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IMPERIAL ETHIOPIAN GOVERNMENT ³
CENTRAL STATISTICAL OFFICE

POPULATION OF ETHIOPIA

RESULTS FROM

THE NATIONAL SAMPLE SURVEY 1st ROUND
1964-1967

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THE NATIONAL SAMPLE SURVEY - ROUND

1984-1987

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Prepared and printed in the Central Statistical Office.

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FOREWORD

The National Sample Survey, 1st Round, covered rural as well as urban areas and was conducted from 1964 to 1967. Results from the rural part are presented in provincial reports and from the urban part in ten town reports and in Statistical Bulletin No. 1: Survey of Major Towns in Ethiopia, December 1968.

This report gives estimates of population characteristics on the provincial level as well as on the country level. It differs from the above mentioned provincial and town reports in the sense that it gives adjusted figures of basic demographic data, such as fertility, mortality and expectation of life.

The population figures of not surveyed rural areas are based on unreliable estimates of 1956. During the preparation of this report more reliable estimates of some of these regions have been obtained from different sources, and are presented and discussed in appendix VI.

The field work of a second round of the National Sample Survey is concluded and the results from it may partly differ from the ones of the first round. Thus, the findings in this report should be regarded as provisional and advise has to be taken from the Central Statistical Office before using or publishing any of these data.

Addis Ababa, October 1971.

1. SUMMARY

1.1 The National Sample Survey, 1st Round, covered around 83% of the rural population and around 92% of the urban population. This report presents demographic and semi-demographic measures obtained from these surveys. In areas where no surveys were conducted (Bale, Ogaden, Eritrea and some awrajas mainly inhabited by nomadic or semi-nomadic populations along the frontiers to Sudan and Kenya, and some towns), population estimates are based on the Ministry of Interior estimates of 1956 and 1962.

The total population is estimated to be 22,591,000 in January 1967 of which 1,917,000, i.e. 8.5%, is urban (town defined as a locality with more than 2,000 inhabitants). However, the estimate is unreliable. With a yearly growth rate of almost 2.5% and using the estimate for 1967 as a base, the population will reach 27.6 million in 1975, 31.4 million in 1980 and will double in 26-27 years. In January 1972 it amounts to around 25.6 million.

The urban population is increasing by 6.5% yearly of which 4.0% is due to in-migration of people from rural areas. The urban population will double in 11 years and it will constitute about 14% of the total population by 1980.

Children below 15 years of age constitute almost 46% of the population, more than 46% in rural and 39-40% in urban areas. 18.4% are below 5 years of age. The primary school-age population, 7-12 years, constitute 16.5% of the total population, which means that there will be about 4.22 million children in that age-group by January 1972.

Of the surveyed rural female population above 10 years almost 68% were married, 8% were widowed and more than 6% were divorced. Corresponding figures for towns are: married 45%, widowed 9% and divorced almost 22%. The average age of females at first marriage in rural areas was 16 years.

Recorded fertility and mortality rates were understated and have been adjusted. The following adjusted rates

for the total population of the country may serve as tolerably reliable estimates:

General fertility rate	215	children born alive during the year per 1000 woman aged 15-49 years
Total fertility rate	6.6	children ever born alive per woman passing through the fertile part of life
Gross reproduction rate	3.2	girls ever born alive per woman passing through the fertile part of life
Crude birth rate	50	per thousand population in one year
Infant mortality rate	195	per thousand live-born infants die before they reach one year of age.
Crude death rate	25	per thousand population die in one year
Rate of yearly natural increase	25	per thousand population
Expectation of life at birth	37-38	years

Net reproduction rate, which takes female mortality into account, is around 1.8. Due to a high infant mortality, expectation of life at birth is low, whereas expectation of life at one and three years is about 45 years and 48 years respectively. Female mortality at adult ages is higher than that of male, which is reflected in a lower female expectation of life at birth, about 36 years compared to 38 years for males.

The literacy rate of the total population is estimated to be around 6.6%; males 11.6% and females 1.7% (valid for 1965/66). Ability to read and write is much higher in urban areas than in rural, 33.6% compared to 4.1%. It is estimated that literacy has increased to over 8% by the end of 1971.

Of the surveyed rural male population aged 10-59 years, 93% were economically active; 90% were working in agriculture and

3% were outside the field of agriculture. 3.3% were students. Presuming "housewives" are non-active, a definition that ought to be open to question, 93% of the females were economically non-active of whom only 0.2% were students. Adding the both sexes together, 50% of the rural population in the actual age-group were economically active, while the corresponding figures for towns was 64%. This means that each economically active person has to feed 3.2 and 2.3 persons in rural and urban areas respectively (ie. himself plus 2.2 and 1.3 non-active persons respectively).

2. NATIONAL SAMPLE SURVEY, FIRST ROUND

2.2 The Sample

The National Sample Survey, 1st Round, covered rural as well as urban areas. The survey in rural areas was multipurpose, including both population and agriculture.

The rural part started in the province of Shoa in 1964 and was concluded in the province of Hararge in July 1967. Except for Addis Ababa, which was surveyed in September 1961 and in September 1967, Asmara, which was surveyed in August 1963 and in March 1968, and Nazreth, which was surveyed in 1964, the urban survey started in August 1965 in about 25 major towns of different provinces. The town survey was undertaken during the rainy season, when access to rural areas is limited, i.e. mainly in the months of June, July and August 1966 (65% of the towns) and 1967 (except for Illubabor towns: January - March 1967, and Wollega towns: March - April 1968). The last town was surveyed in Wollega in April 1968.

Around 83% of the rural population was covered by the survey. Following areas were not covered (most of these areas, except Eritrea and Ogaden, were covered in the 2nd round):

Bale province

Setit & Welkait woredas in Weghera awraja, Begemdir province.

Eritrea Province

Geleb & Hamer Bako awraja in Gemu Gofa province

Metekel awraja in Gojam province

Ogaden (Degeh Bur, Jijiga, Kebri Dehar, Kelafo and Warder awrajas) in Hararge province.

Gambella awraja in Illubabor province

Maji awraja in Kefa province

Borena awraja in Sidamo province

7 mikitil woredas in Agame, Hulet Awlalo, Inderta and Raya and Azebo awrajas, Tigre province

Aussa and Afambo woredas in Aussa awraja, Wollo province

The sample design is explained, and mid-date of survey, sampling fraction, number of households in the sample, and relative standard error is shown in appendix 1. The overall sampling fraction in rural areas was 1:120, almost 29,000 households were included in the sample and the relative standard error (coefficient of variation) of the surveyed rural population was 2.9%.

Population estimates of not surveyed areas are based on the Ministry of Interior estimates from 1956.

Around 92% of the urban population was covered by the survey; 131 towns with more than 2,000 inhabitants (Jan. 1967) and 64 larger villages with less than 2,000 inhabitants. The sampling fraction was 10%. 32 mainly smaller towns were not covered and population estimates of these towns are based on the Ministry of Interior estimates from 1956 and 1962. 7 towns were not surveyed in Tigre, 4 in Gojam, 3 in Arussi, Bale (none surveyed), Shoa, Sidamo and Wollo, 2 in Gemu Gofa and Hararge, and 1 in Begemdir and Illubabor. At least 4 bigger towns in Eritrea, Agordat, Barentu, Keren and Tessenay, have not been surveyed, and no other estimates exists for these towns.

2.3 Definitions

In 1965, when the urban survey started, there was no accepted

official definition of a town, and thus the following considerations were taken into account for the purpose of the survey:

- a) if the area is a chartered municipality
- b) if the area comes under the Jurisdiction of the Municipality Department of the Ministry of Interior
- c) if the area has some sort of local officer who is responsible for collecting service taxes
- d) if the area is taken to be a town by the chiefs and elders of the area.

In this report, a town is simply defined as an agglomeration of more than 2,000 inhabitants¹. Surveyed "towns" with less than 2,000 inhabitants are regarded as rural areas.

A household was defined as a group of persons who sleep in the same premises, or in premises which are closely related, e.g. in the same compound, and who have the same arrangements for the preparation of food.

Active persons are those who get certain income, salary, wage or profit for doing particular work. All other persons are classified as non-active.

Literacy is defined as the ability of a person above 10 years to read and write in any language (according to UN standard).

3. POPULATION ESTIMATES OF 1967, POPULATION PROJECTION AND RATE OF URBANIZATION

3.4 Population Estimates of January 1967

The text below refers to Table 1 - VI.

The surveyed rural population, constituting about 83% of the total rural population, was 16,709,800 at the time of the

¹This definition allows for comparisons with other African countries, of which many of them define a town as an agglomeration of 2,000 inhabitants or more.

survey. Since the rural survey extended over three years, the population figures of the various provinces are raised, in order to get provincial estimates referring to the same time - January 1967 was chosen. The surveyed rural population had then reached 17,141,500, assuming a yearly growth rate in rural areas of 21 per thousand (for details on population growth - see below).

The not surveyed rural population at the same time (based on estimates made by Ministry of Interior in 1956) is estimated to be 3,532,400 including nomads¹) (for calculation - see appendix III) thus making the total rural population of the country

20,673,900 in January 1967.

(As mentioned in the Foreword, more recent estimates of rural areas not surveyed in the first round are discussed in appendix VI).

At the same time the estimated urban population was

1,917,200 in 163 towns

when the urban average yearly growth rate was 6.5%

Thus, the total population estimate is

22,591,100 in January 1967.

The two tables below show rural and urban population, population density and portion urban population by province, and distribution of towns by size of town.

¹This figure includes 24,700 nomads in Areror awraja, Sidamo province, among whom a survey was conducted. "Nomad" refers here to pure nomads, semi-nomads, trans-human pastoralists, and shifting cultivators.

Table 1 Rural and Urban Population Estimates (in '000), population density and % urban population by province, January 1967.

Province	P o p u l a t i o n			Pop. dens. (inh./sqkm)	% urban population
	Rural	Urban	Total		
Arussi	724	40	764	32.5	5.3
Bale	164	16	180	1.4	8.9
Begemdir	1,141	68	1,209	16.3	5.7
Eritrea	1,422	264	1,686	14.3	15.6
Gemu Gofa	601	24	625	15.8	3.8
Gojam	1,496	65	1,561	25.3	4.2
Hararge	2,850	154	3,004	11.6	5.1
Illubabor	597	21	618	13.0	3.4
Kefa	1,094	51	1,145	21.0	4.4
Shoa	3,748	867	4,615	54.2	18.8
Sidamo	2,126	90	2,216	18.8	4.0
Tigre	1,523	108	1,631	24.7	6.6
Wollega	1,096	40	1,136	16.0	3.5
Wollo	2,092	109	2,201	27.7	5.0
Country	20,674	1,917	22,591	18.5	8.5

Shoa was the biggest province of the country, and has also the highest population density - even when Addis Ababa was excluded. The capital population alone constituted 14 % of the population of Shoa, which explains the high percentage urban population in this province. Next to Shoa in size came Hararge, Sidamo and Wollo, all with more than 2 million inhabitants. Except for Shoa, the highest population densities were found in Arussi, Wollo, Gojam and Tigre and the highest portion urban population in Tigre, Begemdir, Arussi and Wollo (the high figure of Bale is over-estimated - see below).

although the population figures of the province of Bale were based upon old estimates by the Ministry of Interior and therefore less reliable.

Table 2 Distribution of Towns by Size of Town in January
1967

Size of town (number of inh.)	Number of towns	Population	Population Cumulated	% of total pop. (cum)
2,000 - 4,999	101	316,590	1,917,160	8.49
5,000 - 9,999	36	247,650	1,600,570	7.08
10,000 - 19,999	15	202,210	1,352,920	5.99
20,000 - 49,999	8	267,750	1,150,710	5.09
50,000 - 99,999	1	56,100 ¹⁾	882,960	3.91
100,000 - 499,999	1	176,410 ²⁾	826,860	3.66
500,000 - and above	1	650,450 ³⁾	650,450	2.88
TOTAL	163	1,917,160		

1) Dire Dawa, 2) Asmara and 3) Addis Ababa.

More than one-third of the total urban population lived in Addis Ababa. 46% of the urban population lived in the three biggest towns, Addis Ababa, Asmara and Dire Dawa, but only around 16% lived in the 101 smallest towns with less than 5,000 inhabitants.

The population figures for not surveyed rural areas are not reliable. This is especially true for the two provinces Bale and Eritrea and for Ogaden.

In Bale, according to the estimates, almost 9% of the population is urban, the third highest figure of the country. With a small rate of infra-structure in Bale compared to most other provinces of the country, this figure is too high, due to an under-estimated rural population¹. Another check on the population estimates of

¹From the 2nd round of the National Sample Survey, supplemented with other information, it was found that the total population of Bale province was about 800,00 in 1971 (see appendix VI).

not surveyed areas is the number of class-rooms in government, mission and private primary schools per thousand population. The reasons for some areas not being surveyed are lack of transportation facilities and the fact that these areas are mainly inhabited by nomads, who attend schools to a negligible degree. Lack of communications also affects building and supervising of schools. A low classroom-to-population ratio in not surveyed areas is therefore to be expected. Yet, some of the not surveyed areas have more class-rooms per thousand population than the surveyed areas in the same province (Begemdir not surveyed areas 0.43 and surveyed areas 0.41, Gemu Gofa n.s.a. 1.63 and s.a. 0.35, Gojam n.s.a. 0.49 and s.a. 0.27, and Sidamo n.s.a. 0.28 and s.a. 0.24 - this could however be explained by the high population density in the northern surveyed part of Sidamo), and some have more class-rooms per thousand population than the average of surveyed areas of the country (holds for all not surveyed areas except for those in the provinces of Hararge, Kefa and Sidamo).

The population of Awsa awraja in Wollo is underestimated as Awsa and Afambo weredas in this awraja were not surveyed and no estimate by the Ministry of Interior exists for these areas.

Thus, it is assumed that the following rural populations are underestimated: Bale (known to be underestimated), Weghera awraja in Begemdir, Geleb and Hamer Bako awraja in Gemu Gofa, Metekel awraja in Gojam, and Awsa awraja in Wollo (known to be underestimated. Population estimates of Eritrea, Ogaden (southern Hararge), Gambella awraja in Illubabor, Maji awraja in Kefa, and Borena awraja in Sidamo are probably also biased in one direction or another (for detailed discussion - see appendix VI)

The population figures of surveyed towns are comparatively reliable and the urban population estimate of the country is believed to be less biased and more efficient than the rural one, although the population figures of the not surveyed towns are based upon old estimates by the Ministry of Interior and therefore less reliable.

A fact that makes a true country-wide estimate almost impossible is the flow of refugees between Sudan and Ethiopia and the seasonal as well as sporadic passes of borders to Sudan, Kenya and Somalia. There is, for example, an inflow of people from Sudan to the south-western parts of Ethiopia, mainly to Gambella awraja in Illubabor. 20,000 or more Sudanese are now said to be living in these areas (this figure is not included in the Gambella awraja population estimate). The seasonal passes of borders by nomads is mainly to be found along the frontiers to Somalia but to a large extent also along the frontiers to Kenya and Sudan. Although sporadic passes of the frontiers (for trade purpose, etc.) are not of the same magnitude, they affect the provincial population estimates as well as the population estimate of the whole country.

