup>23</sup> The Kenya census taken later the same month in 1969 recorded a total population of 10,942,705 of which 10,753,202 (98.25 per cent) were Africans.<sup>24</sup> The successful completion of these censuses and additional demographic information which have been made available through built-in samples have provided a firmer basis for evaluation of earlier growth estimates and the current estimates made by the U.N. Population Division and by the national statistical departments. In the latter part of 1970 the U.N. Population Division made projections of rural and urban population as shown in Table 1.3).<sup>25</sup>

TABLE 1.3. ANNUAL RATE OF INCREASE (TOTAL)

	<i>Tanzania</i>	<i>Uganda</i>	<i>Kenya</i>
1950	—	—	—
1955	2.17	2.21	3.07
1960	2.21	2.33	3.00
1965	2.48	2.47	2.91
1970	2.54	2.60	3.08
1975	2.74	2.75	3.25
1980	2.90	2.89	3.39
1985	3.03	3.00	3.41

Source: UN. *Urban and Rural Population* op. cit.

While these projected rates are not predictions, they are indications of the likely trends in individual countries which can be matched against the regional rates or against the more detailed analysis of the census material.

In a later paper on population projections the U.N. figures suggest that the estimated annual rate of growth in the Eastern Africa region was expected to rise from 2.5 per cent during the 1965/1970 interval to the highest level at 3.0 per cent between 1985 and 1995 and then to fall to a level of 2.8 per cent by the end of the century. Analysis of national census data suggests that the rates of growth might be slightly higher

than the estimates given for individual countries and for the region.<sup>26</sup> However, the studies also underline the point that accurate estimation of annual growth rates is still a complex problem.

In Tanzania Egero and Henin (1973) have carried out a detailed analysis of the problem of current growth rate based on a comparison of the previous rates and that of the 1957 to 1967 intercensal period. The recorded growth rate for Mainland Tanzania from 1957/1967 is well over 3 per cent per annum. Such a figure is regarded as unrealistically high and incompatible with the recorded growth rate between 1948 and 1957 of 1.8 per cent per annum. It is further noted that the 1957 census underestimated the population in relation to 1948 census.<sup>27</sup> A re-examination of the levels of mortality and fertility, independent estimates of natural increase of 2.1 per cent to 2.2 per cent for 1957 and 2.4 per cent to 2.5 per cent for 1967 as well as the extreme irregularity of growth rates for regions and districts during the two intercensal periods all point to considerable errors of under-enumeration in the earlier counts. Further, it has been pointed out that another factor contributing towards the difference is the importance of immigration to Mainland Tanzania during the 1957 to 1967 intercensal period. The net gain in international migration due to a halt in labour migration to Southern Africa and increased tempo of migration from the neighbouring countries is believed to have added a total of 400,000 persons. Taking into account this magnitude of immigration, the implied under-enumeration is reduced to about 2 per cent in 1957.<sup>28</sup>

At the regional level the problem of estimation of growth rate in Tanzania is further complicated by the impact of internal migration. No satisfactory method has been devised to estimate the contribution of internal migration to the *changing spatial balance of population*. Table 4 shows the 1967 population compared with 1957 as estimated and recorded. Egero and Henin (1973) have come to the following conclusion regarding the regional population changes:

"The differences are large and inconsistent. They may be due partly to errors in 1957 estimates and partly to the fact that migration took place before that year. But they also point to the fact that the independent estimates of fertility and mortality may be liable to substantial errors emanating from inaccurate data and age distribution affected by migration."<sup>29</sup>

In Uganda the comparison of a 1969 total population of 9,548,847 and the results of the previous census which gave a total population of 6,536,531 suggests an increase of 45.7 per cent over the ten year period. This magnitude of change represents an annual increase of the order of 3.8 per cent per annum. Such an increase would place the Uganda population among the most rapidly growing populations in the world. However, considering the unusually high rate of immigration (including 200,000 refugees) during the intercensal period and errors arising from undercounting especially in the more remote areas of the country, such as Karamoja in 1959, the rate of natural increase was expected to be lower. Available evidence suggests that the natural rate of increase was in the region of 3.2 per cent in 1969, arising from a crude birth rate of 50 per thousand and a crude death rate of 18 per thousand.<sup>30</sup>

Altogether the 1969 census revealed that there were 1,200,000 more persons than had been anticipated from the projections based on the 1959 census. The earlier estimates of the rate of population growth had been 2.5 per cent per annum. This suggests that even taking into consideration the effect of the increased immigration over the period, a considerable increase had occurred. On the basis of the current trends and crude birth rates and death rates it is estimated that the natural increase of population will be approximately 3.5 per cent per annum by 1976 and even higher by the end of the year 2000.<sup>31</sup>

The most detailed argument presented to explain the current trend of population growth in Uganda has been made by Taber (1972). Using the earlier provisional results of the 1969 census, he arrived at an average annual growth rate of 3.8 per cent since 1959. This was compared with the 1948-1959 estimated growth rate of 2.5 per cent per annum which would have given a projected population of 8,367,000 by 1969. The staggering difference raised the question of a possible under-count at the time of the 1959 census. Taber suggested a possible effect of improvements in communications, transportation and other aspects of socio-economic development as additional factors. It was argued that this could raise the average natural growth rate to about 3.0 per cent per annum for the period 1959-1969.<sup>32</sup>

In explaining the unexpected higher census results, Taber (1959) warned against advancing the argument of the improved census reporting as part of the explanation of the Uganda situation. The discrepancy between the first and the second round of census noted in Tanzania could not be confirmed for Uganda. It was argued that a detailed study of the district figures strongly suggests that the under-count at the 1959 census could not be a factor. Four factors have been advanced to explain the phenomenal rise in the population at the time of the last census in 1969. The first of these is a possible downward trend in mortality that has occurred during the recent decades. Improved socio-economic conditions as it is argued have had an impact on the causes of death. The second explanation suggests that there has been a possible rise in the birth rate. Thirdly it has been suggested that there has been a rise in measured fertility even though there has been no real increase in the birth rate. However, a more important reason advanced for Uganda has been the effect of migration. Taber noted that at least 12 per cent of the recorded population increase in Uganda between 1948 and 1959 was accounted for by net immigration.<sup>33</sup>

Available evidence suggests that overall, the total number of persons reported born outside Uganda in 1969 excluding West Mengo and Masaka District was 524,000 compared with 189,000 in 1959. The total number reported as born elsewhere in Uganda other than in the district where enumeration took place was 818,000 in 1969 compared with 338,000 in 1959. These figures suggest not only the magnitude of migrants into Uganda in the intervening decade, but also increased inter-regional mobility.<sup>34</sup>

In the absence of more recent data it is difficult to forecast the likely trend of Uganda's population growth. However, it is suggested that other things being equal, a current rate of growth in the region of 3.4 per cent per annum is a reasonable guess. It is too early to advance the post independence changes as a factor in the rate of population growth in the mid 1970's.

In Kenya the main demographic analysis in Volume IV of the census has not yet been published. This volume, giving the main arguments concerning the current trend in the rate of population growth should be given a close study. However, statistics of the level and trend of population growth are now available from the demographic analysis of the most recent census taken in 1969.

It has already been noted that at the time of the 1962 census the rate of growth of population was in the region of 2.5 to 3 per cent per annum. At the time of the 1969 census Kenya was still lacking in reliable systematic information on the vital demographic events of births, deaths and migration. For this reason it has been necessary to devise indices of fertility, mortality and other demographic variables from census information. The most recent analysis of material suggests that the intercensal growth based on crude birth and death rates for the period immediately preceding the 1969 census was 33 per thousand or 3.3 per cent per annum.<sup>35</sup> This rate of growth was derived from respective crude birth and death rates of 50 and 17 per thousand. In the absence of appreciable effect of migration the annual rate of 3.3 per cent was taken as the rate current at the time of the census. Analysis of the reported population growth rate by sex for the period 1962 to 1969 was as follows:

TABLE 1.4. POPULATION REPORTED 1962-1969 CENSUS  
(‘000)

Sex	1962	Growth rate (r)	1969
Male	4,277.0	3.6	5,482.4
Female	4,359.3	3.3	5,460.3
Total	8,636.3	3.4	10,942.7

Source: Central Bureau of Statistics.

Apart from Nairobi it is clear that some provincial rates are on the whole in excess of the national average of 3.4 per cent per annum. However, provincial variation in the rates of population growth are part of the problem of ethnic differences in the rates of population growth. Analysis in the rates of growth among the principal ethnic groups in Kenya indicated growth rates in excess of 3.5 per cent per annum. Thus the estimates of the national, district and ethnic rates of population growth in Kenya, all underline the rapid increase of population. The provincial rates of population growth suggest that the population of most of the provinces was doubling every twenty four years.

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## CHAPTER 2

### COMPONENTS OF POPULATION GROWTH

#### **Historical Position**

The study of factors accounting for the rate of population growth has been a keen subject of scientific investigation since the first regional census in 1948. However, in the absence of vital registration data, attention has been primarily directed to census data in estimating the basic demographic indices of fertility, mortality and migration which together determine the level and trend of population growth. In common with the other parts of the world, demographic data in East Africa are subject to systematic errors arising from the sampling technique and incorrect answering of census questions. The data collected are often inadequate for the construction of the standard demographic indices of population growth. Because of these obstacles, it is necessary to construct the pattern of demographic change using models based on data derived from other populations and other regions. But there is no certainty that such data are not subject to basic inaccuracies. Further, these models may represent patterns of fertility and mortality indices that are different from those obtaining in East Africa.<sup>1</sup>

Estimation of the demographic indices of population growth in East Africa falls into four stages. The first stage is the early colonial phase when estimates were based on inadequate guesses of the characteristics of the population prior to the end of the Second World War. The second, third and fourth are the periods coinciding with the 1948, 1957/62 and 1967-1969 censuses. The third and fourth belong to the modern phase of current demographic analysis. In the first instance, the scientific analysis of the components of growth began with the 1948 census when the basic outlines of the East African population became clear for the first time. Estimates of post-Kuczynski period dominated by the comments of C. J. Martin and J. E. Goldthorpe were hampered by lack of a series of census data and by almost total absence of any kind of vital registration data. Even at the time of the 1948 census it was still possible to say

*"Studies of fertility in Kenya on the basis of the 1948 sample census seem to have been less reliable than in Uganda and Tanganyika and most unfortunately there is little reliable evidence leading to a direct estimate of the birth rate."*<sup>2</sup>

Using an estimate of infant mortality of 184 per thousand available at the time, Goldthorpe (1955) arrived at an estimated birth rate of between



49 and 50 per thousand. A birth rate of this magnitude was regarded at the time as unprecedented. Further it should be noted that Goldthorpe was more inclined to reduce the estimated birth rate to 44 per thousand assuming an infant wastage of 184 per thousand for Kenya. Taking into consideration such estimate as could be made of mortality at the time, he concluded that:

"If the birth rate is 44 and adult mortality were say 25 per thousand the natural rate of increase would be  $13\frac{1}{2}$  per thousand, 1.35 per cent. Perhaps all one can say with confidence is that the rate of increase lies between 1 and 2 per cent."<sup>3</sup>

Estimates for Uganda made about 1948 gave a birth rate of 42 per thousand and that for Tanganyika, 44 per thousand. Infant wastage in Uganda was estimated at 200 per thousand and in Tanganyika at 174 per thousand. However, the absence of evidence on adult mortality precluded any possibility of relying on the estimate with any degree of confidence. Concluding on the evidence of inadequate information in 1948 Goldthorpe (1955) states:

"With a death rate for the rest of the population which again, and by peasant standards is distinctly low, a total death rate of 20 is accordingly possible. A birth rate of 44 per thousand is high but not impossibly high; rates of increase of this order are accordingly not possible on general grounds."<sup>4</sup>

Considering the evidence that is now available on fertility and mortality, it would seem that demographers in the first half of the present century were unduly cautious in their estimation of the determinants of population growth.

### **Recent Estimates of Fertility and Mortality**

The foregoing analytical review has underlined the problem of lack of demographic data on which earlier estimates of fertility indices could be made. In the case of fertility, recent estimates in East Africa are based on two principal sources. The first is the information age structure which is closely related to the level of fertility. The second is data derived from answers to fertility questions on total children ever born and births during the preceding twelve months from adult women in the post-enumeration or built-in-sample surveys.<sup>5</sup>

On the basis of the post 1948 round of censuses, Blacker (1972) observed that the general level of fertility in Tanganyika and Uganda was broadly similar with total fertility rates ranging from 5.5 to 6. It will be noted later that the current levels of total fertility derived from Kenya data are very much higher. The estimated crude birth rates were 42 per thousand for Uganda and 46 per thousand for Tanganyika at the time of the second round of census. Estimates for Kenya fertility for the same period indicated a figure of just under 7 and a crude birth rate of about 48 or 50 per thousand.<sup>6</sup> In 1967 the Advisory Mission of the Population Council of United States reporting to the Kenya Government noted an estimated birth rate of about 50 per thousand and a death rate of about

20 per thousand. Blacker estimated that the number of children born to women reaching 50 years of age was about seven and that the expectation of life at birth was between 40 and 45 years. The Mission forecast the possibility of a still higher level of fertility with a birth rate of perhaps 55 per thousand and a completed family size of about eight children.<sup>7</sup>

Information at the time of the second round of the censuses in East Africa indicated substantial variations in fertility between the regions. Highest rates were recorded among such ethnic groups as the Luo, Kisii and Baluhya of the lacustrine region of western Kenya. Similar ethnic variations were found in Uganda where the Bakiga of Kigezi and Banyankole of Ankole in western Uganda had rather high fertility. The Karamojong of north eastern and Acholi of northern Uganda, had the highest levels of fertility. In Tanzania very high fertility was found among the Chagga in the northern part of the country. Some rather low fertility rates were recorded for Bajun along the Kenya coast, the Maasai in northern Kenya and northern Tanzania, the Haya and Nyamwezi of western Tanzania and Iteso in eastern Uganda.<sup>8</sup>

Among the most interesting revelations of the 1959 census in Uganda was the comparatively low fertility rates among Baganda women. The general fertility rate was about 150 per thousand for the Baganda and 190 per thousand for the other ethnic groups in the country. However, the crude birth rate was 36 per thousand for both groups. This was attributed to the large excess of males among the other ethnic groups which tended to lower the index. In Teso, the estimated general fertility rate was 115 per thousand and the crude birth rate was about 31 per thousand population.<sup>9</sup> Exceptionally high fertility was reported in Ankole District which had a general fertility of 241 per thousand and a crude birth rate of 53 per thousand. In this district the completed fertility of women living to the end of the reproductive period was about 7 per thousand. The district of Kigezi recorded a fertility estimated at 230 per thousand and a crude birth rate of 50 per thousand. Blacker argued that the exceptionally high level of fertility in Kigezi appeared to be due to the very high fertility of women aged between 30 and 40.

A 1962 survey using Sullivan's variations on the Brass method of estimating child mortality gave the following provincial figures for the different regions of Kenya (Table 2.1)<sup>10</sup>. The high fertility of Central, Nairobi (E.P.D.), Nyanza, Rift Valley and Southern provinces emerges.

TABLE 2.1. FERTILITY ESTIMATES 1962

	<i>Date of Survey</i>	<i>Survey Population ('000)</i>	<i>Approximate Sample Size</i>	<i>Birth Rate</i>	<i>Total Fertility</i>
	1962	7,776	778	48	6.8
Central	—	1,910	—	49	7.1
Coast	—	643	—	43	5.9
Nairobi (E.P.D.)	—	197	—	44	6.3
Nyanza	—	2,993	—	58	8.5
Rift Valley	—	1,023	—	50	7.5
Southern	—	588	—	48	7.1

*Source:* H. J. Page and A. J. Coale, "Fertility and Child Mortality South of the Sahara", *Population Growth and Economic Development in Africa*, ed. S. H. Ominde and Ejiogu. Heinemann, London 1972.

Analysis of Tanganyika census gave a total fertility ranging from 4.9 in the Western to 6.3 in the Northern Province. Fertility data derived from the crude measures of 'child-woman' ratios also confirmed the extreme positions of the two provinces. There were 546 children per thousand in the Western as against 903 in the Northern Province.<sup>11</sup> These regional variations in fertility continue to constitute one of the most puzzling problems of African Demography.

Among the non-Africans the censuses indicated a decline in family size of the Asian population in all the three mainland countries. The decline was attributed possibly to a general rise in the age of marriage of the Asian female. It was also suggested that the practice of deliberate family limitations in marriage was a possible element in the situation. The Asian birth rate in both Tanganyika and Uganda of 35 per thousand was still considered well above Western levels. It was only in Kenya where it appeared to have fallen to a level of approximately 30 per thousand population in 1962.<sup>12</sup>

In Zanzibar fertility analysis among the Afro-Arab women indicated general levels of fertility which were much lower in Zanzibar Island than in Pemba. The island had an estimated total fertility of 3.5 to 4 and a crude birth rate of about 40 per thousand. Blacker attributed this lower fertility to the influence of Afro-Arab community in Zanzibar Town which had an estimated total fertility of just over 2.5 and a crude birth rate of about 20 per thousand population. The Asian population in the 'Stone Town' part of Zanzibar recorded much higher levels of fertility. Here the crude birth rate was about 40 per thousand population and the total fertility was well in excess of 5 live births per woman.

The position with regard to mortality analysis at the time of the second round of census was more difficult. In the absence of vital registration data the main source of information was the relative number of children ever born to adult women and the numbers which were still alive. From the data on surviving children infant mortality could be constructed. The main drawback continued to be an almost total lack of data on adult mortality. It has therefore been necessary to resort to model life tables with shortcomings that have already been noted.

The second round of census in Tanganyika in 1957 revealed an infant mortality of about 190 deaths in the first year of life per thousand live births. This gave an expectation of life at birth of about 35 and 40 years and a crude death rate of about 24 or 25 per thousand. The estimated levels of mortality for Zanzibar, Kenya and Uganda were much lower than in Tanganyika with infant mortality in the region of 160 per thousand live births, a life expectancy at birth of about 40 and 45 years and a crude death rate of 20 to 21 per thousand. As was the case with fertility, considerable local variations in mortality were noted. The lowest mortality rates were recorded in the northern region of Tanganyika, Buganda and in the Central and Rift Valley Provinces of Kenya. Except for Buganda, mortality rates were rather high around Lake Victoria and among the nomadic peoples of northern Kenya. The Asians in East Africa generally recorded much lower mortality rates and life expectancies which were much higher than those of the Africans.<sup>13</sup>



### **Recent Analysis of the Components of Population Growth in Eastern Africa. (Fertility and Mortality)**

Experience gained during the second round of censuses has proved very valuable in a clearer understanding of the components of population growth in East Africa. In adding yet another series of census data the period has also provided demographers with an opportunity to compare demographic trends through the application of new techniques of analysis of fertility, mortality and migration processes.

## **TANZANIA**

In Tanzania, the 1967 census provided three sources from which current fertility indices have been derived. The first was a question asked of all women aged 12 years and over as to whether or not they had borne a child during the 12 months preceding the census. From this information crude birth rates could be calculated. The second was data on age distribution which provided the material for calculation of 'child-woman' ratios. Finally a question was asked of all women aged 12 years and over as to the total number of children born alive which they had ever had. This provided information on the average number of children born alive by fertile women and in the case of women who had passed reproductive age, the average size of completed families. None of these sources provided by themselves reliable information largely because of the errors arising from methods of enumeration and circumstances of the enumeration. Errors due to 'recall-lapse', 'boundary effect' mis-statement and possible under enumeration or over enumeration of children and the effect of differential mortality could not be ruled out.<sup>14</sup>

Commenting on the differences, Egero and Henin (1973) have warned that not all the recorded differences could be attributed to differential fertility (Table 2.2). At division level the difference between divisions of the same district were so large that errors were suspected. In some divisions errors must have been responsible for crude birth rate of the order of 100 per thousand. Out of a total of 369 (32 per cent) the recorded crude birth rate was 60 or over per thousand population. A conclusion has been reached that considering a crude birth rate for the whole country of 57 per thousand and errors already mentioned, the reference period must have been misunderstood by the respondents and must have been generally inflated.<sup>15</sup>

From data on births during the 12 months preceding the census, the age specific birth rates and total fertility have been calculated for Tanzania Mainland (Table 2.3). Total fertility rate defined as the average number of children born alive to a woman who lives to the end of her reproductive life (age 50) was about 7.3. Such a figure is regarded as high though higher figures appear in Kenya.

It has been indicated that the reference period was misunderstood by the respondents and that some included births that may have taken place more than one year before the census. The table shows abnormally low rates for the women aged 15-19 and excessively high rates for the older women largely because of the inflation of the reference period.

TABLE 2.2. RECORDED CRUDE BIRTH RATE BY REGION (IN DESCENDING ORDER) AND DIFFERENCES BETWEEN DISTRICTS WITHIN REGION WITH HIGHEST AND LOWEST CBR

Region	CBR	CBR recorded at district level		Differences in CBR between highest and lowest records	No. of districts in region
		Lowest	Highest		
Shinyanga	65	51	71	20	3
Mara	62	59	68	9	2
Ruvuma	62	54	63	9	3
Mbeya	62	51	65	14	5
Mwanza	62	54	69	15	4
Dodoma	61	56	72	16	3
Tanga	58	48	66	18	5
Iringa	58	56	61	5	3
Zanzibar	58	41	68	27	6
Kilimanjaro	57	56	58	2	2
Arusha	56	50	67	17	3
Tabora	55	45	66	21	3
Singida	55	51	56	5	3
Kigoma	54	51	57	6	3
West Lake	53	49	63	14	4
Morogoro	50	46	56	10	3
Mtwara	49	43	52	9	6
Coast (excl. Dar es Salaam)	48	43	52	9	5

Source: *The Population of Tanzania* vol. 6 ed. Egero, B., and Henin, R.A.

TABLE 2.3. TANZANIA MAINLAND RECORDED AGE SPECIFIC BIRTH RATES AND TOTAL FERTILITY RATE

Age group	Absolute rates (births per thousand women)	Relative rate (per thousand)
15—19	169	116
20—24	334	229
25—29	316	217
30—34	260	179
35—39	201	138
40—44	115	79
45—49	60	41
Total	1,455	1,000
Total fertility rate	7.275	

Source: Egero, B. and Henin, R. A. *The Population of Tanzania* Table 12.3, 1967. op. cit. p. 190.

In an attempt to estimate the levels of fertility for Tanzania Mainland, and regions available, recorded current retrospective data on fertility were used to arrive at an adjusted fertility using Brass's 'P/F' method. Egero and Henin (1973) indicated that the use of Brass's technique gave a total fertility rate as high as 9.7 for Mbeya, 9.5 for Iringa and 9.4 for Kilimanjaro regions. High total fertility rates ranging from 8.0 to 8.5 were also recorded by this method in Arusha, Dodoma, Mara, Mwanza, Shinyanga, Tanga and West Lake regions. The conclusion is that while total fertility may be high in some regions, the figures computed by the method mentioned were rather doubtful.<sup>16</sup>

Because evidence has shown that the recorded fertility data are distorted by errors arising from inflated reference period and that the retrospective fertility data suffer from errors due to memory failure and as Brass's technique for adjustment for total fertility yields results that are unacceptable, alternative approaches were made. The two approaches used assume 'Stability' of the age distribution. The two parameters used in combination with the mortality level to compute estimates of gross reproduction rates were first the cumulative age distribution under specified age (Cx) and second the female child/adult ratio.<sup>17</sup>

TABLE 2.4. ESTIMATED TOTAL FERTILITY RATES AND BIRTH RATES FOR TANZANIA AND FOR REGIONS BASED ON C/A RATIO

<i>Tanzania and regions</i>	<i>Total fertility rates: females</i>	<i>Males</i>	<i>Birth rates Females</i>	<i>Both Sexes</i>
Arusha	7.1	47.9	46.5	47.2
Coast (excl. Dsm)	4.9	37.2	36.1	36.6
Dodoma	6.9	49.0	47.6	48.3
Iringa	8.4	55.9	54.3	55.1
Kigoma	5.9	43.4	42.1	42.7
Kilimanjaro	7.9	51.6	50.1	50.9
Mara	7.1	52.2	50.7	51.5
Mbeya	7.6	52.9	51.4	52.2
Morogoro	6.0	45.0	43.7	44.4
Mtwara	5.0	38.2	37.1	37.7
Mwanza	6.9	49.4	48.0	48.7
Ruvuma	6.7	48.4	47.0	47.7
Shinyanga	7.5	51.8	50.3	51.1
Singida	6.1	45.9	44.6	45.3
Tabora	5.5	40.7	39.5	40.1
Tanga	6.9	46.9	45.5	46.2
West Lake	7.1	50.5	49.0	49.7
Dar es Salaam	4.3	33.1	32.1	32.6
Zanzibar	6.5	48.9	47.5	48.2
Mainland Rural	6.7	48.1	46.7	47.4
Mainland Urban	4.4	33.7	32.7	33.2
Mainland Total	6.6	47.6	46.2	46.9
(A sex ratio at birth of 1.03 was used op. cit)				

Source: Egero, B. and Henin R.A. op. cit. Table 12.9, p. 195.

Using model age distribution, a total fertility rate of 6.4 for Tanzania Mainland was computed from a cumulative age distribution under age

35.<sup>18</sup> This rate is considered on the low side in view of the possibility of over estimation of female ages beyond 40. It is suggested that a total fertility rate of 6.6 for Tanzania using the child/adult ratio is more plausible (Table 2.4).

TABLE 2.5. ADJUSTED FERTILITY DISTRIBUTION FOR TANZANIA  
MAINLAND

<i>Age group</i>	<i>Absolute rates</i>	<i>Relative rates</i>
15-19	0.200	0.151
20-24	0.334	0.253
25-29	0.296	0.224
30-34	0.226	0.171
35-39	0.162	0.123
40-44	0.078	0.059
45-49	0.024	0.018
<b>Total</b>	<b>1.320</b>	<b>0.999</b>
<b>Total Fertility rate = 6.6</b>		
<b>Mean of age-specific fertility distribution = 27.55</b>		

*Source: Egero, B. and Henin, R.A. op. cit. p. 197.*

TABLE 2.6. RECORDED FERTILITY PATTERN AND MEAN OF THE  
FERTILITY SCHEDULE  $\bar{M}$  BY REGION (IN ASCENDING ORDER OF THE  
VALUE OF  $\bar{M}$ )

<i>Fertility pattern</i>			<i>Mean of fertility schedule</i>
<i>Early Peak</i>	<i>Type A'</i>	<i>Broad Peak</i>	
Dar es Salaam			27.5
Zanzibar			27.7
Coast			28.2
Singida			28.7
Mtwara			28.8
Mara			28.9
Morogoro			29.1
Tabora			29.2
West Lake			29.3
Tanga			29.4
		Kigoma	29.6
		Dodoma	29.7
Mwanza			29.7
Shinyanga			29.7
Ruvuma			29.7
		Arusha	30.1
		Mbeya	30.3
		Kilimanjaro	30.4
		Iringa	30.6

*Source: Egero, B. and Henin R.A. op. cit. p. 197.*

Information given on births during the 12 months preceding the census by the age of the mother has been used to determine the shape of fertility distribution. The data derived from the information has been adjusted to



reach a total fertility rate of 6.6 which is considered a reasonable estimate for Tanzania. The resultant adjusted fertility distribution for Tanzania Mainland is given in Table 2.5. Table 2.6 shows the pattern of fertility and mean of fertility schedule by region.

Analysis of fertility data in Tanzania has shown the importance of education, socio-economic status, and the ethnic factor. Table 2.7

TABLE 2.7. MEAN NUMBER OF LIVE BIRTHS PER WOMAN BY AGE GROUP AND NUMBER OF YEARS OF EDUCATION

Age group	0 and not stated	1-4 years	5-8 years	9 years & over
15-19	0.643	0.400	0.164	0.049
20-24	2.072	1.772	1.392	0.476
25-29	3.208	3.086	2.967	1.524
30-34	4.162	4.346	3.812	2.150
35-39	4.781	5.120	4.405	2.367
40-44	5.028	5.555	4.580	2.289
45-49	5.210	5.747	4.913	1.940
Age standardised mean number of live births (women aged 15-49)	3.258	3.317	2.846	1.392
Index None and not stated = 100	100	102	87	43

Source: Egero, B. and Henin R. A. op. cit.

shows that while there is no difference between women who have had no education and those with 1-4 years education, the number of live births decreases with the increase in the number of years of schooling. It was found that the fertility of women who had 5-8 years education was about 87 per cent of the fertility of those who had no years of schooling. Those who had 9 years of schooling had only 43 per cent of the fertility of women who had no schooling. Fertility differentials were indicated not only by socio-economic grouping but also by rural and urban areas (Tables 2.8 and 2.9). On the basis of the age standardized mean number of live births, women of Arab origin had the highest fertility followed by women of African origin. The mean number of live births among the Asians was found to be about 70 per cent higher than that of women of African origin (Table 2.10).

Estimates of mortality levels in Africa are regarded as the least reliable of the vital rates. It is generally agreed that mortality in African countries is high and that it is declining rapidly. The crude death rate for the first part of the sixties was estimated at 23 per thousand. However, the level of confidence attached to such estimates is very low in the three countries of East Africa. This is largely a measure of the unreliability of the data collected on mortality.

In Tanzania, the information on mortality collected at the time of the 1967 census was the same as that in 1957. It was based on deaths during the last 12 months and the number of children still alive out of those

TABLE 2.8. MEAN NUMBER OF LIVE BIRTHS PER WOMAN  
BY AGE GROUP AND SOCIO-ECONOMIC GROUP\*

Age group	A	B	C	D	E	F
15-19	0.308	0.475	0.616	0.540	0.696	0.449
20-24	1.647	1.715	1.859	2.033	1.922	1.765
25-29	3.105	2.949	2.835	3.251	2.945	2.865
30-34	4.151	3.681	3.542	4.263	3.559	3.724
35-39	4.442	4.337	3.894	4.911	4.032	4.250
40-44	5.092	4.517	3.964	5.159	4.330	4.485
45-49	4.846	4.395	4.027	5.313	4.580	4.854
Age standardised mean number of live births (women aged 15-49)	3.013	2.865	2.726	3.302	2.882	2.891
Index (A = 100)	100	95	90	110	96	96

\*Socio-economic groups

- A Professional, technical, administrative and executive  
 B White collar  
 C Blue collar  
 D Farmers, own account workers or family workers  
 E Agricultural labourers  
 F No occupation

Source: Egero, B. and Henin R. A. op. cit. p. 199.

TABLE 2.9. MEAN NUMBER OF LIVE BIRTHS PER WOMAN  
BY AGE GROUP SOCIO-ECONOMIC (A,B,C) GROUPS AND RESIDENCE

Age group	Socio-economic groups					
	A		B		C	
	Urban	Rural	Urban	Rural	Urban	Rural
15-19	0.270	0.318	0.420	0.509	0.621	0.613
20-24	1.358	1.713	1.399	1.926	1.710	1.955
25-29	2.503	3.259	2.397	3.293	2.465	3.060
30-34	3.145	4.429	3.071	4.078	2.941	3.906
35-39	3.527	4.694	3.406	5.016	3.167	4.336
40-44	3.558	5.533	3.888	4.997	3.114	4.483
45-49	3.710	5.180	3.938	4.664	3.185	4.512

Source: Egero, B. and Henin, R. A. op. cit. p. 199.

ever born to women 12 years of age or more. However, there were a number of departures that need mention. Information on sex and age was added to that for the deceased. For the survival of children individual ages were recorded for each mother. The current mortality data was collected by means of a question to the head of the household covering the last 12 months, and if any, the sex and age and death of each deceased.