Provincial, but mainly awraja estimates are in some cases biased by seasonal movements between high and low-lands. Another factor influencing the population estimates by province, is migration, either from one rural area to another or from rural areas to towns. Hence, since the various provinces were not surveyed at the same time both double-counting and missing some people must in some cases have been unavoidable. Studies on rural-rural migrations have shown that there are at least three noticeable trends in the permanent migration:

- people of the northern provinces moving southwards. The population density in the north is in general higher than that in the southern provinces, and it seems that this movement is an unconscious endeavour to smooth the differences in population density, or at least it may have that effect in the long run.
- there are two main groups of people migrating to work as permanent labourers: the one is the Guragies, Kembatas and Wollamos, who move even long distances to find employment (to Awash Valley and for coffee-picking in Sidamo, Kefa and

Illubabor); the other group is the highlanders, mainly in the north, who have to move relatively short distances to find employment opportunities in the commercial farms in the neighbouring lowlands.

- from regions where the population density is moderate to high, and where the agricultural economy is rapidly growing through the introduction of mechanized agriculture, groups of people out-migrate to towns or to resettle in other rural regions.

3.5 Population Projection 1967 - 1980

Adjusted rates of the yearly natural increase by province, surveyed rural areas, are found in Table XIII.

Calculation of rural and urban growth rates is explained in detail in appendix III.

The yearly natural increase of surveyed rural areas is estimated to 24.6 per thousand around 1967 (recorded 22.0 per thousand - see appendix IV for adjustment procedure). Although the population of not surveyed rural areas may have some characteristics different from the one of surveyed areas (a large part of the not surveyed population is nomadic, whereas the majority of the surveyed population is sedentary), it has been assumed that the natural increase of the population of not surveyed areas was the same, i.e. 24.6 per thousand. Due to migration from rural to urban areas, the growth rate of the rural population was only 21.0 per thousand yearly.

The growth rate of urban population is calculated for each town with more than 10,000 inhabitants. For towns with 2,000 - 10,000 inhabitants the urban growth rate is calculated by province. The urban growth is a combination of the natural increase (births minus deaths), which is assumed to be 2.5% yearly (data for calculating urban natural increase is lacking and it has therefore been assumed that this increase is about the same as for rural areas and as for Addis Ababa), and of the urbanization

rate, i.e. the yearly net in-migration to urban areas, which was 4.0% yearly, on average (for calculation - see appendix III.2).

Table 3 Rate of yearly natural increase and yearly growth
(per thousand population)

	Natural increase	Growth rate
Rural areas	24.6	21.0
Urban areas	25.0	65.0
Country	24.7	24.7

Note: Permanent migration between Ethiopia and other countries is negligible and does not affect the estimated growth rate. Hence, this rate equals the rate of natural increase.

Health, medical, education and other social services are expected to increase and improve gradually, in both urban and rural areas. In consequence, mortality will decline, which will have a positive effect on the population growth rate.

However, the expected decline in death rate will be compensated to some degree by a decline in the birth rate. It is anticipated that fertility will decline for the following reasons:

- a) increased educational opportunities. From the Addis Ababa population survey of 1967 it was found that there was an adverse relation between level of fertility and educational background of women. The proportion female students is steadily increasing: from 26.1% of all students in grade 1-12 in 1963/64 to 29.6% in 1968/69, and from 26.8% to 30.5% in grade 1-6 during the same period. Hence, female school enrollment is fast in increasing;
- b) improved health services. The decrease in infant and child mortality may cause a decline in crude birth rate since the motivation for having many children would be

satisfied at a lower level of fertility as mortality declines;

- c) an expected upward trend at the age of first marriage, which is partly due to the rapid increase in the female school participation rate;
- d) a higher per capita income among some groups of the population;
- e) general increased awareness of the advantages and the possibilities of spacing children; and
- f) the spread of low fertility pattern due to the example set by the upper socio-economic groups, among whom fertility is already low, as compared with the rest of the population.

As experienced from the demographic development in other countries, the death rate declines, followed after some decades or generations by a decline in the birth rate. In Ethiopia, the decline in death rate has started, which means that the growth rate of the population is presently inclining and will continue to incline, at least in the nearest future.

The population projection up to 1980, given in the table below, is provisional, since the rural population estimate is biased. Hence, the absolute population figures should be used with caution, and the projection rather aims at showing the relative increase in population, population density and proportion urban population. The projection is based on the following assumptions:

- a) Rural and urban growth, 2.1% and 6.5% respectively, will remain constant during the period under review.
- b) In accordance with the discussion above on expected change in population growth, the yearly growth rate of the total population will continuously increase during this decade, and as a consequence of assumption a) the growth rate will increase from 2.47% in 1967 to 2.69% in 1980.

Table 4 Population Projection 1967 - 1980

Year (Jan.)	Population in '000			Pop. dens. (inh./sqkm)	% urban pop.
	Rural	Urban	Total		
1967	20,674	1,917	22,591	18.5	8.5
68	21,108	2,042	23,150	18.9	8.8
69	21,551	2,174	23,725	19.4	9.2
70	22,003	2,316	24,319	19.9	9.5
71	22,466	2,466	24,932	20.4	9.9
72	22,938	2,626	25,564	20.9	10.3
73	23,420	2,797	26,217	21.5	10.7
74	23,912	2,979	26,891	22.0	11.1
75	24,414	3,173	27,587	22.6	11.5
76	24,927	3,379	28,306	23.2	11.9
77	25,450	3,599	29,049	23.8	12.4
78	25,985	3,832	29,817	24.4	12.9
79	26,529	4,081	30,610	25.0	13.3
80	27,087	4,347	31,434	25.7	13.8

The population growth is visualized in Figure I and II. Presuming the population figures of 1968 were correct, the rural population will reach 27 million by 1980 and would be doubled in about 33 years. The urban population doubles in 11 years and by 1978 (11 years after the base-year 1967) almost 13% of the population would live in towns. The total population of the country will pass the 30 million-mark in 1978. It will increase by about 620,000 people per year in the beginning of the 1970's and by around 800,000 per year at the end of this decade. The yearly absolute increase will reach one million people around 1985. The total population would double in 26-27 years.

3.6 Urbanization

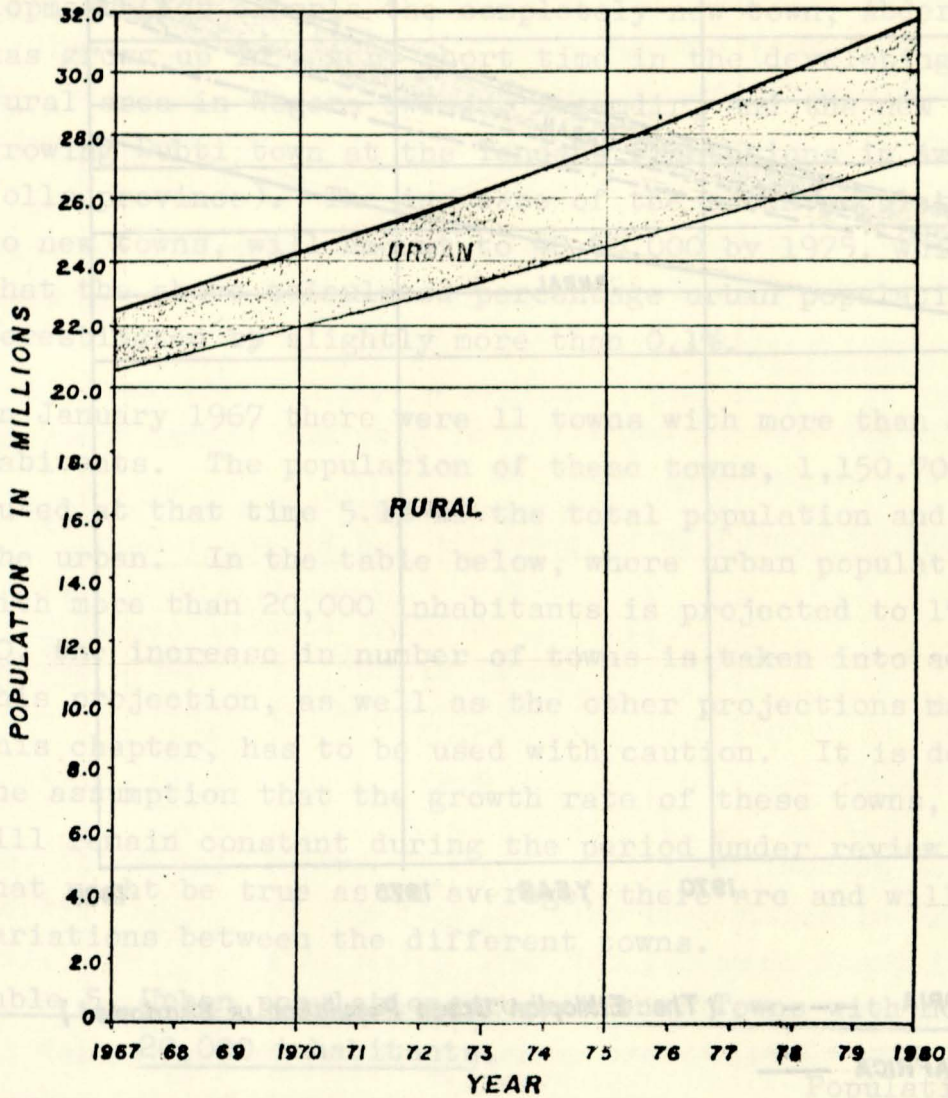
The text below refers to table III and V-VII.

Rate of urbanization (growth rate minus rate of natural increase) is around 4.3% per year in the large towns (more than 10,000 inhabitants), but only around 3.7% in the smaller towns, the difference explained by the fact that the larger towns, in general giving better service (labour opportunities, education and health services, etc.), are more attractive.

About 15 villages, which by January 1967 had less than 2,000

Fig. I

POPULATION OF ETHIOPIA 1967-1980.



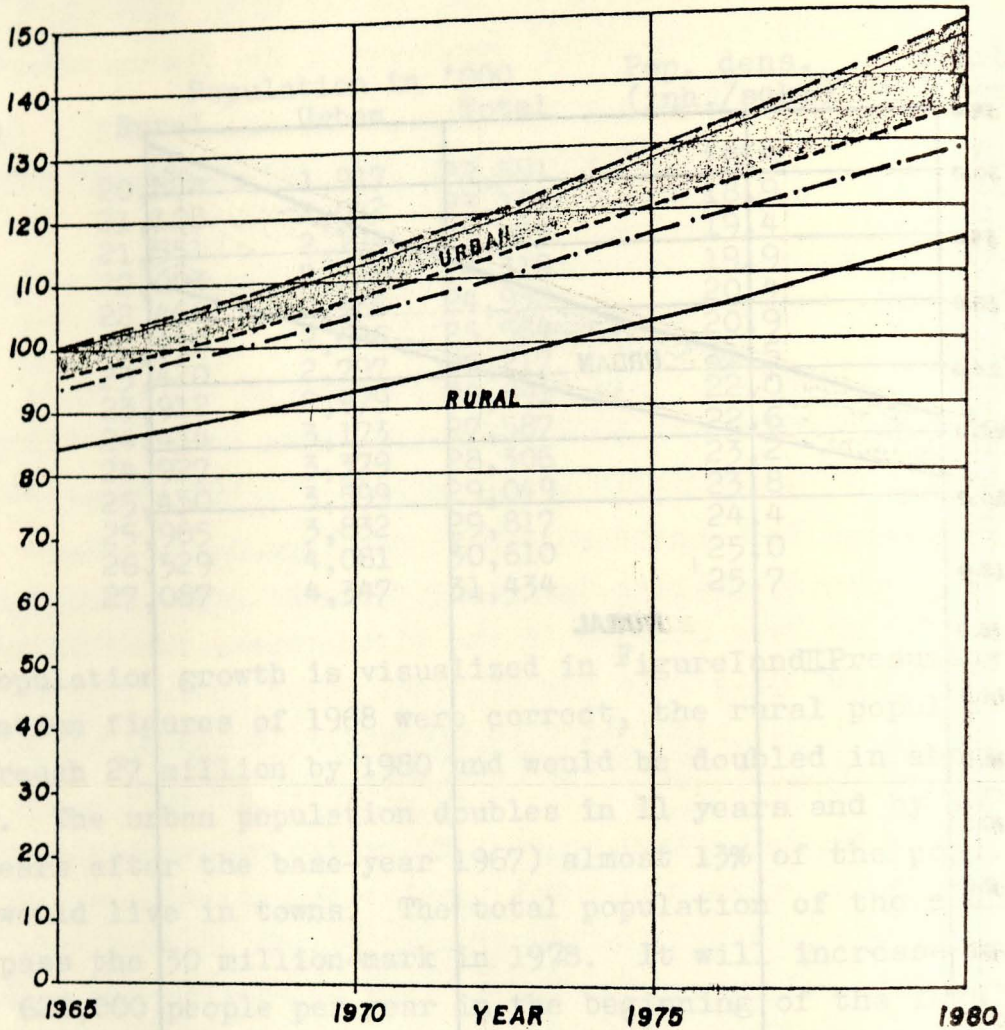
NOTE. URBAN REFERS TO TOWNS OF 2,000 INHABITANTS OR MORE IN JANUARY 1967

Year	Urban Population (Millions)	Rural Population (Millions)	Total Population (Millions)
1967	22.5	20.5	43.0
1970	24.5	22.0	46.5
1975	28.0	24.5	52.5
1980	31.5	27.5	59.0

It is thus estimated that the percentage urban population is

Fig. II

GROWTH OF URBAN, RURAL AND TOTAL POPULATION OF ETHIOPIA COMPARED WITH THAT OF EAST AFRICA AND ALL AFRICA, 1965 TOTAL POPULATION = 100



ETHIOPIA - - - - (The Ethiopian Urban Population is Shadowed)

ALL AFRICA ———

EAST AFRICA ······ (Total Population of East Africa Lies Between "Ethiopia" and "All Africa")

Note. Urban Refers Here to Towns of 20,000 Inhabitants or More.

inhabitants, will become towns before 1975, presuming they will continue to grow by approximately the same rate as they did before 1967. Also new towns will be created, especially in some suddenly attractive regions with rapid economic development (for example the completely new town, Abderefi, that has grown up in a very short time in the developing agricultural area in Wegera awraja, Begemdir, and the new and fast growing Dubti town at the Tendaho Plantations in Awasa awraja, Wollo province). The increase of the urban population, due to new towns, will amount to 40-50,000 by 1975, which means that the above calculated percentage urban population is underestimated by slightly more than 0.1%.

In January 1967 there were 11 towns with more than 20,000 inhabitants. The population of these towns, 1,150,700, constituted at that time 5.1% of the total population and 60% of the urban. In the table below, where urban population of towns with more than 20,000 inhabitants is projected to 1970, 75 and 80, the increase in number of towns is taken into account. This projection, as well as the other projections made in this chapter, has to be used with caution. It is derived from the assumption that the growth rate of these towns, 6.8% yearly, will remain constant during the period under review. Even if that might be true as an average, there are and will be great variations between the different towns.

Table 5 Urban population projection. Towns with more than 20,000 inhabitants.

Year (Jan.)	Number of towns	Population	Population in towns with more than 20,000 inhabitants as % of	
			total po- pulation	urban population
1967	11	1,150,700	5.1	60
1970	11	1,401,800	5.8	61
1975	18	2,124,300	7.7	67
1980	29	3,244,000	10.3	75

It is thus estimated that the percentage urban population of

these towns has doubled from 1967 to 1980 (the absolute population has doubled by 1976), and around 10% of the total population will live in towns of more than 20,000 inhabitants by the end of this decade.