Analysis of information obtained shows that as in the case of fertility, problems of acquiring accurate data arise. There were the problems of reference period, lack of understanding of the precise meaning of the term 'deceased' and omission of some deaths. Three indices of mortality have been derived from the data collected:

- (i) Crude death rate (CDR)
- (ii) Average life expectancy at birth 'e<sub>0</sub>'
- (iii) Infant and child mortality—measured as death risk (qx) or death before age 1 (q<sub>0</sub>) per thousand born and child mortality expressed as survivors to age 2 (1<sub>2</sub>) or age 5 (1<sub>5</sub>) per thousand born.

TABLE 2.10. MEAN NUMBER OF LIVE BIRTHS PER WOMAN BY AGE GROUPS AND ETHNIC ORIGIN

Age group	Africans	Arabs	Asians	Europeans
15-19	0.537	0.627	0.087	0.078
20-24	1.991	2.204	0.592	0.392
25-29	3.102	3.718	1.773	1.317
30-34	4.179	4.218	2.775	1.843
35-39	4.805	5.580	3.819	1.725
40-44	5.062	4.994	4.402	1.876
45-49	5.227	4.909	4.980	1.730
Age standardised mean number of live births (women aged 15-49)	3.218	3.452	2.255	1.161
Index (Africans = 100)	100	107	70	36

Source: Egero, B. and Henin R.A. op. cit.

TABLE 2.11. CRUDE DEATH RATES FOR REGIONS AND PROVINCES

Region	Crude death rate 1967		Province	Recorded crude death rate	
	Recorded	Estimated		1957/58	1967
Kilimanjaro	13.1	13.6	Zanzibar	20.0	13.7
Zanzibar	13.7	20.8	Northern	19.1	15.6
West Lake	17.6	23.0	Tanga	26.7	21.8
Arusha	20.9	13.6	Lake	25.5	23.0
Singida	21.2	27.4	Western	18.2	23.7
			S. Highlands	21.8	24.9
Ruvuma	21.4	27.6	Eastern	21.3	25.7
Shinyanga	22.3	21.0	Central	28.7	27.0
Iringa	22.5	25.8	Southern	22.6	32.1
Dar es Salaam	22.9	16.1			
Tabora	25.0	18.8			
Tanga	25.3	17.0			
Mwanza	27.8	23.0			
Mara	28.2	27.9			
Morogoro	28.5	24.9			
Kigoma	28.8	22.7			
Mbeya	29.9	30.7			
Coast	30.4	19.0			
Dodoma	37.1	22.9			
Mtwara	39.4	24.8			

Source: Egero, B., Henin, R. A. op. cit., Table 11.2, p. 179.

Table 2.11 shows crude death rates for regions and provinces. In general low mortality rates were recorded for areas such as Arusha, Kilimanjaro

and West Lake. High mortality rates were found to be characteristic of the poorer regions such as Dodoma and Mtwara. The exceptions to the pattern were the very low mortality in Ruvuma and Singida and the high mortality of the lake shore area of Mwanza (Table 2.11).

Information from retrospective mortality data has been used with the modification proposed by W. Brass (1968).<sup>19</sup> However, even with this technique it has been necessary to rely more on model life tables in estimating the general and age-specific mortality rates. Table 2.12 shows selected North life tables and corresponding mortality estimates for both sexes combined.<sup>20</sup> Table 2.13 gives mortality estimates for the Mainland by educational groups.

TABLE 2.12. SELECTED NORTH LIFE TABLES AND CORRESPONDING MORTALITY ESTIMATES FOR TOTAL POPULATION BY REGION

<i>North life table level</i>	<i>Region</i>	<i>Crude death rate</i>	<i>Life expectancy at birth</i>	<i>Infant mortality per 1,000 born</i>	<i>Surviving to age 5 per 1,000 born</i>
15	Arusha	13.6			
	Kilimanjaro	13.6	53	93	849
	Mainland urban	14.6			
14	Dar es Salaam	16.1	51	104	829
13	Tanga	17.0	48	115	808
12	Tabora	18.8	46	127	771
	Coast	19.0			
11	Zanzibar	20.8	43	140	762
	Shinyanga	21.0			
10	Kigoma	22.7			
	Mainland total	22.8			
	Mainland rural	22.9			
	Dodoma	22.9	41	155	739
	Mwanza	23.0			
	West Lake	23.0			
9	Mtwara	24.8			
	Morogoro	24.9	38	170	714
	Iringa	25.8			
8	Singida	27.4			
	Ruvuma	27.6	36	186	688
	Mara	27.9			
7	Mbeya	30.7	34	203	660

Source: Egero, B, and Henin, R. A. op. cit. Table 11.3 p. 181.

For estimates of mortality levels based on survival rates up to age 5, derived from the proportion of children still alive, the following tentative estimates have been used.

<i>Age</i>	<i>Proportion surviving</i>
1	0.84
2	0.79
3	0.76
5	0.74

TABLE 2.13. MORTALITY ESTIMATES FOR EDUCATIONAL GROUPS. MAINLAND

<i>Educational</i>	<i>Infant mortality per 1,000</i>	<i>Survived to age 5 per 1,000</i>	<i>Life expectancy at birth</i>	<i>North family</i>
None	155	739	41	10
1-4	115	808	48	13
5 or more	82	868	56	16

Source: Egero, B. and Henin R. A. op. cit. p. 183

The study of Tanzania data for 1967 census confirms mortality differentials by urban and rural categories. Economic development and access to medical facilities between regions and districts are reflected in mortality differences between the various parts of the country. Table 2.13 shows the pattern of mortality for the different educational groups.

Six occupational groups have already been distinguished in the study of fertility of which three were further used to analyse urban and rural fertility differentials. Table 2.14 shows mortality differences for these six categories.

The nature of mortality data still leaves much room for improvement. However, it is possible to conclude that a life expectancy of 40-43 years at birth is a more likely figure for Tanzania. Such a figure suggests a crude death rate estimated at 21 and 23 per thousand. However, the pattern of mortality by age is much more difficult to estimate. The 1967 census data suggested an infant mortality as low as 160 per thousand or less as compared to 190 per thousand in 1952. Egero and Henin (1973) have indicated the possibility of a much higher mortality between the ages 1 and 5 probably as a result of weaning. Information on survival rate suggests a figure of 800 or less per thousand to age 2 and 740 per thousand to age 5.<sup>21</sup>

For Zanzibar the crude death rate has been estimated at the same level as the Mainland. Crude death rate for the island remained at 20.8.

TABLE 2.14. MORTALITY ESTIMATES FOR SOCIO-ECONOMIC GROUPS MAINLAND

<i>Socio-economic group</i>	<i>Infant mortality per 1,000</i>	<i>Survival to age 5 per 1,000</i>	<i>Life expectancy at birth</i>	<i>North family</i>
Urban top-level white collar workers	62	904	61	18
Urban middle level white collar workers	82	868	56	16
Rural top-level white collar workers	104	829	51	14
Urban blue collar workers	115	808	48	13
Rural middle level white collar workers; Rural blue collar workers	140	762	43	11
Agricultural labourers; persons without occupation	155	739	41	10
Farmers				

Source: Egero, B. and Henin, R. A. op. cit. p. 183.

Regional variation in mortality has remained high with the highest life expectancy of about 53 years and the lowest around 33 years. Crude death rates vary around 30 to 13 per thousand.

## UGANDA

Estimation of the determinants of population growth in Uganda is hampered by the range of data so far available from the 1969 census. For a more detailed picture of the trends of fertility and mortality by age and regions it is necessary to examine the 1959 information and such other sources as are available. Estimates of crude birth rates for 1969 census have been made by Taber (1972) as follows (Table 2.15).

TABLE 2.15. UGANDA CRUDE BIRTH RATES 1969 ESTIMATES

<i>District</i>	<i>Crude birth rate</i>
Acholi	55
Ankole	53
Bugishu	48
Bukedi	50
Bunyoro	42
Busoga	43
East Mengo	38
Karamoja	53
Kigezi	50
Lango	50
Madi	50
Masaka	42
Mubende	41
Teso	36
Toro	44
West Mengo	42
West Nile	48

*Source: Taber, S. The 1969 Uganda Census. Provisional Results. Population Growth and Economic Development in Africa, op. cit.*

On the basis of this crude index, Uganda falls into two broad fertility categories. The high fertility areas are clearly indicated in Acholi, Ankole, Bukedi, Kigezi, Lango and Madi. Low fertility areas include Teso, East Mengo, Masaka and Mubende. However, the unreliability of census data underlines the need for more sophisticated techniques of fertility estimation.

Page (1968) and Coale (1968) have used tables of model stable population and the given population in the proportion under 15 (C. (15)). Table 2.16 shows the estimated birth rates, total fertility and fertility schedule by province. Data on total fertility based on the provinces underline the characteristics already noted that fertility in Uganda is very high in the northern and western areas and considerably lower in Buganda and Eastern Provinces. However, for a more detailed analysis of fertility pattern it is necessary to consider data so far available on Age Specific Fertility Rates.

TABLE 2.16. UGANDA 1962

Province	Birth rate	Total fertility	$\bar{m}$
Uganda	44	6.0	29.0
Buganda	41	5.6	29.0
Eastern	42	5.7	29.0
Northern	51	7.3	29.0
Western	46	6.4	29.0

Source: Page, H. J. and Coale, A. J. op. cit. p. 60.

Table 2.17 based on the 1959 census shows the pattern of Age Specific Fertility Rates by Province. It will be seen that at the time of the 1959 census total fertility was lowest in the Eastern Province (4.4640) followed

TABLE 2.17. UGANDA ESTIMATED SPECIFIC FERTILITY AND TOTAL FERTILITY RATES 1959

Age groups	Buganda	Eastern	Northern	Western	Uganda
15-19	.1607	.1207	.0935	.1148	.1252
20-24	.2370	.2292	.2451	.2874	.2475
25-29	.2157	.2007	.2418	.2567	.2952
30-34	.1694	.1650	.1959	.2415	.1894
35-39	.1057	.0971	.1895	.1716	.1335
40-44	.0579	.0472	.0754	.0624	.0588
45-49	.0254	.0329	.0105	.0642	.0338
Total fertility Rate	4.8590	4.4640	5.2585	5.9930	5.0670

Source: Uganda Protectorate, Uganda Census 1959, African Population, Table IV p. 25 Statistics Branch Ministry of Economic Affairs.

by Buganda (4.8590) and highest in the Western Province (5.9930) followed by the Northern Province (5.2585). On the basis of the above information and regional distribution of fertility performance Uganda was divided as follows.<sup>23</sup>

- (a) Low Fertility: Teso, Bunyoro
- (b) Medium Fertility: East Mengo, Mubende, West Mengo, Busoga, Masaka, West Nile and Toro.
- (c) High Fertility: Lango, Madi, Bukedi, Bugishu, Acholi, Kigezi Karamoja and Ankole.

Estimates of age specific fertility by five year groups showed that in Uganda as a whole and in each province, the fertility curves were essentially unimodal rising steeply from the age of 15 and reaching a peak at 20-24 age group. It was noted that in the Western Province rates for women aged 25 and above remained high in relation to the maximum attained at ages 20-24.<sup>24</sup> Table 2.18 indicates the Age Specific Fertility Rates for Uganda Africans according to 1969 census.

TABLE 2.18. AGE SPECIFIC FERTILITY RATES FOR UGANDA

Age group	Fertility rate (African) 1969
15-19	0.1353
20-24	0.2569
25-29	0.2478
30-34	0.1944
35-39	0.1463
40-44	0.0687
45-49	0.0306
<hr/>	
Total Fertility Rate	5.4000

Source: Estimated from data on Uganda African census 1969.

Analysis of the trend of fertility curve underlines the fact that the peak has remained at 20-24 years (Table 2.19). The distribution of relative rates of fertility in Uganda thus differs from the Kenya pattern where between 1962 and 1969 censuses a difference in fertility curve was revealed. This difference might explain the higher total fertility rate recorded for Kenya at the time of the 1969 census (Kpedekpo, 1973 Table 2.20).

In the absence of comprehensive vital registration data for 1969, it is not possible to give an accurate picture of the mortality situation in Uganda. Census data on deaths in the previous year provided one method of estimating mortality. However, the results from this method are obviously inaccurate. The method adopted was to estimate infant mortality and to compute age specific death rates which were then applied to the population to derive an estimate of annual total deaths. Infant Mortality was derived from the following formula,<sup>25</sup>

$$\text{Infant Mortality Rate} = \frac{3Rd}{(1+R)(3r-s)} \quad 1,000$$

Where  $r$  = the total number of children born alive to women 16-45 years.

$s$  = the total number of children born in the last year to women 16-45 years.

$d$  = the total number of children dead to women 16-45 years.

$R$  = The theoretical value of the ratio of the number of children dead under 1 year to the number of children dead over 1 year to women 16-45 years.

Table 2.22 shows the Infant Mortality rates and Crude Death Rates for Uganda by province and districts for 1959 census.

At the time of the 1959 census, Uganda emerged as an area of high infant mortality and high crude death rate. However, the approximate nature of the information has already been noted. Table 2.21 from Taber (1972) gives Provisional Results of Crude Death rate which might be attributed to improved census organisation. A more detailed analysis of the 1969 census must await the publication of the demographic volume for the census.



TABLE 2.19. PERCENTAGE OF AGE SPECIFIC FERTILITY  
UGANDA (1948—1959—1969 CENSUSES)

Age Group	1948	1959	1969
15-19	12.3	13.2	12.5
20-24	22.1	24.7	23.8
25-29	18.3	22.0	22.9
30-34	17.8	18.7	18.0
35-39	15.1	12.0	13.6
40-44	8.3	5.5	6.4
45-49	5.5	3.9	2.9
Total	100.0	100.0	100.0

Source: Kpedekpo, G. M. K. *Patterns of Fertility in Selected African Countries*. Institute of Statistics and Applied Economics. Makerere University, Kampala.

TABLE 2.20. PATTERNS OF AGE SPECIFIC FERTILITY—KENYA 1962, 1969

Age group	1962	1969
15-19	7.9	8.4
20-24	19.7	21.5
25-29	21.3	21.9
30-34	19.3	19.2
35-39	15.5	15.2
40-44	10.3	9.2
45-49	6.0	4.6
Total	100.0	100.0

Source: Kpedekpo, G. M. K. *Patterns of Fertility in Selected African Countries*. Institute of Statistics and Applied Economics. Makerere University.

TABLE 2.21. ESTIMATED CRUDE DEATH RATE 1969

	CDR
Acholi	19
Ankole	13
Bugisu	20
Bukedi	24
Bunyoro	20
Busoga	19
East Mengo	13
Karamoja	15
Kigezi	14
Lango	17
Madi	21
Masaka	16
Mubende	16
Teso	15
Toro	18
West Mengo	13
West Nile	15
Total	16

Source: Taber S. R. op. cit. p. 43.

TABLE 2.22. INFANT MORTALITY AND CRUDE DEATH RATES  
1959 CENSUS

<i>Province/District</i>	<i>Infantile mortality 1959</i>	<i>Crude death rate 1959</i>
<i>Uganda</i>	160	20
<i>Buganda</i>	140	18
West Mengo	130	16
East Mengo	140	17
Mubende	170	24
Masaka	160	21
<i>Eastern</i>	180	25
Busoga	180	24
Bukedi	200	30
Bugisu	180	25
Teso	150	19
<i>Northern</i>	160	21
Karamoja	150	19
Lango	170	22
Acholi	180	24
Madi	200	26
West Nile	150	19
<i>Western</i>	160	23
Bunyoro	180	25
Toro	170	23
Kigezi	130	18
Ankole	170	24

Source: *Uganda Census 1959* op. cit. p. 28-29.

## KENYA

Observations made on the Kenya second round of census in 1962 focused attention on the high level of fertility and its implication to population growth. The study of levels and trends of fertility has been carried a stage further following the third round of census. However, a more reliable study of fertility and various aspects of fertility differential must await the publication of the official demographic volume. But from the inadequate data available and other published material, it is possible to obtain the broad outline of Kenya's demographic characteristics.

Analysis of the 1969 census gave a crude birth and death rate of 50 and 17 per thousand population for the period immediately preceding the census. The annual rate of increase was given as 33 per thousand.

In the absence of vital registration data, fertility in Kenya must be estimated through a number of indices. A crude birth rate of 50 per thousand is an extremely rough measure of the level of fertility. It has been variously estimated by United Nations as ranging between 47 and 50 per thousand between 1950 and 1970.<sup>26</sup>

Table 2.23 indicates the pattern of crude birth rate by provinces.

TABLE 2.23. ESTIMATES OF CRUDE BIRTH RATES BY PROVINCE  
1969 CENSUS

<i>Province</i>	<i>Crude birth rate</i>
Nairobi	40.8
Central	51.0
Coast	42.2
Eastern	44.4
North-Eastern	41.0
Nyanza	52.5
Rift Valley	44.2
Western	54.2
Kenya	50.0

*Source: Central Bureau of Statistics.*

However, as has been noted, the index of crude birth rates is an inadequate measure of the level of performance of the population. Table 2.24 indicates reported average parity by age of the mother for 1962 and 1969 censuses (Blacker 1971).

The slightly higher estimates for 1969 may be due to the improvement in the collection of census data.

Using the average parity as a measure of fertility, the Kenya data shows considerable regional variation. Very high fertility performance is characteristic of Central Nyanza, Rift Valley and Western Provinces. Low fertility levels are noted for the main urban centres of Nairobi and Mombasa as well as the Coast Province (Table 2.25). Muinde (1972) has compiled General Fertility Rates and birth Rates for Kenya based on the 1969 census data. These figures give slightly different estimation of fertility, (Table 2.26).<sup>27</sup>

TABLE 2.24. AVERAGE PARITY BY AGE GROUP OF THE MOTHER  
1962 AND 1969

<i>Age group</i>	<i>1962</i>	<i>1969</i>
15-19	0.36	0.35
20-24	1.65	1.88
25-29	3.01	3.65
30-34	4.20	5.11
35-39	5.07	6.00
40-44	5.61	6.44
45-49	5.90	6.69
50-54	5.74	6.40
55-59	5.74	6.40
60+	4.78	5.78

From the above measure of General Fertility Rate, it would be seen again that very high fertility is characteristic of Central, Western and Nyanza Provinces. It should be noted that the crude birth rate data in Table 2.26 suggests much higher fertility for the Coast, Eastern, Central, Rift Valley, North-Eastern and Western. However, The General Fertility Rate like Crude Birth Rate does not give a fuller picture of differential fertility among women of various age groups and marital status. Table 2.27 shows

the estimated Age Specific Fertility Rates for Kenya as a whole in 1969 and Table 2.28 indicates Age Specific Rates by Race. A closer study of

TABLE 2.25. MEAN FERTILITY SCHEDULE AND REPORTED AVERAGE PARITY BY AGE OF THE MOTHER AND BY PROVINCES. (AVERAGE NUMBER OF CHILDREN EVER BORN BY AGE OF MOTHER 1969)

	m	15-19	20-24	25-29	30-34	35-39	40-44	45-49
<i>Kenya</i>	27.45	0.355	1.882	3.653	5.112	6.003	6.441	6.687
*Nairobi	25.61	0.317	1.511	3.053	4.004	4.637	4.832	4.639
Central	28.17	0.266	1.743	3.564	5.142	6.143	6.712	7.092
Coast	26.47	0.465	1.852	3.058	4.206	4.696	4.820	4.870
*Mombasa	24.99	0.438	1.720	2.978	3.737	4.211	4.133	4.127
Eastern	28.18	0.311	1.803	3.504	4.878	5.489	5.952	5.873
North Eastern	28.58	0.118	1.375	3.071	4.699	5.802	6.312	6.882
Nyanza	27.35	0.399	2.094	4.080	5.805	6.777	7.444	7.668
Rift Valley	26.67	0.387	1.901	3.613	4.729	5.624	5.863	6.048
Western	27.30	0.346	2.066	4.239	6.094	7.352	8.132	8.224

*Note:* Very high fertility performance in Kenya as a whole, Central Nyanza, Rift Valley and Western.

*Source:* Central Bureau of Statistics

\*Urban Centres

TABLE 2.26. GENERAL FERTILITY RATES AND CRUDE BIRTH RATES BY PROVINCE 1969

<i>Province</i>	<i>GFR</i> (live births per 1,000 women aged 15-49)	<i>CBR</i> (live births per 1,000 population)
Nairobi	125.6	39.7
Coast	180.2	50.4
Eastern	182.7	54.1
Central	268.3	58.0
Rift Valley	211.3	55.7
Western	245.7	58.1
Nyanza	223.4	49.9
North Eastern	—	56.7

*Source:* J. N. Muinde

TABLE 2.27. ESTIMATED AGE-SPECIFIC FERTILITY RATES KENYA—1969  
(ANNUAL BIRTHS PER 1,000 WOMEN IN EACH AGE-GROUP)

<i>Age group</i>	<i>Age-specific fertility rate</i>
15-19	132
20-24	331
25-29	337
30-34	294
35-39	223
40-44	135
45-49	68
Total (X <sup>5</sup> )	7,600

*Source:* Confidential report J. G. C. Blacker, U.N. Regional Advisor in Demographic Statistics.

TABLE 2.28. AGE SPECIFIC FERTILITY RATES BY RACE—1969

Age	African (Kenya Figures)	European	Asian	Arab
15-19	.1320	.0150	.0141	.1450
20-24	.3305	.1175	.1591	.3527
25-29	.3373	.1664	.2552	.2640
30-34	.2942	.1036	.1538	.2443
35-39	.2232	.0769	.0913	.1586
40-44	.1351	.0228	.0341	.0586
45-49	.0677	.0146	.0144	.0456
Total	7.600			

Source: Statistics Division.

the typology of fertility in Kenya shows a skewed distribution typical of developing countries of the world. In this respect it will be noted that the national fertility curve is influenced largely by the African fertility performance and differs markedly from the European pattern characteristic of the more developed parts of the world. Total fertility for the Europeans in 1969 was 2.6 as against 7.6 for the Africans, 3.6 for the Asians and 6.3 for the Arabs.

Table 2.29 summarises the provincial and district data on Fertility Schedule ( $\bar{m}$ ) and total fertility. This table brings out the striking difference between the districts of Central, Eastern, Nyanza, Western and Rift Valley provinces and those of the Coast. Very high fertility performances are characteristic of Kiambu, Murang'a, Nyandarua and Nyeri with total fertility scores of 8 and above. In the western provinces the size of completed family is well above 7 and in the case of Bungoma and Kakamega it is above 8.

The Rift Valley districts emerge with a fertility performance which though lower than in the Central and Western provinces is still quite high. Most of the districts show the size of completed family of 6 and above. The high fertility levels of the districts are combined with generally low mean fertility schedule which in most cases is below 29 years. The fact of regional variations in fertility is well established from available data. But the causes of this regional variation are not clear. However, it is possible to hazard a guess that the explanation lies in combination of factors including environmental, social and economic.

In attempting to summarise the regional differences in fertility performance the percentage, age specific fertility rates for Kenya have been computed. These rates confirm that the standard pattern of fertility curve is the 'Broad Peak' type with very little difference in levels between the ages 20-24 years, 25-29 years, and 30-34 years. This is combined with a very steep rise from the age of 15 and a more gentle decline beyond 30 years. A closer examination of the two urbanised areas of Nairobi and Mombasa shows that the urban decline beyond 30 years is much steeper than the rural curves. It is also important to note that fertility performance in Mombasa beyond 30 years at the time of the 1969 census declined more steeply than Nairobi.

TABLE 2.29. FERTILITY SCHEDULE AND COMPUTED TOTAL FERTILITY  
(BY PROVINCE AND DISTRICTS)

	$\bar{m}$	Total fertility (unadjusted)
<i>Kenya</i>	27.45	7.6
<i>Nairobi</i>	25.61	5.5
<i>Central</i>	28.17	8.7
Kiambu	27.95	8.1
Kirinyaga	27.77	6.9
Murang'a	28.39	8.6
Nyandarua	28.28	9.7
Nyeri	28.36	8.0
<i>Coast</i>	26.47	5.6
Kilifi	27.31	4.7
Kwale	26.49	4.8
Lamu	25.22	3.5
Mombasa	24.99	4.2
Taita	27.41	5.4
Tana River	26.39	4.2
<i>Eastern</i>	28.18	7.6
Embu	27.67	7.7
Isiolo	26.87	3.7
Kitui	28.23	8.8
Machakos		7.6
Marsabit	27.53	5.8
Meru	28.21	6.8
<i>North Eastern</i>	28.58	6.6
Garissa	28.31	8.0
Mandera	29.55	4.2
Wajir	28.03	4.3
<i>Nyanza</i>	27.35	7.9
Kisii	27.99	7.3
Kisumu	28.24	5.7
Siaya	27.86	6.0
South Nyanza	26.84	5.7
<i>Rift Valley</i>	26.67	6.6
Baringo	26.48	4.6
Elgeyo-Marakwet	27.30	5.4
Kajiado	28.31	8.5
Kericho	26.45	6.0
Laikipia	25.35	6.7
Nakuru	27.14	6.8
Nandi	26.09	6.6
Narok	27.11	5.6
Samburu	29.42	4.9
Trans-Nzoia	25.10	7.0
Turkana	28.03	3.3
Uasin-Gishu	26.97	5.9
West Pokot	26.02	3.4
<i>Western</i>	27.30	8.6
Bungoma	27.33	8.1
Busia	27.71	6.5
Kakamega	27.19	8.1

Source: Central Bureau of Statistics.

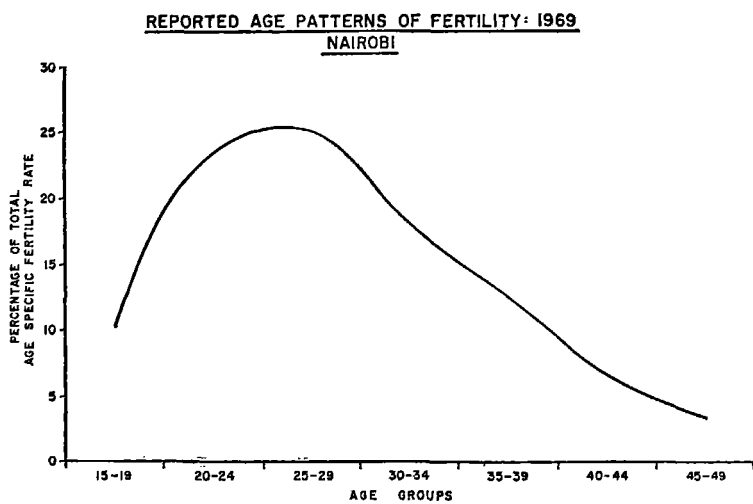


FIG. 2.

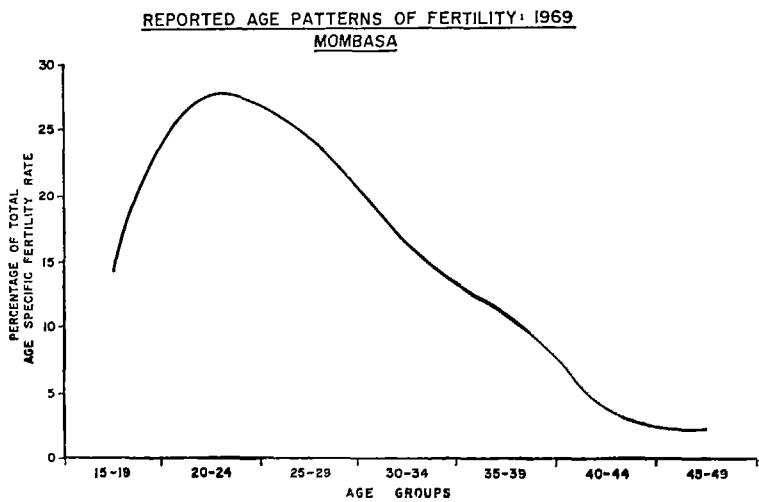


FIG. 3.



On a district basis a major departure occurs in Lamu with an 'Early Peak' pattern. Lamu is unique among Kenya districts in having a contribution of 21.43 per cent for women aged 15–19. This is followed by the maximum peak for those aged 20–24 (27.93 per cent). This suggests that cultural factors do have an important impact on fertility trends between the various ages. The problem of data accuracy precludes further dogmatic statements on these fertility curves.

Although mortality is a vital element in the estimation of population growth, Kenya's data is far from satisfactory. It is therefore, necessary to use indirect methods or other population models in analysing the mortality situation.

At the time of the 1962 census, Kenya had an estimated crude Death Rate of 20 per thousand and a Life Expectancy at birth of 40 to 45 years. Table 2.30 shows a Model Life Table Function for the African Population

TABLE 2.30. MODEL LIFE TABLE FUNCTIONS FOR THE  
AFRICAN POPULATION OF KENYA

<i>Age</i>	<i>Life table survivors</i>	<i>Life table population</i>	<i>Age-specific mortality</i>
0	1,000	912	0.1382
1	874	840	0.0666
2	818	804	0.0348
3	790	781	0.0218
4	773	769	0.0104
5	765	3,705	0.0130
10	717	3,542	0.0048
15	700	3,430	0.0082
20	672	3,267	0.0113
25	635	3,085	0.0117
30	599	2,905	0.0124
35	563	2,720	0.0140
40	525	2,520	0.0167
45	483	2,295	0.0209
50	435	2,032	0.0280
55	378	1,730	0.0370
60	314	1,385	0.0534
65	240	1,012	0.0741
70	165	647	0.1097
75	94	340	0.1529
80	42	142	0.1895
85	15	52	0.2885

The expectation of life at birth derived from these figures is 38.9 years.

Source: 1962 Kenya Population Census, vol. III, Appendix, p. 92.

and the expectation of life derived from the data. Thus at the time of the 1962 census the average life expectancy at birth among Africans was about 39 years. It has already been noted that at the time of the 1969 census, Kenya had an estimated crude Death Rate of 17 per thousand. This crude measure suggests that although mortality is still high in Kenya it is on the decline. The decline is attributed to the impact of social and economic development and in particular due to the impact of modern medicine and improved medical technology.<sup>62</sup>

TABLE 2.31. AGE SPECIFIC DEATH RATES BY RACE 1969

Age	African (Kenya Figures)		European		Asian		Arab	
	Male	Female	Male	Female	Male	Female	Male	Female
0	.1382	.1215	.0374	.0221	.0374	.0211	.1010	.0872
1	.0241	.0199	.0093	.0039	.0096	.0041	.0229	.0171
5	.0085	.0069	.0037	.0015	.0039	.0021	.0087	.0064
10	.0032	.0025	.0015	.0006	.0004	.0006	.0031	.0022
15	.0054	.0042	.0024	.0008	.0035	.0011	.0055	.0039
20	.0070	.0056	.0034	.0013	.0036	.0017	.0067	.0053
25	.0072	.0060	.0037	.0013	.0039	.0017	.0076	.0057
30	.0075	.0062	.0042	.0015	.0042	.0017	.0082	.0059
35	.0084	.0067	.0046	.0015	.0051	.0022	.0094	.0069
40	.0101	.0081	.0059	.0020	.0062	.0027	.0112	.0060
45	.0128	.0101	.0079	.0024	.0072	.0034	.0140	.0102
50	.0167	.0137	.0104	.0040	.0116	.0050	.0193	.0140
55	.0226	.0184	.0162	.0050	.0168	.0071	.0261	.0190
60	.0329	.0267	.0252	.0083	.0271	.0019	.0389	.0287
65	.0464	.0390	.0400	.0132	.0426	.0193	.0559	.0426
70	.0718	.0670	.0679	.0421	.0725	.0358	.0848	.0665
75	.1074	.0872	.1149	.0796	.1210	.0690	.1275	.1053
80	.1605	.1459	.2093+	.1305+	.2156+	.1734+	.2136+	.1928+
85	.2494	.2298	—	—	—	—	—	—

+ Refers to 80+M.