In order to get a better knowledge of the pattern of urbanization; a further study of migration between rural and urban areas (both directions) and between towns will be done. Also migration by sex, age, etc. demands a deeper study than has been possible in this paper. The results from the National Sample Survey, 2nd Round, will allow for drawing more definite conclusions concerning the pattern of urbanization in Ethiopia.

4 SIZE OF HOUSEHOLD

4.7 The average size of household by province at the time of the survey was as follows:

Table 6 Size of household by province and by rural-urban

Province	Average size of household	
	Rural areas	Urban areas
Arussi	5.03	3.39
Begemdir	4.41	3.30
Eritrea	-	3.79
Gemu Goffa	4.26	3.35
Gojam	4.47	3.02
Hararge	5.05	3.49
Illubabor	4.14	3.75
Kefa	3.94	3.62
Shoa	4.97	3.79(3.40) ¹⁾
Sidamo	4.80	3.76
Tigre	4.53	3.67
Wollega	5.03	3.82
Wollo	4.39	3.27
Country	4.65	3.65 ²⁾ (3.52) ¹⁾

1) Addis Ababa excluded

2) For comparison with rural area, the average for urban areas when Eritrea is excluded is 3.63 (3.50)¹⁾.

Households in rural areas are, in all surveyed province, bigger than in urban areas; on average one person more per household. Of the rural areas, the three south-western provinces Kefa, Illubabor, and Gemu Goffa show the smallest size of households, while the highest figures are found in the rest of the southern and central provinces. The difference in household size between the four northern provinces, Tigre, Begemdir, Gojam and Wollo, is negligible. The figures of these provinces are also all below the average for the country.

There is a significant difference in average size of household between towns with more than 10,000 inhabitants and smaller towns. Thus the household size of the bigger towns is 3.78 (3.64 when Addis Ababa is excluded) but only 3.38 in the smaller towns.

5. SEX - AND AGE - DISTRIBUTION

5.8 Sex - Distribution

The sex - ratio of the

rural population was	104.1
urban "	90.0
total "	102.8

i.e. there were almost 3% more males than females in the country, whereas there were 11% more females than males in urban areas only. The excess of males over females were found in all surveyed regions, except in the two neighbouring provinces Illubabor and Wollega. This western region was also the only one in which females out-numbered the males in rural areas. Provinces with comparatively high sex-ratios in rural areas were Begemdir (sex-ratio 109.6), Gemu Goffa (109.3), Wollo (107.2), and Tigre (105.3).

The female urban population was larger than the male one in all provinces, except in Illubabor, Sidamo and Shoa (when Addis Ababa is excluded), where the both sexes equaled in number. In the four northern provinces, Begemdir, Gojam, Wollo and Tigre,

there were 44%, 42%, 38% and 37% respectively more females than males in the urban areas.

Sex - ratio increased by increasing age of the population and there were recorded almost twice as many as females above 65 years of age¹.

5.9 Age - Distribution

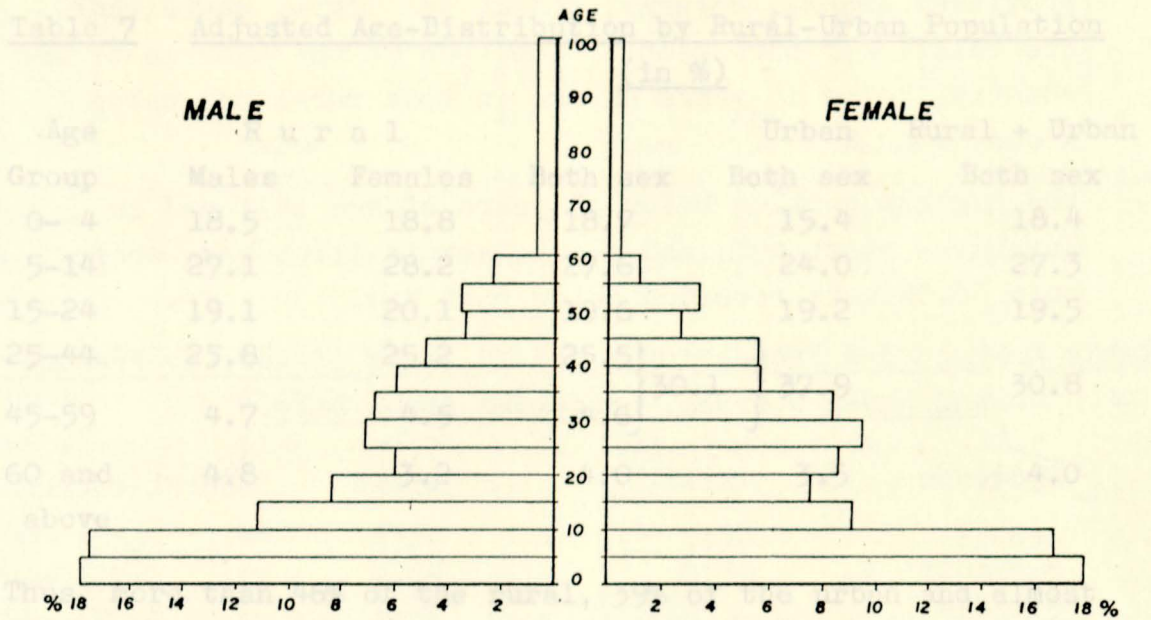
There are two distinguished types of age-misreporting: the one when respondents round off their ages to the nearest age ending with five, or more often, with zero, and the other when they place themselves in the wrong age group, believing being older or younger than they actually are. (For a detailed discussion on errors in age-recording, see appendix II). The age-distribution is adjusted by using life table technique after having adjusted fertility and mortality by the method explained in appendix IV.

Since information on urban vital rates is lacking, it has not been possible to adjust for the errors in the recorded urban age-distribution. However, an attempt is made by comparing adjusted and recorded age-distribution of rural areas, and by assuming that the "direction of age-misstatement" is the same for urban areas, but that the difference between the true and recorded distribution is only half of that of rural areas. This type of adjustment is obviously rough and the adjusted age-distribution of urban areas should be used with caution. Nevertheless, the adjusted figures are probably less biased than the recorded ones and the errors are presumably rather small.

¹) A larger male than female population above 65 years of age is recorded in almost 60% of the African countries, however, the difference between the sexes is only in a few cases as big as here.

Fig. III

POPULATION PYRAMID FOR 12 PROVINCES RECORDED



POPULATION PYRAMID FOR 9 PROVINCES RECORDED AND ADJUSTED (Stable Population)

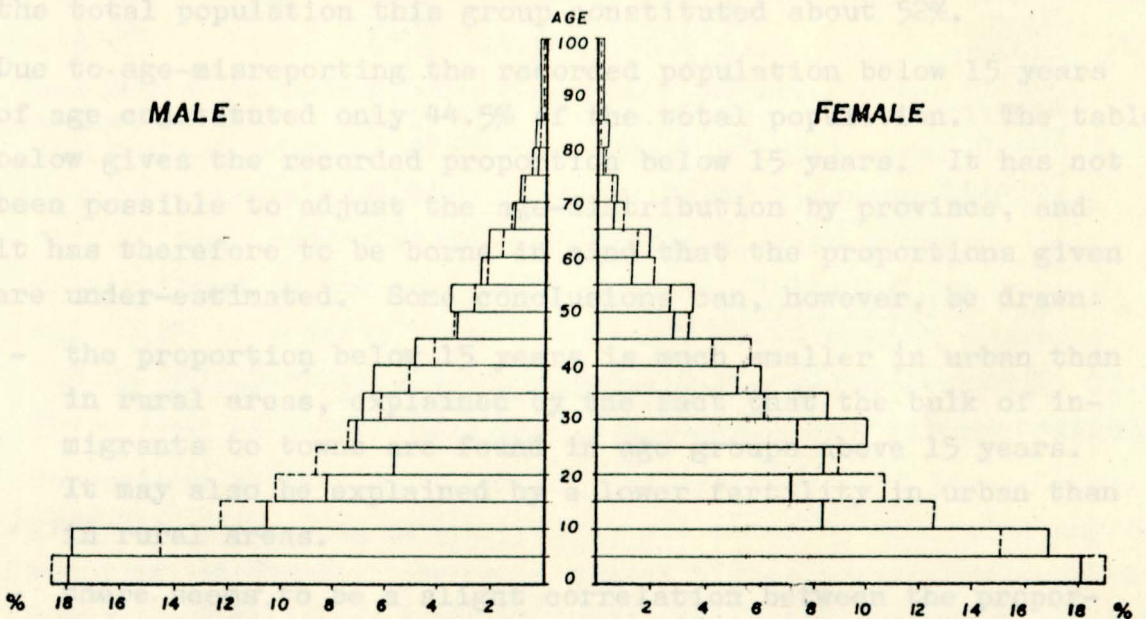


Table I and II are summarized as follows:

Table 7 Adjusted Age-Distribution by Rural-Urban Population

Age Group	R u r a l			Urban	Rural + Urban
	Males	Females	Both sex	Both sex	Both sex
0- 4	18.5	18.8	18.7	15.4	18.4
5-14	27.1	28.2	27.6	24.0	27.3
15-24	19.1	20.1	19.6	19.2	19.5
25-44	25.8	25.2	25.5	37.9	30.8
45-59	4.7	4.5	4.6		
60 and above	4.8	3.2	4.0	3.5	4.0

Thus, more than 46% of the rural, 39% of the urban and almost 46% of the total population was under 15 years of age. 51-52% of the rural population, and 58-59% of the urban was within the economically active age groups, when defined 15-64 years. Of the total population this group constituted about 52%.

Due to age-misreporting the recorded population below 15 years of age constituted only 44.5% of the total population. The table below gives the recorded proportion below 15 years. It has not been possible to adjust the age-distribution by province, and it has therefore to be borne in mind that the proportions given are under-estimated. Some conclusions can, however, be drawn:

- the proportion below 15 years is much smaller in urban than in rural areas, explained by the fact that the bulk of in-migrants to towns are found in age groups above 15 years. It may also be explained by a lower fertility in urban than in rural areas.
- there seems to be a slight correlation between the proportions below 15 years in rural and urban areas. Thus, in the four provinces Illubabor, Kefa, Shoa and Wollo, the proportions

are smaller in both rural and urban areas than the average for the country, whereas the reverse holds for the four provinces Arussi, Hararge, Sidamo and Tigre, where there are relatively more people, compared to the average of the country, below 15 years of age in both rural and urban areas.

- the highest portion below 15 years of age is found in Hararge - about 49%, and the lowest in Illubabor, where only 38.5% were recorded below that age.

Table 8 Recorded Proportion below 15 Years of Age, by Province and Rural - Urban. Surveyed Areas Only.

Province	Rural	Urban	Rural + Urban
Arussi	46.7	39.8	46.3
Begemdir	45.0	40.9	44.7
Eritrea	-	40.2	-
Gemu Gofa	46.0	36.6	45.6
Gojam	46.6	36.6	46.2
Hararge	50.2	39.7	49.1
Illubabor	38.6	34.8	38.5
Kefa	40.6	36.2	40.3
Shoa	43.7	38.6	42.7
Sidamo	47.1	39.5	46.8
Tigre	46.7	42.3	46.4
Wollega	44.7	41.4	44.6
Wollo	41.0	34.3	40.6
Country	45.2	38.9	44.5

6. MARITAL STATUS

6.10 The text below refers to Table VIII - XI. The most important results are summarized as follows:

Table 9 Marital Status by Sex, Province and Rural - Urban, as % of Population above 10 Years of Age

Province	RURAL AREAS					URBAN AREAS			
	FEMALES					FEMALES			
	Males marr.	marr.	wid + div.	no times marr.	age 1st marr.	Males marr.	marr.	wid + div.	
Arussi	58.2	66.7	12.4	-	15.9	58.8	45.6	31.8	
Begemdir	60.0	64.2	18.8	1.64	14.1	57.2	34.1	45.4	
Eritrea	-	-	-	-	-	54.0	41.8	35.1	
Gemu Gofa	62.0	70.8	14.1	1.50	17.8	57.0	46.3	33.4	
Gojam	63.3	68.1	16.7	-	14.5	61.0	41.0	42.0	
Hararge	59.6	66.7	13.1	1.23	17.1	53.8	48.0	26.3	
Illubabor	66.3	75.6	12.4	1.50	17.2	50.1	47.6	33.5	
Kefa	68.1	76.2	11.3	1.44	17.1	56.9	54.0	27.7	
Shoa	57.2	65.5	12.2	-	16.2	52.1	47.6	26.9	
Sidamo	61.7	76.3	9.7	1.38	17.3	54.5	55.5	25.9	
Tigre	55.9	59.6	19.8	1.40	15.5	52.6	35.1	39.4	
Wollega	56.3	62.2	14.1	1.40	17.9	57.1	51.2	23.8	
Wollo	59.2	66.2	20.1	1.99	14.4	59.9	40.8	40.8	
Country	59.8	67.6	14.5	1.53	16.1	53.8 ¹	45.4 ¹	31.1 ¹	

¹ When Eritrea is excluded, the figures are the same, except for females married (45.8%)

The highest portion of married women in rural areas is found in the southern provinces, Sidamo, Kefa, Illubabor and Gemu Goffa. When adding widowed and divorced, this category is mainly found in the northern provinces, Wollo (20.1% in rural and 40.8% in urban), Tigre (19.8% and 39.4% resp.), Begemdir (18.8% and 45.4% resp.) and Gojam (16.7% and 42.0% resp.). These four provinces also show the lowest age at first marriage.

Comparison between rural areas, smaller towns and larger towns gives an increasing proportion single women by inclining agglomeration of people. There is a much higher percentage married women in rural areas than in towns, while the reverse holds for widowed and divorced. The small towns have relatively more widowed and divorced women than the larger towns. So for

example in the three provinces Begemdir, Tigre and Wollo more than one-third of the women above 10 years of age in smaller towns were divorced and around one-third were married. As shown in the previous chapter, towns of the four northern provinces also have a comparatively high proportion of females. One can therefore conclude that in-migration of divorced women to towns is a common phenomenon in these provinces.

The difference in marital status of women, comparing provinces, is partly explained by the existence of polygyny (the form of polygamy when one husband has two or more wives). In a monogamous society, the number of married females and males are equal. As a measure of rate of polygyny, the ratio of number of married females by number of married males by province is examined and shown in the table below:

Province	Fem/Mal	Province	Fem/Mal
Arussi	1.15	Kefa	1.07
Begemdir	0.99 ¹⁾	Shoa	1.08
Gemu Goffa	1.07	Sidamo	1.22
Gojam	1.02	Tigre	1.03
Hararge	1.10	Wollega	1.17
Illubabor	1.21	Wollo	1.02
		Country	1.086

¹Ratio for Begemdir below one indicates existence of polyandry (one woman married to two or more husbands). It is doubtful whether polyandry exists in Ethiopia and a more reasonable explanation is that married men have moved temporarily from Eritrea and Tigre to find employment in the recently developed agricultural districts in Gondar and Wegera, which are the only awrajas where the ratio is below one.