Source: Statistics Division.

TABLE 2.32. ESTIMATES OF INFANT MORTALITY RATES BY PROVINCE  
1969

Province	Infant Mortality	
	Males	Females
Nairobi	79	62
Central	81	66
Coast	152	136
Eastern	115	100
North Eastern	121	107
Nyanza	183	168
Rift Valley*	94	77
Western	150	131
Kenya	126	112

\* Infant mortality is thought to be higher than shown in this table. Sampling and errors of content may have resulted in the lower rate.

Source: Central Statistical Bureau.

Mortality rates are a reflection of the health conditions and the socio-economic conditions affecting them. Analysis of the incidence of death by age, sex and ethnic origin is therefore important. Table 2.31 indicates the Age Specific Death Rate by race for 1969. The contrast between the African population and the other races is striking.

Over the period between the second and third census, the life expectancy at birth for males and females in Kenya has improved from 40-45 years in 1962 to 47 for males and 51 for females in 1969. However, a global analysis of the mortality situation and life expectancies does not provide adequate information. It is well known that the incidence of death varies with ecological conditions in the country. Hence it is more useful to consider the regional pattern of life expectancy. Using Coale and Demeny

life tables, South Model, Muinde (1972) arrived at the following mortality levels and life expectancies by province. (Table 2.33)

The provincial pattern clearly shows that Nairobi emerges with the highest average life expectation. The differences suggest considerable diversity in health conditions and in particular infant mortality. Table 2.32 shows the pattern of infant mortality by province in 1969.

From these figures it will be noted that infant mortality is lowest in Nairobi, Central Province, and to a lesser extent, the Rift Valley Province. It is highest in Nyanza, the Coast, North Eastern and Eastern provinces.

TABLE 2.33. LIFE EXPECTANCY AT BIRTH AND MORTALITY LEVELS FOR KENYA POPULATION 1969 AND 1972

Province	Mortality levels	1969 Life expectancy			Mortality levels	1972 Life expectancy		
		Males	Females	Total		Males	Females	Total
Coast	16	54.0	57.5	55.7	17.5	59.6	63.5	61.5
Eastern	13	47.3	50.0	48.6	14.5	52.7	56.0	54.4
N. Eastern	11.5	43.9	46.2	45.0	14.9	49.4	52.3	50.8
Nairobi	18.5	59.9	63.8	61.8	20.0	66.8	69.8	68.3
Central	15.5	53.0	56.3	54.6	17.0	58.3	62.3	60.3
R. Valley	12.0	45.1	47.5	46.3	13.5	50.5	52.5	52.0
Western	13.0	47.3	50.0	48.6	14.5	52.7	51.0	54.4
Nyanza	14.0	49.6	52.5	51.0	15.5	54.9	58.5	56.7
	$\Sigma$ 113.5	400.1	$\Sigma$ 423.8	—	—	444.9	470.9	—
	$\bar{x}$ 14.18	$\bar{x}$ 50.0	52.9	15.9	55.6	58.86		
Kenya	14.18	51.5			15.9	57.20		

1969 Estimation of life expectancy: Selected from Coale and Demeny by accumulating C(X).  
1972 Estimation of life expectancy: In every 5 years Kenya population gains 2.5 for females and 2.25 for males.

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## CHAPTER 3

### MIGRATION

Apart from fertility and mortality, migration is clearly one of the most important changes affecting the characteristics of a population and hence the rate of growth. But the refinement in the study of the contribution of migration is hampered by lack of adequate data. Migrational studies in East Africa are therefore based on estimates derived from indirect methods of which the birth-place and age-sex ratios are the most commonly used.

East African countries are all affected by considerable internal migration. But they differ in very important respects in the impact of inter-state migration. In general, international migration has been an important component of population change in Tanzania and Uganda.

#### TANZANIA

In the absence of detailed population register, analysis of the movements of population in Tanzania has been derived from census data on the 'place of birth'. The latest available information in Tanzania is derived from the 1967 census. In addition, census information included data on citizenship and major ethnic groups. Claeson (1973) outlined the birth-place classification in the 1967 census which form the basis of the study of migration as follows.<sup>1</sup>

- A. *Same Locality* — born in the locality of residence.
- B. *Same Region* — born in the region of residence, but outside the locality of residence.
- C. *Other Regions* — born in Tanzania but outside the region of residence.
- D. *Neighbouring Countries* — born in one of the countries bordering Tanzania (Kenya, Uganda, Rwanda, Burundi, Zaire, Zambia, Malawi, and Mozambique)
- E. *Other African Countries* — born in Africa but not in countries bordering on Tanzania.
- F. *Countries outside Africa* — born in non-African countries.

#### Immigration and Emigration

On the basis of this classification it is possible to analyse the contribution

of immigration and internal migration to population change. Table 3.1 shows the population of Tanzania by ethnic origin and country of birth.

Since the second round of census, there has been a decline in the total number of the main non-African ethnic groups. The Indian/Pakistan group declined from 76,536 in 1957 to 75,000 in 1967. In Zanzibar the decline was from 18,000 in 1958 to 13,500 largely due to emigration. The European group declined from 20,598 in 1957 to 16,884 in 1967.<sup>2</sup>

TABLE 3.1. POPULATION BY ETHNIC ORIGIN AND COUNTRY OF BIRTH 1967

<i>Ethnic origin</i> <i>Mainland</i>	<i>Total no.</i>	<i>Country of birth: (per cent)</i>				<i>Total</i>
		<i>Tanzania</i>	<i>Neighbour- ing country</i>	<i>Other African countries</i>	<i>Country outside Africa</i>	
African	11,481,595	97	3	0	0	100
Arab	29,775	86	3	1	10	100
Asian	75,015	71	7	1	21	100
European	16,884	28	4	2	66	100
<i>Zanzibar</i>						
African	225,620	99	1	0	0	100
Arab	56,832	96	0	1	3	100
Asian	13,552	85	2	1	12	100
European	188	8	2	1	89	100

Source: *Population of Tanzania* op. cit. Table 41, p. 59.

A classification of the population by citizenship indicated that in 1967 there were 233,600 non-citizens in Zanzibar and Mainland Tanzania. Some 230,000 of these non-citizens were to be found on the Mainland and Zanzibar Island. Of the Mainland non-citizens the majority were from neighbouring countries of Mozambique, Kenya, Burundi and Rwanda. Table 3.2 shows the population of Tanzania and Zanzibar by citizenship and country of birth.

TABLE 3.2. POPULATION BY CITIZENSHIP AND COUNTRY OF BIRTH\*

<i>Citizenship</i>	1967		
	<i>Tanzania</i>	<i>Country of Birth Neighbouring countries</i>	<i>Other countries</i>
<i>Mainland</i>			
Tanzania	11,442,605	245,743	12,901
Neighbouring Countries	30,809	147,965	428
Other Countries	14,548	3,195	31,671
All	11,487,962	396,903	45,000
<i>Zanzibar</i>			
Tanzania	345,749	1,362	2,984
Neighbouring Countries	62	1,653	11
Other Countries	16	39	1,808
All	345,827	3,054	4,803

\*Citizenship and/or place of birth is not stated for about 28,800 persons on the Mainland and 1,100 persons in Zanzibar.

Source: *The Population of Tanzania*, 1967 op. cit. p. 61.

It is more difficult to secure records of the large-scale labour migration from Tanzania prior to and after independence. Approximately 140,000 persons born in Tanzania now live outside the country. The latest estimates give the following numbers: Kenya (1969) 39,200, Malawi (1966) 11,200; Uganda (1969) 51,900 and Zambia (1969) 22,700 excluding 3,300 that had moved into Zambia prior to the census.<sup>3</sup>

More reliable data on immigration indicates that at the time of the 1967 census, 444,000 people had moved into Mainland Tanzania from outside the country and 8,000 into Zanzibar. The respective rates were 3.7 per cent and 2.2 per cent of the total population. The rates may be compared to Ghana 8.3 per cent, Uganda 7.9 per cent, and Kenya 1.5 per cent.<sup>4</sup>

A majority of the immigrants were primarily from the surrounding countries although traditional Asian sources such as India and Pakistan were also important. On the whole the immigrants tend to be found in the peripheral areas of the country while the central areas of the country receive rather few. Out of a total figure of about 400,000 immigrants, 40,000 were in 1967 recorded as refugees, 10–15,000 were believed to be unregistered refugees and the remaining 350,000 were classified as 'partly refugees'.

Altogether, Mozambique accounted for approximately  $\frac{1}{3}$  of the border crossing migrants, Kenya  $\frac{1}{4}$ , and Burundi  $\frac{1}{8}$ . Table 3.3 shows the distribution of immigrants from the neighbouring countries.

TABLE 3.3. MAJOR RECEIVING DISTRICTS FOR MIGRANTS FROM NEIGHBOURING COUNTRIES

<i>Sending country</i>	<i>Number of immigrants</i>	<i>Receiving districts and per cent of all immigrants</i>							
Mozambique	132,027	Maasai	23	Newala	14	Lindi	11	Others	52
Kenya	97,863	Musoma	28	N. Mara	18	Kilima-njaro	11	Others	43
Burundi	75,644	Kibondo	29	Ngara	16	Bukoba	13	Others	42
Rwanda	35,309	Karagwe	35	Bukoba	25	Ngara	15	Others	25
Malawi	17,918	Rungwe	19	Dsm	9	Kilosa	8	Others	64
Congo	17,444	Kigoma	36	Sumbawa-nga	24	Mpanda	4	Others	36
Uganda	13,980	Bukoba	33	Karagwe	26	Mwanza	5	Others	36
Zambia	11,419	Rungwe	21	Mbozi	11	Tanga	10	Others	67

Source: *The Population of Tanzania*, op. cit. Table 45 p. 64.

### Internal Migration

The pattern of internal migration in Tanzania is based on analysis of place of birth and place of residence. Three major streams have been identified. The first is the rural component from regional sources to defined districts. The second is the region to town stream or rural to urban migration. A third variant of the above migration streams involves short distance migration from the rural areas of a region to the urban area of the region. These migration streams have become very important factors in

policy decisions affecting the development of both the rural and urban destinations of the migration streams. Table 3.4 summarises the regional exchange of population. It will be seen that out of the total number of Tanzania residents at the time of the 1967 census, about 39 per cent were intra-regional and some 9 per cent were inter-regional migrants. In this exchange the men dominate the movement and cover larger distances whilst the women are more predominant in the short range migration within regions.<sup>5</sup> In the one way migration streams, the coast and Tanga regions are the dominant destinations. Inter-regional exchange in the area of Lake Victoria is considered primarily as family moves.

Taking the net gains between regions, Dar es Salaam leads in relation to other regions. Arusha, Kilimanjaro and Shinyanga follow in the exchange with other regions. The remainder of Tanzania experiences loss in relation to other regions. Analysis of the net migration per cent of those born in

TABLE 3.4. REGIONAL POPULATION BY BIRTH PLACE CATEGORY, PER CENT

	<i>Same locality</i>	<i>Same region</i>	<i>Other regions</i>	<i>Neighbour- ing countries</i>	<i>Other countries</i>	<i>Total</i>
Mainland Total	58	30	9	3	—	100
Mainland Rural	59	30	8	3	—	100
Mainland Urban	34	27	30	5	4	100
Zanzibar	51	42	5	1	1	100
Arusha	52	32	14	2	1	100
Coast	61	25	12	2	—	100
Dar es Salaam	33	24	35	4	5	100
Dodoma	67	27	5	—	—	100
Iringa	78	19	2	8	—	100
Kigoma	57	31	2	9	—	100
Kilimanjaro	76	14	6	3	—	100
Mara	51	34	7	9	—	100
Mbeya	63	30	4	2	—	100
Morogoro	58	30	10	1	1	100
Mtwara	56	34	2	8	—	100
Mwanza	76	12	10	1	—	100
Ruvuma	50	39	4	7	—	100
Shinyanga	39	47	14	1	—	100
Singida	49	44	6	—	—	100
Tabora	34	40	24	2	—	100
Tanga	57	27	11	4	1	100
Westlake	51	32	7	9	—	100

Source: *The Population of Tanzania*, op. cit. Table 4.6, p. 65.

the region, Dodoma, Kilimanjaro, Mbeya, Mtwara, Mwanza, Iringa, Kigoma, Ruvuma and Singida show a net outflow of population in relation to other regions in Tanzania.<sup>6</sup>

District migration on Mainland Tanzania shows that in the four districts of Biharamulo (West Lake), Pangani (Tanga), Nzega (Tabora), Mzizima (Coast) the inter-regional migrants are in excess of 20 per cent. Some



fifteen districts have migrants up between 10 and 20 per cent. The majority of migrants are economically motivated.

The importance of rural-urban migration has already been noted. Analysis of urban destination in Tanzania shows that approximately a third of the urban population is born in the same locality. About the same proportion were born in the same and other regions. About 10 per cent. recorded birth places in neighbouring and other countries. In Zanzibar town, well over two thirds of the population were from the rural areas of the region. In the more remote centres such as Kigoma/Ujiji, well over a half of the urban population were born in the town. Of the urban centres of Tanzania, Dar es Salaam leads as a destination of the migrants.<sup>7</sup>

An important feature of the migration outlined is the age and sex selectivity. Labour migration tends to be dominated by men in the working ages. But this male selectivity tends to decline with time. Table 3.5 shows the sex ratio of the respective migrants.

TABLE 3.5

TABLE 3.5. SEX RATIO BY BIRTH PLACE CATEGORY

<i>Birthplace category</i>	<i>Mainland Total</i>	<i>Mainland rural</i>	<i>Mainland urban</i>	<i>Zanzibar</i>
Same Locality	98	97	99	114
Same Region	81	80	112	98
Other Region	134	131	148	224
Neighbouring Countries	114	113	131	166
Other Countries	147	168	130	173
All	95	94	116	102

*Source: The Population of Tanzania, op. cit. Table 4.11, p. 71.*

## UGANDA

In analysing the importance of migration in Uganda, it is necessary to consider data from the 1959 and the 1969 censuses. In both cases, data is available by nationality and race and by place of birth. The information available permits analysis of the significance of immigration into and emigration from Uganda.

At the time of the 1959 census there were 87,058 non-Africans in Uganda of which the Indians constituted 72.5 per cent, the Europeans 12.5 per cent, Pakistan 6.9 per cent. The Goans, Arabs, Somali, mixed and other sections of the population constituted less than 10 per cent of the total population. Provincial distribution showed that Buganda with 54.1 per cent had the largest share followed by the Eastern Province with 34.17 per cent. The remaining Northern and Western Provinces had very few non-Africans.

Birth place data indicated that, of the Europeans, about 83 per cent of the total population were born outside East Africa. Among the Indians, some 53.5 per cent were Uganda born and only 37.8 per cent had been born outside East Africa. Altogether 57.1 per cent of the Pakistani were born in Uganda and only 26.5 per cent outside East Africa. About 49 per cent of the Goans were born in Uganda and 43.0 per cent outside East Africa. A similar pattern of distribution was noted in the case of the Arabs. Among the Somali some 44.5 per cent were born in Uganda and 20.1 per cent outside East Africa.

As in 1959, the 1969 Asian population was heavily concentrated in Buganda region which accounted for almost 56 per cent of the total. Within Buganda 42 per cent were to be found in the city of Kampala. The remainder were distributed between the Eastern Province town of Jinja (11 per cent) and Mbale (6 per cent) and other Uganda towns.

Analysis of birth place data shows that 58 per cent of the Asian population was Uganda born. This dominance is only characteristic of the young. Above 30 years, the Uganda born Asians were greatly outnumbered by the immigrants. The distribution of Uganda born Asians followed closely the general distribution of the Asian population. A large proportion of those born outside were born in India.

In 1969, there were 74,308 Asians from India, Pakistan and Goa. The number suggests that the Asian population increased very slowly during the intercensal period at approximately 0.3 per cent per annum. Census data indicates that the Asian population probably reached a peak somewhere in the middle of the 1959–1969 decade. Over this period the share of Asian population declined from 1.1 per cent to only 0.8 per cent.<sup>9</sup> Approximately 35 per cent of the Asians held Uganda citizenship. The actual proportion differed among males and females and among adults and those aged less than 15 years. About 36 per cent of the males were citizens as against 33 per cent for the females. Among the non-citizens, those holding British citizenship constituted just over 75 per cent.<sup>10</sup>

In 1969 the Arabs, Europeans and other remaining races made up a very small part of the total population. The Arabs numbered 3,238 and had a ratio of 134 males per 100 females. Most of those born in Uganda were to be found in the Eastern Province of Uganda.

The number of Europeans showed a decline from 10,866 in 1959 to 9,533 in 1969. Most of these were temporary migrants in the country. Their age and sex distribution shows the hour-glass pattern typical of a migrant population. Birthplace data show that a very small proportion of these were born in Uganda. Since the 1969 census, the non-African population in Uganda has been drastically reduced in response to the economic policies of the country. Table 3.6 shows the migrants from outside Uganda by country of birth.

The African population is the dominant element in both the international and internal migration in Uganda. In 1959 the major immigrant tribes in Uganda included those from Rwanda and Burundi, Kenya, Tanzania, Congo and the Sudan. The Rwanda group was by far the most numerous and was mainly concentrated in Buganda and Western Province (Kigezi and Ankole). Those from Burundi were almost all concentrated in Buganda. The next most numerous group was from Kenya. As in the case of the other migrants, Buganda was the most important destination of the Kenya migrants. However, a large proportion resided in the Eastern Province.<sup>11</sup>

A considerable degree of internal migration was evident at the time of the 1959 census. The major streams of migration were mainly directed to Buganda. These originated mainly in the Eastern, Northern and Western Provinces. The two largest immigrant tribes from Rwanda and Burundi accounted for 20 per cent of the total population, in Buganda.<sup>12</sup>

The 1969 data by nationality indicates that 5.14 per cent of the total African population held alien citizenship. The non-Ugandan African

population was distributed as follows: Rwanda 33.31 per cent, Kenya 24.19 per cent, Sudan 13.41 per cent, Congo 13.16 per cent, Burundi 8.23 per cent and Tanzania 6.91 per cent.

In Buganda region the non-Ugandans constituted about 10 per cent of the total population of Buganda. Provincial distribution indicated that the Rwanda group had the largest share of non-Ugandan population (44.86 per cent). The next most numerous groups were Kenya 19.51 per cent, Burundi 13.97 per cent and Tanzania 11.72 per cent. In Kampala City, the pattern was very different. An overwhelming proportion of non-Ugandans were Kenyans (69.36 per cent of the total).

The Eastern Region data indicated that non-Ugandans accounted for 11.25 per cent of the total population of the region. Approximately 65 per cent of these were from Kenya. The next largest group was from Sudan (18.57 per cent). In Jinja, over 75 per cent of the non-Uganda Africans were from Kenya and 19.15 per cent from the Sudan.

The small contribution of migration to the population of the Western Province emerges in the small share of the non-Uganda population (3.49 per cent). Of this total, 48.91 per cent were from Rwanda and 34.65 per cent from the Congo. Similarly in the Northern Province, migration played a relatively minor role (3.31 per cent). Majority of the aliens in the Northern Province were from Sudan (57.31 per cent) and Congo (35.37 per cent).

Birthplace data for the African population show that approximately 91.73 per cent were born in Uganda, 7.90 per cent outside Uganda. The importance of migration in the population is underlined by the fact that in Buganda region 63.35 per cent were born in Buganda Region and 21.31 per cent were born elsewhere in Uganda.

TABLE 3.6. THOSE BORN OUTSIDE UGANDA 1969 CENSUS

<i>Country of birth</i>	<i>Percentage of total</i>
Kenya	20.49
Tanzania	6.90
Rwanda	33.67
Burundi	10.44
Congo (Kinshasa)	20.67
Sudan	7.46
Other African Countries	0.27
Other Countries	0.06
Total	99.96

In the West Mengo districts of Buganda about 68 per cent were born in West Mengo. The remainder of the population were more evenly distributed. The proportion of migrants in Buganda Province was 36.59 per cent. District distribution indicated that West Mengo had 31.47 per cent, East Mengo 38.26 per cent, Masaka District 23.66 per cent and Mubende District 38.14 per cent. In Kampala City, those born in Kampala accounted for only 35.61 per cent of the total city population. Some 46.38 per cent were born elsewhere and 17.79 per cent were born outside Uganda.

Analysis of the 1969 census data indicated that about 56 per cent of Kenya population in Uganda was resident in the Eastern Province. The majority of Tanzanians were concentrated in Buganda where 90.36 per cent were to be found. Altogether 77.01 per cent of Rwanda population was resident in Buganda leaving 20.70 per cent in the Western Province. Approximately 98 per cent of Burundi population was resident in Buganda.

Migrants from Congo Kinshasa were to be found mainly in the Western Province (60.72 per cent) and the Northern Province (23.28 per cent). About 61 per cent of the total population of persons born outside Uganda in the Northern Province were migrants from the Sudan. Buganda accounted for 14.46 per cent and Eastern 14.65 per cent.

In the Eastern Region, the migrant population was approximately 11 per cent of the total population. District distribution shows proportions ranging from 4.05 per cent in Teso to 17.56 in Busoga. Jinja Municipality had the highest proportion. Here well over 70 per cent of the total population were migrants. Over 50 per cent were born elsewhere in Uganda and about 22 per cent were born outside Uganda. In the case of Mbale Town, the migrants accounted for 54.51 per cent of the total population.

In the Western Region 17.70 per cent of the total population were migrants. Of these 10.87 per cent were internal migrants and 6.83 were born outside Uganda. District share of the migrants indicated that Kigezi had 4.50 per cent, Ankole 15.67 per cent and Toro 23.33 per cent. The highest proportion of migrants were in Bunyoro where they formed 38.83 per cent of the total population.

The small contribution of the Northern Region to migration destination is underlined. Here 10 per cent of the total population were migrants. West Nile had 7.79 per cent, Madi 15.46 per cent, Acholi 14.50 per cent and Lango 6.61 per cent.

Excluding the urban areas the district with the highest proportion of persons born outside Uganda was East Mengo with 15.9 per cent followed by Mubende with 14.1 per cent. The district with the highest proportion born elsewhere was Bunyoro which had 25.6 per cent followed by Mubende with 24 per cent.

Analysis of birthplace data of persons born elsewhere thus shows the dominance of the economically motivated migration. In Buganda Region the majority of migrants were aged 15 to 54 years. But in the rest of Uganda the male migrants were mostly aged 15 to 34 and female migrants 20 to 29 years.

## KENYA

A direct comparison between Kenya, Tanzania and Uganda is not possible due to differences in the tabulation of data and enumeration dates. However, from the general tabulations at the time of the 1969 Census, it is possible to form a picture of the balance of population by ethnic origin and nationality. Table 3.7 shows the total population of Kenya Africans and non-Africans according to the latest census.<sup>13</sup> It will be seen that on the basis of ethnicity and nationality, the Asians were by far the most numerous of the non-African group. There was a total of 60,195 Kenyan Asians and 76,870 non-Kenyan Asians. They out-numbered the Europeans of whom there were 4,019 citizens and 39,072 non-citizens. Kenya Arabs

numbered 23,227 and non-Kenyan Arabs 4,213. Africans holding alien citizenship were 59,432.

Birthplace data show that at the time of the 1969 census there were a total of 158,692 persons from outside Kenya. Table 3.8 shows that a large part of this total was from the neighbouring countries and other African countries.

Among the neighbouring African countries of Kenya, Tanzania had the largest share amounting to 24.73 per cent of the total followed by Uganda with 21.09 per cent. Approximately 47 per cent of the total population from outside Kenya was from countries outside Africa. United Kingdom and Ireland constituted 12.01 per cent of the total and India with the largest share accounted for approximately 23 per cent of the total population from outside Kenya.

TABLE 3.7. POPULATION BY TRIBE OR NATIONALITY 1969

Kenya Africans	10,673,770
Non-Kenyan Africans	59,432
European Kenyan	4,019
European Non-Kenyan	39,072
Asians Kenyan	60,195
Asians Non-Kenyan	76,870
Arabs Kenyan	23,227
Arabs Non-Kenyan	4,213
Others Kenyan	264
Others Non-Kenyan	1,643
Total	10,942,705

Source: *Kenya Population Census, 1969*, vol. III, 1971.

TABLE 3.8. COUNTRY ORIGIN OF PERSONS BORN OUTSIDE KENYA 1969

Country	Total population	per cent of total
Tanzania	39,249	24.73
Uganda	23,472	21.10
Rwanda	514	0.32
Burundi	536	0.34
Somalia	1,617	1.02
Ethiopia	4,655	2.93
Sudan	313	0.20
Congo	479	0.30
Other African Countries	3,451	2.17
Other Countries	74,406	46.89
Total	158,692	100.00

Provincial destinations (Table 3.9) indicate that the majority of persons from outside Kenya were destined for the principal economic growth points in the Nairobi area and the Coast. Nairobi alone accounted for 32.78 per cent and the Coast 26.10 per cent. The next most important destination was the farming area of the Rift Valley Province.

TABLE 3.9. PROVINCIAL DESTINATION OF TOTAL POPULATION BORN OUTSIDE KENYA 1969

	<i>Total</i>	<i>per cent of total</i>
Nairobi	52,026	32.78
Central	5,711	3.60
Coast	41,418	26.10
Eastern	6,808	4.29
North eastern	1,601	1.01
Nyanza	15,503	9.77
Rift Valley	24,724	15.58
Western	10,901	6.87
Total	158,692	100.00

Table 3.10 summarises the 1969 census pattern of lifetime migration for Kenya and underlines the concentration of Kenyan Asians, Arabs and non-Kenyan Arabs in the district of birth and the important contributions of sources outside Kenya, to the non-Kenyan Africans, Kenyan and non-Kenyan Europeans to the lifetime migration.

### Other Sources of Migration Data

Census sources of data are only useful in analysis of general trends of long term population movements. Official migration statistics in Kenya are collected under the Immigration Act of 1967. Under this Act, persons entering and leaving Kenya are classified as follows:

- a. Residents
- b. New Permanent Immigrants including persons other than old residents or visitors who later secure permit to become permanent.
- c. Persons in transit.
- d. Visitors.

Table 3.11 shows the distribution of reported arrivals and departures from 1968 to 1971. It will be noted that between 1969 and 1971 there has been a sharp drop in numbers of permanent immigrants arriving and a steady increase in the number of departing permanent emigrants. Thus, unlike in Uganda and Tanzania which over the period between the second and third censuses experienced substantial immigration, the population change in Kenya has not been much influenced by immigration. Table 3.12 gives a breakdown of the nationality of departing visitors and persons in transit in Kenya.

### Internal Migration in Kenya

One of the most powerful consequences of the evolution of Kenya's economic regions has been the gathering momentum of internal migration. It has been established that this economically and socially motivated movement is essentially, first, a shift of rural population from the less to the more prosperous and developing areas and, the second and more important aspect of it is the accelerating influx of population from rural to urban areas as economic growth points. Urban to urban migration plays a relatively small part in the total national movement. The first type

TABLE 3.10. POPULATION OF NON-KENYAN AFRICANS AND NON-AFRICANS BY PLACE OF BIRTH 1969 CENSUS

Description	Total	Same district	per cent of total	Elsewhere in province	per cent of total	Elsewhere in Kenya	per cent of total	Outside Kenya	per cent of total	Not stated	per cent of total
Non-Kenyan Africans	59,432	16,932	28.49	1,068	1.80	4,737	7.97	36,040	60.64	655	1.10
Europeans-Kenyans	4,019	875	21.77	112	2.79	877	21.82	2,118	52.70	37	0.92
Europeans Non-Kenyan	39,072	5,743	14.70	299	0.77	4,014	10.27	28,561	73.10	455	1.16
Asians Kenyan	60,195	38,394	63.78	1,505	2.50	10,011	16.63	9,798	16.28	487	0.81
Asians Non-Kenyan	76,870	29,701	38.64	1,021	1.33	9,566	12.44	35,670	46.40	912	1.19
Arabs Kenyan	23,227	17,644	75.96	2,375	10.23	1,310	5.64	1,645	7.08	253	1.09
Arabs Non-Kenyan	4,213	2,188	51.93	128	3.04	371	8.81	1,401	33.25	125	2.97
Others Kenyan	264	121	45.83	7	2.65	96	36.36	26	9.85	14	5.30
Others Non-Kenyan	1,643	634	38.59	23	1.40	298	18.14	630	38.34	58	3.53

TABLE 3.11. REPORTED ARRIVALS AND DEPARTURES

Year/Quarter Month	Returning residents	Arrivals		Visitors	Total	Departures		Visitors	Total
		Permanent immigrants	Persons in transit			Permanent emigrants	Persons in transit		
1968	98,097	16,973	74,420	185,663	375 153	11,497	69,667	187,424	392,458
1969	108,920	19,082	73,381	219,327	419,081	13,526	63,770	212,200	424,801
1970	110,085	19,879	76,261	266,325	472,552	14,020	69,454	269,319	491,845
1971	119,594	1,421	68,115	343,095	532,236	15,840	47,907	351,798	531,930

Source: Central Bureau of Statistics.

- 1 Permanent immigrants are persons other than existing residents, who on entering Kenya possess either an entry permit, a dependant's pass or a pupil's pass. Before 1971, a substantial number of persons who should strictly have been classified as visitors were also included in this category.
- 2 Visitors who later became permanent immigrants are included in permanent immigrants column and excluded from visitors.
- 3 Permanent emigration excludes temporary emigrants who later became permanent emigrants.

TABLE 3.12. NATIONALITY OF DEPARTING VISITORS AND PERSONS IN TRANSIT

Year	Ugandans and Tanzanians	Europeans			Americans (USA)			Other Nationalities			Total	
		British	German	Swiss	Italian	French	Indian	Other European	African	Others		
1968	41,797	86,625	15,253	6,200	7,788	5,761	36,101	13,562	18,717	9,906	15,381	257,091
1969	46,612	88,103	16,078	7,490	8,482	6,793	42,245	13,243	20,970	8,094	17,860	275,970
1970	60,471	100,339	23,067	9,441	9,560	7,918	51,511	17,483	25,566	10,638	22,780	338,773
1971	69,462	100,328	37,780	13,374	13,037	9,057	63,539	17,937	31,660	16,157	27,374	399,705

Source: Central Bureau of Statistics.



of movement has been primarily from the more crowded districts of the Nyanza and Western provinces in the west of Kenya and the Central province and Eastern province population centres to the east of the Rift Valley. The Coast Province plays a relatively minor role. This demographic feature is reflected in the sex imbalance of the source (Table 3.13) and receiving districts (Table 3.14).

TABLE 3.13. SEX RATIO OF THE MAIN SOURCE AREAS 1969 CENSUS

<i>District</i>	<i>Sex Ratio</i>
<i>Central Province</i>	94
Kiambu	98
Kirinyaga	95
Murang'a	88
Nyandarua	100
<i>Eastern Province</i>	94
Embu	92
Isiolo	108
Kitui	89
Machakos	92
Marsabit	115
Meru	97
<i>Coast Province*</i>	105
Kilifi	91
Kwale	98
Lamu	98
Mombasa Island	139
Taita	97
Tana River	100
<i>Nyanza Province</i>	97
Kisii	101
Kisumu	104
Siaya	85
South Nyanza	98
<i>Western Province</i>	93
Bungoma	97
Busia	90
Kakamega	93

\* Influenced by Mombasa urban area.

Source: *Kenya Population Census, 1969*, volume 1. Table 1. Statistics Division Ministry of Finance and Economic Planning 1970.

Table 3.15 gives a total breakdown of birthplace data by province of residence at the time of the 1969 census. Table 3.16 shows the same breakdown on a percentage basis. It will be noted that with the exception of Nairobi, Coast and Rift Valley provinces, over 90 per cent of the population of the remaining provinces in Kenya were born in the same area. The Nairobi urban area shows the dominance of the main population sources of the Central, Eastern, Nyanza and Western provinces.

TABLE 3.14. SEX RATIO OF SELECTED RIFT VALLEY PROVINCE  
DISTRICTS 1969

<i>District</i>	<i>Sex ratio</i>
<i>Kericho</i>	108
Longisa	93
Emkwein	103
Sigor	91
Chepalungu	92
Konoin	111
Buret (3)	107
Buret Island	191
Belgut (1)	99
Belgut (9)	101
Londiani	99
Belgut (2)	99
Chagaik	185
Saosa	225
Kerenga	178
<i>Laikipia</i>	111
West	103
East	127
Mukogodo	113
<i>Nakuru</i>	112
Gilgil Rural	140
Naivasha Rural	103
Molo Mau-Sumit	109
Njoro Rural	109
Solai Rural	111
<i>Trans-Nzoia</i>	110
Cherangani	107
Saboti	107
Kwanza	111
Kitale (Town)	127
<i>Uasin Gishu</i>	109
Soy	109
Moiben	109
Turbo	104
Plateau	115
Kaptagat	109
Ainabkoi Timboroa	103

\* The Tea Plantations emerge with rather high sex ratios.

Source: *Kenya Population Census, 1969* Table 1., vol. 1., op. cit.

The main provincial destinations in the Rift Valley and the Coast also show more diverse sources. These were mainly the Nairobi area and Central Province, Eastern, Nyanza and Western Provinces. The migrant population of the Rift Valley was drawn mainly from the Central, Nyanza and Western Provinces (Table 3.16).

The rural to rural migration is paralleled by the accelerating influx of population from the rural sources to developing urban centres. This rural to urban drift is a major determinant of the urban sex composition reflected in the numerical male dominance. Table 3.17 shows the dominant-ly male character of the Kenya African population resident in the main

TABLE 3.15. DISTRIBUTION OF POPULATION BY BIRTHPLACE AND BY PROVINCE OF RESIDENCE 1969 CENSUS

Province	1	2	3	4	5	6	7	8	9	10
Nairobi	123,013	71,888	46,461	3,860	64	118,561	32,161	30,585		426,593
Central	132,313	1,507,366	14,742	15,064	646	8,213	156,255	5,322		1,839,921
Coast	8,887	2,654	731,430	3,269	4,377	3,175	4,183	1,121		759,096
Eastern	64,372	16,362	49,398	1,852,216	2,522	2,087	26,633	497		2,014,087
North-Eastern	928	419	1,397	2,273	234,794	1,546	2,650	1,067		245,074
Nyanza	53,986	7,818	24,487	3,195	251	1,928,659	85,157	11,175		2,114,728
Rift Valley	15,025	46,430	4,011	3,443	826	10,156	1,749,617	8,932		1,838,440
Western	54,892	5,850	14,714	2,350	233	25,591	97,316	1,256,088		1,457,034
Non-Kenyans	52,026	5,711	41,418	6,808	1,601	15,503	24,724	10,901		158,692
(Total)										
(living in)	10	509,286	1,675,647	944,082	1,907,301	245,757	2,122,045	2,210,289	1,328,298	10,942,705

Vertical totals include "Kenyans not stated" and "non-Kenyans not stated"

Source: ILO *World Employment Programme* (Working Tables)  
Comprehensive Employment Strategy Mission to Kenya 1971.

towns of the country. At the time of the 1962 census the sex ratio for the total African population in Nairobi was 187. By 1969 the ratio had been reduced to 147. Mombasa district experienced a less striking drop from a sex ratio of 151 in 1962 to 139 in 1969 at the time of the census. The decline is a feature of most of the urban centres of Kenya and is primarily attributed to increasing female participation in the rural to urban migration and in particular the greater role played by family migration.

The impact of migration though felt throughout the population is highly selective of certain age groups as is the case in other countries

TABLE 3.16. DISTRIBUTION OF POPULATION LIVING IN PROVINCES  
BY BIRTHPLACE 1969 (PERCENTAGE)

Provinces		1	2	3	4	5	6	7	8	9	10
Nairobi	1	24.2	4.3	4.9	0.2	—	5.6	1.5	2.3	—	3.9
Central	2	26.0	90.0	1.6	0.8	0.3	0.4	7.1	0.4	—	16.8
Coast	3	1.7	0.2	77.5	0.2	1.8	0.1	0.2	0.1	—	6.9
Eastern	4	12.6	1.0	5.2	97.1	1.0	0.1	1.2	—	—	18.4
North Eastern	5	0.2	—	0.1	0.1	95.5	0.1	0.1	0.1	—	2.2
Nyanza	6	10.6	0.5	2.6	0.2	0.1	90.9	3.9	0.8	—	19.3
Rift Valley	7	3.0	2.8	0.4	0.2	0.3	0.5	79.2	0.7	—	16.8
Western	8	10.8	0.3	1.6	0.1	0.1	1.2	4.4	94.6	—	13.3
Non-Kenyans	9	10.2	0.3	4.4	0.4	0.7	0.7	1.1	0.8	—	1.5
<hr/>											
Total											
(living in)	10	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	—	100.0

Source: *World Employment Programme (Working Tables)*  
*Comprehensive Employment Strategy Mission to Kenya 1971.*

TABLE 3.17. SOME URBAN SEX RATIO (KENYAN AFRICANS) 1969  
CENSUS

Urban centre	Sex ratio 1969
Nairobi	159
Mombasa	151
Nakuru	127
Kisumu	136
Eldoret	135
Thika	151
Nanyuki	117
Kitale	132
Nyeri	151
Gilgil	127
Lamu	93
Malindi	141
Athi River	164
Isiolo	119

Source: *Central Bureau of Statistics.*

of East Africa. Table 3.18 shows the percentage distribution of migrant and sedentary population by age and sex at the time of the 1969 census.

The selective impact of migration is most heavily felt, between the ages of 15 and 59 years. Considering the two sexes the proportion of the males recorded as migrants is much higher than that of the females between 20 and 69. The proportions decline significantly after the age of 49 for men and 34 for women.

However, the national total proportions of migrant population conceal the very distinctive pattern characteristic of the main urban destinations of migration. Tables 3.19 and 3.20 show the distribution of the urban population of Nairobi, and Mombasa by age and sex. The striking contrast

TABLE 3.18. MIGRATION:—PERCENTAGE DISTRIBUTION OF TOTAL POPULATION BY SEX AND AGE: MIGRANT AND SEDENTARY POPULATION, 1969

<b>A</b>			
<i>Age group</i>	<i>Percentage Sedentary</i>		<i>Females</i>
	<i>Both sexes</i>	<i>Males</i>	
Total	80.8	79.0	82.6
0-4	88.2	88.2	88.2
5-9	86.2	86.4	85.9
10-14	86.0	86.1	85.8
15-19	80.2	80.2	80.2
20-24	71.7	68.2	74.9
25-29	69.9	63.2	75.5
30-34	71.3	63.7	78.5
35-49	72.1	65.1	78.9
40-49	74.8	68.9	80.6
50-59	78.2	74.2	82.2
60-69	81.4	80.1	82.8
70+	82.9	83.8	82.0
<b>B</b>			
	<i>Percentage Migrant</i>		
<i>Age group</i>	<i>Both sexes</i>	<i>Males</i>	<i>Females</i>
Total	18.4	20.2	16.7
0-4	11.2	11.2	11.2
5-9	13.2	13.0	13.5
10-14	13.4	13.3	13.5
15-19	19.1	19.1	19.1
20-24	27.4	30.9	24.2
25-29	29.2	25.7	23.7
30-34	27.8	35.2	20.8
35-39	27.0	33.9	20.4
40-49	24.5	30.1	18.8
50-59	21.2	25.1	17.2
60-69	18.1	19.2	16.7
70+	16.4	15.6	17.3

Source: Kenya Population Census, 1969 Volume III, Table 5.

**Notes**

1. Migrant Population: Persons enumerated outside district of birth.  
Sedentary Population: Persons enumerated in district of birth.
2. The total of migrant and sedentary population does not add up to 100 per cent since no percentages have been calculated for persons who did not state their birth place.

in the sex ratio between the two urban centres should be noted. Nairobi is dominated by migrants between the ages of 15 and 49 years.

TABLE 3.19. 1969 KENYAN AFRICAN POPULATION OF NAIROBI BYSEX  
AND AGE-GROUP

	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Percentage</i>	<i>Sex ratio</i>
0- 4	66,926	33,812	33,114	16.4	102.1
5- 9	47,057	23,415	23,642	11.5	99.0
10-14	29,480	14,026	15,454	7.2	90.8
15-19	40,017	19,909	20,108	9.8	99.0
20-24	63,022	39,598	23,424	15.5	169.0
25-29	49,634	33,298	16,336	12.2	203.8
30-34	34,757	25,964	8,793	8.5	295.3
35-39	27,448	21,475	5,973	6.7	395.5
40-44	17,490	13,962	3,528	4.3	395.7
45-49	12,820	10,474	2,346	3.1	446.5
50-54	7,514	5,916	1,598	1.8	370.2
55-59	4,536	3,550	986	1.1	360.0
60-64	3,105	2,159	946	0.8	228.2
65-69	1,715	1,198	517	0.4	231.7
70-74	1,020	629	391	0.3	160.9
75+	598	335	263	0.15	139.0
Total	407,736	250,054	157,682	100.0	158.6

Source: Central Bureau of Statistics.

TABLE 3.20. KENYAN AFRICAN POPULATION OF MOMBASA

	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Percentage</i>	<i>Sex ratio</i>
0- 4	27,052	13,921	13,131	15.7	106.0
5- 9	20,312	10,216	10,096	11.8	101.2
10-14	13,276	7,605	5,671	7.7	134.1
15-19	20,696	12,070	8,626	12.0	139.9
20-24	23,549	14,307	9,242	13.6	154.8
25-29	21,204	13,260	7,944	12.3	166.9
30-34	14,182	9,795	4,387	8.2	223.3
35-39	11,668	8,495	3,173	6.8	267.7
40-44	6,786	4,771	2,015	3.9	236.8
45-49	5,166	3,802	1,364	3.0	278.7
50-54	3,022	2,001	1,021	1.8	196.0
55-59	1,909	1,285	624	1.1	205.9
60-64	1,512	877	635	0.9	138.1
65-69	933	547	386	0.5	141.7
70-74	643	404	239	0.4	169.9
75+	356	214	142	0.2	157.8
Total	172,621	103,784	68,837	100.0	150.8

Source: Central Bureau of Statistics.

## REFERENCES

- <sup>1</sup> CLAESON, C. F. *Population of Tanzania* op. cit. p. 57.
- <sup>2</sup> CLAESON, C. F. op. cit. p. 60.
- <sup>3</sup> CLAESON, C. F. op. cit. p. 61.
- <sup>4</sup> CLAESON, C. F. op. cit. p. 62.
- <sup>5</sup> CLAESON, C. F. op. cit. p. 65.
- <sup>6</sup> CLAESON, C. F. op. cit. p. 66–68.
- <sup>7</sup> CLAESON, C. F. op. cit.
- <sup>8</sup> *Uganda Census 1959*. 'Non-African Population' Table VII. 1., East African Statistical Department, 1960.
- <sup>9</sup> *Report on the 1969 Uganda Population Census*, vol. III op. cit.
- <sup>10</sup> *Report on the 1969 Uganda Population Census*, vol. III op. cit.
- <sup>11</sup> *Uganda Census, 1959*. op. cit.
- <sup>12</sup> *Uganda Census, 1959*. op. cit.
- <sup>13</sup> *Kenya Population Census 1969*, vol. III, p. 71. Statistics Division. Ministry of Finance and Economic Planning.

## CHAPTER 4

### POPULATION COMPOSITION

#### General Comments

In the earlier chapters attention was focussed on population growth and components of population change in East Africa. The chapter on population composition reviews the distribution of population in individual countries among certain aggregates such as sex, age, marital status, household characteristics, ethnic groups and educational levels. These characteristics have important implications to development in the region. Information analysed is drawn largely from the most recent censuses in Tanzania, Uganda and Kenya.

#### TANZANIA

The summary information on Tanzania contained in this section is drawn from volume 3 of the 1967 census and from the analysis of the 1967 by Egero and Henin.<sup>1, 2</sup>

Discussions of age and sex data of the African population have underlined the effect of distortions arising from errors of responses and of the manner in which questions are asked. In Tanzania serious distortions have been reported indicating strong preference for ages ending in 0 and 5 and from the tendency of raising ages upwards. Egero and Henin (1973) have analysed the response errors of the 1967 census and noted considerable fluctuations of sex ratios from the age groups 0–4 up to the age of 70–74. They came to the conclusion that there was evidence of both a general under estimation of the ages of the females or an over-estimation of the ages of the males or both.<sup>3</sup> Table 4.1 shows the population by sex and year age groups for Mainland and Zanzibar.

It is evident from Table 4.2 that the digital preference is a major contributory factor to the irregularities in the sex ratios. This tendency is confirmed by the Whipple's Index for Tanzania (Table 4.3).

However, as a corrective, Egero and Henin (1973) have indicated that Whipples Index is not satisfactory since it merely brings out the degree of distortion due to digital preference. The sex and age ratios used by the United Nations Secretariat have been recommended as suitable indices for analysing the inaccuracies due to age reporting or incomplete enumeration.<sup>4</sup>

For the females, Egero and Henin (1973) have attributed the irregularities in the recorded age distributions to a tendency to overestimation of the age of girls from 10–14, the females aged 5–19 and 20–24. This over-estimation of ages has been attributed to unconscious upward bias in age associated with marriage and child bearing.<sup>5</sup>



TABLE 4.1. POPULATION OF TANZANIA BY SEX AND FIVE YEAR AGE GROUPS

Age	Total	Sex	
		Male	Female
0- 4	2,205,878	1,090,982	1,114,896
5- 9	1,944,589	976,419	968,170
10-14	1,247,978	657,135	590,843
15-19	1,083,212	512,637	570,575
20-24	921,365	378,412	543,953
25-29	1,033,233	461,238	571,995
30-34	760,375	358,597	401,778
35-39	675,813	341,089	334,724
40-44	458,238	221,921	236,317
45-49	483,874	252,604	231,270
50-54	361,632	178,079	183,553
55-59	211,586	108,971	102,615
60-64	227,979	110,563	117,416
65-69	150,043	76,597	73,446
70-74	123,852	60,438	63,414
75+	410,164	226,931	183,233
Stated	12,299,811	6,120,613	6,287,198
Not stated	5,745	3,141	2,604
Total	12,305,878	6,015,754	6,289,802

Source: *Population Census, 1967*, vol. 3 op. cit.

TABLE 4.2. MAINLAND TOTAL AND ZANZIBAR SEX RATIOS BY 5 YEARS AGE GROUPS

Age group	Mainland total	Zanzibar
0- 4	98	98
5- 9	101	97
10-14	111	123
15-19	90	94
20-24	70	67
25-29	80	89
30-34	89	91
35-39	101	126
40-44	94	98
45-49	108	145
50-54	97	103
55-59	105	165
60-64	93	119
65-69	103	185
70-74	94	116
75-79	124	163
80-84	114	105
85-89	134	102
90-94	132	104
95+	127	81

Source: *Egero, B. and Henin, R. A. op. cit. Table 13.1, p. 203.*

In general the table of sex ratios shows very little difference for any individual year except for Arusha and Tanga regions, where ratios in

excess of 100 were experienced (Table 4.4). The high sex ratios associated with Arusha and Tanga may be due to the influence of migration. This is particularly the case in Tanga and Dar es Salaam regions which can be classified as regions of economic development. In these areas of expected immigration there has been a general drop in the sex ratios probably attributed to increasing involvement of the women in migration.

TABLE 4.3. WHIPPLES INDEX FOR REGIONS OF TANZANIA

<i>Region</i>	<i>Males</i>	<i>Females</i>
Mainland Rural	180.4	194.4
Mainland Urban	188.9	210.7
Zanzibar	282.1	350.4
Singida	155.6	
Mwanza	160.0	
Iringa	167.2	
Mbeya	168.9	
Shinyanga	174.2	
Ruvuma	174.6	
Mara	185.7	
Dodoma	185.9	
Tabora	203.7	
Morogoro	206.1	
West Lake	207.2	
Mtwara	208.4	
Kilimanjaro	209.4	
Kigoma		210.2
Arusha		214.2
Tanga		240.8
Coast excl. DSM		261.2

Source: Egero, B. and Henin, R. A. op. cit. Table 13.2, p. 204.

TABLE 4.4. SEX RATIOS BY REGIONS 1948, 1957/58, 1967

<i>Region</i>	<i>1948</i>	<i>1957/58</i>	<i>1967</i>
Arusha	110	106	103
Coast	88	90	98
Dodoma	97	89	94
Iringa	83	85	88
Kigoma	80	80	84
Kilimanjaro	97	99	95
Mara	87	91	91
Mbeya	86	85	91
Morogoro	102	99	98
Mtwara	94	93	95
Mwanza	93	97	99
Ruvuma	80	85	90
Shinyanga	88	89	94
Singida	83	84	87
Tabora	93	91	95
Tanga	118	114	105
West Lake	83	87	92
Zanzibar	110	111	101

Source: Egero, B. and Henin, R. A. op. cit. Table 13.6, p. 207.

But it has also been suggested that the sharp decrease in the case of Zanzibar in 1967 may be due to outmigration of the males in recent years.<sup>6</sup>

Graduated age distributions by regions for Tanzania have been prepared using the child/adult ratio and appropriate mortality level from the North Family.<sup>7</sup> These indicate that in 1967 Kilimanjaro region had the youngest and Mtwara the oldest population. Altogether 8 out of the 18 regions had proportions of under 15 years of age of 45 per cent and over. A further 8 had proportions ranging from 40 to 45 per cent. Mtwara and the Coast had proportions well below 40 per cent. Table 4.5 shows considerable ethnic differences in the age distribution.

From the table the Arabs had the youngest population, whilst the Europeans had the oldest. Among the Arabs, the under-age population accounted for 51 per cent of the total as compared to 29 per cent for the Europeans. The recorded under-age population for the Africans was 43 per cent of the total and for the Asians it was 36 per cent. The European population structure is typical of an immigrant community. A summary of the proportion of working age population (15–59 years) showed that the Europeans with 66.1 per cent had the highest followed by Asians with 60.1 per cent, and the Africans 50.7 per cent. The Arabs had the lowest proportion of working age population. The dependency burden was correspondingly much greater among the Arabs and the Africans.

Out of a total Mainland population of 11,951,708, 54.18 per cent were reported as single, 39.88 per cent were married, 2.53 per cent divorced and 3.27 per cent were widowed. However, the census classification of marital status has been criticised as too western in orientation. Using stable population model and the census data Egero and Henin (1973) arrived at an average age of marriage of 25.8 years for males and 16.8 years for women.<sup>9</sup>

TABLE 4.5. MAINLAND TOTAL RECORDED FEMALE AGE DISTRIBUTION BY AGE AND ETHNIC GROUPS

<i>Age group</i>	<i>Africans</i>	<i>Arabs</i>	<i>Asians</i>	<i>Europeans</i>
0–4	17.8	21.0	10.5	11.8
5–9	15.5	16.7	12.8	10.9
10–14	9.3	13.6	12.8	6.2
15–19	9.0	10.4	10.9	5.3
20–24	8.6	8.7	9.6	8.9
25–29	9.1	7.7	9.5	11.7
30–34	6.4	6.2	9.1	11.1
35–39	5.4	4.6	6.9	9.8
40–44	3.7	3.4	5.3	7.7
45–49	3.7	3.0	3.9	5.4
50–54	2.9	1.4	2.9	3.9
55–59	1.9	0.6	2.0	2.3
60–64	1.8	1.1	1.5	2.3
65–69	1.2	0.2	1.0	1.2
70–74	1.0	0.4	0.6	0.6
75+	3.0	1.0	0.9	0.5
Total	100.0	100.0	100.0	100.0

Source: Egero, B. and Henin, R. A. op. cit. Table 13.11, p. 211.

Altogether a total of 130 tribes and ethnic groups were represented in the population of Mainland Tanzania. Table 4.6 shows the relative position of 15 largest tribes at the 1948, 1957 and 1967 censuses. In Zanzibar the two dominant groups were the Shirazi and the Tumbatu.

TABLE 4.6. TANZANIA MAINLAND AFRICAN POPULATION BY TRIBE  
1948-1967

Tribe	Population			Household
	1948	1957	1967	Size 1967
Sukuma	888,800	1,093,767	1,529,917	6.0
Makonde	281,320	333,897	476,135	3.7
Chaga	239,215	318,167	440,239	4.9
Haya	275,586	325,539	412,356	3.7
Nyamwezi	362,829	363,258	405,976	4.2
Ha	286,112	289,712	383,021	4.3
Hehe	192,153	251,624	360,686	4.6
Gogo	278,755	299,417	360,131	4.2
Nyakyusa	192,816	219,678	306,786	4.5
Shambaa	151,754	193,802	271,536	4.3
Luguru	178,163	202,297	257,443	3.9
Bena	158,548	195,802	251,949	4.1
Turu	181,739	195,709	246,317	4.3
Zaramo	173,518	183,260	227,741	3.5
Yao	126,741	144,198	204,399	3.4

Source: Egero, B. and Henin, R. A. op. cit. Table 10.1, p. 160.

In 1967 the Shirazi numbered 159,303 and the Tumbatu 53,809.

In addition to the major African ethnic groups, it has already been indicated that a number of important minority groups, including the Arabs, Asians and Europeans were enumerated in the Republic in 1967. A total of 86,607 Arabs were recorded in the whole of Tanzania. Of this total only 30,000 were on the Mainland and 56,832 were in Zanzibar. The Island of Pemba accounted for 41,893. The spatial distribution reflects early patterns set by traders along the Coast and the routes into the interior.

Unlike the Arab population the Asians and the Europeans have shown a marked decline. The Mainland Urban population rose from 33,368 in 1948 to 60,111 in 1957 and then decreased to 58,402 at the time of the 1967 census. In the rural areas the corresponding figures were 12,886 in 1948, 16,306 in 1957 and 16,613 in 1967. At the time of the 1967 census the total Mainland Asian population was 75,015 of which 77.9 per cent were in the urban areas and 22.1 per cent in the rural areas. The European population of the Mainland increased from 10,648 in 1948 to 20,534 in 1957 and then decreased to 16,884 in 1967. At the time of the 1967 census 34 per cent of the Europeans were in the urban and 66 per cent in the rural areas. The distribution of the Europeans showed a distinct rural bias.

An important aspect of population composition is the level of educational attainment. This is measured by the level of literacy or by the number of years at school. At the time of the 1967 census only 31 per cent of the Mainland population was literate as against 39 per cent for Zanzibar.

The urban population of the Mainland had a literacy level of 61 per cent as compared to 29 per cent for the rural areas. In both the Mainland and Zanzibar literacy level for the females was distinctly lower.<sup>10</sup>

A more widely used measure of the quality of population in East Africa is the level of education attained. Table 4.7 shows the percentage distribution of citizens aged 10 or over by sex and education for Mainland Tanzania.

TABLE 4.7. CITIZENS AGED 10 OR OVER BY SEX AND EDUCATION  
TANZANIA MAINLAND

<i>Years at School</i>	<i>Rural</i>			<i>Urban</i>			<i>Total</i>		
	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
None	58	81	70	29	58	42	57	80	68
1-4	29	14	21	28	19	24	29	14	21
5-8	11	4	7	30	17	24	11	4	8
9-14	2	1	2	11	5	9	2	2	2
15+	0	0	0	2	1	1	1	0	1
Total	100	100	100	100	100	100	100	100	100

Source: Dey, A. K. and Mogil, I. N. *Population of Tanzania*, op. cit., Table 7.18, p. 124.

Here again the contrast between the male and female levels of educational attainment is striking. Further there is a much higher level of educational attainment in the urban areas as compared to the rural areas. In Zanzibar, analysis of the total population showed that in 1967, 68 per cent of the total citizen population had no schooling. Of the remainder about 15 per cent had 1-4 years, 14 per cent 5-8 years and 2 per cent had 9-14 years of school. The proportion of those who had more than 15 years of schooling was less than 1 per cent (0.24 per cent). This situation is common to most developing countries of Africa.

## UGANDA

Unlike Tanzania where considerable analytical material is already available on the most recent census, Uganda has yet to publish the basic demographic volume for the 1969 census. Much of the material presented here is derived from the 1959 census and from Additional Tables to Volume III of the report on the 1969 population census. In this report, the composition of the various ethnic groups were treated separately.

Analysis of data for Uganda Africans shows that 46 per cent of the total population was under the age of 15. Uganda Africans therefore represent a typically youthful and rapidly increasing population. Table 4.8 gives a summary of the sex ratios for the African population by five year age groups in 1969. The sex ratio at the time of the census was 101.8 males per hundred females. Analysis of the sex ratios for Ugandans only indicates that age reporting is similarly affected by errors arising from digital preference and from under-enumeration as well as over enumeration.

For the non-Ugandans, the sex ratio for the total population was 171 as compared to 99 for Ugandans (Table 4.8). Beyond 5 to 9 years of age the sex ratio shows a dominance of males typical of migrant communities. It varied from about 113 males per hundred females among the Sudanese to 331 per 100 females for Burundi nationals. This high sex ratio is primarily a result of economic migration.<sup>11</sup>

Table 4.9 shows the distribution of population by broad age group at the various censuses.

TABLE 4.8. SEX RATIO OF THE AFRICAN POPULATION BY FIVE YEAR AGE GROUPS 1969

Age	Total Population	Ugandans	Non-Ugandans
0- 4	98	98	99
5- 9	100	100	98
10-14	110	109	124
15-19	100	96	188
20-24	88	82	207
25-29	92	86	225
30-34	102	95	257
35-39	109	103	271
40-44	103	99	229
45-49	113	109	254
50-54	103	99	204
55-59	120	117	228
60-64	109	106	223
65-69	125	122	222
70-74	119	116	230
75+	140	137	244
Total	102	99	171

Source: *Report on Uganda Population*. 1969, vol. III op. cit. Table 1, p. 11.

The percentages indicated above show considerable differences in the proportion of population aged less than 1 year. It has been suggested that the differences are due to the errors arising from under-reporting and over-reporting. The figures are therefore not strictly comparable. Thus for the structure of the population with respect to various functional groups the 1969 census data has been used. Table 4.10 shows the provincial distribution of Uganda's population between the various age groups.

TABLE 4.9. PATTERN OF AGE DISTRIBUTIONS 1948, 1959 AND 1969 CENSUSES<sup>12</sup>

Year	Under 1	1-5 years	6-15 years	16-45 years	45+
1948	2.8	14.3	23.8	47.5	11.6
1959*	5.7	18.2	19.6	43.8	12.7
1969*	2.9	20.0	25.3	39.0	12.8

\*Unadjusted.

TABLE 4.10. DISTRIBUTION OF POPULATION OF UGANDA BY AGE AND PROVINCE 1969

Age group	Buganda	Eastern	Western	Northern	Uganda total
0- 4	18.42	18.31	21.03	19.52	19.29
5- 9	14.48	15.00	16.17	16.43	15.40
10-14	10.27	11.10	12.52	12.55	11.49
15-19	8.46	8.27	8.99	9.41	8.70
20-34	23.63	21.36	19.99	20.94	21.57
35-49	13.05	14.17	11.04	11.92	12.68
50-64	7.32	7.83	6.28	5.89	6.96
65+	4.23	3.82	3.82	3.17	3.83
Not Stated	0.13	0.11	0.14	0.14	0.13
Total	99.99	99.97	99.98	99.97	100.00

*Source: The Population of Uganda. Special Supplement, Table 1 p. 2-5.*

The distribution of the various age groups shows that the Western Province had the youngest population with approximately 50 per cent of the total population aged less than 15 years. The proportion of under age population in the Northern Province was approximately 49 per cent. The lowest percentage of under-age population was recorded in Buganda with 43 per cent and the Eastern Province with 44 per cent. These are the traditional goals of economic migration in Uganda.

Analysis of the working age population on the basis of the standard ILO classification showed that the Western Province and the Northern Province had the lowest percentage of working population. Economic migration to the southern provinces of Uganda is undoubtedly an important factor in the situation.

Data on marital status among Africans indicates that in 1967, 64.81 per cent of the male population was single, 30.48 per cent were married, 1.14 per cent were divorced. The proportion of married females was approximately 37 per cent. However, the proportion of those married within the different cohorts shows a distinct contrast between the males and females. Table 4.11 shows the percentage of married African males and females. This is a common feature among the African population in the other countries. Women marry much earlier. In Uganda over 80 per cent of the women were married between the ages of 20 and 40.

Table 4.12 shows that the level of educational attainment in Uganda among Africans was low. Approximately 60 per cent of the total population had no formal education. The proportion differed between the sexes and between the various regions of the country. At the national level about 80 per cent of the female population had no education. The highest percentage among the regions was the Western Province with about 66 per cent of the males without education. The lowest was Kampala City with 36 per cent for the males.

The regional pattern for the females shows that the Western Province had 85.08 per cent of the females without education, followed by the Northern Province with 84.97 per cent and the Eastern Province with 83.04 per cent. The low level of women's education is also reflected in the figures for Kampala City where 51 per cent of the females had no education.

TABLE 4.11. PERCENTAGE OF MARRIED UGANDA AFRICANS BY AGE AND SEX 1969

Age	Males	Females
10-14	0.41	1.89
15-19	1.60	46.20
20-24	5.98	80.26
25-29	62.98	85.58
30-34	71.45	83.83
35-39	75.11	81.68
40-44	75.19	75.10
45-59	76.04	70.52
50-54	73.72	59.07
55-59	76.10	53.33
60-64	71.14	41.59
65-69	72.64	35.58
70-74	67.56	26.59
75+	65.23	19.81

Source: Report on the 1969 Population Census, vol. III, op. cit. Table 5.

It will be seen from the table that the position at various levels of education is much worse.

In contrast the minority ethnic groups such as the Asians Arabs and Europeans had important differences worth noting briefly.

The Asian population was characterised by a preponderance of males. The sex ratio in 1967 was 110 males for every 100 females. About 37 per cent of the total Asian population was under the age of 15. Age 0-4 was smaller than age 5-9 and this in turn was much smaller than 10-14 cohort. The age sex pyramid had a bulge in the middle characteristic of communities dominated by economic migrations.

TABLE 4.12. UGANDA AFRICANS LEVELS OF EDUCATIONAL ATTAINMENT BY REGIONS 1969

		None or NS	P1-P6	P7, JS2	JS3	S1-S4	S5-S6	University
Uganda	Males	59.91	32.30	4.81	2.73	0.11	0.11	
	Females	78.62	18.77	1.76	0.80	0.02	0.01	
Buganda	Males	50.38	39.01	5.70	4.44	0.17	0.27	
	Females	62.75	32.27	3.10	1.77	0.04	0.04	
Kampala City	Males	35.90	35.26	12.94	13.32	0.81	1.74	
	Females	50.82	34.97	7.60	5.99	0.21	0.38	
Eastern	Males	64.82	27.77	4.99	2.29	0.07	0.04	
	Females	83.04	14.91	1.48	0.53	—	—	
Western	Males	66.06	29.26	3.10	1.44	0.08	0.03	
	Females	85.08	13.48	1.04	0.36	0.01	—	
Northern	Males	58.81	33.04	5.51	2.40	0.15	0.06	
	Females	84.97	13.20	1.33	0.45	0.02	—	

Source: Report on Uganda Population 1969, vol. III op. cit. Table 6.