The highest ratios are found in Sidamo, Illubabor, Wollega and Arussi, and the lowest in the four northern provinces. Thus, except for the high ratios in Wollega and Arussi and

Fig. IV

AGE AT FIRST MARRIAGE, WOMEN, 9 PROV., RURAL

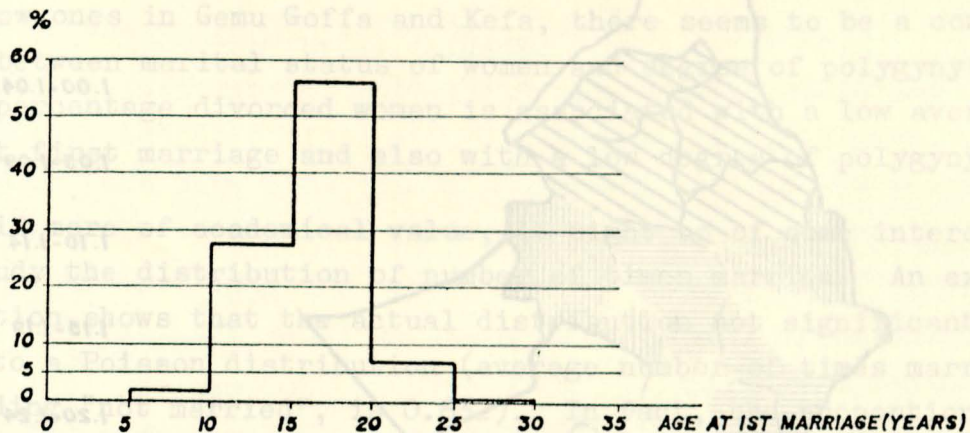


Fig. V

EVER MARRIED WOMEN BY NUMBER OF TIMES MARRIED, 9 PROVINCE, RURAL

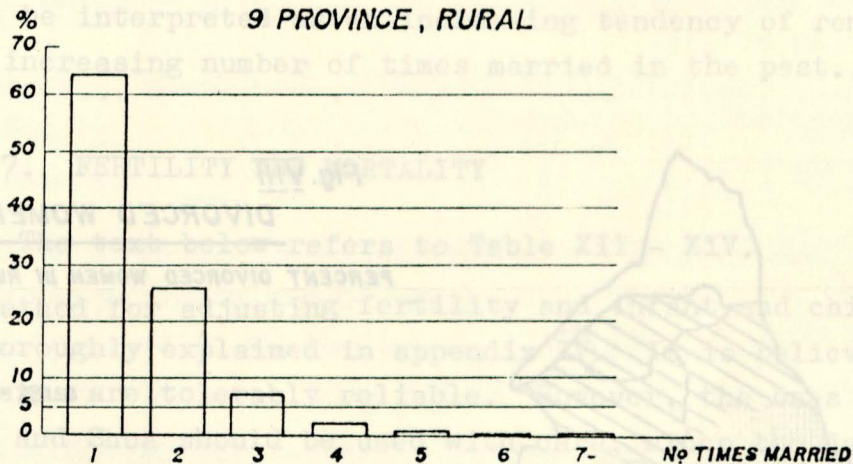


Fig. VI

PERCENTAGE DIVORCED WOMEN ABOVE 10 YEARS BY AVERAGE AGE AT FIRST MARRIAGE 12 PROVINCES, RURAL

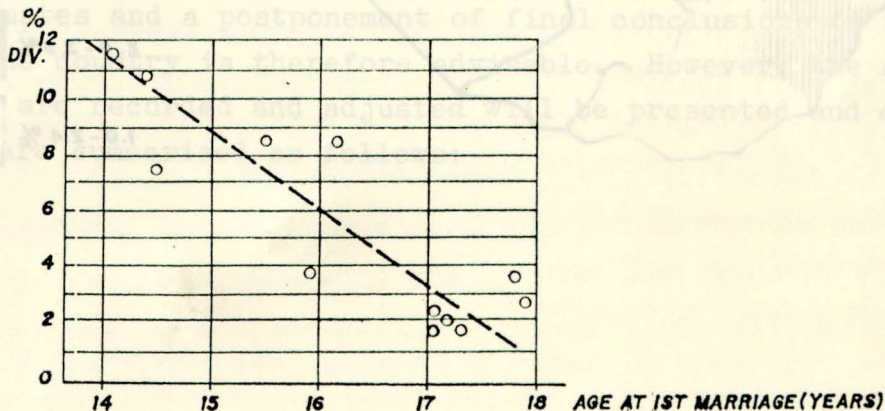
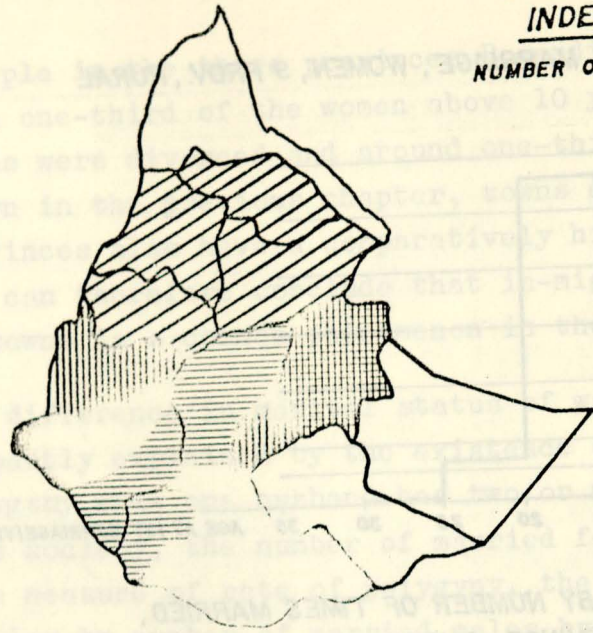


Fig. VII

INDEX OF POLYGyny

NUMBER OF MARRIED WOMEN PER MARRIED MAN



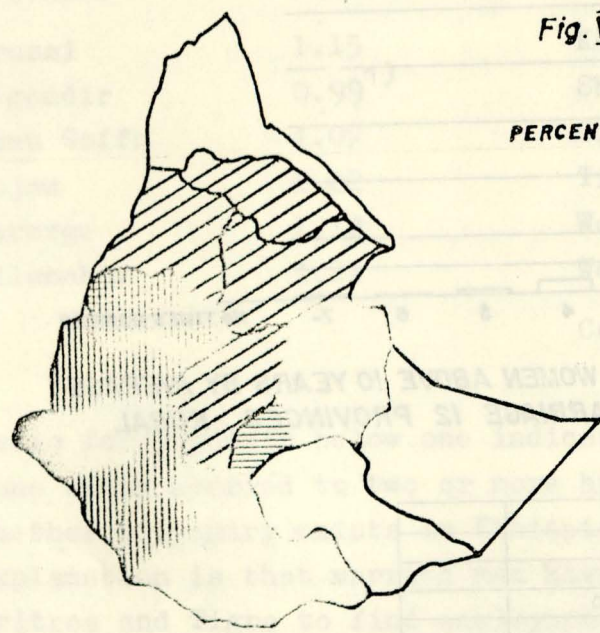
KEY

1.00-1.04	
1.05-1.09	
1.10-1.14	
1.15-1.19	
1.20-1.24	

Fig. VIII

DIVORCED WOMEN

PERCENT DIVORCED WOMEN IN RURAL AREAS



KEY

8.1% -	
6.0-7.9%	
4.0-5.9%	
2.5-3.9%	
1.0-2.4%	

the low ones in Gemu Goffa and Kefa, there seems to be a connection between marital status of women and degree of polygyny: a high percentage divorced women is associated with a low average age at first marriage and also with a low degree of polygyny.

Even if more of academical value, it might be of some interest to study the distribution of number of times married. An examination shows that the actual distribution not significantly fits to a Poisson distribution (average number of times married, including "not married", is 0.832). In fact, the proportion of women that has been married four times or more is higher than the corresponding values in the Poisson distribution. This might be interpreted as an increasing tendency of remarrying with increasing number of times married in the past.

7. FERTILITY AND MORTALITY

7.11 The text below refers to Table XII - XIV.

The method for adjusting fertility and infant and child mortality is thoroughly explained in appendix IV. It is believed that the estimates are tolerably reliable. However, the ones for Arussi, Gojam and Shoa should be used with care, since the data of these provinces do not allow for an adjustment procedure similar to the one used for the other provinces. Analysis from the second round of the National Sample Survey will presumably give better estimates and a postponement of final conclusions on vital rates of the country is therefore advisable. However, the results as they are recorded and adjusted will be presented and discussed, and are summarized as follows:

Table 10 Estimates of Vital Rates as of 1966

	Population of surveyed rural areas in 12 provinces		Total population of the country
	Recorded	Adjusted	Adjusted
General fertility	190	221	215
Total fertility	5.6	6.7	6.6
Crude birth rate	44.0 per th	51.1 per th	50.1 per th
Infant mortality	84 per th	200 per th	195 per th
Child mortality	120 per th	295 per th	285 per th
Crude death rate	22.0 per th	26.5 per th	25.3 per th
Yearly natural incr.	22.0 per th	24.6 per th	24.7 per th
Expectation of life at birth	about 40 years	36.2 years	37-38 years
Gross reproduction	2.8	3.3	3.2
Net reproduction	-	1.8	1.8

A relatively high general fertility rate compared to the crude birth rate in surveyed rural areas is explained by a low portion of women aged 15 - 49 years, namely 23.9% of the rural population¹.

The adjusted total fertility rate is 6.7 and probably slightly lower in the country as a whole (average number of children ever born alive by women who have passed their reproductive ages). When considering only those women who have been recorded reproductive (almost 10% of the women above 50 years in the surveyed rural areas were recorded childless), the average number of children ever born alive by women above 50 years of age was 7.4 in the surveyed rural areas.

Information on sex of infants born during the year preceding the survey was not collected. The adjusted gross and net reproduction rates, 3.3 and 1.8 resp. in the rural areas are

¹Average for Africa is around 24.5%.

derived on the assumption that sex-ratio at birth is around 105¹, i.e. there are 105 males born per 100 females.

Age-specific fertility is highest at ages 20-24, 25-29 and 30-34 years (adjusted figures 0.315, 0.310 and 0.242 resp.). This means that more than 31% of all women aged 20 -29 years in surveyed rural areas (and most probably in the country as a whole) had delivered a child during the last year previous to the survey.

An expected, but nevertheless interesting result, is that there is a connection between the age at first marriage and the current fertility at lower ages. Thus, a comparison between the age at first marriage and the current fertility at age.

20 years,	gives the correlation coefficient	-0.55
25 years	"	-0.47
50 years	"	-0.17

This means that the lower the age at first marriage, the more children were born by women aged 20 and 25 years resp. (more pronounced for the younger women), but not necessarily (significantly) by women who have passed their reproductive period.

The great difference between recorded and adjusted infant mortality rate is partly explained by errors in the respondents' time-estimation, but mainly by the fact that more than half of the infants deceased were not mentioned at all (these types of error are discussed in appendix II). As shown by the adjusted infant mortality of 195 per thousand live born infants, almost one-fifth of the children born alive die before reaching one year of age. The child mortality is estimated to about 285 per thousand, i.e. almost 29% of the children born alive die

¹ A recently conducted study of around 9,000 deliveries at an Addis Ababa hospital gave as a result a sex-ratio at birth of slightly above 105 (made by ENI - Ethiopian Nutrition Institute, and CSO in collaboration).



NOTE: ALTHOUGH PARTS IS FOR ONLY 2 PROVINCES, THE COMPARISON IS HARDLY AFFECTED

before reaching 5 years of age. About 37% die before reaching 15 years of age, and only half of those born reach 35 years of age. Deceased infants constitute more than one-third, and deceased children (0-4 years) about half of all deaths.

In accordance with the mortality picture of other countries, male infant mortality is higher than that of females, 201 compared to 185 per thousand in 9 provinces (all surveyed rural areas, except Arussi, Gojam and Shoa). The same relation holds for child mortality: male 303 and female 280 per thousand in the same provinces.

The relatively high crude death rate of more than 25 per thousand keeps the rate of the yearly natural increase down to less than 25 per thousand (see also chapter 3.4).

Expectation of life at birth is above 36 years, males 37 and females 35 years. The higher expectation of life of males is explained by a comparatively heavy mortality of adult women at ages of maximum fertility, 15 to 40 years, due to hard work associated with childbirths and early infant care. The maternal mortality is obviously very high. The difference in mortality by sex at adult ages is reflected in a relatively high expectation of life at 20 years of age of males compared with that of females, 40 and 35 years resp. Actually, from 10 to 80 years of age, the male expectation of life is constantly 5 - 6 years more than that of the females (above 50 or 60 years, this difference is partly explained by overestimation of age of a majority of the males - alive as well as deceased). The higher female mortality is also reflected in the total number of males exceeding that of the females, in rural as well as in rural plus urban areas (almost 3% more males than females in the country - see chapter 5.1)

Analysing fertility in rural areas by province, it is found that there is an exceptionally high fertility in Hararge - a total fertility above 8 children, a general fertility of 300 per thousand women in age group 15-49 years, and a crude birth

Fig. 18

DISTRIBUTION OF WOMEN BY NUMBER OF CHILDREN EVER BORN ALIVE AND BY AGE-GROUP OF WOMEN. 11 PROVINCES RURAL AREAS RECORDED DATA.

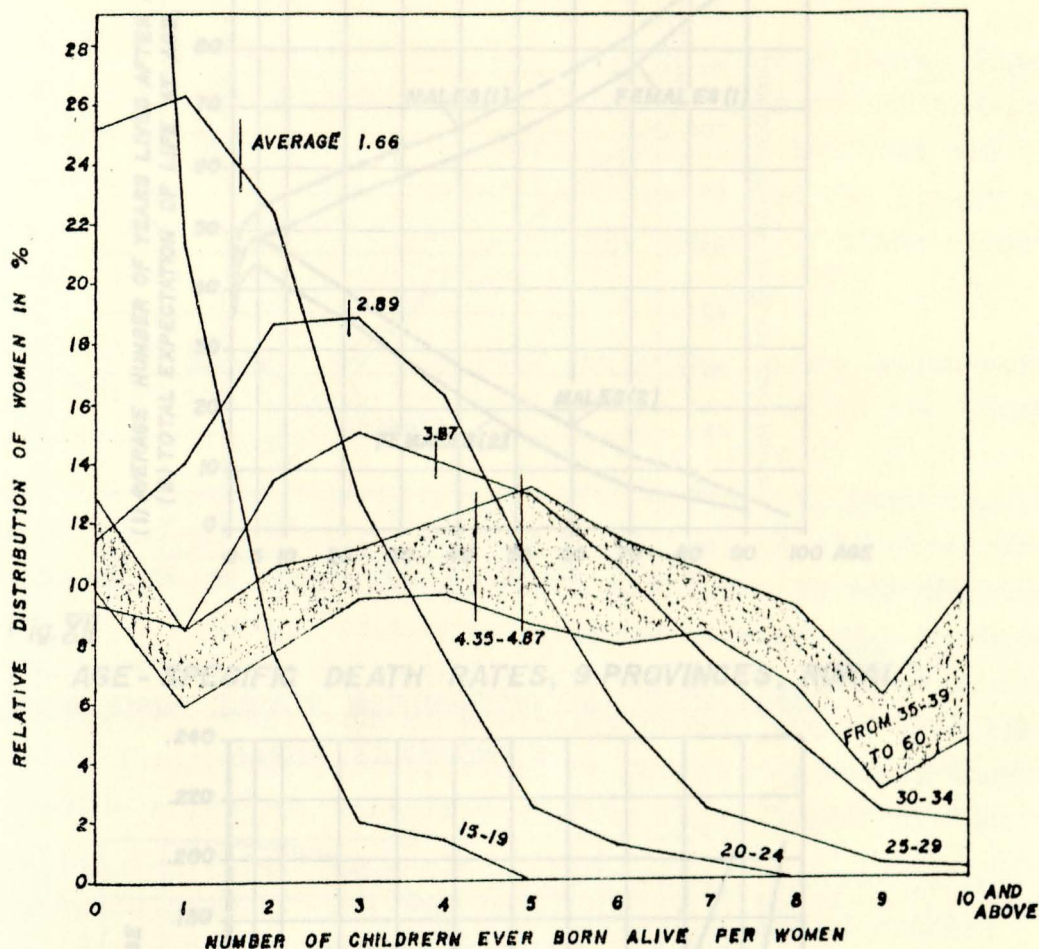
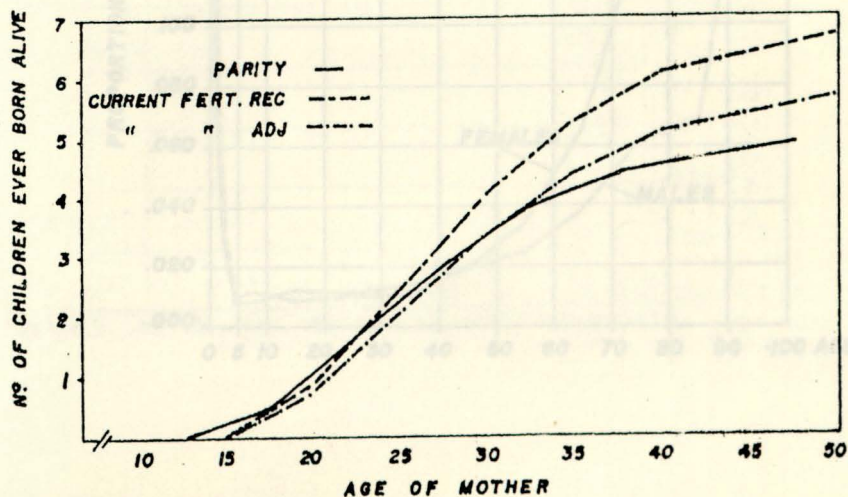


Fig. 19

PARITY AND CURRENT FERTILITY (rec. and adj.) 12 PROVINCES RURAL AREAS



NOTE: ALTHOUGH PARITY IS FOR ONLY 11 PROVINCES, THE COMPARISON IS HARDLY AFFECTED

Fig. XI

EXPECTATION OF LIFE, 9 PROVINCES, RURAL

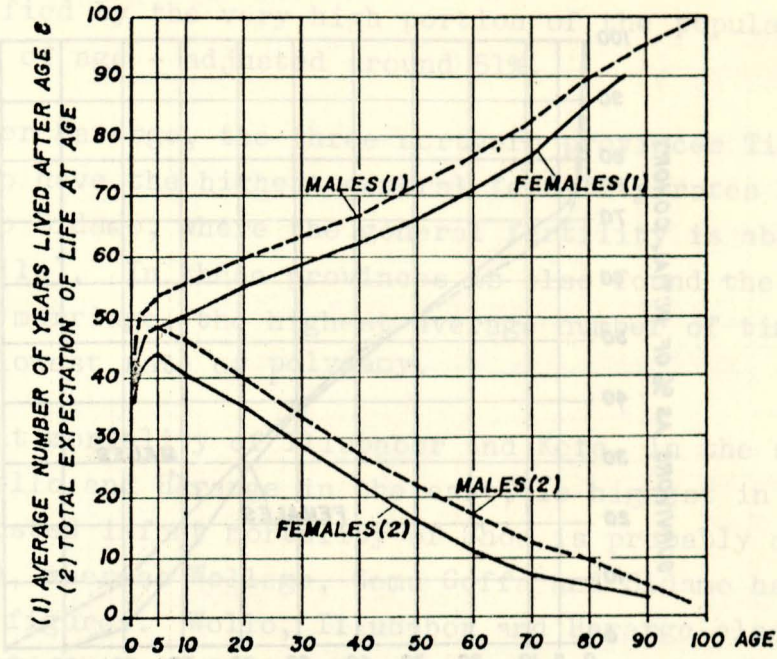


Fig. XII

AGE - SPECIFIC DEATH RATES, 9 PROVINCES, RURAL

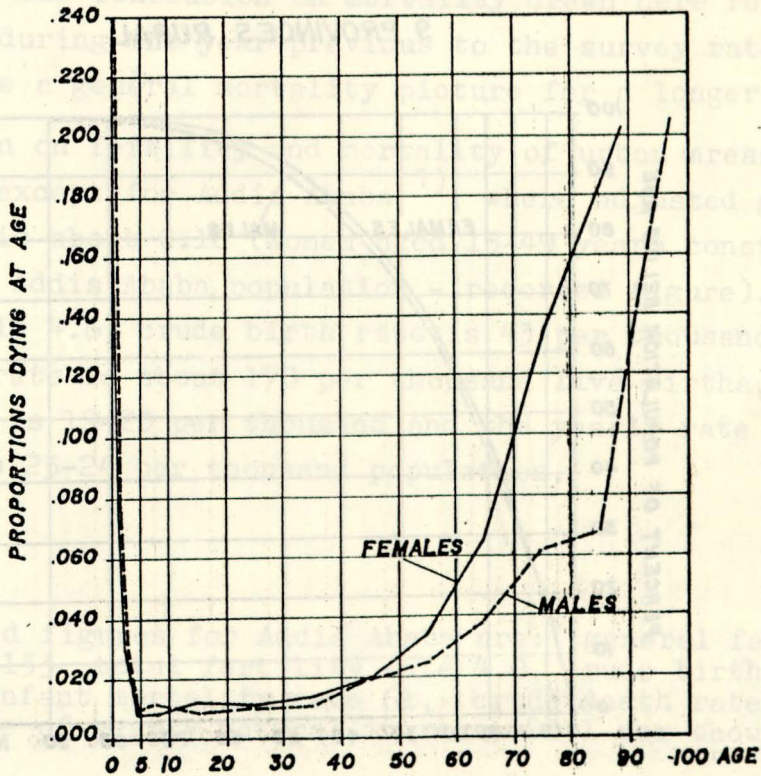


Fig. XIII

SURVIVORS IN STATIONARY POPULATION, 9 PROV., RURAL

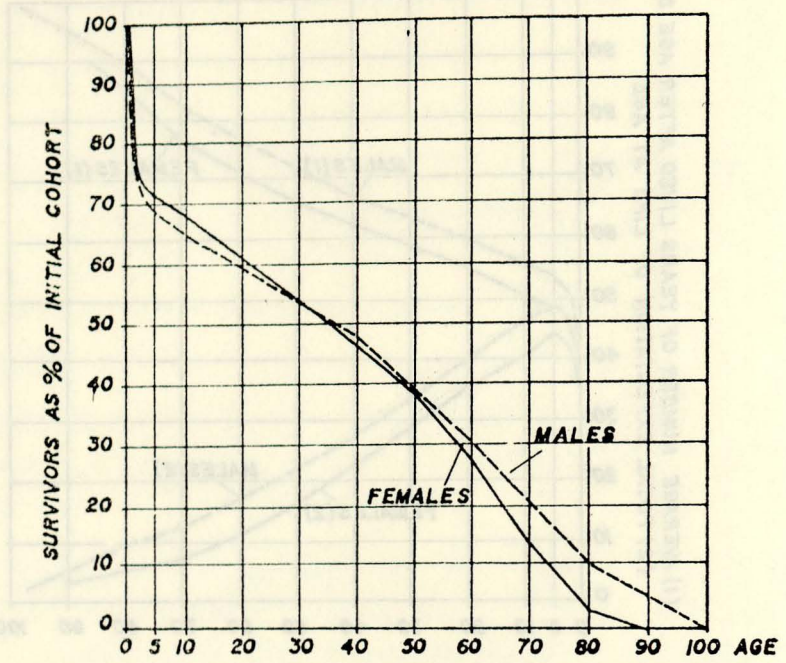
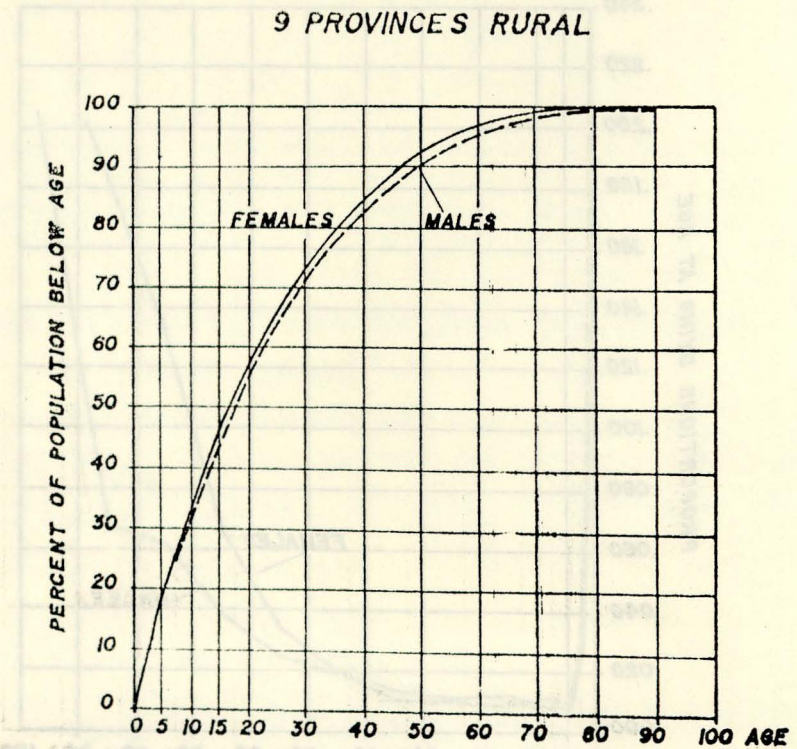


Fig. XIV

CUMULATED AGE DISTRIBUTION, STABLE POPULATION, 9 PROVINCES RURAL



rate of about 60 per thousand. The reliability of these figures is justified by the very high portion of the population below 15 years of age - adjusted around 51%.

Except for Hararge, the three northern provinces Tigre, Begemdir and Wollo have the highest general fertility rates of the country (also Sidamo, where the general fertility is about the same as in Wollo). In these provinces is also found the lowest age at first marriage, the highest average number of times married and the lowest rate of polygamy.

The infant mortality of Illubabor and Kefa, in the south-west, and of Wollo and Hararge in the east, is highest in the country (the adjusted infant mortality of Shoa is probably an over-estimate), whereas Wollega, Gemu Goffa and Sidamo have the lowest adjusted figures. Wollo, Illubabor and Hararge also have the highest adjusted crude death rates - all above 30 per thousand population. However, it has to be borne in mind that there may be yearly variations in number of deaths in the various provinces. Therefore, the conclusion on mortality drawn here reflect the situation during the year previous to the survey rather than trying to give a general mortality picture for a longer period.

Information on fertility and mortality of urban areas is not available except for Addis Ababa ¹⁾, where adjusted general fertility is about 0.16 (women aged 15-49 years constitute about 27% of the Addis Ababa population - recorded figure), total fertility is 4.6, crude birth rate is 43 per thousand, infant mortality rate is about 170 per thousand live births, crude death rate is 19-20 per thousand and the yearly rate of natural increase is 23-24 per thousand population.

¹⁾Recorded figures for Addis Ababa are: general fertility rate 0.133, total fertility rate 4.0, crude birth rate 37.0, infant mortality rate 61, crude death rate 8.9 and rate of yearly natural increase 28.1 per thousand.

8. LITERACY

8.12 In accordance with the UN definition, literacy is here defined as "being able to read and write" (population 10 years and above only). Table XV - XVII are summarized as follows:

Table 11 Literacy by Sex and Rural-Urban in 1965/66 (in %)
Population 10 Years and above

	Males	Females	Total
Rural	7.9	0.3	4.1
Urban	53.0	17.2	33.6
Total	11.6	1.7	6.6

It has to be borne in mind that these rates refer to the mid-1960's. Since then, there have been much efforts to increase the school enrollment, especially in primary schools, which is also reflected in the higher literacy rates at younger ages. So, for example, in rural areas literacy rate in

age group 10-19	is about 5.1 %
20-24	4.2 %
25-44	4.0 %
45 and above	3.3 %

It is possible to roughly project the literacy rate from the knowledge of literacy by age group and from the known increase in school participation. Thus, it is estimated that by the end of 1971, the literacy rate has increased to over 8% in the country as a whole, the increase being much more pronounced for females than for males. In the mid-1970's the literacy rate will pass the 10% mark, presuming the previous increase in school participation rate will remain at the same pace.

In surveyed rural areas, male literacy by age is relatively constant, increasing from 8.1% in age-group 10-14 to 9.7% in group 20-24 and then decreasing continuously to 5.2% in age-group 50 and above. The same is not true for females; 1.2%

Fig. XV

LITERACY BY SEX AND AGE-GROUP, 12 PROV. RURAL, 1966

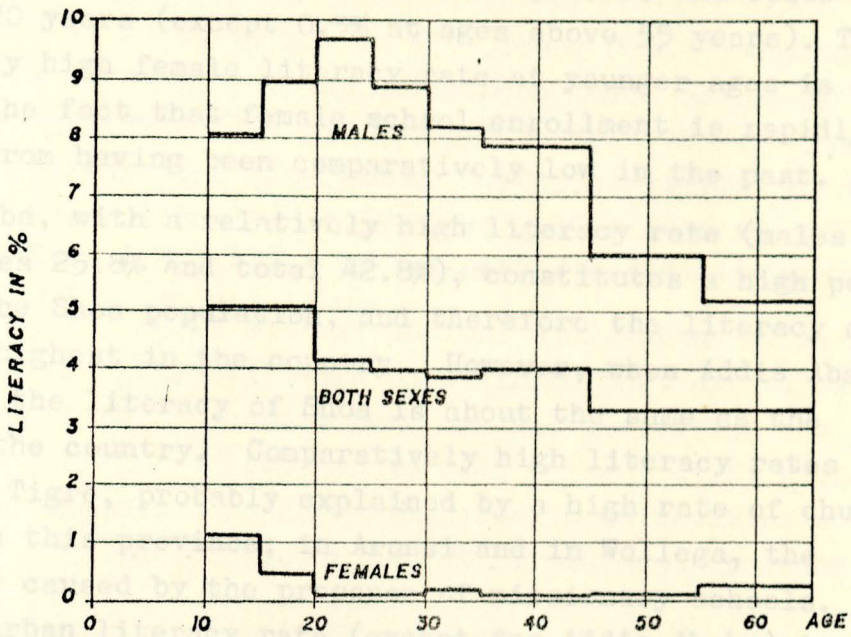
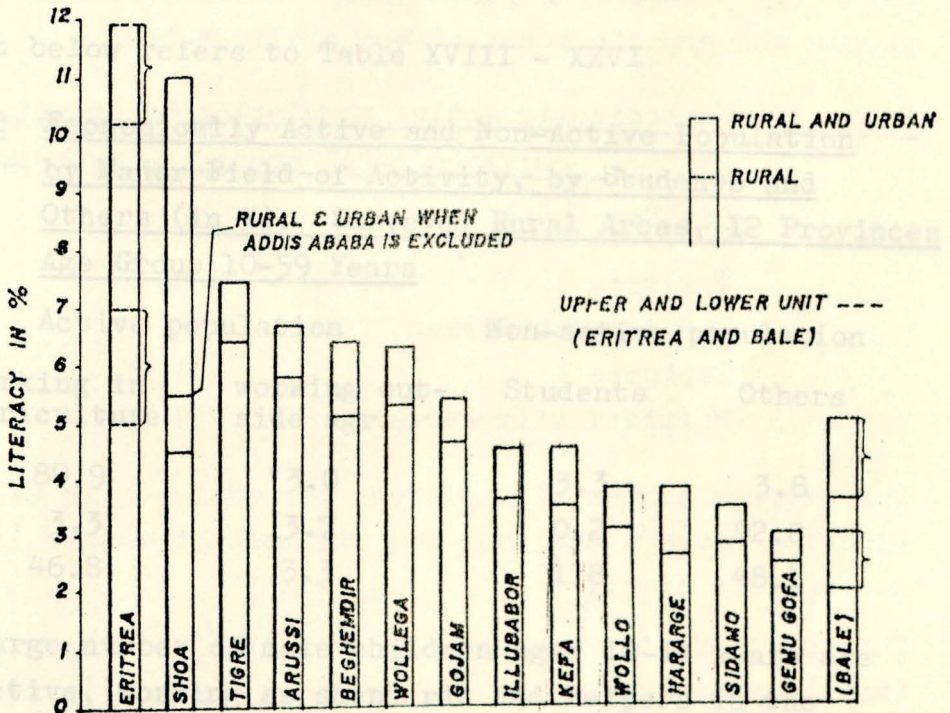


Fig. XVI

LITERACY BY PROVINCE, 1966, POPULATION TEN YEARS AND ABOVE



are literate in group 10-14, 0.5% in group 15-19 and below 0.2% above 20 years (except 0.3% at ages above 55 years). This comparatively high female literacy rate at younger ages is explained by the fact that female school enrollment is rapidly increasing from having been comparatively low in the past.