NS = No schooling

P = Primary

JS = Junior Secondary

S = Secondary



The marital status indicated that in contrast to the Africans a much larger proportion of males than females were married. In 40–44 age bracket over 90 per cent of both sexes were married as compared to 75 per cent for the Africans. Only 1 per cent of the adults were recorded as single. Half the females aged 20 to 24 were married as compared to 16 per cent for the males.<sup>13</sup>

A major contrast among the Asian population was noted in the level of education attained. Only 8 per cent of the males and 14 per cent of the females of age 5 and over had never been to school. About 43 per cent of the total male population had been to secondary school as against 31 per cent for the females. Over 6 per cent out of the males and 2 per cent of the females had been to University.

The Arab population showed a considerable surplus of males (134 males per 100 females). In 1959 the Arab sex ratio was 155 males per 100 females. Educationally the Arabs were better off than the Africans. 36 per cent claimed to have formal education with variations by sex being very similar to the Africans.

The European population had a sex ratio of 112 males per 100 females. But there were differences among the nationalities of the various countries represented. The age distribution showed the traditional hourglass pattern with fairly large numbers of children declining as age increases to a minimum of about 15–19 years of age. Beyond 19 years there was a rise to a peak around 30 followed by a decline. The Europeans had the highest level of educational attainment compared to the other ethnic groups.

## KENYA

The age and sex composition of Kenya's population does not differ significantly from that of Tanzania and Uganda (Table 4.13). Further analysis of the sex ratio indicates that except for the urban areas where the influence of immigration has been strong, there has been little change in the sex ratio. In 1962 the national sex ratio for Kenya was 98 males per hundred females. For the same year the Africans and Somali had a sex ratio of 98, the Asians 110, Europeans 116, Arabs 113 and others 96. The dominance of males characteristic of the Asian, the European and Arab communities was attributed to the effect of economic migration already noted in the case of Tanzania and Uganda. However, it should be noted, that African demographic data in Kenya is subject to the same errors of misreporting.

In 1969, the sex ratio for Kenya was 100 males per 100 females and this proportion was the same for the Kenya Africans. The non-Kenyan Africans had a sex ratio of 144 males per 100 females. Analysis of the individual communities indicated a sex ratio of 109 for the Europeans, 106 for the Asians, 113 for the Arabs and 96 for the others. Thus while the total national sex ratio was dominated by the Kenyan African population that of the non-Kenyan Africans was primarily influenced by the immigration effect.

Kenya is basically a youthful country. At the time of the 1969 census, approximately 51 per cent of the total population was under the age of 15 years. Analysis of the broad age groups showed that for the males the under-age population was approximately 49 per cent of the total male

TABLE 4.13. POPULATION OF KENYA BY AGE AND SEX 1969 CENSUS

<i>Age</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
0- 4	1,058,102	1,046,380	2,104,482
5- 9	916,599	893,359	1,809,958
10-14	714,707	663,808	1,378,515
15-19	560,152	544,847	1,104,999
20-24	428,015	450,096	878,111
25-29	349,594	411,245	760,839
30-39	533,084	564,060	1,097,144
40-49	366,444	365,788	732,232
50-59	247,135	241,307	488,442
60+	308,549	279,434	587,983
Total	5,482,381	5,460,324	10,942,705

*Source: Kenya Population Census, 1969, vol. I Table III, 1970.*

population. Male persons aged 15 to 59 years accounted for about 45 (45.32 per cent) of the total population. Among the females approximately 48 per cent of the total population was aged less than 15 years. The age pyramid shows a large base of child population and a very small proportion of old people. However, despite the low proportion of the old people the difficulty of securing gainful employment in a rapidly expanding and youthful population, and the consequent heavy dependency burden on a small proportion of gainfully employed population are problems that Kenya shares with other countries of East Africa.

The distribution of the under-age population by provinces shows a major contrast between the urban areas and rural sources of population (Table 4.14). In both Nairobi and Mombasa, the under-age population was less than 40 per cent of the total population. In five of the eight provinces the under-age population was well in excess of 50 per cent of the total population. The most youthful provinces in the country were Western, Central and Nyanza, followed by Rift Valley, North-Eastern and the Coast. Table 4.14 shows the distribution of the under-age population by districts in Kenya. The extremely youthful population of the districts underlines the accelerating growth rate of the population of the country.

Analysis of the population composition by marital status indicated that in 1969 approximately 62 per cent of the total population was single, 32 per cent married, 3 per cent widowed and 1 per cent divorced or separated. Approximately 68 per cent of the total male population was single as against 57 per cent for the female. The proportion of the married persons by sex showed that 29 per cent of the males were married as against 36 per cent for the females. However, analysis of the percentage married by cohort shows an interesting contrast. Table 4.15 gives the percentages of married persons for the total population and by sex.

Provincial breakdown of the sex ratio in 1969 shows that Nairobi, had a sex ratio of 147, Central Province 94, Coast 105, Eastern 94, Northern Eastern 119, Nyanza 97, Rift Valley 106, Western 93. The low sex ratio of the Central, Eastern Nyanza and Western Provinces has already been attributed to the effect of out migration from these areas.

Ethnically there are over 40 different groups in Kenya. However, the

eight main ethnic groups among the African population in 1969 included, the Kikuyu (20.6 per cent), Luo (14.3 per cent), Luhya (13.6 per cent),

TABLE 4.14. DISTRICT PERCENTAGE OF UNDER-AGE POPULATION  
1969 CENSUS

<i>Province/District</i>	<i>Percentage of total</i>
<i>Central</i>	
Kiambu	52.07
Kirinyaga	51.75
Murang'a	53.12
Nyandarua	54.62
Nyeri	53.89
<i>Coast</i>	
Kilifi	46.27
Kwale	47.23
Lamu	43.31
Mombasa Island	37.16
Taita	50.77
Tana River	51.06
<i>Eastern</i>	
Embu	53.00
Isiolo	45.68
Kitui	49.70
Machakos	52.99
Marsabit	44.39
Meru	50.33
<i>North-Eastern</i>	
Garissa	51.60
Mandera	49.24
Wajir	48.44
<i>Nyanza</i>	
Kisii	57.49
Kisumu	47.58
Siaya	49.69
South Nyanza	50.60
<i>Rift Valley</i>	
Baringo	50.14
Elgeyo/Marakwet	48.67
Kajiado	47.96
Kericho	53.32
Laikipia	50.42
Nakuru	49.65
Nandi	48.79
Narok	48.56
Samburu	48.54
Trans-Nzoia	52.30
Turkana	42.10
Uasin Gishu	50.42
West Pokot	49.34
<i>Western</i>	
Bungoma	55.32
Busia	51.77
Kakamega	55.28
<i>Nairobi</i>	36.11

Kamba (11.2 per cent), Kisii (6.6 per cent), Meru (5.2 per cent), Mijikenda (4.9 per cent) and Kipsigis (4.4 per cent).

An analysis of the level of educational attainment among the Kenya Africans revealed that approximately 74 per cent had no formal education. For the males and females the proportions were 67 per cent and 80 per cent respectively. The non-Kenya Africans generally had a higher level of educational attainment. Approximately 61 per cent of the total population had no record of formal education as against 54 per cent for males and 70 per cent for females.

The position among the minority groups showed a very different picture. Of the total European population, approximately 35 per cent had no record of formal education as against 33 per cent for males and 38 per cent for females.

The situation among the Asians showed a much higher level of educational attainment particularly for males (30 per cent). The female population had a much lower level of achievement than the Europeans, but a far higher level than that of the Kenya Africans and non-Kenya Africans.

The Arabs in Kenya had very similar levels to the Kenya Africans. About 75 per cent of the total Arab population had no record of formal education as against 66 per cent for males and 84 per cent for females.

If University education is taken as a measure of educational attainment the position is even more striking. Less than 0.1 per cent of the total Kenya African population in 1969 had University education as against 1 per cent for the non-Kenya Africans, 21 per cent for the Europeans, 4 per cent for the Asians and 0.2 per cent for the Arabs. The low level of educational attainment is a feature which recurs in most countries of Eastern Africa. As in the other African countries already studied, the ethnic differences are also matched by considerable regional differences. Of particular significance is the gap between the nomadic pastoral areas of Kenya and the more closely settled parts of the west and east of the Rift Valley and the Coast.

TABLE 4.15. PERCENTAGE OF MARRIED PERSONS BY AGE 1969 CENSUS

<i>Age</i>	<i>Total</i>	<i>Males</i>	<i>Females</i>
10-14	0.9	0.4	1.4
15-19	18.2	3.4	33.4
20-24	51.3	26.0	75.6
25-29	76.4	64.4	86.6
30-34	84.8	81.9	87.6
35-39	86.1	86.0	86.2
40-49	84.0	87.8	80.1
50-59	77.4	88.1	66.4
60-69	68.4	86.2	43.3
70+	56.2	80.7	30.7

Source: *Kenya Population Census, 1969*, vol. III, Table 6 p. 73. Statistics Division, Ministry of Finance and Economic Planning 1971.

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- <sup>9</sup> EGERO, B. and HENIN, R. A. op. cit. p. 156.
- <sup>10</sup> DEY, A. K. and MOGIL, N. *The Population of Tanzania*. op. cit. p. 119–123.
- <sup>11</sup> *Uganda Report on Population Census 1969* vol. III op. cit. p. 1 1973.
- <sup>12</sup> *Uganda Report on Population Census 1969* op. cit., Table A (i) p. 2.
- <sup>13</sup> *Uganda Report on Population Census 1969* op. cit.

## CHAPTER 5

### POPULATION DISTRIBUTION

#### **Geographical Distribution of Population**

Geographically the spatial distribution of population is one of the most striking features of the human condition in East Africa. The significance of this aspect of population situation may be considered in terms of the relatively permanent outlines or the large features of the regional distribution. On the other hand consideration of the dynamic aspect of spatial population change also includes the important phenomenon of urbanization and its consequent problems. Certain features of the regional distribution may be examined first.

An important feature of the regional distribution of population is the existence of distinct population clusters separated by broad areas of sparse population. This regional pattern is a reflection of the varying environmental constraints, physical and biological. In the introductory chapter, attention was drawn to the importance of the coastal belt and the interior highlands. Further the importance of the area around Lake Victoria was noted in relation to spatial population pattern. However, considered in respect of individual countries there are important differences which should be noted.

The tendency of population to be concentrated in certain favourable regions is a common feature of all the three countries of East Africa (Figure 4). But, it will be shown later in considering individual countries that the degree of concentration is much greater in Kenya and Tanzania. Analysis of the distribution of population in relation to area shows that population is more evenly spread in Uganda. This is again a reflection of the more favourable conditions in Uganda for agricultural activities. East Africa in common with the rest of the developing regions of Africa has entered a phase of accelerated urbanization with the attendant problems of unemployment, over-strained infrastructural facilities, and deterioration in conditions of living. Urbanization as a dynamic aspect of this spatial change is an important area of demographic inquiry. However, it is also recognised that by world standards the level of urbanization is low. It is the implications of the modest national levels of urbanization in circumstances of scarce development resources that merits the study of urbanization as an aspect of spatial population distribution.

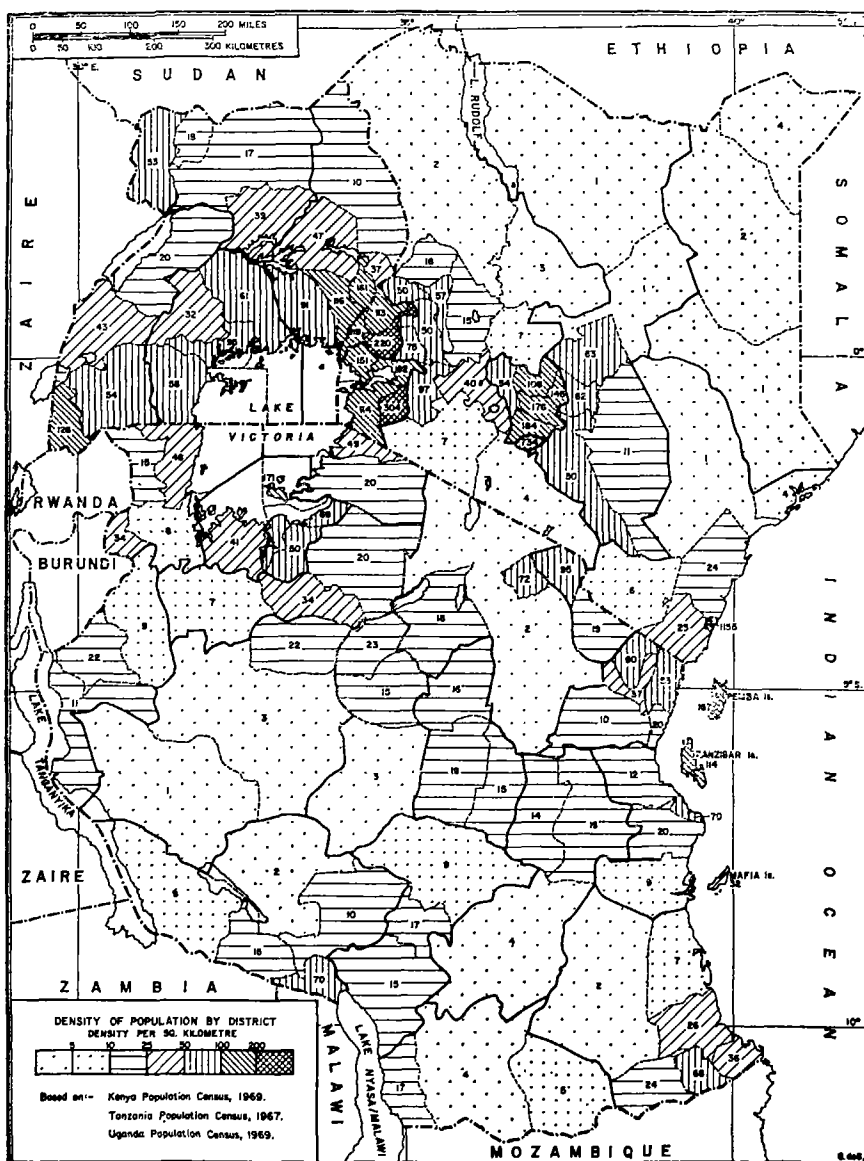


FIG. 4. EAST AFRICA: DENSITY OF POPULATION

## TANZANIA

**General Comments**

The general distribution of population in Tanzania has been described as occurring in well 'defined regions' or 'clusters'. Parts of the central plateaux, the southern plateaux and the Mara-plains are virtually uninhabited, whereas large portions of the volcanic highlands chain of the North-East, South and North-West are literally over populated.

In 1967, Tanzania had approximately 12,313,469 inhabitants occupying about 886,250 sq. km of land. Zanzibar's share was 350,815 persons or approximately 3 per cent of the Tanzanian population aggregate. Furthermore, Zanzibar had a land area of 2644 sq. km or 0.3 per cent of the total Tanzania area.

Tanzania has approximately 63 per cent of her aggregate population occupying only 25 per cent of the total area. If the administrative divisions are considered too, then slightly over 65.5 per cent of Tanzania's population occupies only 18.8 per cent of the total area.

The gross density of population in Tanzania Mainland for 1967 was therefore about 13.5 persons per sq. km. Moreover, Zanzibar had about 134.2 persons per sq. km thus being one of the most densely settled area in Tropical Africa.<sup>1</sup> Table 5.1 below shows the regional distribution of population in Tanzania.

Tanzania's rural population density when compared with rural densities in the neighbouring states reveals that the percentage of people living in extremely high density areas is small, for only 9.3 per cent of the population live at densities of more than 100 persons per sq. km.<sup>2</sup> In Kenya,

TABLE 5.1. REGIONAL DISTRIBUTION OF POPULATION IN TANZANIA  
1967

<i>Region</i>	<i>Population</i>	<i>Accumulated per cent of total population</i>	<i>Area in sq. km.</i>	<i>Accumulated per cent of total area</i>	<i>Density per sq. km.</i>
Dar es Salaam	272,821	2.2	88	0.01	3100.2
Zanzibar	354,815	5.1	2,644	0.3	134.2
Mwanza	1,055,883	13.7	19,684	2.5	53.6
Kilimanjaro	652,722	19.0	13,209	4.0	49.4
Tanga	771,060	25.0	26,807	7.0	28.8
Mara	544,125	29.7	21,997	9.5	25.0
West Lake	658,712	35.0	28,749	12.7	22.9
Shinyanga	899,468	42.3	50,764	18.5	17.7
Dodoma	709,380	48.1	41,311	23.1	17.2
Coast	511,506	52.2	33,719	26.9	15.2
Kigoma	473,443	56.1	37,039	31.1	12.8
Mtwara	1,041,146	64.5	82,751	40.5	12.6
Iringa	689,905	70.1	56,845	46.9	12.1
Mbeya	969,053	78.0	83,139	56.3	11.7
Morogoro	685,104	83.6	73,038	64.5	9.4
Singida	457,938	87.3	49,340	70.1	9.3
Arusha	610,474	92.2	82,098	79.3	7.4
Ruvuma	393,043	95.4	61,254	86.2	6.4
Tabora	562,871	100.0	121,989	100.0	4.6
Tanzania	12,313,469	100.0	886,265	100.0	13.9

Source: *The Population of Tanzania*, Vol. 6 op. cit. Table 3.2.



over 50 per cent of the population size live at the corresponding density. Moreover, Zanzibar has 27.4 per cent of the aggregate urban population and these add up to 97,200 persons living in towns with over 5,000 persons in Tanzania.

### **Population Regions**

The irregularity in the spatial distribution of the population is a function of two major factors, both physical and human. The interplay of the physical elements and human factors greatly determine human spatial distribution and density. Tanzania may be divided into eight major population regions or 'bands' on the basis of population density.

#### **(a) High Density Regions**

Some of the regions carrying high population density in Tanzania are also regions with good annual rainfall intensity and reliability. These regions may be summarized as follows;

- (a) North Eastern Zone
- (b) Western parts of Lake Victoria
- (c) The Southern Highlands Groups
- (d) The Western Rift Valley Highlands
- (e) Lake Victoria Borderlands
- (f) The Coastal Zone.

#### *The North Eastern Zone*

This geographical area is densely populated. Parts of Vunjo East division of Kilimanjaro have over 200 persons per sq. km. The long period of settlement stability offered by its highlands which formed a defensive belt against the Maasai raiders enabled rapid population growth. The women-folk in the region are known to have high fertility, and this may be partly responsible for high growth rates in the region.

These cool volcanic highlands experiencing two rainfall maxima provide suitable ecological conditions for intensive and extensive commercial farming as well as subsistence farming. Agricultural potential of the region has therefore attracted farmers and labourers into the region. The growth of some urban centres such as Arusha which is now the headquarters of the East African Community has made the area attractive for location of industrial activities. This, too has attracted population movements into the region.

#### *Western Parts of Lake Victoria*

This region experiences heavy and reliable rainfall with two maxima thus enabling cultivation of cash crops like coffee and bananas throughout the year. The Haya women of the area are also known to have high fertility, hence the rate of population growth is generally high in the area. Also the region has experienced heavy immigration of labourers from Ruanda and Burundi.

#### *Lake Victoria Plains*

This zone includes the major parts of North Mara and extends southwards

to the mining regions of Shinyanga and Nzenga. The high population density in the region could be attributed to the major towns in the area as Mwanza, Musoma and Shirati which have attracted settlers and labourers. The bulk of Sukuma people in the region who now number well over 2 million people practice subsistence and commercial farming. Mining towns in the South have been attractive centres for in-migrant workers, whereas, fishing activities in the region have also attracted fishermen from Kenya to settle in the region.

### *The Southern Highlands*

This region of volcanic soils experiences high rainfall intensity and reliability throughout the year. The region has good agricultural potential which has attracted many migrants. Regional differences are great for parts of Tukuyu and Poroto have well over 160 persons per sq. km., whereas Iringa, Njombe and Ufipa have much lower population density. The completion of the Tanzam railway and the Great Southern Road will further influence commercial farming in the region.

### *The Coastal Zones*

The coastal belt has 'clusters' indicated by coastal towns and marketing centres of major plantations within the region. The rapid growth of coastal ports and other fishing towns along the coast has attracted labourers from as far as Zaire and other parts of East Africa. But, in common with Kenya, population distribution is discontinuous because coral rocks render some portions unsuitable for farming and fishing. The low density areas are thus found along major river valleys such as Rufiji and Ruvuma. Unpleasant outbreaks of floods and tse-tse fly infestation in some regions further contribute to the low population density in some areas.

### *Dar es Salaam—Kigoma Belt*

This belt has also discontinuous bands of high population density. Areas with high population density are mostly communication nodes along the railways and other routes. Marketing centres of some major plantations within the region also have moderate population density.

### *Western Rift Valley Highlands*

The bordering highlands extending into Ruanda and Burundi experience reliable rainfall which makes the area suitable for agricultural activities. This has made the region attractive for agricultural settlements. But, the high density in the region is further attributed to the constant flow of refugees from Ruanda and Burundi who have settled in the Tanzania sector. This region has a population density exceeding 100 persons per sq. km. in places.

### **(b) Moderate to High Density Regions**

The high plateaux in the centre and the southern regions of Tanzania Mainland, and along some major river valleys such as Kilombero, contain moderate to high population density of 50–100 persons per sq. km.

Population concentration in these regions occurs in pockets of tse-tse free areas, or where water wells occur in relatively drier regions. The traditional system of agriculture has helped in some areas, sustaining high population density as in Makonde plateau.

### **(c) Sparse—Settlement Regions**

These are mostly in the Western plateau which have less than 2.6 persons per sq. km. The occurrence of tse-tse flies in some areas and increasing effects of drought have made these regions unattractive for settlement.

The interior plateau for a long time had its demographic growth influenced by the impact of Angoni Slave raids and Maji Maji rebellion massacres. Other areas containing sparse population are Songai and Masai steppe. Some parts of Masai steppe have been annexed as Game Reserves although the extensive dominance of tse-tse flies in the region has prevented settlement in some parts.

### **Conclusion**

Tanzania's spatial distribution of population occurs in 'clusters' or bands. But, ethnic characteristics tend to depict more features of heterogeneity in their spatial patterns. Regions showing the greatest tribal homogeneity are Kigoma (Ha and Rundi), Kilimanjaro (Chagga and Pare), Mwanza (Sukuma), Shinyanga (Sukuma and Nyamwezi) and West Lake (Haya). The least homogeneous are Mara and Ruvuma regions where no tribe has more than 21 per cent of the total regional population. Towns are more heterogeneous except only three in which one tribe constitutes over 50 per cent of their total population. These towns are Mtwara 61 per cent (Makonde), Bukoba 56 per cent (Haya) and Morogoro 52 per cent (Luguru).<sup>3</sup>

## **UGANDA**

### **General Distribution of Population**

Three important factors have enhanced higher population densities and relatively more evenly distributed population in Uganda than in Kenya or Tanzania. The first is the fact that much of the country is plateau land lying between 3,000 and 5,000 feet above the level. This gives the country almost uniform physiographic conditions, hence almost uniform pattern of population distribution. Secondly, as the most climatically favoured of the East African countries, Uganda has a well distributed rainfall. But the highest rainfall areas such as the Lake Victoria Basin, and the various mountains including the slopes of Elgon, Moroto, Ruwenzori and Mufumbiro have the highest population densities. The rich soils in these highland areas coupled with rainfall have encouraged intensive agricultural activities, permanent settlement and high population densities.

In 1969, Uganda census returned a population of 9,548,847 occupying 236,860 sq. km. of land. This gave a national average density of 40 persons per sq. km. Table 5.2 shows the comparison of Uganda with selected countries of Africa and the world.

From the table it can be seen that Uganda is the most densely populated

country in Eastern Africa though less densely populated than Burundi and Nigeria in that order. But compared to Asiatic countries, African countries are more lightly populated. Within Uganda itself the regional disparities of population shown in Table 5.3 provide a useful basis for regional delimitation of population zones.

TABLE 5.2. POPULATION, AREA AND POPULATION DENSITY FOR SELECTED COUNTRIES

<i>Region</i>	<i>Population (mid 1969 estimate)</i>	<i>Area (sq. km.)</i>	<i>Density (Persons per sq. km.)</i>
Uganda	9,548,847	236,860	40
Tanzania (1967)	12,313,469	886,250	14
Kenya	10,943,000	569,249	19
Zambia	4,208,000	752,614	6
Burundi	3,475,000	27,834	125
Malawi	4,398,000	118,484	37
Nigeria	63,870,000	923,768	69
U.A.R.	32,501,000	1,001,449	32
India	536,984,000	3,268,090	164
Japan	102,321,000	369,881	277
Brazil	90,840,000	8,511,965	11
Netherlands	12,873,000	40,844	315
Africa	345,000,000	30,313,000	11
World	3,552,000,000	135,772,000	26

Source: *The Population of Tanzania* vol. 6. op. cit. Table 3.3. BRALUP and Bureau of Statistics Dar es Salaam, 1973.

TABLE 5.3. UGANDA POPULATION DISTRIBUTION 1969 CENSUS

<i>Region</i>	<i>Population</i>	<i>Accumulated per cent of total population</i>	<i>Area (sq. km.)</i>	<i>Accumulated per cent of total area</i>	<i>Density per sq. km.</i>
W. Mengo	511,498	5.38	6,559	2.77	78
E. Mengo	1,182,283	17.76	23,440	12.67	50
Masaka	640,596	24.47	21,300	21.66	30
Mubende	330,700	27.93	10,310	26.01	32
Teso	570,628	33.91	12,921	31.47	44
Bugisu	397,889	38.01	2,546	32.54	156
Bukedi	550,634	43.85	4,553	34.46	121
Busoga	949,384	53.79	14,047	40.39	68
Sebei	64,464	54.47	1,738	41.12	37
Karamoja	284,067	57.44	27,213	52.61	10
Kigezi	647,988	64.23	5,218	54.81	124
Ankole	861,145	73.25	16,182	61.64	53
Toro	571,514	79.24	13,904	67.51	41
Bunyoro	351,903	82.93	19,609	75.79	18
Lango	504,315	88.21	13,740	81.59	37
Acholi	463,844	93.07	27,853	93.35	17
Madi	89,978	94.01	5,006	95.46	18
West Nile	573,763	100.00	10,721	100.00	54
Uganda	9,548,847	100.00	236,860	100.00	40

Source: *Uganda Population Census*, 1969, vol. 1, Statistics Division, Ministry of Planning and Economic Development, 1971.

Like other African countries, Uganda has the bulk of her population living in rural areas. According to the 1969 Census three major urban centres—Kampala, Jinja and Mbale—accounted for only 4.3 per cent of the total population.

### **Population Regions of Uganda<sup>4</sup>**

Population regions in Uganda are the outcome of the interplay of physical as well as human factors. Improvement or preservation of the physical environment and past waves of migration which culminated in the present pattern of settlement of Uganda have an important bearing on population distribution and density patterns. On the basis of the 1969 Census three density regions may be recognised:

- (a) High Density Regions
- (b) Moderate to High Density Regions
- (c) Sparsely Populated Regions

#### **(a) High Density Regions**

These are districts with 100 or more persons per sq. km. They include the three districts of Bukedi (121 p.s.k.), Kigezi (124 p.s.k.) and Bugisu (156 p.s.k.).

Bukedi has a remarkably even distribution of population and only a very small part of it has a low population density. The neighbouring Bugisu supports a denser population due to its fertile volcanic soils and good rainfall. The Iteso and Jopadhola on the plains below practise pastoralism and mixed agriculture. Kigezi in the neighbourhood of the Mufumbiro highlands is also an area of fertile soils and high rainfall.

#### **(b) Moderate to High Density Regions**

These regions have between 40 and less than 100 persons per sq. km. Seven districts included here are further sub-divided as follows:

##### *Moderate Density Regions*

These include regions with 40–50 persons per sq. km. such as Toro (41 p.s.k.), Teso (44 p.s.k.) and East Mengo (50 p.s.k.). If the urban population of Kampala is excluded from East Mengo, the density of this district could be even lower.

Much of Toro is occupied by the Ruwenzori Mountains, a factor which explains uninhabitability of much of the district. Also the Queen Elizabeth National Park in the South and Toro Game Reserve in the North plus extensive forest reserves limit habitation of these areas. The East has low densities due to political disturbances. Moreover, it lacks forest or game reserves which mask the true picture of population density.

##### *High Density Regions*

These regions have between 50 to 100 persons per sq. km. Four districts are included, namely, Ankole (53 p.s.k.), West Nile (54 p.s.k.), Busoga (68 p.s.k.) and West Mengo (78 p.s.k.). Parts of Ankole are also occupied by Game Reserves (Queen Elizabeth National Park and Kyambura Game Reserve) as well as forest reserves. The Eastern part is dry and low-lying

country where only pastoralism is possible but the western part is wetter and more densely settled. Sometimes out-migration occurs in the rugged parts in the north-west.

West Nile district consists of low-lying plains adjacent to Lake Mobutu and the plateau which is heavily populated. It is a region of out-migration which further reduces population density.

High densities of population prevails over most of central Busoga. The district is a rich agricultural land with extensive banana groves; bananas form the staple diet of the dense population. At one time southern Busoga became depopulated during the sleeping sickness epidemic. The depopulation was due to deaths and prohibition of settlement in the area. Exclusion of the population of Jinja town reduces density figures for Busoga as a whole.

West Mengo has densities varying from medium to high. Its commercial economy is based on coffee and cotton. Banana cultivation is an important aspect of subsistence farming on which the dense population depends.

### **(c) Sparsely Populated Districts**

Nearly half of Uganda's districts have densities of between 10 and less than 40 persons per sq. km. Eight districts in this category are Karamoja (26 p.s.k.), Acholi (17 p.s.k.), Bunyoro and Madi (18 p.s.k. each), Masaka (30 p.s.k.), Mubende (32 p.s.k.), Sebei and Lango (37 p.s.k. each).

Karamoja is by far the most sparsely populated district in Uganda. Besides being dry, part of it forms the Kidepo National Park. Pastoralism is the mainstay of the economy and improvement of the environment is unlikely in a foreseeable future.

In Acholi district the Gulu-Kitgum-Lira triangle has particularly low population densities with some places virtually unoccupied. During the first two decades of the present century, sleeping sickness was a great menace in the area. Also occupying a large area of the district is the Murchison Falls National Park. It is a predominantly Nilotic district, settled by Madi and Acholi from southern Sudan.

Bunyoro is occupied by large forests in Bundongo and Bungoma and some scattered forest reserves in Mubende. The spread of tse-tse fly into the area is a determining factor for the low density. It has been settled partly by immigrants from other districts in Uganda and was the core of the once famous and extensive Bunyoro—Kitara Empire.

Like Bunyoro, Madi has an average density of 18 persons per sq. km. Much of it is low-lying plain forming the northern part of the Lake Mobutu-Nile lowlands. The prolonged dry season lasting for four months annually, poor rainfall and poor surface water resources are responsible for the sparse population. Inhabitants depend heavily on boreholes for domestic water. The area was closed to settlement because of sleeping sickness in the 1910–1920 period, a time when people were evacuated from the area. The area was also disturbed by slave raiders.

Western Masaka district is another sparsely populated area. The islands in the district were abandoned for about 20 years because of sleeping sickness but were repopulated in the late 1920's.

Mubende is an area which supports much fewer people than its full potential. While it is difficult to determine its potential land carrying capacity, it is likely that improvement of the environment might increase

population densities. It is situated in an area between the former empires of Buganda in the south-east and Bunyoro-Kitara in the north-west with Ankole bordering in the south.