As Addis Ababa, with a relatively high literacy rate (males 60.5%, females 25.8% and total 42.8%), constitutes a high percentage of the Shoa population, and therefore the literacy of Shoa is the highest in the country. However, when Addis Ababa is excluded, the literacy of Shoa is about the same as the average for the country. Comparatively high literacy rates are found in Tigre, probably explained by a high rate of church activities in this province; in Arussi and in Wollega, the latter partly caused by the presence of missionary schools. The highest urban literacy rate (except for Addis Ababa) is also found in Wollega.

9. ECONOMICALLY ACTIVE POPULATION

9.13 The text below refers to Table XVIII - XXVI

Table 12 Economically Active and Non-Active Population
by Major Field of Activity, by Students and
Others (in %). Surveyed Rural Areas, 12 Provinces
Age Group 10-59 Years

	Active population		Non-active population	
	working in agriculture.	working out-side agr.	Students	Others
Males	89.9	3.0	3.3	3.8
Females	3.3	3.7	0.2	92.8
Both sexes	46.8	3.3	1.8	48.1

A relatively large number of male children aged 10-14 years are economically active, working as shepherds and helpers in the field of agriculture, which motivates the inclusion of this age

group in the economically active population.

In age group 10-59 years, 93% of the male, 7% of the female, and 50% of the total population were recorded as economically active. The two latter figures are misleading as they do not include "housewives". If "housewives" were defined as an economically active category, the female economically active population would probably be almost the same as the male one.

Workers in agriculture include farmers 27.9% (one who cultivates his own land mainly with hired labour), cultivators 28.4% (one who cultivates his own land without hired labour), sharecroppers 12.7% (has no land of his own to cultivate but takes up the cultivation of another's land on a cropsharing basis), agricultural labourer 12.7% and herder 18.3%.

Only around 3% of the rural population work outside agriculture.

Non-active "others" include houseworkers (93% of the females), rentiers, pensioners, permanently disabled persons, beggars and people who are too young or too old to work.

Table 13 Economically active population by industrial status (in %). Surveyed rural areas, 12 provinces. Both sexes.

Employer	0.5%
Own account worker	56.3%
Employee	3.3%
Unpaid family worker	39.9%

The average number of employees per employer is 6.2. The distinction between employer and own account worker is not always necessarily clear.

The unpaid family workers are economically active in the sense that they contribute to the economy. Generally they get payment in kind.

In towns, 63.8% of the population in age group 10-59 years were recorded economically active. Since the definition of "economically active" is not absolutely clear, this figure should be used with caution. A higher portion of the males than of the females were recorded economically active, however, the difference being smaller in urban than in rural areas. Larger towns had a much higher portion non-active population than smaller towns.

- V Urban Population By Size Of Town And Province, January 1967.
- VI Urban Population In Towns With 2,000 - 10,000 Inhabitants In January 1967.
- VII Urban Population In Towns With More Than 10,000 Inhabitants In January 1967.
- VIII Marital Status In Surveyed Rural Areas By Sex, Age-Group (10-14, 15-19 And 20-) And Province; In %. Recorded Age-Distribution.
- IX Marital Status In Urban Areas By Sex And Province In %. Population Above 10 Years Only.
- X Number of Ever Married Women In Survey Rural Areas By Age At First Marriage As % Of Total Ever Married.
- XI Number of Ever Married Women By Number of Times Married.
- XII Demographic Details For Surveyed Rural Areas, By Province; Recorded Figures.
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- XIV Life Table For Males + Females In 9 Provinces, Surveyed Rural Areas.
- XV Literacy By Sex And Age-Group, In % Surveyed Rural Areas.
- XVI Literacy Of Surveyed Areas, In % (Population 10 Years And Above).

TABLE I Population By Province, Sex and Age-Group Surveyed Rural Areas Recorded Distribution.

II Urban Population By Province And Age-Group In January 1967, Recorded Distribution.

III Estimated Rural And Urban Population By Province And Sex in January 1967.

IV Area, Population And Population Density By Awraja In January 1967.

V Urban Population By Size Of Town And Province, January 1967.

VI Urban Population In Towns With 2,000 - 10,000 Inhabitants In January 1967.

VII Urban Population In Towns With More Than 10,000 Inhabitants In January 1967.

VIII Martial Status In Surveyed Rural Areas By Sex, Age-Group (10-14, 15-19 And 20-) And Province; In %. Recorded Age-Distribution.

IX Martial Status In Urban Areas By Sex And Province In %. Population Above 10 Years Only.

X Number of Ever Married Women In Survey Rural Areas By Age At First Marriage As % Of Total Ever Married.

XI Number of Ever Married Women By Number of Times Married.

XII Demographic Details For Surveyed Rural Areas, By Province; Recorded Figures.

XIII Demographic Details For Surveyed Rural Areas, By Province, Adjusted Figures.

XIV Life Table For Males + Females In 9 Provinces, Surveyed Rural Areas.

XV Literacy By Sex And Age-Group, In % Surveyed Rural Areas.

XVI Literacy Of Surveyed Areas, In % (Population 10 Years And Above).

TABLE	XVII	Literacy By Province And Rural - Urban, In %. Recorded And Assumed Figures
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	XIX	Non-Active Population By Province, By Reason Of Non-Activity, And Sex, Surveyed Rural Areas.
	XX	Economically Active Population By Field Of Activity, Age-Group And Sex. 12 Province, Surveyed Rural Areas.
	XXI	Economically Non-Active Population By Reason Of Non-Activity, Sex And Age-Group. 12 Provinces, Surveyed Rural Areas.
	XXII	Economically Active Population By Province, Age Group And Sex Surveyed Rural Areas.
	XXIII	Economically Non-Active Population By Province, Age-Group And Sex; Surveyed, Rural Areas.
	XXIV	Activity Status By Province; Surveyed Rural Areas Only.
	XXV	Economically Active Population, As % Of Total Population, By Size Of Town And Province.
	XXVI	Economically Active Urban Population By Main Activity And Province.

TABLE I.1 Population By Province, Sex and Age-Group Surveyed Rural Areas Recorded Distribution.

AGE	ARUSSI		BEGEMDIR		GEMU GOFA	
	Male	Female	Male	Female	Male	Female
0			23,900	21,200	14,400	12,400
1	Information		6,500	5,400	4,000	3,900
2			24,300	22,700	15,700	16,200
3	not available		22,800	19,000	15,500	15,100
4			21,200	17,000	13,500	11,100
0-4	67,200	64,600	98,700	85,300	63,100	58,700
5-9	60,200	54,400	98,900	88,100	56,000	45,600
10-14	39,600	36,200	66,000	51,800	26,900	18,000
15-19	31,600	23,200	51,700	50,900	21,900	15,600
20-24	23,600	24,200	34,000	41,800	14,500	22,300
25-29	20,000	25,600	44,200	49,300	21,400	31,900
30-34	17,400	23,800	35,500	37,800	24,600	27,400
35-39	16,400	16,000	37,200	29,700	22,000	19,500
40-44	13,800	18,200	25,100	26,700	17,500	16,300
45-49	12,000	7,800	23,200	16,900	9,500	8,000
50-54	9,000	12,800	15,400	16,300	11,200	7,200
55-59	6,400	2,200	14,100	5,900	5,800	2,000
60-64	24,400	19,800	8,800	7,500	4,200	2,700
65-69	(60 and above)		8,500	3,200	3,000	800
70-74	Information		4,000	3,200	2,000	1,100
75-79			1,300	1,000	300	200
80-84	not available		800	900	500	600
85-89			400	400	100	400
90-94			300	200	0	100
95-99			100		100	
N/S	6,800	13,400	300	1,800	0	300
Total	348,400	342,200	568,500	518,700	304,600	278,700

AGE	GOJAM		HARARGE		ILLUBABOR	
	Male	Female	Male	Female	Male	Female
0			42,530	40,580	8,950	8,575
1	Information		7,550	9,060	2,175	2,600
2			32,710	36,790	9,725	9,825
3	not available		36,440	39,360	10,775	10,025
4			35,910	31,710	8,225	9,575
0-4	113,282	118,301	155,140	157,500	39,850	40,600
5-9	122,927	118,090	143,060	132,460	38,500	37,850
10-14	86,124	68,154	69,480	62,460	25,100	17,050
15-19	65,966	69,778	58,860	51,410	17,000	11,750
20-24	50,202	63,402	42,740	58,970	12,575	23,300
25-29	59,686	53,342	49,130	64,410	20,100	32,900
30-34	37,245	36,358	51,830	51,480	21,250	24,825
35-39	39,080	27,115	36,920	33,470	18,600	17,500
40-44	23,415	27,909	36,130	33,520	13,450	18,600
45-49	24,926	16,900	18,320	11,750	9,875	9,325
50-54	19,583	14,494	21,450	21,940	11,050	12,275
55-59	13,077	6,021	6,650	6,660	5,875	3,500
60-64	25,458	22,961	18,680	14,600	8,325	7,000
65-69	(60 and above)		3,900	2,730	2,700	1,875
70-74			5,950	3,840	2,650	1,800
75-79			1,460	1,000	875	550
80-84	Information		2,760	1,200	1,625	1,500
85-89			670	300	825	425
90-94	not available		240	500	350	450
95-99			400	100	400	0
N/S	3,064	17,656	340	1,160	300	1,025
Total	684,035	660,481	724,110	711,460	251,275	264,100

TABLE 1.2 Population By Province, Sex and Age-Group Surveyed Rural Areas. Recorded Distribution (Cont.)

AGE	KEFA		SHOA		SIDAMO	
	Male	Female	Male	Female	Male	Female
0	25,400	25,350			25,280	28,400
1	1,600	1,850	Information		25,910	27,240
2	20,850	21,600			41,920	47,850
3	19,950	22,200			49,870	53,280
4	20,150	20,100	not available		44,050	44,150
0-4	87,950	91,100	323,911	282,256	187,030	200,920
5-9	74,750	68,350	294,687	263,342	198,085	166,540
10-14	42,150	28,800	226,919	175,849	105,470	65,880
15-19	32,100	24,500	148,340	123,357	71,140	51,695
20-24	23,550	46,850	118,296	152,749	49,960	80,925
25-29	42,900	56,050	121,283	143,210	62,950	100,680
30-34	40,950	45,750	132,517	159,945	64,665	85,415
35-39	37,500	34,250	88,268	87,761	57,100	58,275
40-44	31,100	27,650	92,632	103,147	46,070	55,915
45-49	19,900	13,300	59,172	45,447	34,665	26,810
50-54	22,800	13,500	66,914	62,469	37,165	31,235
55-59	10,900	3,900	40,611	20,203	23,980	11,470
60-64	10,600	9,850	103,722	67,328	17,920	15,570
65-69	4,550	2,400	(60 and above)		12,310	6,890
70-74	4,900	1,950			12,330	5,190
75-79	1,500	550			2,800	1,960
80-84	2,200	1,550	Information		3,690	3,080
85-89	350	400			1,060	350
90-94	200	300	not available		720	630
95-99	550	300			1,380	730
N/S	1,150	5,250	30,154	50,976	595	745
Total	492,550	476,550	1,847,426	1,738,039	991,085	970,905

AGE	TIGRE		WOLLEGA		WOLLO	
	Male	Female	Male	Female	Male	Female
0	22,000	17,000	15,600	14,700	26,200	23,000
1	19,800	18,400	10,300	10,500	20,200	19,600
2	40,200	27,800	24,700	22,000	42,000	39,400
3	28,000	28,200	22,800	17,000	35,400	35,800
4	22,200	23,000	20,100	21,700	33,600	31,600
0-4	132,200	114,400	93,500	85,900	157,400	149,400
5-9	128,000	121,600	95,200	85,000	175,000	172,000
10-14	89,400	72,800	60,300	55,900	111,600	79,000
15-19	70,000	69,800	46,300	34,100	94,600	76,600
20-24	44,200	53,800	32,600	40,400	64,200	83,400
25-29	48,800	61,000	37,100	48,400	73,200	97,200
30-34	41,200	48,000	36,100	48,400	69,400	88,200
35-39	43,200	36,200	30,500	38,000	79,600	57,000
40-44	30,400	40,200	26,400	27,900	51,600	55,800
45-49	17,400	15,800	19,600	14,600	36,800	32,400
50-54	22,600	20,600	16,000	22,500	43,600	39,600
55-59	21,800	11,000	10,500	7,300	37,800	13,200
60-64	12,200	9,800	12,600	11,100	28,200	21,600
65-69	9,200	4,000	5,500	3,500	15,800	6,800
70-74	6,800	4,000	3,100	4,400	12,600	9,800
75-79	2,000	800	1,300	1,800	3,600	2,400
80-84	2,200	2,600	2,700	3,300	6,400	5,400
85-89	600	0	500	100	2,000	400
90-94	800	200	500	400	1,600	1,000
95-99	0	0	200	0	1,200	200
N/S	600	600	0	600	400	3,800
Total	723,600	687,200	530,500	533,600	1,066,600	995,200

TABLE I.3 POPULATION BY SEX AND AGE GROUP, 12 PROVINCES, SURVEYED
RURAL AREAS, RECORDED DISTRIBUTION (Cont.)

AGE	NUMBER OF PEOPLE			RELATIVE DISTRIBUTION %			CUMULATIVE DISTRIBUTION %		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	1,519,260	1,418,980	2,968,240	17.90	17.93	17.91	17.90	17.93	17.91
5-9	1,485,305	1,353,330	2,838,635	17.50	16.75	17.13	35.40	34.68	35.04
10-14	919,040	731,890	1,680,930	11.18	9.06	10.15	46.58	43.74	45.19
15-19	709,510	602,695	1,312,205	8.36	7.46	7.92	54.94	51.20	53.11
20-24	510,420	692,095	1,202,515	6.01	8.57	7.26	60.95	59.77	60.37
25-29	600,740	763,990	1,364,730	7.08	9.46	8.24	68.03	69.23	68.61
30-34	572,635	677,375	1,250,030	6.74	8.38	7.54	74.77	77.61	76.15
35-39	596,370	454,775	961,145	5.96	5.63	5.80	80.73	83.24	81.95
40-44	407,600	451,845	859,445	4.80	5.59	5.19	85.53	88.83	87.14
45-49	285,355	219,030	504,385	3.36	2.71	3.04	88.89	91.54	90.18
50-54	296,765	274,915	571,680	3.50	3.40	3.45	92.39	94.94	93.63
55-59	197,490	93,350	290,840	2.33	1.16	1.76	94.72	96.10	95.39
60-	448,450	315,560	764,010	5.28	3.90	4.61	100.00	100.00	100.00
N/S	43,705	97,315	141,020	-	-	-	-	-	-
Total	8,532,665	8,177,145	16,709,810	100.00	100.00	100.00	100.00	100.00	100.00

TABLE I.4 POPULATION BY SEX AND AGE GROUP, 9 PROVINCES SURVEYED RURAL AREAS,
RECORDED AND ADJUSTED DISTRIBUTION.

AGE	NUMBER OF PEOPLE		RECORDED DISTRIBUTION %				ADJUSTED DISTRIBUTION %			
	RECORDED DISTR.		REL. DISTR.		CUM. DISTR.		REL. DISTR.		CUM. DISTR.	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0	204,270	191,235	3.61	3.52	3.61	3.52	4.5	4.5	4.5	4.5
1	98,045	98,590	1.74	1.81	5.35	5.33	3.9	4.0	8.4	8.5
2	252,115	244,215	4.46	4.49	9.81	9.82	3.6	3.7	12.0	12.2
3	241,555	240,045	4.27	4.42	14.08	14.24	3.4	3.5	15.4	15.7
4	218,955	210,045	3.87	3.86	17.95	18.10	3.2	3.3	18.6	19.0
0-4	1,014,940	984,130	17.95	18.10	17.95	18.10	18.6	19.0	18.6	19.0
5-9	1,007,715	918,380	17.83	16.89	35.78	34.99	14.5	15.1	33.1	34.1
10-14	596,620	452,390	10.55	8.32	46.33	43.31	12.2	12.6	45.3	46.7
15-19	463,830	387,205	8.21	7.12	54.54	50.43	10.2	10.7	55.5	57.4
20-24	318,525	453,015	5.63	8.33	60.17	58.76	8.6	8.9	64.1	66.3
25-29	400,090	543,710	7.08	10.00	67.25	68.76	7.4	7.3	71.5	73.6
30-34	385,855	459,140	6.83	8.45	74.08	77.21	6.2	6.1	77.7	79.7
35-39	363,010	325,425	6.42	5.99	80.50	83.20	5.1	5.1	82.8	84.8
40-44	278,080	304,215	4.92	5.60	85.42	88.80	4.2	4.2	87.0	89.0
45-49	189,520	149,775	3.35	2.76	88.77	91.56	3.4	3.3	90.4	92.3
50-54	201,565	186,380	3.57	3.43	92.34	94.99	2.7	2.6	93.1	94.9
55-59	137,625	65,400	2.43	1.20	94.77	96.19	2.2	2.0	95.3	96.9
60-64	121,745	100,510	2.15	1.85	96.92	98.04	1.6	1.4	96.9	98.3
65-69	65,585	32,465	1.16	0.60	98.08	98.64	1.2	0.9	98.1	99.2
70-74	54,440	35,600	0.96	0.66	99.04	99.30	0.8	0.5	98.9	99.7
75-79	15,165	10,360	0.27	0.19	99.31	99.49	0.5	0.2	99.4	99.9
80-84	22,925	20,340	0.41	0.37	99.72	99.86	0.3	0.1	99.7	100.0
85-89	6,525	2,795	0.12	0.05	99.84	99.91	0.2	0.0	99.9	100.0
90-94	4,720	3,830	0.08	0.07	99.92	99.98	0.1	0.0	100.0	100.0
95-99	4,340	1,350	0.08	0.02	100.00	100.00	0.0	0.0	100.0	100.0
Total	5,652,820	5,436,415	100.00	100.00	100.00	100.00	100.0	100.0	100.0	100.0

Note: Ages not Stated are distributed proportional to mid-age in the age-groups and proportional to recorded size of the age-groups

Table II URBAN POPULATION BY PROVINCE AND AGE GROUP,
IN JANUARY 1967, RECORDED DISTRIBUTION.

PROVINCE		A G E - G R O U P						TOTAL
		0-4	5-14	15-24	25-59	60-	N/S	
Arussi	N ^o	5,960	10,100	5,970	16,790	1,680	50	40,550
	%	14.7	24.9	14.7	41.4	4.2	0.1	100.0
Begemdir	N ^o	10,650	17,350	10,230	27,570	2,530	30	68,360
	%	15.6	25.4	15.0	40.3	3.7	0.0	100.0
Eritrea	N ^o	39,170	66,750	52,600	93,300	10,970	710	263,500
	%	14.9	25.3	20.0	35.4	4.2	0.2	100.0
Gemu Gofa	N ^o	3,180	5,550	3,630	10,430	1,010	0	23,800
	%	13.4	23.3	15.3	43.8	4.2	0.0	100.0
Gojam	N ^o	9,570	14,210	11,450	27,670	2,040	140	65,080
	%	14.7	21.9	17.6	42.5	3.1	0.2	100.0
Hararge	N ^o	23,730	37,340	24,340	59,290	7,860	1,320	153,880
	%	15.4	24.3	15.8	38.5	5.1	0.9	100.0
Illubabor	N ^o	2,640	4,660	3,740	8,730	1,160	50	20,980
	%	12.7	22.2	17.8	41.6	5.5	0.2	100.0
Kefa	N ^o	7,660	10,770	8,550	21,770	1,950	120	50,820
	%	15.1	21.2	16.8	42.9	3.8	0.2	100.0
Shoa	N ^o	131,660	203,300	156,250	340,920	30,280	4,960	867,370
	%	15.2	23.4	18.0	39.3	3.5	0.6	100.0
Shoa (excl. AA)	N ^o	29,460	48,390	33,450	95,870	9,080	670	216,920
	%	13.6	22.3	15.4	44.2	4.2	0.3	100.0
Sidamo	N ^o	13,940	21,500	14,070	36,190	3,750	140	89,590
	%	15.6	24.0	15.7	40.4	4.2	0.1	100.0
Tigre	N ^o	16,740	29,050	17,690	40,090	4,440	300	108,310
	%	15.5	26.8	16.3	37.0	4.1	0.3	100.0
Wollega	N ^o	6,570	9,950	5,390	15,400	2,480	70	39,860
	%	16.5	25.0	13.5	38.6	6.2	0.2	100.0
Wollo	N ^o	13,480	23,900	17,920	48,790	4,210	720	109,020
	%	12.4	21.9	16.4	44.7	3.9	0.7	100.0
Country	N ^o	284,950	454,430	331,830	746,940	74,360	8,610	1,901,120
	%	15.0	23.9	17.5	39.3	3.9	0.4	100.0
Country (excl. AA)	N ^o	182,750	299,520	209,030	501,890	53,160	4,320	1,250,670
	%	14.6	24.0	16.7	40.1	4.3	0.3	100.0

TABLE III ESTIMATED RURAL AND URBAN POPULATION BY PROVINCE AND SEX IN
JANUARY 1967

PROVINCE	RURAL POPULATION			URBAN POPULATION			TOTAL POPULATION			PERCENTAGE URBAN		POP.
	MALES ¹⁾	FEMALES ¹⁾	TOTAL	MALES ¹⁾	FEMALES ¹⁾	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL
Arussi	365,100	358,600	723,700	18,300	22,250	40,550	383,400	380,900	764,300	4.77	5.84	5.31
Bale	83,900 ²⁾	80,500 ²⁾	164,400	7,650	8,390	16,040	91,500	88,900	180,400	8.36	9.44	8.89
Begemdir	596,300	544,100	1,140,400	28,070	40,290	68,360	624,400	584,400	1,208,800	4.50	6.89	5.66
Eritrea	762,400 ²⁾	696,100 ²⁾	1,422,500	123,700	139,800	263,500	850,100	835,900	1,686,000	14.55	16.73	15.63
Gemu Goffa	314,000	287,400	601,400	11,060	12,740	23,800	325,100	300,100	625,200	3.40	4.25	3.81
Gojam	760,900	734,700	1,495,600	26,920	38,160	65,080	787,800	772,900	1,560,700	3.42	4.94	4.17
Hararge	1,437,700	1,412,500	2,850,200	72,840	81,040	153,880	1,510,500	1,493,500	3,004,000	4.82	5.43	5.12
Illubabor	290,800	305,700	596,500	10,360	10,620	20,980	301,200	316,300	617,500	3.44	3.36	3.40
Keffa	556,000	537,900	1,093,900	24,630	26,190	50,820	580,600	564,100	1,144,700	4.24	4.64	4.44
Shoa	1,931,000	1,816,800	3,747,800	429,370	438,000	867,370	2,360,400	2,254,800	4,615,200	18.19	19.43	18.79
Shoa (excl. AA)	1,931,000	1,816,800	3,747,800	108,340	108,580	216,920	2,039,300	1,925,400	3,964,700	5.31	5.64	5.47
Sidamo	1,074,100	1,052,300	2,126,400	44,810	44,780	89,590	1,118,900	1,097,100	2,216,000	4.00	4.08	4.04
Tigre	780,900	741,700	1,522,600	45,780	62,530	108,310	826,700	804,200	1,630,900	5.54	7.78	6.64
Wollega	546,600	549,900	1,096,500	18,720	21,140	39,860	565,300	571,000	1,136,300	3.31	3.70	3.51
Wollo	1,082,200	1,009,800	2,092,000	45,860	63,160	109,020	1,128,100	1,073,000	2,201,100	4.07	5.89	4.95
Country	10,545,900	10,128,000	20,673,900	908,070	1,009,090	1,917,160	11,454,000	11,137,100	22,591,100	7.93	9.06	8.49
Country (excl. AA)	10,545,900	10,128,000	20,673,900	587,040	679,670	1,266,710	11,132,900	10,807,700	21,940,600	5.27	6.29	5.77

1) Sex-ratio of not surveyed areas is assumed the same as that of surveyed areas.

2) Assuming the same sex-ratio as for the average of the country.

TABLE IV.1 AREA, POPULATION AND POPULATION DENSITY BY AWRAJA IN JAN. 1967

Province	Awraja	Area ('000 sqkm)	Population		Population dens.	
			rural	total	rural	total
Arussi		23.5	723,700	764,300	30.8	32.5
	Arba Gugu	6.0	158,100	162,700	26.4	27.1
	Chilalo	9.5	378,700	405,800	39.9	42.7
	Ticho	8.0	186,900	195,800	23.4	24.5
Bale		124.6	(164,400)	(183,100)	(1.3)	(1.5)
Begemdir		74.2	1,140,400	1,208,800	15.4	16.3
	Chilga ¹⁾	17.1	257,500	257,500	13.0	15.1
	Debre Tabor	5.7	158,000	167,100	33.8	29.3
	Gaynt	6.2	113,300	113,300	18.3	18.3
	Gondar	10.9	167,200	210,400	15.3	19.3
	Libo	6.2	192,500	196,900	31.0	31.8
	Semien	9.4	111,700	116,100	11.9	12.4
Wegera	18.7	(140,200)	(147,500)	(7.5)	(7.9)	
Eritrea		117.6	(1,422,500)	(1,686,000)	(12.1)	(14.3)
Gemu Gofa		39.5	601,400	625,200	15.2	15.8
	Gardula	8.0	171,600	176,200	21.5	22.0
	Geleb & Hamer Bako	13.2	(12,300)	(19,100)	(0.9)	(1.4)
	Gemu	7.0	265,800	271,800	38.0	38.8
	Gofa	11.3	151,700	158,100	13.4	14.0
Gojam		61.6	1,495,600	1,560,700	24.3	25.3
	Agew Midir	5.5	166,500	170,500	30.3	31.0
	Bahir Dahr	4.0	293,600	311,600	73.4	77.9
	Bichena	3.0	195,800	195,800	65.3	65.3
	Debre Markos	7.0	218,500	249,000	31.2	35.6
	Kola Dega	8.5	334,500	342,300	39.4	40.3
	Metekel	30.1	(69,500)	(69,500)	(2.3)	(2.3)
	Mota	3.5	217,200	222,000	62.1	63.4
Hararge		259.7	2,850,200	3,001,400	11.0	11.6
	Chercher	15.2	501,000	519,300	33.0	34.2
	Dire Dawa	1.0	63,900	120,000	63.9	120.0
	Garaguracha	44.6	73,500	73,500	1.6	1.6
	Garamuleta	10.2	265,300	269,900	26.0	26.5
	Harar	12.2	289,100	348,200	23.7	28.5
	Weberra	2.0	236,200	243,000	118.1	121.5
	Degehabur, Jijiga					
	Kebridehar, Kelafo and Welwel & Wardier	174.5	(1,421,200)	(1,427,500)	(8.1)	(8.2)

1) including Mahbere Selassie wereda

TABLE IV.2 AREA, POPULATION AND POPULATION DENSITY BY AWRAJA IN JAN.1967 (Cont.)

Province	Awraja	Area ('000 sqkm)	Population		Population dens.	
			rural	total	rural	total
Illubabor		47.4	596,500	612,200	12.6	12.9
	Buno Bedele	6.0	254,900	259,200	42.5	43.2
	Gambella	25.9	(77,500)	(77,500)	(3.0)	(3.0)
	Gorie	7.0	227,500	239,500	32.5	34.2
	Motcha	8.5	36,600	36,600	4.3	4.3
Kefa		54.6	1,093,900	1,150,000	20.0	21.1
	Gimira	7.5	74,700	77,800	10.0	10.4
	Jima	12.2	338,700	372,900	27.8	30.6
	Kefa	7.5	155,300	160,300	20.7	21.4
	Kulo Konta	7.0	95,900	98,200	13.7	14.0
	Limu	3.2	305,500	317,000	95.5	99.1
	Maji	17.2	(123,800)	(123,800)	7.2	7.2
Shoa		85.2	3,747,800	4,597,200	44.0	54.0
	Chebo & Guragie	9.6	375,700	390,200	39.1	40.6
	Haikoch & Butajira	12.2	507,200	530,900	41.6	43.5
	Jara	-	64,300	64,300	-	-
	Jibat & Mecha	11.2	413,800	439,400	36.9	39.2
	Kembata	4.8	795,400	803,400	165.7	167.8
	Menagesha	7.5	284,400	961,900	37.9	128.3
	Menz & Yifat	-	261,900	271,700	-	-
	Merha Bietie	4.3	301,700	301,700	70.2	70.2
	Selalie	5.3	162,300	171,700	30.6	32.4
	Tegulet & Bulga	10.7	297,600	309,900	27.8	29.0
Yerer & Kereyo	9.0	283,500	350,100	31.5	38.9	
Sidamo		117.3	2,126,400	2,216,000	18.1	18.9
	Arero	25.7	47,900	54,600	1.9	2.1
	Borena	66.9	(101,800)	(110,200)	(1.5)	(1.6)
	Derasa	4.1	496,400	515,900	121.0	125.8
	Jemjem	12.4	290,500	297,100	23.4	24.0
	Sidama	4.6	658,300	694,800	143.1	151.0
Wolamo	3.6	531,500	543,400	147.6	150.9	
Tigre		65.9	1,522,600	1,630,900	23.1	24.7
	Adwa	3.2	318,900	334,900	99.7	104.7
	Agamie	4.8	216,700	227,000	45.1	47.3
	Axum	3.2	164,000	178,500	51.3	55.8
	Hulet Awlalo	13.8	171,300	177,300	12.4	12.8
	Inderta	21.8	202,700	230,400	9.3	10.6
	Raya & Azebo	7.9	153,300	166,100	19.4	21.0

TABLE IV.3 AREA, POPULATION AND POPULATION DENSITY BY AWRAJA IN JAN. 1967 (Contd.)