Sebei district on the slopes of Mount Elgon has extensive forests at an altitude of 2,100 metres. The main area of inhabitation is the middle slopes in the north-east of the mountain. During the last fifty years the tendency has been for people to move down slope.

Lango district is an area of geographical uniformity to a large extent. But, swamps are found in the peninsulas jutting into Lakes Kwana and Kyoga—an area of impeded drainage. The most important demographic feature of the district is out-migration to the more developed parts of Southern Uganda.

Considering all districts in Uganda, the situation of population density may be explained by Table 5.4 below.

TABLE 5.4. UGANDA DENSITY OF POPULATION BY DISTRICTS 1969<sup>5</sup>

<i>Density classes (Persons per sq. km.)</i>	<i>Number of districts in class</i>	<i>Population</i>		<i>Area</i>	
		<i>Total</i>	<i>Percent</i>	<i>Total</i>	<i>Percent</i>
150.0 and over	1	397,889	4.2	2,546	1.1
100.0–149.9	2	1,198,622	12.5	9,771	4.1
75.0– 99.9	1	513,498	5.4	6,559	2.8
50.0– 74.9	4	3,566,575	37.3	64,390	27.2
40.0– 49.9	2	1,142,142	12.0	26,825	11.3
20.0– 39.9	4	1,540,329	16.1	47,088	19.9
10.0– 19.9	4	1,189,792	12.5	79,681	33.6
All Density Classes		9,548,847	100.0	236,860	100.0

It can be seen that the density class of 50.0 to 74.9 persons per sq. km. accounts for more than one third of the total population. Population density is generally highest in the smaller districts and lowest in the largest districts or those where forest and game reserves occupy large areas.

A few conclusions may be drawn from the foregoing discussion. First, environmental conditions relating to physiography and climate determine density differentials of population and its redistribution within the national boundaries. Drier areas have more sparse populations than wetter areas with good soil and hence agricultural activity. Secondly, the occurrence of game and forest reserves undermines the realistic situation of population density in areas where they are found. Thirdly, the tse-tse fly which has been responsible for both human and livestock trypanosomiasis is an important factor in population distribution and density. Sleeping sickness has resulted in the sparsity of population due to either diseases or prohibition of settlement in areas where the disease is rampant. Conversely, elimination of the fly has led to settlement of formerly uninhabitable areas of the country.

## KENYA

### General comments

Mention, has already been made of the extreme concentration of population in Kenya. Before analysing in detail the spatial pattern, certain broad features should be noted. In 1948, Kenya had a total population of 5,405,966 in a land area of 569,249 sq. km. giving an overall density approximately 10 persons per sq. km. By 1962 the overall density had increased to 15 per sq. km. and at the time of the 1969 census it was 19 persons per sq. km. However, such overall densities have little meaning.

Analysis of district densities show that 52 per cent of the total population at the time of the 1969 census occupied only 5.46 per cent of the total land area. Table 5.5 shows that this figure is affected by the urban density of Nairobi and Mombasa. At another level of concentration well over two thirds of the total population at the time of the census occupied approximately 9 per cent of the total area. It will be noted from the table again that some 90 per cent of the total population of the country live in 26 percent of the total area of the land. At the other extreme, there are the vast open areas of the country that appear very sparsely populated.

The striking spatial contrast in the distribution of rural population in Kenya can be attributed largely to the interaction of environmental factors including rainfall, productivity of the soils, socio-economic factors and the inhibiting influence of the biotic factors. The most important environmental factors are the fertility of the soils and the effectiveness of rainfall. Fertility of the soils enhances the role of the volcanic highland areas and regions similarly located. However, human factors acting within the well established historical and economic framework are extremely important.

### Regional Distribution of Rural Population

Rural population in Kenya is found concentrated in three district clusters separated by broad areas of sparse population. The three population clusters form an hourglass shaped region with a broad base on Lake Victoria borderlands, narrowing in the higher parts of the central rift floor to the east of the rift valley. The region broadens again to include the well populated highland area from Nairobi to Mount Kenya-Nyambene region in the north-east. Eastwards the well marked population region is continued in a south easterly direction by the well populated hills of Machakos and Kitui. The third population region forms an isolated band extending along the coast from just south of Tana river delta across into Tanzania.

To the north and south of the main population axis and including the broad band of very lightly populated country between the coast and the populated highland region is a relatively empty region with occasional small population clusters such as the Taita Hills and the slopes of Mount Kilimanjaro. The main regions of population concentration outlined roughly coincided with those parts of the country where in 0–20 years out of 100 years, the rainfall is likely to be less than 50 mm. These regions may be summarised as follows :



## 1. Population regions of better watered lands

- (a) The Lake Victoria basin
- (b) The West Rift Highland region
- (c) The Central Rift
- (d) The Aberdares—Mount Kenya—Nyambene region
- (e) The Hills of Machakos and Kitui
- (f) The Coastal Belt

TABLE 5.5. POPULATION DISTRIBUTION BY DISTRICT 1969 CENSUS  
(IN ORDER OF DENSITY)

<i>District</i>	<i>Population '000</i>	<i>Cumulated per cent</i>	<i>Area km.</i>	<i>Cumulated per cent</i>	<i>Density per sq. km.</i>
Mombasa	247	2.3	214	0.04	1,155
Nairobi	509	6.9	693	0.16	734
Kisii	675	13.1	2,217	0.54	304
Kakamega	783	20.2	3,558	1.15	220
Kisumu	401	23.9	2,082	1.51	192
Kiambu	476	28.2	2,578	1.95	184
Murang'a	445	32.3	2,529	2.39	176
Siaya	383	35.8	2,535	2.82	151
Uasin Gishu	217	37.8	1,490	3.08	146
Busia	200	39.6	1,680	3.36	119
South Nyanza	663	45.6	5,793	4.36	114
Bungoma	345	48.7	3,046	4.88	113
Nyeri	361	52.0	3,351	5.46	108
Kericho	479	56.4	4,948	6.31	97
Nandi	209	58.3	2,789	6.79	75
Meru	597	63.7	9,528	8.42	63
Embu	179	65.3	2,871	8.91	62
Elgeyo Marakwet	159	66.7	2,810	9.40	57
Nyandarua	177	68.3	3,284	9.96	54
Machakos	707	74.7	14,156	12.39	50
Trans Nzoia	124	75.8	2,495	12.82	50
Uasin Gishu	191	77.5	3,799	13.47	50
Nakuru	291	80.2	7,291	14.72	40
Kwale	206	82.2	8,317	16.15	25
Kilifi	308	85.0	12,593	18.31	24
West Pokot	82	85.7	5,246	19.21	16
Baringo	162	87.2	10,703	21.05	15
Kitui	343	90.3	31,099	26.39	11
Laikipia	66	90.9	9,723	28.06	7
Narok	125	92.0	18,033	31.15	7
Taita	111	93.0	17,209	34.11	6
Lamu	22	93.2	5,797	35.10	4
Mandera	95	94.1	25,922	39.55	4
Kajiado	86	94.9	22,106	43.35	4
Samburu	69	95.5	20,804	46.92	3
Wajir	86	94.9	57,340	56.76	2
Turkana	165	97.8	66,887	68.24	2
Tana River	51	98.3	39,198	74.97	1
Isiolo	30	98.6	25,621	79.37	1
Marsabit	52	99.1	76,858	92.56	1
Garissa	64	99.7	43,364	100.10	1

Source: Central Bureau of Statics.

## 2. Population regions of the arid and semi-arid lands (marginal lands)

- (g) The marginal lands of the northern and southern Rift Valley Province
- (h) The plateau foreland (including Taita Hills and slopes of Mount Kilimanjaro)
- (i) The arid and semi-arid lands of northern and north eastern Kenya

### *The Lake Victoria Basin*

The Lake Victoria basin of western Kenya is a well defined lacustrine population zone which can be identified in similarly situated parts of Uganda and Tanzania. It extends from Mt. Elgon region along the Kenya-Uganda border in a broad arc which includes the western Nyanza Provinces and Kericho District.

Provincial average rural densities for Nyanza and Western Provinces in 1969 were 168 and 161 persons per sq. km. respectively. District average densities indicated that Kisii with 304 persons per sq. km. was the most populated administrative unit and Kericho District, with an average of 97 persons per sq. km. had the lowest density. However, these average densities conceal important regional contrasts which can be easily identified on a density map.

Although average rural densities were in excess of 150 persons per sq. km., the core regions of rural densities in the higher parts of the Nyanza and Western provinces were in excess of 400 persons per sq. km. South of the Winam Gulf, densities ranged from about 100 persons per sq. km. near the Lake shore to well over 500 persons in Kisii Highlands to the south-east. North of the Gulf densities ranged from about 150 to 200 persons per sq. km. near the Lake shore to well over 700 persons per sq. km. in the southern districts of the Western Provinces. These clusters of population concentration are the population problem areas of Western Kenya.

### *The West Rift Valley Highlands*

Immediately west of the Rift Valley in Central Kenya is agriculturally one of the most productive regions of the country. It supports a varied and successful commercial farming based on the rich volcanic highlands. Population density ranges from about 100 persons to about 200 persons per sq. km. Within this belt there are zones of rather low densities in Uasin Gishu, parts of Nandi Trans-Nzoia and West Pokot. The pattern of rural density is here very much influenced by the impact of former European settlement in this highland area. Districts formerly reserved for African occupation appear as islands of denser population concentration.

### *The Central Rift*

A narrow band of a more closely populated zone forms a bridge between the main population region west of the rift and the next population region to the east. From the Nakuru-Nyahururu towns it forms a well defined belt generally to the east of the Nakuru-Nairobi railway and is separated from the next population region to the east by a belt of forest including Aberdares and Kikuyu forests. Rural densities here in 1969 varied from 50 to about 100 persons per sq. km.

*The Aberdares—Mount Kenya—Nyambene Population Region*

This is one of the most striking population concentration region in Kenya and indeed in Africa. The population cluster extends from the Nairobi region northwards on the lower slopes of the Aberdares and links up with the ring of populated regions round Mount Kenya which extends north eastwards to Nyambene Mountains in Meru District.

The most populated part forms a well defined belt extending from the southern locations of Kiambu District northwards through Murang'a to Nyeri on the slopes of Mount Kenya. In the Kiambu portion there were in 1969 locations carrying rural densities ranging from about 600 to about 800 persons per sq. km. In Nyeri District the most closely settled rural parts had densities of about 500 to 600 persons per sq. km.

The well populated belt is continued on the slopes of Mount Kenya including parts of Nyeri, Kirinyaga, Embu and Meru Districts. Average densities on the mountain slopes varied from about 200 to about 400 persons per sq. km. except for the vicinity of townships such as Embu and Meru. The whole region has been deeply affected by the rapid growth of the urban complex of Nairobi which forms the principal destination of the rural to urban migrations.

*The Hills of Machakos and Kitui*

The Aberdares-Mount Kenya and Nyambene population region merges eastwards into a zone with a density ranging from 50 to 100 persons per sq. km. This is the low country consisting largely of basement complex rocks and experiencing less reliable rainfall.

The hills of Machakos and Kitui form two distinct clusters with densities rising to well over 100 persons per sq. km. In the northern half of Machakos District, rural densities increase to well over 500 persons per sq. km. The Machakos and Kitui population clusters form isolated regions of denser concentration surrounded by very sparsely populated areas.

*The Coast*

The last major population zone is located along the Indian Ocean fringe in a zone extending from the old coastal settlement of Malindi on the Galana river delta southwards into Tanzania. Two distinct clusters may be identified. There is the northern cluster based on Malindi town and the southern cluster based on the principal port of Mombasa. Average rural density varies from 100 persons to 200 persons per sq. km. However, densities are much higher within the urban cores that dominate the parts of the coast. Densities of well over 500 persons per sq. km. are characteristic of the urbanised cores of Malindi and Mombasa. About 60 kilometers from the coast there is a sharp drop in the concentration of population to 20 persons per sq. km. or less.

*The Marginal Lands of the Northern and Southern Rift*

Bordering the highlands to the north and south is a marginal region which shares the severe character of the semi-arid lands and during the more favourable rainy periods resembles the character of some of the neighbouring higher lands. In the north these form the parts of Isiolo Districts, the

lower parts of Nanyuki, Samburu and Baringo Districts. The region is the home of the pastoral nomadic communities including the Maasai, Samburu and West Pokot. In the south, this forms largely parts of the former Maasai Province. This is traditionally a population problem area where occasionally favourable rainfall may lead to an overburdening of the environmental resources and where periodic droughts have been a constant threat to continued occupation by man.

### *The Arid and Semi-Arid Lands*

Beyond the marginal lands and occupying more than two thirds of the total area of the country is the relatively empty portion of the country occupied largely by the Cushitic speaking pastoral nomads. Over most parts of this dry country the density of population is less than 10 persons per sq. km.

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## CHAPTER 6

### URBANIZATION

#### **Rural and Urban Settlements**

Population distribution in East Africa may also be examined in terms of the settlement types both rural and urban. The two aspects of population distribution are important with respect to the different problems of development which they pose.

In the rural areas of East Africa the dominant pattern of settlement distribution is dispersed homestead. In many parts of East Africa the homestead presents varying patterns of density types. Between the scattered homestead and the large urban settlements there are wide variations of settlement types which have received little attention.

The problems set by the dispersed nature of the rural settlements are at the root of many development issues. In Tanzania the 'Ujamaa' villages constitute a deliberate attempt to influence the pattern of settlement growth towards greater nucleation. With increased nucleation the task of providing information is thus greatly facilitated.

The creation of 'Ujamaa' villages though not a policy feature of Uganda and Kenya has its parallels in these countries. There has been a move to stimulate the growth of intermediate centres and new forms of nucleation which have emerged with the development of a modern administration and exchange economy. The concept of the growth points and service centres has earned a considerable measure of support.

However, analysis of the spatial distribution of population is incomplete without references to the urbanization as an important aspect of population change. International Comparisons are hampered by the differences in definitions of urbanization. In East Africa, national census definitions include all settlements of 2,000 or more persons. But the range of data available varies from country to country.

Data compiled on a global basis taking into account national definitions show very low levels of urbanization in the region. Whilst urbanization at the global level is expected to rise from about 33 per cent in 1960 to about 51 per cent by the end of the present century the expected change in Eastern Africa will involve a rise in the level from 7 per cent to about 21 per cent. Comparable proportions for Northern Africa are 30 per cent and 53 per cent. Southern Africa 42 per cent and 58 per cent, Middle Africa 12 per cent to 41 per cent and Western Africa 15 per cent to 40 per cent. However, analysis of country levels and trends in urbanization reveal important differences.

## Urbanization in Tanzania

Urbanization in Tanzania is in general very low as compared to other countries. In 1957 Tanganyika had 33 gazetted townships with an aggregate population of 364,072, of this total 128,742 were in Dar es Salaam and 38,053 in Tanga. Thus out of the overall total population of 364,072, 45 per cent were in the townships of Dar es Salaam and Tanga. However, considering Zanzibar and Pemba there was a much higher level of urbanization.<sup>1</sup> At the time of the 1967 Census the level of urbanization in Mainland Tanzania was 5.7 per cent as compared to 6.2 per cent if the 834,541 people in Zanzibar town are included. Analysis of the intercensal growth rates for 1948–57 was 7.4 per cent for Tanzania and 6.4 per cent including Zanzibar.<sup>2</sup>

In 1967 Zanzibar town had a population of 64,490 making up approximately 82 per cent of the total urban population of the two islands. However, despite the high level of urbanization in the island the recorded annual rate of growth has been very low. In 1948–58 Zanzibar recorded an urban growth rate of 2.5 per cent per annum as against 1.9 per cent for the 1958 to 1967. The proportion living in the urban areas has not changed significantly. In 1958, 35 per cent of the urban population was resident in Zanzibar town as compared to 35.9 per cent in 1967.<sup>3</sup> The majority of the urban population were non-Africans.

Recent changes include a substantial decline of the Asian population and a considerable increase in the African population. In 1967 the share of Asians declined to 12 per cent and the African/Arab group increased to 84 per cent. In the same year Pemba Island had 9 per cent of the total population in the towns as compared to 36 per cent for Zanzibar Island.

On the Mainland Tanzania, the trend in urbanization has been different. At the time of the 1948 census, there were only four towns with an excess of 10,000 inhabitants. These included Dar es Salaam, Tanga, Tabora and Mwanza. In 1967 there were 14 towns with a total population in excess of 10,000. These included Dar es Salaam (272,821), Tanga (61,058), Mwanza (34,861), Arusha (32,452), Moshi (26,864), Morogoro (25,262), Dodoma (23,559), Iringa (21,746), Kigoma/Ujiji (21,269), Tabora (21,012), Mtwara-Mikindani (20,413), Musoma (15,412), Lindi (13,352) and Mbeya (12,247).

At the time of the 1967 census Dar es Salaam had increased its dominance. With a total population of 127,821 it was more than four times larger than Tanga (61,658), the next largest town. Table 6.1 shows the changes in size and number of the various categories of urban centres.

In 1948 most of the towns ranged between 2,500 and 5,000 in size. By 1957 though the concentration round the 2,500 to 5,000 was still evident, there was a marked rise of towns in the 15,000 to 20,000 range. By 1967 a noticeable decrease in the smaller towns was recorded. There were 9 towns with a population range between 20,000 and 50,000 as compared to the only one in 1967. Analysis of growth indicates an average growth rate of 7 per cent between 1948 and 1957 for the 25 urban areas. The fastest growing towns were Kigoma (16 per cent) and Tukuyu (13 per cent). The two townships of Bagamoyo and Chunya actually experienced a decline.<sup>4</sup>

TABLE 6.1. NUMBER AND SIZE OF URBAN AREAS IN TANZANIA  
MAINLAND

<i>Size by Category</i>	<i>1948</i>	<i>1957</i>	<i>1967</i>
Less than 1,000	2	1	0
1,000–5,000	15	15	12
5,000–15,000	8	9	8
15,000–20,000	1	4	1
20,000–25,000	—	—	5
25,000–50,000	—	1	4
50,000–100,000	1	—	1
over 100,000	—	1	1
Total	27	31	32

*Source: Mascarenhas, A. op. cit. p. 83, Table 5.3.*

Between 1957 and 1967, the overall growth rate had declined from 6.5 per cent to 6 per cent per annum. However, some towns still showed faster growth. Songea with 14 per cent and Arusha with 12 per cent per annum were among the faster growing towns. Among the large towns only Dar es Salaam experienced above average growth.

Analysis of the regional distribution of urban centres suggests considerable differences. Only two regions had urbanization levels in excess of the national average (6 per cent). The Coast region (35 per cent) and Tanga (7 per cent) had the highest. Most of this growth has been attributed to migration.

As the case with Uganda and Kenya the urban population is dominated by the presence of the males. This accounts for the high sex ratios of the urban centres.

### Urbanization in Uganda

One of the striking features of Uganda's population distribution is the smallness of the urban population. The study of urbanization is limited by the data available and the shortness of time over which Uganda has had regular census. The most useful data for a comparative study are the results of 1959 and 1969 censuses. Between the two censuses the total urban population defined as settlements of 2,000 persons or more grew from 280,000 or 4.3 per cent to 675,520 or 7 per cent of the total population in 1969.

Table 6.2 shows the total population of the main towns in 1959 and 1969. Analysis of the data on urbanization indicates that although the urban population more than doubled in the intercensal period, the proportion of those living in urban areas is still small. One of the major problems in studying the changes associated with urbanization are changes in boundaries. It is difficult to compare figures from the two censuses. Kampala alone has experienced an expansion of area from 20.7 to 180 sq. km. Other centres including Jinja have experienced similar changes in area. The growth of peripheral population is another problem. Many of the towns have a large concentration of population outside the control of the urban authorities.<sup>5</sup>

Although the total urban population is small the primacy of Kampala capital city is evident. The second largest town is Jinja which together

with Bugembe and Njeru now forms one urban planning complex. Kampala and the Jinja-Bugembe-Njeru complex in 1969 accounted for 4.4 per cent of the total urban population of Uganda. The two major centres are located on a development axial belt extending from Tororo

TABLE 6.2. THE POPULATION OF URBAN CENTRES IN 1959 AND 1969

<i>Town</i>	<i>Population</i>	
	<i>1969</i>	<i>1959</i>
Kampala	330,700	146,000
Jinja	52,509	29,741
Bugembe	46,884	—
Mbale	23,544	13,569
Entebbe	21,096	10,941
Gulu	18,170	4,770
Mbarara	16,078	3,844
Tororo	15,977	6,365
Kilembe	13,673	—
Masaka	12,987	4,782
Soroti	12,398	6,645
Arua	10,837	4,645
Kabale	8,234	10,919
Fort Portal	7,949	8,317
Lira	7,340	2,929
Kasese	7,213	1,564
Mubende	6,004	1,877
Iganga	5,958	3,146
Moroto	5,488	2,082
Rhino Camp	5,257	3,478
Masindi	5,226	1,571
Magamaga	4,818	—
Njeru	4,637	1,988
Mityana	4,220	803
Mukono	3,532	450
Mpigi	3,401	577
Kitguru	3,242	3,454
Bundibugyo	2,931	1,615
Kamuli	2,916	1,867
Moyo	2,656	2,009
Lugazi	2,500	—
Nyendo	2,430	—
Buwenge	2,378	—
Hoima	2,339	—
Total	675,520	281,481

*Source: Uganda National Report on the Human Environment, op. cit. p. 12.*

to Masaka. The third largest town Mbale is situated not far off to the north of Tororo. The zone coincides with the fertile and productive area of Southern Uganda.<sup>6</sup>

Urban growth in Uganda can be explained as a result of industrial activity. Towns considered in this category include Kasese, Kilembe, Tororo, Jinja and Kampala. More recently the establishment of new district headquarters has brought in activities leading to urban expansion.

Development of economic activities in these towns have also led to the dominance of males over females. Table 6.3 shows the sex ratio for Kampala Africans in 1969. This dominance is, however, on the decline.



TABLE 6.3. KAMPALA (AFRICANS) SEX RATIO

	<i>Total</i>	<i>Non-Ugandans</i>
0- 4	96	98
5- 9	88	89
10-14	94	105
15-19	101	110
20-24	148	181
25-29	172	261
30-34	181	413
35-39	201	549
40-44	153	574
45-49	203	819
50-54	132	547
55-59	209	830
60-64	108	430
65-69	128	575
70-74	93	413
75+	103	292
Total	126	963

*Source: Report on the 1969 Population census op. cit. Table 1.*

### Urban Problems

It has been noted that urbanization in Uganda is extremely low. However, a number of problems have already attracted the attention of the policy makers. There are three crucial problems that raise the urbanization trend as a priority area. These are: housing; water and sewerage and traffic. The problem of inadequacy of housing facilities is a universal feature of all the countries of the African region and other developing parts of the world. The scarcity of resources and the general high cost of building mean that only a limited number of people can have access to decent housing.

It has been estimated that taking the annual average rate of growth between 1959 and 1969 as constant, the urban population will have increased to 1.2 million by 1976. This would represent an increase of 500,000 over the period 1969-1976. The total requirement for additional housing is roughly estimated at 125,000.<sup>7</sup> The inadequacy of housing facilities has led to the development of highly congested areas and deterioration in the quality of living in some towns.

Associated with the problem of housing is the provision of the essential infrastructural facilities such as water and sewerage. By 1973 there were 33 towns in Uganda with piped water supply. Because of the rapid expansion of the urban population it is not possible to meet the requirements established by international organizations. Most of the urban population have no access to satisfactory sewerage facilities.

Uganda is among the countries of East Africa that has invested heavily in permanent roads. However, traffic congestion in the main urban centres remains one of a growing number of problems. The problem of congestion in the City of Kampala is made worse by the lack of adequate parking facilities.

Since 1930 there has been a continuing drive for planning the development of the towns of the country. Further the demographic conditions of the towns in Uganda underlie the need for various forms of social services. Provision of these social services and employment facilities continue to be among the high priorities of the country.

### **Urbanization in Kenya**

In contrast to the other countries of East Africa there has been an appreciable development of urbanization in Kenya. The current rate of growth of urban population and problems raised by the general trend are among the most important areas of interest of policy makers. However, a fuller understanding of the nature of urbanization problems is hampered by uncertainties over definitions and the constantly changing or imprecise urban boundaries. Data on all centres that qualify as urban settlements according to census definition is scarce. Thus although a considerable amount of information is available on Nairobi and Mombasa, many of the medium sized and the smaller urban centres are little known.

### **Size and Growth of the Urban Population**

Blacker (1964) adopted, for purposes of defining urban centres, a total population of 2,000 and over, on grounds that it is more realistic and facilitates comparison with the 1948 Census.<sup>8</sup>

On the basis of this definition there were 17 towns in 1948 with a total urban population of 285,445. At the time of the 1962 census, the figure had increased to 670,945 and the number of towns to 34. The latest census in 1969 gave a total urban population of 1,079,908 and the number of the towns with over 2,000 persons had risen to 47.

By world standards Kenya's level of urbanization using the crude index of proportion of total population is very low. In 1962, the aggregate urban population amounted to 7.8 per cent of the total population. In 1969 the urban population living in urban settlements of 2,000 or more persons accounted for 9.9 per cent of the total population (Table 6.4).

A closer analysis of the structure of urbanization shows that although 7.8 per cent of the total population was at the time of the 1962 census living in the urban areas, only 5.3 per cent of the African population was urbanized and over 60 per cent of these were in the City of Nairobi and Mombasa.<sup>9</sup>

Thus by 1962, the total African population living in urban areas of 2,000 persons or more was equivalent to the total urban population of Kenya in 1948. Inter-censal comparison indicates that between 1948 and 1962 the rate of growth of urban African population was far in excess of that of the non-Africans. The urban Africans increased by 174 per cent and the Non-Africans by 85 per cent. The growth rate of Kenya's towns absorbed only 10 to 15 per cent of the total increase in the country's population.

Table 6.5 summarises the growth of the population of all races in the main towns of the country. However, analysis of the African population shows a very different picture. Between 1948 and 1962 Thika was the fastest growing centre for Africans. The rate of growth of the African population was estimated at 11 per cent giving a doubling time of less than 7 years. The slowest growing centre was Kitale in the heart of com-

mercial farming highlands, of north west Kenya. Between 1962 and 1969 the lead had passed on to the city of Nairobi, Kisumu and Mombasa. The African population of Nairobi had increased by 15 per cent and that of Kisumu by 8.7 per cent, whilst Mombasa had increased by 7.6 per cent per annum. It has been noted that some of the high rate of increase may

TABLE 6.4. GROWTH OF URBAN POPULATION 1948-1969

Size of urban centres	Number of Towns		
	1948	1962	1969
100,000+	1	2	2
20,000-99,999	1	2	2
10,000-19,999	2	3	7
5,000- 9,999	3	11	11
2,000- 4,999	10	16	25
Total	17	34	47
Total Urban Population	285,445	670,945	1,079,908
Percentage of Kenya's Population	5.3	7.8	9.9

TABLE 6.5. GROWTH OF TOTAL POPULATION IN MAIN TOWNS  
1948-1962-1969

	1 Population 1948	2 Population 1962	3 Population 1969	4 Annual rate of growth per cent 1948-1962	5 Annual rate of growth per cent 1962-1969
Nairobi	118,976	266,794	509,286	5.9	9.7
Mombasa	84,746	179,575	247,073	5.5	4.7
Nakuru	17,625	38,181	47,151	5.7	3.1
Kisumu	10,899	23,526	32,431	5.7	4.7
Eldoret	8,193	19,605	18,196	6.4	0.5
Thika	4,435	13,952	18,387	8.6	4.0
Nanyuki	4,090	10,448	11,624	6.9	1.6
Kitale	6,338	9,342	11,573	2.8	3.1
Nyeri	2,705	7,857	10,004	7.9	3.5
Kericho	3,218	7,692	10,144	6.4	4.0

Sources: Column 1: Range Population Census 1948.  
2 and 5: Statistical Abstract 1970, p. 15.  
4 and 5: Calculated.

in some instances have been due to boundary changes. The high rate of growth of Nairobi's African population between the two censuses was certainly due partly to inclusion of large areas of former African locations of Kiambu. However, it has been indicated in the section on migration that one of the most distinctive features of spatial population change in Kenya is the accelerating rural-urban influx of population.

During the period of the three censuses, about 70 per cent of the total urban population was located in Nairobi, and Mombasa. Nairobi has therefore maintained its primate role. In 1962, the total population of the 10 largest urban centres including, Nairobi, Mombasa, Nakuru, Kisumu, Eldoret, Thika, Nanyuki, Kitale, Nyeri and Malindi was 575,098. By 1969 the total population of the ten towns had increased to 916,482. Altogether in 1962, Nairobi's population accounted for only 3.09 per cent of the total national population. In 1969 the share had increased to 4.8 per cent. Mombasa's share of the national population increased from 2.08 per cent in 1962 to 2.26 per cent in 1969.

In 1962 the ten largest towns listed above accounted for 6.67 per cent of the national total population. By 1969 the same ten largest cities had increased their share to 8.48 per cent of the total national population. Nairobi's share of the total population of the ten centres increased from 46.5 per cent in 1962 to 55.6 per cent in 1969. All the other towns except Nairobi suffered a decline in their share of the total population of the ten largest centres.

The pattern of the urban growth in Kenya has led to a striking difference in the age and sex structure. In the rural areas there is a preponderance of the young people aged less than 15 years. In the urban areas the proportion is lower by a little more than 10 per cent. The difference in the characteristics of the urban population is even more marked if the sex ratio is used. The sex ratio for urban centres appears to be higher with the increase in the size of the town. For the urban centres with a population range of 2,000–4,999, the sex ratio at the time of the 1969 census was 119. The ratio for the towns falling between 5,000 and 9,999 was 125. For towns with a population ranging from 10,000 to 99,999 the ratio was approximately 130. In the case of the large cities of 100,000 or more, the sex ratio was 145.

Out-migration does not appear to affect towns above the 100,000 population threshold and those ranging in population from 5,000 to 9,999. In these settlements the age sex ratio rises from just over 101 to a peak between 40 and 49 years of age after which there is a slight decline. Centres with a total population of 2,000 to 4,999 and between 10,000 to 9,999 show a male deficiency between 10 and 19 years after which there is a rise in the sex ratio up to the age of 40 to 49 followed by a decline. A clear analysis of the African population shows an ever greater imbalance between the males and females. Sex ratios of the urban Africans are distinctly in favour of males.

An estimate of the future trend of urban population is extremely important. The general indications are that the rate of urban growth will accelerate rather than decrease. The Physical Planning Department of the Kenya Government has indicated that the barest minimum annual increase will be 7.5 per cent per annum. By the year 2,000, the urban areas of Kenya will have to accommodate between 26 per cent and 32 per cent of the total population estimated at between 7 and 9 million. Approximately 81.8 per cent of the total urban population will by 1980 be resident in the largest 11 centres.

Regional distribution of urbanization in Kenya has shown a marked concentration in the highlands area and at the Coast. Nairobi, the capital city in the interior highlands accounted for 47.16 per cent of the total urban population in 1969. The coastal region which includes Mombasa

accounted for 26.27 per cent of the total urban population. The Rift Valley Province with a concentration of the small size towns had 13.75 per cent. Nyanza Province in the west had 4.06 per cent and the Eastern Province, 3.51 per cent. The least urbanized was the Western Province with less than 1 per cent (0.99 per cent).

The distribution of urban population by size indicates that of the urban centres with more than 100,000 population, Nairobi had 67.33 per cent and Mombasa 32.67 per cent.

There were two towns with a total population of between 20,000 and 99,999. Nakuru in the Rift Valley had 59.25 per cent of the total population and Kisumu in Nyanza 40.75 per cent. The smaller towns ranging in population from 10,000 to 19,999 were mostly concentrated in the central Rift Valley and Western Provinces. The Western had 32.83 per cent of the population, Central 31.31 per cent and Rift Valley 24.00 per cent.

Towns within the 5,000 to 9,999 population range were more widely distributed. The Eastern Province with 37.10 per cent of the total population had the highest share. Rift Valley had 17.17 per cent and Central 10.65 per cent. Western and Nyanza provinces had 8.75 per cent and 8.52 per cent respectively.

Most of the smallest towns with a population range of 2,000 to 4,999 were to be found in the Rift Valley. The provincial share of the total population for the Rift Valley was 45.96 per cent.

The pattern of urbanization outlined presents a problem as well as opportunities for a sound urbanization policy. The major problem is to be seen in the growing concentration of population in the two large urban centres of Nairobi and Mombasa as a result of rural-urban migration. A similar trend is to be noticed in the urban centres of Kisumu and Nakuru.

However, it will be seen from the distribution of the smaller towns that Kenya has an adequate framework for a policy to stimulate regional and local growth centres. The present policy of decentralising urban growth is based on the stimulation of growth of a number of such centres using certain incentives to development.

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## CHAPTER 7

# LABOUR FORCE

### General Comments

Lack of data on the economic activities of the population of East Africa has been one of the limiting factors in the development planning in the area. The first East African round of census in 1948 ignored essential economic data on the labour force. At the time of the second round of census in 1959 and 1962 Uganda and Kenya included questions on industry and type of employment for the non-African only over and above the questions on population. Kenya collected data on economic characteristics but this was not analysed. The need for such vital information was clearly realised at the time of the Kenyan third round of census. However, it is only in the case of Tanzania that the analysis of the last census data on economic activities is available in published form.

Material summarised in this chapter is drawn from a variety of sources. Information on labour force projections for the three countries is derived from Part II and Part VI of the ILO Labour Force projections 1965–1985. In the case of Tanzania, the summary information is based on the analysed results of the 1967 census. For Kenya, background data collected for the recent ILO Mission to Kenya has proved very useful in presenting a more up to date picture.<sup>1</sup> However it is necessary to stress that the scanty information available on the region as a whole is a well recognised weakness in the chain of demographic information.

### Tanzania Labour Force

Information on the structure and future trends in the labour force of Tanzania is currently available from two sources. The ILO estimates consists of benchmark data on the estimated annual rates of growth of Labour force for 1950, 1955 and 1960. In addition there are estimates of labour force by the three major areas of employment namely, Agriculture, Industry and Services. Projections of the labour force are made from 1965 to 1985. Table 7.1 gives a summary of the ILO estimates for the period 1950 to 1985 and the respective annual growth rates as a percentage.

For the 1970 level, it will be seen that the labour force is projected to about 3.7 million males and just over two million females. For 1980 the estimates suggest a total male labour force of 4.7 million males and approximately 2.7 million females.

Analysis of activity rates for the total population in 1970 gave an estimate of approximately 57 per cent for the males and 32 per cent for the females.

TABLE 7.1. TANZANIA: LABOUR FORCE (ILO ESTIMATES)

Year	Labour Force ('000)			Annual Rates of Growth (%)			
	Males	Females	Total	Period	Males	Females	Total
1950	2,433	1,444	3,877				
1955	2,668	1,582	4,250	1950-55	1.86	1.84	1.85
1960	2,942	1,737	4,679	1955-60	1.97	1.89	1.94
1965	3,294	1,925	5,219	1960-65	2.29	2.08	2.21
1970	3,700	2,141	5,841	1965-70	2.35	2.15	2.28
1975	4,162	2,394	6,556	1970-75	2.38	2.26	2.34
1980	4,704	2,687	7,391	1975-80	2.48	2.34	2.43
1985	5,364	3,034	8,398	1980-85	2.66	2.46	2.59

Source: ILO. *Labour Force Projections, 1965-1985, Part II, Africa*, Geneva 1971.

(Table 7.2). Even though cohort activity rates decline from 1970 to 1980 due to the high rate of growth of population in Tanzania projected for the 1970-80 period, it is not surprising that the ILO estimates show a substantial increase in the absolute change in the labour force.

The forward projection to 1980 indicates a general decline in activity rates but considerable increase in the total labour force (Table 7.3). On the basis of the ILO estimates it is expected that the total labour force of approximately 7.3 million will be made up of about 4.7 million males and 2.6 million females.

Estimates of the distribution by occupation indicate that well over 80 per cent of the total population in 1960 were engaged in agriculture. Agriculture was followed by service industry which had about 7 per cent. The share of industry was very small.

TABLE 7.2. TANZANIA: POPULATION ACTIVITY RATES AND LABOUR FORCE BY SEX AND AGE. (ILO ESTIMATES)

1970									
Age groups	Population ('000)			Activity rates			Labour force ('000)		
	M	F	T	M	F	T	M	F	T
0-9	2,135	2,141	4,276	0.00	0.00	0.00	0	0	0
10-14	797	802	1,599	39.22	26.18	32.67	313	210	523
15-19	682	687	1,369	82.29	46.67	64.41	561	321	882
20-24	578	586	1,164	96.96	50.72	73.68	560	297	858
25-44	1,520	1,563	3,083	98.65	53.06	25.53	1,499	829	2,329
45-54	416	442	858	98.43	58.21	77.71	409	257	667
55-64	251	283	534	95.88	56.79	75.16	241	161	401
65+	158	194	352	73.75	33.72	51.68	117	65	182
Total	6,537	6,698	13,235	56.61	31.95	44.13	3,700	2,140	5,842

Source: ILO. *Labour Force Projections*, op. cit.

This pattern is confirmed by the results of the 1967 Census presented in much greater detail.

At the time of the 1967 census, Mainland Tanzania showed 47 per cent of the total population as being gainfully employed, as against 48 per cent for Zanzibar. The respective participation rates were 48 per

cent for Mainland Tanzania and 49 per cent for Zanzibar. Those classified as others not working were 37 per cent for Mainland and 35 per cent for Zanzibar. For the population aged 15 and over, 80 per cent in the Mainland were in labour force as against 84 per cent for Zanzibar.<sup>2</sup>

Analysis of population aged 15 and over by sex and economic activity indicated that 88 per cent of the males and 77 per cent of the females on the Mainland were in the labour force. The corresponding proportions for Zanzibar were 89 and 79 per cent. About 11 per cent of the mainland males and 26 per cent of the females were not in the labour force. Table 7.4 shows a breakdown of the population aged 15 and over by sex and age group.<sup>3</sup>

The importance of agriculture as brought out by the ILO estimates further underlined by the results of the 1967 census. Other significant sectors of industry include commerce, transportation, storage and communications and manufacturing. At the time of the 1967 census 94 per cent of the Mainland rural population was engaged in agriculture, 1 per cent in manufacturing, 1 per cent in commerce and 2 per cent in services. In Zanzibar, 82 per cent were in agriculture, 4 per cent in manufacturing, 2 per cent construction, 4 per cent in commerce, 1 per cent in transport, storage and communication.<sup>4</sup> The distribution of mainland urban population by sex and industrial division is given in Table 7.5.

TABLE 7.3. TANZANIA: POPULATION ACTIVITY RATES, LABOUR FORCE BY SEX AND AGE GROUP (ILO ESTIMATES) 1980

Age group	Population ('000)			Activity rates			Labour force ('000)		
	M	F	T	M	F	T	M	F	T
0-9	2,883	2,874	5,757	0.00	0.00	0.00	0	0	0
10-14	1,044	1,050	2,094	33.60	24.56	29.06	351	258	609
15-19	890	897	1,787	77.67	44.52	61.03	691	399	1,091
20-24	751	761	1,512	95.14	48.52	71.67	715	369	1,084
25-44	1,981	2,038	4,019	98.27	51.20	74.40	1,947	1,043	2,990
45-54	546	579	1,125	98.04	56.18	76.49	535	325	861
54-64	335	373	708	94.64	55.59	74.06	317	207	524
65+	213	262	475	69.84	32.20	49.07	149	84	233
Total	8,643	8,834	17,477	54.43	30.41	42.29	4,705	2,685	7,392

Source: ILO. *Labour Force Projections*, op. cit.

Analysis of the occupational structure of rural and urban population shows some striking differences. The 1967 census reported that 87 per cent of the urban population were engaged in non-agricultural occupations as against 6 per cent in the rural areas. Distribution by sex showed that over 22 per cent of the women in urban areas were to be found in the skilled occupations including professional, technical and related workers, administrative, executive, managerial and clerical workers. About 2 per cent of Mainland rural population, 28 per cent of Mainland urban and 8 per cent of Zanzibar population were engaged in various crafts, or as unclassified labourers.<sup>5</sup> Table 7.6 shows the classification by broad



occupational grouping and educational attainment. Some interesting differences emerge in the relationship between the percentage of economically active population in each category and their educational attainment.

TABLE 7.4. TANZANIA: PER CENT ECONOMICALLY ACTIVE POPULATION BY SEX AND AGE GROUP 1967

Age group	Mainland			Zanzibar		
	M	F	T	M	F	T
15-19	60	67	64	42	66	55
20-24	85	75	79	84	83	83
25-29	94	77	84	96	84	90
30-39	96	79	87	97	85	91
40-49	96	81	89	97	85	91
50-59	96	80	88	95	83	90
60-69	91	57	74	88	64	78
70+	78	40	60	76	49	63
15 & Over	89	73	80	87	78	82

Source: Dey, A. K. and Mogil, N. op. cit.

TABLE 7.5. TANZANIA: ECONOMICALLY ACTIVE POPULATION BY SEX AND INDUSTRIAL DIVISION PER CENT. (MAINLAND, URBAN)

	Males	Females	Total
Agriculture, forestry and fishing	10	38	14
Mining and quarrying	0	0	0
Manufacturing	15	8	14
Construction	6	0	5
Electricity, gas, water and sanitary service	1	0	1
Commerce	16	10	15
Transport, storage and communication	15	1	13
Services	31	38	32
Activities not adequately described nor stated	6	5	6
Total	100	100	100

Source: Dey, A. K. and Mogil, N. op. cit. Table 8.12.

### Uganda Labour Force

Some forward projections of Uganda labour force based on the results of the most recent census are given in the next chapter. However, in the absence of the detailed analysis of the demographic volume, it is not possible to present the distribution of population by industrial classification and by broad occupational categories.

Some comparison may be made with Tanzania and Kenya by examining the ILO estimates (Table 7.7, 7.8, 7.9). The ILO estimates of Uganda

labour force indicate that by mid-twentieth century, Uganda had a total labour force of about 2.5 million of which 1.6 million were males and approximately 0.9 million were females.

Applying a varying rate of annual growth from 1.93 over the 1950–55 period to 2.60 during the 1980–85 period, the total labour force is expected to increase to about 5.4 million of which 3.6 million will be males and 1.8 million females. ILO estimates gave broadly similar activity rates that differed by very narrow margins from those of Kenya.

In terms of industrial classification the 1960 summary showed that 89.40 per cent of the total population was engaged in agriculture with 87.00 per cent for males and 94.00 per cent for females. Industry was shown to account for approximately 3.65 per cent of the total population, composed of 5.00 per cent of the males and 1.00 per cent of the females in 1960.

TABLE 7.6. TANZANIA: ECONOMICALLY ACTIVE POPULATION BY BROAD OCCUPATIONAL GROUPING AND EDUCATION (PER CENT)

<i>Years in School</i>	<i>Mainland Rural Agriculture</i>	<i>Non- Agriculture</i>	<i>Mainland Agriculture</i>	<i>Urban Non- Agriculture</i>	<i>Zanzibar Agriculture</i>	<i>Non- Agriculture</i>
None	69	25	61	25	79	39
1–4	24	34	26	27	15	24
5–8	6	30	12	31	6	29
9 or more	0	11	2	15	0	8
Total	100	100	100	100	100	100
Absolute Numbers (‘000)	5,033	305	28	174	139	31

Source: Dey, A. K. and Mogil, N. op. cit. Table 8.17, p. 146.

TABLE 7.7. UGANDA: LABOUR FORCE

<i>Year</i>	<i>Labour Force (‘000)</i>			<i>Period</i>	<i>Annual Rates of Growth (%)</i>		
	<i>Males</i>	<i>Females</i>	<i>Total</i>		<i>Males</i>	<i>Females</i>	<i>Total</i>
1950	1,636	860	2,496				
1955	1,806	941	2,747	1950–55	2.00	1.82	1.93
1960	2,008	1,037	3,045	1955–60	2.14	1.96	2.08
1965	2,250	1,149	3,399	1960–65	2.30	2.07	2.22
1970	2,516	1,279	3,796	1965–70	2.26	2.17	2.23
1975	2,821	1,430	4,251	1970–75	2.31	2.26	2.29
1980	3,180	1,608	4,788	1975–80	2.42	2.37	2.41
1985	3,625	1,819	5,444	1980–85	2.65	2.50	2.60

Source: ILO. *Labour Force Projections, 1965–1985*, Part II. op. cit. 1971.

TABLE 7.8. UGANDA: POPULATION, ACTIVITY RATES, LABOUR FORCE BY SEX AND AGE GROUP (ILO ESTIMATES)

1970									
Age group	Population ('000)			Activity rates			Labour force ('000)		
	M	F	T	M	F	T	M	F	T
0-9	1,337	1,332	2,669	0.00	0.00	0.00	0	0	0
10-14	504	504	1,008	40.82	23.38	32.09	206	118	324
15-19	433	434	867	83.00	41.87	62.41	359	182	541
20-24	374	373	747	97.26	45.98	71.65	364	172	535
25-44	1,040	1,013	2,053	98.74	49.15	74.24	1,027	498	1,525
45-54	297	296	593	98.52	54.33	74.46	293	161	453
55-64	185	195	380	96.09	52.87	73.91	178	103	281
65+	121	146	267	74.64	31.78	51.20	90	46	137
Total	4,291	4,293	8,584	58.61	29.81	44.21	2,517	1,280	3,796

Source: ILO. op. cit. 1971.

TABLE 7.9. UGANDA: POPULATION ACTIVITY RATES, LABOUR FORCE BY SEX AND AGE GROUP (ILO ESTIMATES)

1980									
Age Group	Population ('000)			Activity rates			Labour force ('000)		
	M	F	T	M	F	T	M	F	T
0-9	1,812	1,794	3,606	0.00	0.00	0.00	0	0	0
10-14	675	674	1,349	35.54	21.99	28.76	240	148	388
15-19	568	569	1,137	78.83	39.89	59.34	448	227	675
20-24	481	484	965	95.65	43.93	69.70	460	213	673
25-44	1,318	1,318	2,636	98.38	47.39	72.88	1,297	625	1,921
45-54	389	386	775	98.13	52.48	75.39	382	203	584
55-64	247	256	503	94.96	51.90	73.04	235	133	367
65+	168	195	363	71.12	30.63	49.36	119	60	179
Total	5,660	5,676	11,336	56.18	28.32	42.23	3,180	1,608	4,788

Source: ILO. op. cit., 1971.

### Kenya Labour Force

In estimating the size of the labour force in Kenya, official statistics are based on the assumption that the labour force is made up of 95 per cent of the population of males and 45 per cent of the females between the ages of 15-59. Thus in 1969, the labour force in Kenya consisted of approximately 2.4 million males and 1.1 million females. The Development Plan 1966-70 assumed that the labour force constituted 35 per cent of the total population. Table 7.10 shows the breakdown of the 1969 census figures by rural and urban location and districts.

Specific census projections of labour force under various fertility assumptions to the year 2,000 appear in the next section. However, it is interesting to note the ILO estimates 1950-1985 (Table 7.11). According to the ILO estimates, the Kenya labour force grew from a total of approxi-

mately 2.5 million in 1950 (1.6 million males and 0.9 million females) to a total of 3.3 million in 1960. The expected total for 1985 is approximately 6.7 million of which 4.5 million will be male and 2.2 million females. The estimated activity rates also come very close to Tanzania and Uganda figures. Tables 7.12 and 7.13 show the ILO estimates for 1970 and 1980.

Analysis of the distribution of the labour force by industry shows the dominance of agriculture and the small contributions from industry and services.<sup>6</sup> In 1950, the proportion of the labour force engaged in agriculture was 89 per cent leaving 4.30 per cent for industry and 6.70 per cent for services. By 1960 the share of agriculture had declined to 85.8 and industry and services increased to 5.05 per cent and 9.10 per cent, respectively. The current plan is based on the assumption that more than 80 per cent

TABLE 7.10. KENYA: LABOUR FORCE—URBAN AND RURAL LABOUR FORCE PER DISTRICT 1969 BY SEX

<i>District</i>	<i>Urban Male</i>	<i>Labour Female</i>	<i>Force Total</i>	<i>Rural Male</i>	<i>Labour Female</i>	<i>Force Total</i>	<i>Total Male &amp; Female Urban &amp; Rural</i>
Nairobi	197,604	50,971	248,575	—	—	—	248,575
Central Province	17,505	4,751	22,256	290,131	165,516	455,647	477,903
Nyanza Province	15,249	4,425	19,674	413,221	225,729	638,950	658,624
Western Province	3,521	1,073	4,594	235,908	138,254	374,162	378,756
Coast Province	99,057	30,290	129,347	137,200	78,357	215,557	344,904
Rift Valley Province	45,391	14,882	69,273	468,605	212,040	680,645	740,918
Eastern Province	13,383	3,888	17,271	360,038	204,064	564,102	581,373
N.E. Province	—	—	—	63,379	25,552	88,931	88,931
All Provinces	391,710	118,280	501,990	1,968,482	1,049,512	3,017,994	3,519,984

Source: Kenya Population Census 1969 (ILO Mission Working Tables)

NOTE: The Labour Force is taken as 95 per cent of the male population aged 15–59 years plus 45 per cent of the female population between 15–59 years of age.

TABLE 7.11. KENYA: LABOUR FORCE (ILO ESTIMATES)

<i>Year</i>	<i>Labour Force ('000)</i>			<i>Period</i>	<i>Annual Rates of Growth (%)</i>		
	<i>Males</i>	<i>Females</i>	<i>Total</i>		<i>Males</i>	<i>Females</i>	<i>Total</i>
1950	1,646	902	2,549				
1955	1,895	1,024	2,919	1950–55	2.86	2.57	2.75
1960	2,179	1,161	3,340	1955–60	2.83	2.54	2.73
1965	2,484	1,311	3,795	1960–65	2.65	2.46	2.59
1970	2,859	1,495	4,354	1965–70	2.85	2.66	2.79
1975	3,306	1,703	5,010	1970–75	2.95	2.64	2.85
1980	3,837	1,946	5,783	1975–80	3.02	2.70	2.91
1985	4,478	2,242	6,720	1980–85	3.14	2.87	3.05

Source: ILO. op. cit., 1971.

of the population will be primarily dependent on agriculture in Kenya.<sup>7</sup>

It has already been noted that Kenya did not include economic characteristics of the labour force in the 1969 census. Lack of this data limits the scope for a comparative study of patterns of labour force by industry and occupation.

TABLE 7.12. KENYA: POPULATION, ACTIVITY RATES AND LABOUR FORCE BY SEX AND AGE GROUP (ILO ESTIMATES) 1970

Age group	Population ('000)			Activity Rates			Labour Force ('000)		
	M	F	T	M	F	T	M	F	T
0-9	1,858	1,851	3,709	0	0	0	0	0	0
10-14	680	684	1,364	32.22	21.35	26.76	219	146	365
15-19	573	574	1,147	78.96	40.35	59.53	452	230	683
20-24	474	481	955	95.82	44.22	69.83	454	213	667
25-44	1,195	1,234	2,429	98.40	47.42	72.50	1,176	585	1,761
45-54	310	333	643	98.12	52.18	74.32	304	174	478
55-64	183	208	391	94.81	50.51	71.24	174	105	279
65+	114	146	260	69.55	28.69	46.60	79	42	121
Total	5,387	5,511	10,898	53.05	27.13	39.94	2,859	1,495	4,354

Source: ILO. op. cit., 1971.

TABLE 7.13. POPULATION ACTIVITY RATES AND LABOUR FORCE BY SEX AND AGE GROUP (ILO ESTIMATES) 1980

Age group	Population ('000)			Activity Rates			Labour Force ('000)		
	M	F	T	M	F	T	M	F	T
0-9	2,619	2,593	5,212	0.00	0.00	0.00	0	0	0
10-14	938	937	1,875	27.94	19.55	23.74	262	183	445
15-19	790	791	1,581	74.09	37.84	55.95	585	299	885
20-24	649	657	1,306	94.05	41.94	67.83	610	276	886
25-44	1,644	1,688	3,332	98.04	45.36	71.35	1,612	766	2,377
45-54	430	457	887	97.49	49.96	73.00	419	228	648
55-64	258	288	546	93.14	48.71	69.70	240	140	381
65+	165	205	370	65.30	26.22	43.68	108	54	162
Total	7,493	7,616	15,119	51.20	25.55	38.27	3,837	1,946	5,784

Source: ILO. op. cit., 1971.

## REFERENCES

- <sup>1</sup> ILO, *Employment, Incomes and Equality*. 'A strategy for increasing productivity employment in Kenya.' Geneva 1972.
- <sup>2</sup> DEY, A. K. and MOGIL, N., op. cit. p. 136.
- <sup>3</sup> DEY, A. K. and MOGIL, N. op. cit. Table 8.9, p. 139.
- <sup>4</sup> DEY, A. K. and MOGIL, N. op. cit. Table 8.12.
- <sup>5</sup> DEY, A. K. and MOGIL, N. op. cit. Table 8.16, p. 145.
- <sup>6</sup> ILO. op. cit. 1971.
- <sup>7</sup> *Kenya Development Plan 1974-78* Part I p. 197, Govt. Printer Nairobi 1974.

## CHAPTER 8

# POPULATION PROJECTION

### Introduction

Since the first national censuses of 1948 in East Africa, there has been a marked improvement in the quality of census data. This improvement in data collection has led to greater interest in forecasting the likely trend in the rise of total population, the changing size and, the size of the different functional groups. However, population projections have become increasingly necessary in the context of national development planning.

The usefulness of the population projections depends on the nature of data and more important, the assumptions made regarding the future course of demographic change. It is in these respects that the poor quality of data in East Africa seriously limits the range of projections that can be made. Population projections for the East African countries have been worked out by United Nations and in the census publications beginning with the second round of censuses. However, even at the time of the third round of censuses the nature of population growth rates in the various East African countries was still subject to considerable errors.

Further, since the departure from a common date of census population projections for the region have been done on a country basis and on different base years. The discussions that follow treat the projections of each country individually. However, it is possible to estimate the total population of the three countries for a number of years. Lack of data limits the range of projections possible for Tanzania and Uganda. In Kenya an attempt has been made to provide projections for the total population as well as for the various functional groups and for provinces and districts.

### Population projections for Tanzania

Problems for projections for Mainland Tanzania and for Zanzibar have been fully discussed in the volume on 'The Population of Tanzania'.<sup>1</sup> In these discussions it has been emphasised that the problems of unreliable estimates of the population growth from 1948 to 1967 and the suspected under-enumeration present serious difficulties in arriving at a realistic estimate of future population trends.

Egero and Henin (1973) have published projections for the Mainland total and a summary for each region based on different assumptions regarding growth rates. Regional projections have been derived from the overall national growth rates which are thought to be more reliable. The procedure used for regional projections by Egero and Henin has been summarised as follows:

- a) Two sets of assumptions were made concerning the Mainland annual growth up to 1980.
- b) Independent of these the Dar es Salaam population was projected up to 1980 with an average annual growth rate of 8.5 per cent.
- c) From the overall absolute increase according to (a) above, the Dar es Salaam increase was deducted giving an absolute population increase by year for Mainland excluding Dar es Salaam.
- d) The regional share of this increase was determined by a formula based on the recorded regional rate of growth 1948–67 and the regional population in 1967.
- e) Thus for each individual year the Mainland increase according to (c) above was distributed and added to the population of each region according to (d). Thereafter the resulting annual rates of increase were calculated for each region.<sup>2</sup>

The assumptions regarding the growth trends for the Mainland provide first for a declining mortality. In the second place the assumptions regarding fertility provide for a constant fertility or a steady rise in fertility. Table 8.1 shows the vital rate assumptions used for Tanzania Mainland projections.

TABLE 8.1. VITAL RATES ASSUMPTIONS FOR MAINLAND PROJECTIONS

		<i>Rate per thousand</i>		
		<i>1967–70</i>	<i>1970–75</i>	<i>1975–80</i>
<i>High Assumption</i>	Birth Rate	48	49	50
	Death Rate	22	20	18
	Growth Rate	26	29	32
<i>Low Assumption</i>	Birth Rate	47	47	47
	Death Rate	22	20	18
	Growth Rate	25	27	29

Source: Egero, B. Henin, R. A. op. cit. Table 14.5.

For Zanzibar, a high assumption provided for annual growth rates of 2.4 in 1967–70, 2.6 in 1970–75 and 2.9 in 1975–80. The low assumption was based on annual growth rates of 2.3 for 1967–70, 2.4 for 1970–75 and 2.6 for 1975–80. For Mainland Urban, a high assumption provided for a growth rate of 7.0 per cent between 1967 and 1970, 8.0 per cent between 1970 and 1975 and 10 per cent for the period 1975–80 (Table 8.2.) The low assumption figures provided for a constant rate of growth of 7 per cent for three different periods.

On the basis of the above assumptions the high projection gave a Mainland total population in 1968 of approximately 12.8 million rising to 14.4 million in 1974 to 17.3 million in 1980. The high projections of Mainland Urban gave a total population of 654,000 rising to 1,018 million in 1974 and 1,771 million in 1980. According to the low assumption the projected Mainland total population for Tanzania was approximately 12.2 million in 1968 rising to 14.2 million in 1974 and 16.9 million in 1980. For Zanzibar the high estimates gave a total population of 362,000 in 1968, 421,000 in 1974 and 498,000 in 1980. Corresponding figures for the islands' low estimates were 362,000 in 1968, 416 in 1974 and 482 in 1980.<sup>3</sup> Table 8.2 shows projected population by regions.

TABLE 8.2. PROJECTIONS OF MAINLAND REGIONAL POPULATION TO 1980 HIGH ASSUMPTION

Region	Projected Population ('000)			Implied Annual Growth per cent	
	1970	1975	1980	1970-75	1975-80
Arusha	671	801	965	3.6	3.8
Coast	534	582	643	1.7	2.0
Dar es Salaam	344	517	776	8.5	8.5
Dodoma	755	853	976	2.5	2.8
Iringa	752	886	1,055	3.3	3.6
Kigoma	493	534	587	1.7	1.9
Kilimanjaro	715	850	1,021	3.5	3.7
Mara	599	719	869	3.7	3.9
Mbeya	1,048	1,218	1,433	3.1	3.3
Morogoro	723	804	907	2.2	2.4
Mtwara	1,111	1,261	1,451	2.6	2.8
Mwanza	1,135	1,308	1,525	2.9	3.1
Ruvuma	424	491	575	3.0	3.2
Shinyanga	965	1,106	1,284	2.8	3.0
Singida	475	513	560	1.5	1.8
Tabora	595	666	755	2.3	2.5
Tanga	829	955	1,114	2.9	3.1
West Lake	695	774	873	2.2	2.4

Source: Egero, B. and Henin, R. A. op. cit Table 14.9, p. 218.

Projections have also been made for the Mainland total population by sex and age, using the vital rates. On the basis of the above projections the total population by sex from 1967 to 1980 were presented as follows (Table 8.3) :

TABLE 8.3. ESTIMATED MID-YEAR POPULATION BY SEX ('000)

	Males	Females	Total
1967	5,804	6,109	11,913
1970	6,284	6,577	12,861
1975	7,267	7,571	14,838
1980	8,528	8,540	17,368

Source: Egero, B. and Henin, R. A. op. cit. Table 14.10, p. 220.

Computation of the total population by the exponential method and assuming a constant growth rate of 3.05 per cent per annum suggests that by 1990 the total population of Mainland Tanzania will be approximately 23,258,000 and 31,566,000 by the year 2000. Assuming a slightly lower rate of 2.75 per cent up to the end of the century, Zanzibar population will increase from about 490,000 in 1980 to 646,000 by 1990. By the year 2000 Zanzibar's population is expected to be 850,000. On the basis of the above assumption, the estimated total population for the whole of Tanzania could be approximately 17.6 million by 1980, 24 million by 1990,



and 32 million by the year 2000. These figures are not predictions but very rough indications of the likely trend. The actual population will be determined by a complex combination of factors including the course of vital events and the extent to which family planning becomes an important factor in the preferences of families.

### Uganda Population Projection

In the absence of appropriate data on Uganda, certain assumptions have been made to facilitate population projection. The projections have been made of the total population and the summary totals broken down by functional groups. It has been necessary to use the exponential method due to unavailability of the necessary demographic data. For the period 1969 to 1999, the population projections have been made on the basis of a five year interval using a changing exponential growth rate.<sup>4</sup> Table 8.4 shows the rates for the respective periods.

Since data used was not available in the appropriate age interval the Kenya population age groups were used to break Uganda population age groups into five year class intervals. It was assumed that the age distributions for Uganda were similar to the age group distribution for the 1969 Kenya population. This assumption may not be strictly accurate. Table 8.5 shows a summary of the population for the various five year intervals except for the year 1999–2000.

It will be seen that on the basis of an exponential growth rate rising from 2.87 per cent in 1969 to 3.64 by the year 2000, Uganda's population is expected to increase from about 9.5 million in 1969 to about 18 million by the year 1989 and to about 26 million by the end of the century.

Analysis of the total population by various functional age groups shows that the population aged less than 15 years is expected to increase from just over 5 million in 1974 to about 9 million by 1989 and to approximately 12 million by the end of the century. The proportion of the population age 15–59 will increase from about 5 million in 1974 to about 8 million by 1989 and about 12 million by the end of the century.

TABLE 8.4. ASSUMED GROWTH RATES FOR UGANDA 1969–2000

Year	Growth rates
1969/74	2.87
1974/79	3.01
1979/84	3.17
1984/89	3.35
1989/94	3.51
1994/99	3.64
1999/2000	3.64

Source: UNITED STATES: *The Two Child Family and Population Growth*, op. cit., 1971.

These projected figures suggest a number of basic problems which will continue to face Uganda and other East African countries. These are the growing dependency burden and the cost of social services and the pressure on available employment opportunities.

TABLE 8.5. UGANDA POPULATION PROJECTION BY SEX AND AGE GROUP (1974-2000)

<i>Age group</i>	<i>Males</i>	<i>1974 Females</i>	<i>Total</i>	<i>per cent</i>
0-14	2,735,781	2,610,998	5,346,779	48.5
15-59	2,526,705	2,583,158	5,109,863	46.4
60+	298,044	264,757	562,801	5.1
Total	5,560,530	5,458,913	11,019,443	100.0
<i>1979</i>				
0-14	3,179,111	3,034,117	6,213,228	48.5
15-59	2,936,155	3,001,765	5,937,920	46.4
60+	346,342	307,662	654,004	5.1
Total	6,461,608	6,343,544	12,805,152	100.0
<i>1984</i>				
0-14	3,722,961	3,553,164	7,276,125	48.5
15-59	3,438,442	3,515,275	6,953,717	46.4
60+	405,591	360,293	765,884	5.1
Total	7,566,999	7,428,732	14,995,726	100.0
<i>1989</i>				
0-14	4,400,651	4,199,945	8,600,596	48.5
15-59	4,064,340	4,155,163	8,219,503	46.4
60+	479,421	425,877	905,298	5.1
Total	8,944,412	8,780,985	17,725,397	100.0
<i>1994</i>				
0-14	5,241,483	5,002,429	10,243,912	48.5
15-59	4,840,916	4,949,088	9,790,004	46.4
60+	571,024	507,251	1,078,275	5.1
Total	10,653,423	10,458,768	21,112,191	100.0
<i>1999</i>				
0-14	6,284,696	5,998,062	12,282,758	48.5
15-49	5,804,403	5,934,107	11,738,510	46.4
60+	684,674	608,207	1,292,881	5.1
Total	12,773,773	12,540,376	25,314,149	100.0
<i>2000</i>				
0-14	6,516,727	6,219,511	12,736,238	48.6
15-59	6,018,700	6,153,193	12,171,893	46.4
60+	709,953	630,663	1,340,616	5.1
Total	13,245,380	13,003,367	26,248,747	100.0

### Kenya Population Projection

Considerable work has been done in Kenya to indicate the likely changes in the total population and in the size of the various functional groups. The earliest attempt based on 1962 census material were a series of projections by Mr. Blacker.<sup>5</sup> Blacker (1967) based his projections on assumption of a continued increase in expectation of life and continuation of fertility at about 50 per thousand population. His projections assumed an annual growth rate rising from about 3 per cent per annum to about 3.9 per cent by the end of the century. Table 8.6 shows the trend of population on the above assumption.

TABLE 8.6. THE PROJECTED TOTAL POPULATION OF KENYA 1965–2000 UNDER TWO ASSUMPTIONS OF THE COURSE OF FERTILITY

Year	Population	(‘000)
	<i>Fertility Unchanged</i>	<i>Fertility Reduced by 50 per cent in 15 years</i>
1965	9,100	9,100
1970	10,600	10,400
1975	12,400	11,700
1980	14,700	12,900
1985	17,500	14,100
1990	20,800	15,500
1995	25,000	17,100
2000	30,000	19,000

Source: *Family Planning in Kenya*. Table 1, 1967.

For the more recent 1969 census, projections have been made under various assumptions of the total population persons aged 5 years or less, school population and labour force.<sup>6</sup> In a later issue the Kenya Statistical Digest published an article ‘Population Projections by District 1970–1980.’<sup>7</sup> These two reports underline the great interest now attached to demographic data at national and at sub-national levels. The two reports also indicate that the considerable problems facing demographers in making such projections have not been solved. Further details are expected with the publication of Volume IV of the 1969 Census.

### Projection of Total Population 1969

Estimates of the rates of population growth have been made from analysis of relevant questions included in the 1969 census. The information from the census indicated crude birth and death rates of 50 and 17 per thousand giving a rate of annual increase of 33 per thousand or 3.3 per cent per annum.<sup>8</sup>

On the basis of analysis of the more recent census data certain assumptions have been made regarding the future prospects for the total population and its component parts as follows:

- (i) No change from 1969 fertility up to 1975
- (ii) A steady decline in mortality leading to a rise in life expectancy at birth for both sexes from 49 years in 1969 to 53 years in 1980.
- (iii) The fertility assumptions for each series are :
  - (a) Series (A)—No change in age specific fertility rates through 1980.
  - (c) Series (B)—Decline in age specific fertility rates leading to a fall in total fertility rate from 7.6 in 1969 to 6.9 in 1980 and 4.0 in the year 2000.

It will be noted that under Series A assumption regarding fertility trend Kenya's population is expected to rise from approximately 11 million in 1970 to 34 million in the year 2000. Assuming a reduction of total fertility to half the 1969 level, the total population of the country is expected to exceed 28 million by the year 2000 (Table 8.7).

With no change in fertility the proportion of the under-age population is expected to increase from 47 per cent in 1970 to about 49 per cent in the year 2000. Under the second assumption of a drop in fertility the share of the under-age population is expected to decrease to about 41 per cent. Since more and more people will be reaching old age, with no change in fertility, the dependency burden is expected to be greater.

Some of the critical development problems facing the country are best understood by considering the relevant functional groups. Assuming a low growth projection, the primary school population (6–12) is expected to increase from about 2.2 million in 1970 to 5.1 million in the year 2000. On the basis of a similar assumption population aged 15 to 59 is expected to increase from about 3.8 million in 1960 to 10.7 million by the end of the century and the number of women of childbearing age on the basis of low projection is expected to increase from 2.4 million to about 7 million over the same period. A high variant projection would mean much greater hardships and greatly increased strain on development resources.

### **Population Projections by Administrative Units 1970–80**

Problems so far encountered in making projections of the total population have been largely due to the inadequacies of demographic data. At the level of the various administrative units and sub-units these problems are intensified. In the first place use of intercensal changes between 1962 and 1969 was found unsatisfactory. The intercensal changes represented a compound of both the natural increase and net gains or losses through migration. The latter proved difficult to estimate though its importance is recognised in connection with new settlement schemes which have taken place in Nyandarua, Uasin Gishu and to a lesser extent in Kericho, Trans-Nzoia and Nakuru districts.<sup>9</sup>

Another major problem has been the changes in the boundary of the provinces and districts. A major boundary revision took place in Kenya a year after the 1962 census which has made the direct comparison of population of the various administrative units virtually impossible on a national scale. Some attempt has been made to minimise the problem by an adjustment of data. Further it is known that in several districts, the population count was not complete. Districts such as Turkana, Samburu, Marsabit and Isiolo were enumerated on a sample basis. In the case of the North Eastern Province, the 1969 count was *de facto* where as the 1962 census was *de jure*.<sup>10</sup>

TABLE 8.7. PROJECTED POPULATION BY SOME DERIVED CHARACTERISTICS

Year	Total fertility Rate		Total Population		Per cent Population Aged 0-14		Primary School Population 6-12		Population Aged 15-59		Estimated Labour Force 15-59		Female Aged 15-59		Driven Birth Rate		Rate of Population Increase	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
1970	—	—	11,247	11,247	47.4	47.4	2,235	2,235	5,442	5,442	3,818	3,818	2,446	2,446	50	50	—	—
1975	—	—	13,413	13,413	47.9	47.9	2,652	2,652	6,439	6,439	4,515	4,515	2,907	2,907	49.2	49.2	3.6	3.6
1980	—	6.9	16,053	15,877	48.4	47.8	3,235	3,235	7,646	7,646	5,357	5,357	3,460	3,460	49.0	45.2	3.6	3.4
1985	—	6.2	19,310	18,635	49.0	47.1	3,939	3,836	9,107	9,107	6,376	6,376	4,131	4,131	45.5	41.0	3.8	3.2
1990	—	5.4	23,302	21,617	49.2	45.2	4,795	4,312	10,944	10,944	7,667	7,667	4,959	4,959	45.2	38.1	3.8	3.0
1995	—	4.7	28,213	24,795	49.3	43.0	5,830	4,754	13,216	13,054	9,258	9,144	5,990	5,910	44.8	35.1	3.9	2.8
2000	—	4.0	34,286	28,131	49.4	40.7	7,067	5,134	16,012	15,379	11,215	10,771	7,266	6,952	44.6	32.2	4.0	2.6

Source: Central Bureau of Statistics

Because of the unsatisfactory nature of intercensal change and estimates of the natural increase based on crude birth and death rates, the ratio method has been used to make the projections for the administrative units. However, in addition it has been necessary to adjust for 1962, the estimated population of all districts of the North Eastern Province and of Marsabit, Isiolo, Elgeyo-Marakwet, Uasin Gishu and West Pokot.<sup>11</sup> For details of the method the appropriate report indicated below should be consulted.

Table 8.8 gives the projected population by provinces from 1970 to 1980 and on the basis of assumption A. Table 8.9 sets out the projected school age population on the same assumption.

It should be noted that in the tables on school age population the burden of primary and secondary school education is expected to be particularly heavy in Central Province, Eastern Nyanza and Western Provinces.

TABLE 8.8. PROJECTED POPULATION BY PROVINCE (1970-1980)  
(BASED ON SERIES A)

Province	1970 ('000)	1974 ('000)	1980 ('000)
Nairobi	534	700	913
Central	1,719	1,029	2,404
Coast	970	1,158	1,387
Eastern	1,953	2,284	2,680
North Eastern	247	264	279
Nyanza	2,187	2,645	3,210
Rift Valley	2,266	2,666	3,148
Western	1,371	1,667	2,034
Total	11,247	13,413	16,053

Source: Kenya Statistical Digest vol. X, No. 3, 1972, Table 4, p. 6.

TABLE 8.9. PROJECTED SCHOOL-AGE POPULATION (1970-1980)  
(BASED ON SERIES A)

Province	1970 ('000)			1975 ('000)			1980 ('000)		
	5	6-12	13-16	5	6-12	13-16	5	6-12	13-16
Nairobi	15	79	36	18	94	43	22	115	51
Central	61	352	160	74	418	189	91	510	225
Coast	29	173	85	35	206	100	43	251	119
Eastern	65	381	174	78	452	205	95	551	244
North Eastern	7	45	23	8	53	27	10	65	32
Nyanza	74	456	212	89	542	250	104	661	297
Rift Valley	79	460	209	95	546	247	116	666	294
Western	45	287	141	55	341	166	67	416	198
Total	375	2,233	1,040	452	2,652	1,227	548	3,235	1,460

Source: Kenya Statistical Digest, p. 8-9 op. cit.

## REFERENCES

- <sup>1</sup> EGERO, B. and HENIN, R. A. *The Population of Tanzania*, op. cit., p. 212–220.
- <sup>2</sup> EGERO, B. and HENIN, R. A. *The Population of Tanzania*, op. cit., p. 215.
- <sup>3</sup> EGERO, B. and HENIN, R. A. op. cit. Table 14.8, p. 218.
- <sup>4</sup> UNITED STATES. *The Two Child Family and Population Growth*, p. 18.  
Department of Commerce/Bureau of Census, September 1971.
- <sup>5</sup> KENYA. *Family Planning in Kenya*, p. 3. Ministry of Economic Planning and Development, 1967.
- <sup>6</sup> KENYA. *Statistical Digest*, p. 1–7 vol. IX, No. 2 June 1971.
- <sup>7</sup> KENYA. *Statistical Digest*, p. 4–10 vol. X No. 3 September 1972.
- <sup>8</sup> KENYA. *Statistical Digest*, vol. IX No. 2 p. 1 June 1971.
- <sup>9</sup> KENYA. *Statistical Digest*, vol. X No. 3, op. cit. p. 4.
- <sup>10</sup> KENYA. *Statistical Digest*, op. cit.
- <sup>11</sup> KENYA. *Statistical Digest*, vol. X op. cit. p. 4–5.

## CHAPTER 9

# POPULATION GROWTH AND SOCIO-ECONOMIC DEVELOPMENT

### General Comments

The three East African partner states in the Community reveal subtle differences in development strategies influenced by broadly similar population problems. Analysis of the population situation has brought up important contrasts in such characteristic problems as size, composition, growth rate, spatial distribution and future prospects. However, underlying the differences that have emerged is the common problem of rapid population expansion in relation to resource constraints. The problems arise from differences in degree rather than in the basic contrasts in the nature of population.

### TANZANIA

One of the most important features of development of modern Tanzania is the close relationship between the socio-economic policy and the realities of resource development. The inter-relationship is more clearly seen in the field of population. A characteristic problem of Tanzania is the extreme pattern of spatial distribution or the widespread nature of the main population centres.

There are eight or nine main concentrations of population in the country separated from each other by extensive areas of sparsely populated countryside. The Second Development Plan (1969–1974) and its expression in the Arusha Declaration is committed to bringing development to each of these population concentrations. But the new shift towards a pattern of regional development is also a reaction to the tendency for development in Tanzania to be concentrated in one or two regions. This has led to the 'centre and periphery' pattern of development and a further stimulus to rural-urban exodus. Arusha Declaration has recognised the adverse impact of this dynamic aspect of development, and spatial population change and has offered the strategy of rural development as an alternative.

The importance of population growth has been more clearly expressed in post-independence educational planning. At the time of independence, the broad demographic character of Tanzania was known. The alternative chosen was to give priority to Secondary and Teacher training and University development. The expansion of primary school places was held back and the permitted rate of growth was estimated as being no more than the rate of growth of the number of primary school children.



The 1967 census brought to light the fact that the size of the Tanzanian population and its rate of growth had in fact been underestimated. The expected enrolment at the beginning of the Second Development Plan was in fact not 50 per cent as had been earlier estimated but 47 per cent (Table 9.1).

TABLE 9.1. ENROLMENT IN PRIMARY SCHOOL (1969/70–1988/89)

<i>Year</i>	<i>Standard I total</i>	<i>Standard I–VII total</i>	<i>Percentage of age group in Std. I</i>
1969/70	171,485	850,920	47
1973/74	208,340	1,140,059	52
1978/79	278,752	1,576,039	60
1983/84	420,119	2,232,015	77
1988/89	652,647	3,404,660	95

*Source: Tanzania Second Five-Year Plan for Economic and Social Development. Volume I p. 149, Govt. Printer, Dar es Salaam 1969.*

Thus by the time of the 1967 census the chances of a 7 year old child of receiving a Primary School education had become worse. Table 9.1 shows the proposed Primary School education enrolment over the period of the Second Development Plan. However, the demographic situation is such that the plan as envisaged assumes that maximum use will be made of 'self help' in the construction of school buildings. Since the plan was formulated the world wide inflationary tendencies have added a further burden which may well push further back the chances of providing increased opportunities for primary education.

Over the plan period the recurrent cost of Primary education was expected to rise from 141.6 million Tanzanian shillings in 1969/70 to 195.8 million shillings in 1973/74 and the capital cost was expected to rise from about 16.0 million shillings to 31.7 million shillings. In the case of Secondary education, the planned recurrent cost is expected to rise from 51.8 million shillings to 58.2 million shillings over the same period, whilst the capital cost is expected to decrease from 23.3 million shillings to 4.9 million shillings.<sup>1</sup> The recurrent cost of training in teacher colleges is expected to rise from 14.4 million shillings to 19.4 million shillings and the capital cost is expected to rise from 9.3 to 11.9 million between 1969/70 and 1970/71 and then to decline to 4.1 million shillings in 1973/74. The heavy demand placed by educational services is reflected in the other areas of national development such as health.

Whilst capital expenditure on health is expected to vary from 14.7 million shillings at the beginning of the period to 17.6 million at the end, the recurrent expenditure on health over the plan period will rise from 97.0 million to 134.0 million shillings at the end of the plan period. The estimated total expenditure is expected to rise from about 111 million to 151.6 million shillings in providing for the most basic health needs of the country.

Since the development aim for all Tanzanians is for a healthy diet, adequate clothing, acceptable housing conditions, and access to basic education and health facilities, the demographic constraints to development

must be accepted as constituting a problem to the entire national development programme.

It has been mentioned that the pattern of economic development characterised by growing regional imbalance and in particular the rural to urban migration constitute a policy area of high priority. Recent urban growth has been estimated at the rate of about 6.0 per cent per annum. However, over the period 1957–1967 the estimated growth of Dar es Salaam has been 7.8 per cent per annum. There is thus an urgent necessity for a clearly defined urban development policy. Such a policy arises from the need to stimulate and complement rural development; the need to avoid the development of undesirable urban social conditions and the urgency of balancing the drain on scarce physical resources imposed by uncontrolled urbanization.

The urbanization policy as envisaged in the current development plan is not negative. It is expected that urbanization cannot be halted and that the high rate of urbanization must be planned for. The essential feature of the policy is the acceptance of a demographic reality which should form the basis for a viable plan. The urbanization policy aims at creating poles of self sustained growth based on the following major population clusters of the country.<sup>2</sup>

- (i) Greater Dar es Salaam region
- (ii) Tanga and its hinterland
- (iii) Kilimanjaro and environs
- (iv) East Lake Region of Mwanza
- (v) The West Lake region
- (vi) Kigoma cluster
- (vii) The Southern Highlands
- (viii) The South Coast

But the effort to decentralise development into regions and major growth centres must also be seen in a wider context of employment policy and income distribution. Recent tendency towards heavy geographical concentration of development in Tanzania has also been associated with widening inequalities in income which the Second Five Year Plan is intended to rectify. Thus by a measure of decentralization of economic growth activities, the government policies are not only influenced by the existing population pattern but they are further intended to correct the adverse effects of the past policies in response to population realities of the country.

Population growth trends have important implications to provision of housing facilities in the urban areas. The first Development Plan concentrated on slum clearance. But the Second Development Plan has not merely placed a ceiling on the resources that can be used to improve urban conditions. The new emphasis in the face of rural-urban migration is on low and medium cost housing at costs very much below the levels previously in force. There will be greater emphasis on provision of site development and on the principle of self-reliance.

## UGANDA

The survey of the general population situation in Uganda has underlined the accelerating growth rate as a major feature of current population

trend. It has already been indicated that Uganda may well expect a population of approximately 26 million by the end of the century. Such a change in the size of population and the various functional groups will have far reaching consequences on the development of the nation.

Since population growth is one of the two elements which directly affect the growth rate of capital and income, rapid growth of population is certain to act as a factor inhibiting an accelerated increase in the material welfare of the people. The structure of the population is such that only half the population works to maintain the entire population. This means that the task of maintaining the entire population is intensified as the rate of population growth accelerates. High rate of population growth therefore will increase the acute problem of finding satisfactory solutions to improved welfare.

As is common in other developing countries the creation of employment opportunities in Uganda is independent of the growth of population. The high rate of population growth reduces the investment capacity for more job creation while the size of the entrants to the labour force increases.

Development of the social services in the country is seriously curtailed by a high rate of population growth which increases the size of the needed recurrent expenditure. Despite the worsening position regarding available resources for social investment, it is unlikely that the size of the primary school age population will begin to decline for decades. Well over 40 per cent of the total population is under the age of 15 and from the previous analysis this proportion is unlikely to change for some time.

Uganda's health programme is seriously hampered by unfavourable population/doctor ratio. Appreciable improvement in health conditions would require diversion of increasing resources from the other vital areas of development. In most families, the absence of satisfactory child spacing creates serious medical problems. Maternal mortality, though declining, continues to be a problem especially in the less developed parts of the country. There is thus urgent need for a viable family planning programme backed by adequate governmental resources. However, even with such a programme it will take years for the family planning programme to have the desired effect on the high birth rate because of the prevalent pro-natalist attitude in the country. At the same time it is necessary to intensify efforts towards overall national development and to reduce the widening gap between the rural and urban areas.

Although there are inequalities in the concentration of population, Uganda is a small country and is already well populated. Population growth and available land is thus a critical factor in the social and economic development. Average population density on the total surface area of the country is 41 persons per square kilometre. However, the density on the land area is 50 persons per square kilometre.

Analysis of the spatial distribution of population shows that a relatively small part of Uganda already carries high densities and accounts for a high proportion of the population. Considerable areas of the country consist of swamps or low lying valley bottom lands which require heavy investment in drainage to be used for agricultural purposes.

The spatial variation in population concentration has important environmental consequences. Over 90 per cent of the total population of Uganda is dependent on agriculture for their subsistence. A high population density intensifies pressure on available land resources. As the quality of land

varies considerably from one part of the country to another, the prevalent high rate of population growth in different regions of the country poses serious problems. There are parts of the country where land scarcity is leading to the creation of a landless and unemployed rural population.<sup>3</sup> It is the shortage of land in the heavily populated parts of the country such as, Kigezi, Bugishu and the West Nile that leads to a heavy outflow of migrants to the more developed parts of the country.

However, in those parts of the country where the density of population is low, the ecological conditions are not conducive to maintenance of high population densities. The harshness of the environment in the drier parts of the country and in particular the unreliability of rainfall means that the continued rate of high population growth will become a real threat to the capacity of the land to maintain the population.

So far attention has been directed primarily to the broader issues of population growth and rural development. However, it has also been revealed that Uganda faces problems of increasing severity as a result of the rural to urban migration. Rural to urban migration is primarily a reflection of the imbalance between the rate of population growth and opportunities for gainful employment.

In the urban areas the influx of population from the rural areas and from the traditional sources of non-Uganda in-migration have over the years created serious problems of unemployment. Thus apart from the increasing internal competition for employment opportunities, Uganda has had to face competition from migrants originating from the Sudan, Congo, Ruanda and Burundi, Tanzania and Kenya.

These migrations are also at the root of the problems of providing education and other facilities in the urban areas. Hence although, the scale of urbanization is low by international standards, the increasing influx of rural population from the national and international sources creates demands for investment resources which are beyond the means of most local authorities. Deterioration in social conditions in the urban areas is thus a very real problem.

Of particular importance is the problem of housing which has already been mentioned. Uganda needs large investments in order to meet the existing requirements. However, in the condition of a rapidly expanding population, much larger resources will have to be diverted from other essential areas of development to provide for the needed infrastructure in the urban areas.

## KENYA

Kenya's development framework derives from the Sessional Paper No. 10 on 'African Socialism and its Application to Planning in Kenya'. Its main provisions include individual freedom; freedom from want; disease ignorance and exploitation; expansion of the economy with equitable, sharing of the benefits and integration of the national economy. However, after 10 years of independence, the 1974-78 Development Plan has the following comments:

"In spite of the growth of the economy, in the first ten years of independence the problems associated with a rapidly growing

population, unemployment and income disparities have become more apparent than they were in 1963."

Unlike Tanzania and Uganda, Kenya has felt more acutely the pressure of population on the available land and on development efforts. There is thus a well organised body of information at the policy level on plans of the government to face up to the situation

In considering the impact of population growth on socio-economic development, it is necessary to examine the situation with respect to land, the basic resource of the country and the backbone of the country's thriving commercial farming. Land has always been at the root of Kenya's political and social development.

As a major resource for development the actual land available is restricted by a number of factors. Apart from the demographic factor, it is known that out of a total land area of 569,000 sq. km., only about 7 per cent can be described as good agricultural land with adequate and reliable rainfall, suitable slope, and good soil. A further  $4\frac{1}{2}$  per cent is suitable for cropping, but is in areas where in more unfavourable years, rainfall may be inadequate. The remainder in the absence of reliable sources of water is suitable only for stock rearing at different levels of intensity. Thus in a situation of rapidly increasing population there is a growing pressure in two directions.

There is first the pressure to overspill into lands of marginal productivity. This has happened with the result that certain parts of the country face serious famine during years of low rainfall. The second area of pressure is directed to reserved forest areas where there is mounting pressure for excision of the forest areas to make way for agriculture. This pressure varies between the different areas of the country.

The relationship between the rate of population growth and available land has been examined under various fertility assumptions. Assuming that age specific fertility remains constant, the available per capita arable land is expected to decrease from 0.89 hectares in 1970 to 0.29 hectares in the year 2000. However, assuming a fertility remaining constant to 1975 and then falling by 50 per cent by the year 2000, the available per capita arable land by the end of the century will be 0.36 hectares. With a 60 per cent fall in fertility by the year 2000 the per capita arable land available could be raised to 0.38 hectares.<sup>4</sup>

However, there are wide differences in the quality and amount of land available for agriculture between the different districts of the country. Table 9.2 shows the estimated good agricultural land by districts in 1969.

The gross imbalance in the distribution of good agricultural land is immediately apparent. The scarcity of good agricultural land falls most heavily on the well populated districts of the Central Nyanza, and the Western Provinces. With the exception of the newly settled district of Nyandarua, all the districts in the above mentioned provinces had less than one hectare per person. Kisii District in Nyanza had the lowest proportion with less than 0.3 hectares per person closely followed by the well populated districts of Meru, Nyeri, Kakamega, Machakos and Kiambu. Higher acreages per person are characteristic of the marginal areas including Lamu, Laikipia, Tana River and Samburu. It is only in the parts of Narok where there are still large areas of unused and good agricultural land (Table 9.2).

African nations have placed a high priority on education and educational

TABLE 9.2. ESTIMATED AVAILABILITY OF GOOD AGRICULTURAL LAND BY DISTRICTS, 1969 (HECTARES OF HIGH-POTENTIAL LAND\* EQUIVALENTS)<sup>5</sup>

District	Hectares ('000)	Hectares per person	District	Hectares ('000)	Hectares per person
Narok	915	7.3	Kwale	163	0.8
Lamu	74	3.3	Bungoma	253	0.7
Tana River	119	2.4	Elgeyo Marakwet	105	0.7
Samburu	156	2.2	Embu	103	0.6
Laikipia	138	2.1	Kisumu and		
Uasin Gishu	327	1.7	Siaya	438	0.6
Trans-Nzoia	208	1.7	Kilifi	162	0.5
Nyandarua	265	1.5	Murang'a	217	0.5
West Pokot	107	1.3	Kirinyaga	100	0.5
Baringo	190	1.2	Taita	50	0.5
Nandi	234	1.1	Meru	263	0.4
Nakuru	301	1.0	Nyeri	160	0.4
Kitui	305	0.9	Kakamega	325	0.4
South Nyanza	567	0.9	Machakos	284	0.4
Busia	163	0.8	Kiambu	170	0.4
Kericho	380	0.8	Kisii	220	0.3

*\*This Table has been calculated on the assumption that 5 hectares of medium-potential land and 100 hectares of low-potential land are equivalent to 1 hectare of high-potential. This is admittedly a crude weighing system but probably adequate for establishing broad orders of magnitude. Districts with virtually no land of high-or medium-potential have been excluded.*

*Source: Calculated from Kenya Statistical Abstract, 1971, Tables 13 and 73.*

services have a very large share of the national development resources. However, since independence the demographic constraints on educational development have attracted increasing attention of policy makers. At the time of independence the focus of attention was on universal free primary education.

Estimates of the number of children based on the 1962 rate of growth of population indicated that the number of African children of primary school age would reach 1,769,000 in 1965, 2,058,000 in 1970, 2,439,000 in 1975 and 2,908,000 in 1980. The number of primary school going children in the second half of the 1970's was expected to be increasing according to Development Plan 1974-78. The planned enrolment for 1974 was 2,116,000 and for 1975 this will be 2,371,000. Thus by 1975, out of the eligible primary school age population of 2,652,000 and assuming no change in fertility, more than  $\frac{1}{4}$  million will not find places in primary schools. Kenya may therefore be faced with a growing population of children who have had no formal education.

The basic problem facing Kenya is the mounting cost of giving free and universal primary education. In 1964 it was estimated that additional cost of free universal primary education having 1971 as a target date would have exceeded £13 million for that year.<sup>6</sup>

Population projection of demand for primary school places based on the change in fertility suggests that the approximate cost based on the current estimate of about K£20 per child would mean a total budgetary provision rising from £44 million in 1970 to well over 60 million in 1980. If high sustained fertility continues this would mean an expenditure well in excess of K£100 million. Provision of expenditure at the suggested

level could only be achieved at the expense of other urgent development objectives.

However, the demographic pressures on educational facilities are not confined to the primary sector of education. Serious financial constraints have been experienced at the Secondary school level where the cost of education is estimated at £100 per annum. The projected secondary school population assuming no change in fertility is expected to increase from 1,040,000 in 1970 to 3,210,000 in the year 2000. The figures given are not predictions but they indicate the likely problems of financing education at Secondary school level, if no change takes place in fertility.

Ideally, the national commitment to primary education would be considerably reduced if fertility were to decline. Assuming a constant Age Specific Fertility Rate up to 1975 and then a decline by 50 per cent could lead to a reduction of eligible population down to 5.1 million instead of 7.1 million.<sup>7</sup>

Closely allied to the problem of education is the cost of developing the health services. In 1969 the population/doctor ratio in Kenya was 1/14,000. Assuming the ratios of 1/13,000 in 1970's, 1/12,000 in the 1980's and 1/11,000 in the 1990's, Table 9.3 shows the projected need of doctors over a 5 year period. The three assumptions include no change in fertility to the year 2000; a constant fertility to 1975 falling by 50 per cent by the year 2000; and thirdly a constant fertility to 1975 then falling by 60 per cent by the year 2000.

The government's main objective as stated in the Third Development Plan is to control and prevent and ultimately eliminate communicable diseases, deficiency conditions, environmental health hazards, and hazards associated with child-birth and child-rearing. The major thrust of the new plan includes a substantial expansion of basic paramedical training and development of a comprehensive master plan for the basic rural health services. In addition to these, the government plans to improve the curative services. In particular it is planned to increase the number of hospital beds, health centres and dispensaries.

However, with the current levels of fertility and rate of population growth a large portion of the available resources is likely to be taken up to improve the maternal and child health services. The basic outline of rural health centres envisages the provision of one health centre for every 50,000 inhabitants. With a population of 34 million by the year 2000, it would require 312 centres more than what would be needed for a total population of 28 million. The second population alternative would mean a saving of £15.6 million in capital costs and £2.2 million in recurrent costs by the year 2000.

Demand for safe water supply, adequate housing both in the rural and urban areas closely affect the quality of health services. A rapid population growth will increase the resources required well beyond the capacity of what the country can provide. It is for this reason that self-help has become a major factor in the extension of health services.

Population growth is an important factor in the creation of employment opportunities and in income distribution. Taking the three fertility assumptions mentioned earlier, it has been shown that without a decrease in the level of fertility the demand for new jobs to be created will increase from 103,000 in 1970 to 1,957,000 by the year 2000. With a 60 per cent drop in fertility from 1975 the number of new jobs needed could

TABLE 9.3. PROJECTED NEED FOR DOCTORS

	Unit	1970	1985	2000
Assumption (i)	No	75	265	550
Assumption (ii)	No	75	228	300
Assumption (iii)	No	75	220	220

Source: Kenya National Report on the Human Environment op. cit. Table III.

be reduced to 1,521,000.<sup>8</sup> It has been indicated that at the current rate of population growth of 3 to 3.5 per cent and growth of employment in the modern sector of 4.5 per cent per annum, it would take 100 years before Kenya can absorb a majority of the country's inhabitants in wage earning employment.

However, creation of new jobs and the capacity of the country to expand the growth of the modern sector are closely affected by the rate of population growth. There will be less savings if population growth continues to accelerate and the nation will be forced more and more to resort to more expensive forms of new job formation. It will be necessary to divert funds from other services in order to meet the level of demand for new jobs.

The high rate of population growth is a constraint on the expansion of the national income through a higher rate of economic growth. It leads to the emergence of a population overburdened by dependants and increased social and welfare services which a young population demands. However, the slowing down of the rate of economic growth has the adverse effect of increasing instability.

It is against this background that the intensified interest of Kenya in a Population Programme may be understood. Kenya has embarked on an expanded Five-Year Family Planning Programme estimated to cost a total of 38.8 million US dollars of which 14.3 million dollars will be locally contributed by the Kenya Government. This is a major step forward and the first such effort in sub-Saharan Africa.

## Conclusion

In the foregoing chapters a picture emerges of the East African region as an area of rapidly expanding population. East Africa falls within a zone of high fertility extending from the Sudan through to Central and parts of Southern Africa.<sup>9</sup> Each of the three countries in the region has shown a determined stand to develop their economies to ensure a higher standard of living. However, it is evident that the current rates of population growth confront the East African countries with immense problems which will increase in severity as the 21st century approaches.

There is the urgent need for effective population policy in each country which would be consistent with the desired development goals. It is evident especially in Kenya and Tanzania that the search for an alternative policy is on. A comprehensive policy of socio-economic development must seek to harmonise the rate of population growth with the capacity and prospects for sustained development.



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- <sup>3</sup> UGANDA *National Report on Human Environment*, p. 4. op. cit.
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- <sup>6</sup> KENYA. *Educational Commission vol. I* op. cit. p. 66.
- <sup>7</sup> KENYA. *Kenya National Report on the Human Environment*, op. cit. p. 9.
- <sup>8</sup> KENYA. *Kenya National Report on the Human Environment* op. cit.
- <sup>9</sup> OMINDE, S. H. and EJIOGU, E. N. op. cit. p. 55.