Province	Awraja	Area ('000 Sqkm)	Population		Population dens.	
			rural	total	rural	total
Tigre	Shirie	8.5	191,300	204,000	22.5	24.0
	Tembien	2.7	104,400	112,700	38.9	41.7
Wollega		71.2	1,096,500	1,136,400	15.4	16.0
	Arjo	4.6	93,100	95,600	20.2	20.3
	Asosa	14.3	65,900	65,900	4.6	4.6
	Gimbi	17.4	304,900	318,600	17.5	18.3
	Horo & Guduru	16.4	169,900	173,600	10.4	10.6
	Kielem	10.8	243,300	249,400	22.5	23.1
	Lekent	7.7	219,400	233,300	28.5	30.3
Wollo		79.4	2,092,000	2,201,000	26.3	27.7
	Ambasel	5.4	264,400	276,300	51.8	54.2
	Aussa	27.5	(74,300)	(80,500)	(2.7)	(2.9)
	Borena	6.6	268,700	268,700	40.7	40.7
	Dessie	1.0	181,800	226,400	181.8	226.4
	Kalu	2.0	128,400	132,400	64.2	66.2
	Lasta	5.1	296,700	296,700	58.2	58.2
	Raya & Kobo	11.2	55,000	66,300	4.9	5.9
	Wadla Delanta	3.6	149,600	149,600	41.6	41.6
	Wag	7.1	144,300	159,900	20.3	22.5
	Werehimeno	3.6	227,900	227,900	63.3	63.3
	Wereilu	2.5	139,400	146,200	55.8	58.5
	Yeju	4.1	161,500	170,100	39.4	41.5
	Country		1,221.9	20,673,900	22,585,400	16.92

Note: Population figures in brackets when the area is not or only partly surveyed.

TABLE V. URBAN POPULATION BY SIZE OF TOWN AND PROVINCE, JAN. 1967

PROVINCE	POPULATION (NUMBER OF TOWNS)							TOTAL
	2,000-4,999	5,000-9,999	10,000-19,999	20,000-49,999	50,000-99,999	100,000-499,999	500,000-	
ARUSSI	20,010 (6)	5,100(1)	15,440(1)					40,550(8)
BALE	8,240 (2)	7,800(1)						16,040(3)
BEGEMDIR	22,240 (6)	12,460(2)		33,660(1)				68,360(9)
ERITREA	34,520(11)	14,300(2)	38,270(3)			176,410(1)		263,500(17)
GEMU GOFA	16,950 (5)	6,850(1)						23,800(6)
GOJAM	25,630(9)		15,580(1)	23,870(1)				65,080(11)
HARARGE	36,420(11)	14,060(2)		47,300(1)	56,100(1)			153,880(15)
ILLUBABOR	13,100(5)	7,880(1)						20,980(6)
KEFA	7,780(3)	8,870(1)		34,170(1)				50,820(5)
SHOA	60,360(9)	44,090(6)	53,800(4)	58,670(2)			650,450	867,370(32)
SIDAMO	24,080(7)	28,600(5)	36,910(3)					89,590(15)
TIGRE	19,960(8)	34,510(5)	28,350(2)	25,490(1)				108,310(16)
WOLLEGA	13,880(5)	12,120(2)	13,860(1)					39,860(8)
WOLLO	13,420(4)	51,010(7)		44,590(1)				109,020(12)
TOTAL	316,590(101)	247,650(36)	202,210(15)	267,750(8)	56,100(1)	176,410(1)	650,450(1)	1,917,160(163)

TABLE VI URBAN POPULATION IN TOWNS WITH 2,000 - 10,000 INHABITANTS IN JANUARY 1967

PROVINCE	No. OF SURV. TOWNS	AVERAGE DATE OF SURVEY	No. OF NOT SURV. TOWNS	No. OF TOWNS	POPULATION OF SURVEYED TOWNS AT THE SURVEY	POPULATION OF NOT SURVEYED TOWNS (No. OF TOWNS IN 1956	POPULATION OF TOWNS IN BRACKET) IN 1962	YEARLY GROWTH RATE IN %	POPULATION OF SURVEYED TOWNS IN JAN. 1967	POPULA. OF NOT SURV. TOWNS IN JAN. 1967	POPULA. IN TOWNS WITH 2,000 - 10,000 INH. IN JAN. 1967
ARUSSI	4	JULY. 66	3	7	14,230	-	8,100(3)	5.2	14,610	10,500	25,110
BALE	0	-	3	3	0	-	13,130(3)	4.0 ¹⁾	0	16,040	16,040
BEGEMDIR	7	AUG. 66	1	8	31,170	-	2,410(1)	4.5	31,690	3,010	34,700
ERITREA	13	- " -	0	13	47,850	0	0	5.0	48,820	0	48,820
GEMU GOFA	4	JULY 66	2	6	12,690	3,910(1)	3,040(1)	5.1	13,020	10,780	23,800
GOJAM	5	- " -	4	9	15,080	1,500(1)	6,540(3)	3.9	15,380	10,250	25,630
HARARGE	11	OCT. 66	2	13	40,270	5,030(2)	-	5.3	41,480	9,000	50,480
ILLUBABOR	5	JAN. 67	1	6	18,900	-	1,740	3.6	18,900	2,080	20,980
KEFA	4	DEC. 66	0	4	16,550	0	0	6.2	16,650	0	16,650
SHOA	24	JAN. 66	1	25	97,000	-	1,810(1)	7.1	101,870	2,580	104,450
SIDAMO	9	- " -	3	12	37,730	-	10,440(3)	5.9	38,660	14,020	52,680
TIGRE	6	JULY 66	7	13	33,110	-	15,830(7)	5.3	33,820	20,650	54,470
WOLLEGA	7	MAR. 68	0	7	27,410	0	0	4.4	26,000	0	26,000
WOLLO	8	JULY 66	3	11	40,750	6,480(2)	6,250(1)	6.7	42,140	22,290	64,430
TOTAL	109	SEP. 66	30	137	432,740	16,920(6)	70,730(25)	6.2	443,040	121,200	564,240

1) Information not available, 4.0% yearly growth rate is a rough guess

TABLE VII URBAN POPULATION IN TOWNS WITH MORE THAN 10,000
INHABITANTS IN JANUARY 1967

PROVINCE	TOWN	DATE OF SURVEY	YEARLY GROWTH RATE IN %	POPULATION AT SURVEY	POPULATION IN JAN. 1967
ARUSSI (1)	ASELLA	SEP. 65	6.3	13,360	15,440
BEGEMDIR (1)	GONDAR	AUG. 65	5.4	29,570	33,660
ERITREA (4)	ADIUGRI	JULY 66	6.0	9,770	10,070
	ASHARA	AUG. 63 (Mar. 68) ⁴⁾	7.2	137,720	176,410
	ASSAB	APR. 65	5.9 ¹⁾	10,730	12,580
	MASSAWA	JULY 66	5.9	15,160	15,620
GOJAM (2)	BAHIR DAR	AUG. 65	10.9	11,990	15,580
	DEBRE MARKOS	AUG. 65	5.9	20,720	23,870
HARARGE (2)	DIRE DAWA	AUG. 65	5.8	48,810	56,100
	HARAR	AUG. 65	5.8	41,150	47,300
KEFA (1)	JIMMA	AUG. 65	6.2	29,420	34,170
SHOA (5)	ADDIS ABABA	OCT. 67	7.2	683,530 ³⁾	650,450
	AKAKI	SEP. 65	10.7	10,570	13,520
	DEBRE BERHAN	AUG. 65	6.8	8,750	10,300
	DEBRE ZEIT	SEP. 65	7.3	21,220	25,100
	NAZARETH	AUG. 64	7.0 ²⁾	26,460	33,570
SIDAMO (3)	DILA	AUG. 65	7.2	10,860	12,900
	SODDO	SEP. 65	5.7	10,430	11,890
	YIRGALEM	AUG. 65	6.7	10,320	12,120
TIGRE (3)	ADWA	AUG. 65	4.3	12,450	13,800
	AXUM	AUG. 65	3.5	13,380	14,550
	MEKELE	AUG. 65	5.7	22,230	25,490
WOLLEGA (1)	LEKEMTE	SEP. 65	5.5	12,210	13,860
WOLLO (1)	DESSIE	AUG. 65	5.5	39,080	44,590
EMPIRE (24)	-	-	6.8	1,263,770	1,352,920

- 1) Information not available, growth rate assumed same as Massawa
- 2) Information not available, growth rate assumed same as the average for Shoa
- 3) Adjusted figure
- 4) The population in March 1968 was 192,000.

TABLE VIII MARTIAL STATUS IN SURVEYED RURAL AREAS BY SEX, AGE-GROUP (10-14, 15-19 AND 20-) AND PROVINCE; IN %, RECORDED AGE-DISTRIBUTION

AGE-GROUP	MALE				FEMALE				
	SINGLE	MARR	WID	N/S	SINGLE	MARR	WID	DIV	N/S
A R U S S I									
10-14	100.0	0	0	0	92.3	7.7	0	0	0
15-19	94.3	5.7	0	0	29.3	67.2	0	3.5	0
20-	10.8	85.6	2.5	1.1	0	2.5	80.1	11.6	5.2
TOTAL	39.3	58.2	1.6	0.7	20.1	66.7	8.5	3.9	0.8
B E G E M D I R									
10-14	99.4	0.6	0	0	85.2	12.5	0	2.3	0
15-19	95.4	4.3	0	0.3	19.6	66.4	1.2	12.8	0
20-	8.3	86.8	1.2	3.6	0.1	1.6	74.9	9.7	13.7
TOTAL	36.7	60.0	0.9	2.4	0	16.9	64.2	7.0	11.8
G E M U G O F A									
10-14	98.5	1.5	0	0	98.3	1.7	0	0	0
15-19	96.3	3.7	0	0	44.2	54.5	0	1.3	0
20-	8.9	83.3	4.6	3.2	0	1.0	81.4	13.0	4.4
TOTAL	32.3	62.0	3.4	2.3	0	14.9	70.8	10.4	3.7
K E F A									
10-14	99.9	0.1	0	0	97.9	2.1	0	0	0
15-19	94.1	4.4	0	1.5	0	35.9	60.8	0	3.3
20-	8.2	87.9	1.9	2.0	0	0.9	85.9	10.3	2.9
TOTAL	28.8	68.1	1.5	1.6	0	12.5	76.2	8.7	2.6
S H O A									
10-14	98.9	1.1	0	0	97.1	2.4	0.3	0.2	0
15-19	95.3	4.6	0	0.1	0	45.3	51.3	2.1	1.3
20-	14.6	82.2	2.0	1.2	0	2.9	81.0	4.7	11.4
TOTAL	40.6	57.2	1.4	0.8	0	22.3	65.5	3.6	8.6
S I D A M O									
10-14	100.0	0	0	0	97.2	2.6	0	0.2	0
15-19	96.5	3.4	0.1	0	0	34.5	63.6	0.6	1.3
20-	9.5	86.5	0.9	3.1	0	0.6	87.6	9.6	2.2
TOTAL	35.5	61.7	0.6	2.2	0	14.0	76.3	7.8	1.9
T I G R E									
10-14	99.8	0.2	0	0	0	88.2	11.2	0.3	0.3
15-19	95.1	4.9	0	0	0	30.1	63.9	0.3	5.7
20-	11.9	84.0	2.2	1.8	0.1	2.3	70.0	16.1	11.4
TOTAL	41.4	55.9	1.5	1.2	0.0	20.5	59.6	11.1	8.7

	MALE				FEMALE					
	SINGLE	MARR	WID	DIV	N/S	SINGLE	MARR	WID	DIV	N/S
G O J A M										
10-14	100.0	0	0	0	0	70.3	29.6	0	0	0.1
15-19	69.0	23.9	6.3	0.8	0	11.4	74.4	12.6	1.3	0.3
20-	4.4	91.2	3.6	0.7	0.1	2.1	76.4	10.7	10.7	0.1
TOTAL	32.6	63.3	3.3	0.7	0.1	15.0	68.1	9.1	7.6	0.2
H A R R A R G E										
10-14	100.0	0	0	0	0	99.4	0.6	0	0	0
15-19	96.5	3.3	0	0.2	0	40.8	57.3	0.5	1.4	0
20-	10.7	84.6	2.9	1.8	0	0.7	81.7	15.3	2.3	0
TOTAL	37.1	59.6	2.0	1.3	0	20.2	66.7	11.2	1.9	0
I L L U B A B O R										
10-14	100.0	0	0	0	0	98.8	1.2	0	0	0
15-19	96.5	3.5	0	0	0	36.2	60.4	0.4	3.0	0
20-	8.7	87.2	1.7	2.4	0	0.7	84.9	12.2	2.2	0
TOTAL	30.6	66.3	1.3	1.8	0	12.0	75.6	10.3	2.1	0
W O L L E G A										
10-14	100.0	0	0	0	0	99.6	0.2	0	0.2	0
15-19	98.5	1.5	0	0	0	72.4	26.7	0.6	0.3	0
20-	14.6	81.5	1.6	2.3	0	1.9	79.5	14.8	3.8	0
TOTAL	41.0	56.3	1.1	1.6	0	23.7	62.2	11.2	2.9	0
W O L L O										
10-14	99.8	0.2	0	0	0	82.7	10.8	0.2	6.3	0
15-19	95.8	3.8	0	0.4	0	25.3	59.5	1.6	13.6	0
20-	12.3	81.6	1.1	5.0	0	1.3	75.8	11.8	11.1	0
TOTAL	36.4	59.2	0.8	3.6	0	13.7	66.2	9.2	10.9	0
1 2 P R O V I N C E S										
10-14	99.6	0.4	0	0	0	91.7	7.3	0.1	0.9	0
15-19	93.6	5.6	0.6	0.2	0	34.0	59.2	2.3	4.5	0
20-	11.0	84.6	2.0	2.4	0	1.8	78.6	14.3	8.2	0.1
TOTAL	37.1	59.8	1.4	1.7	0	17.8	67.6	8.1	6.4	0.1

TABLE IX MARITAL STATUS IN URBAN AREAS BY SEX AND PROVINCE, IN %.
POPULATION ABOVE 10 YEARS ONLY

PROVINCE	TOWNS WITH MORE THAN 10,000 INH.								TOWNS WITH LESS THAN 10,000 INH.								ALL TOWNS							
	MALES				FEMALES				MALES				FEMALES				MALES				FEMALES			
	S	M	W	D	S	M	W	D	S	M	W	D	S	M	W	D	S	M	W	D	S	M	W	D
ARUSSI	29.9	58.7	1.9	9.5	25.9	38.1	9.8	26.2	33.5	58.9	3.2	4.4	19.9	51.9	11.8	16.4	32.1	58.8	2.7	6.4	22.6	45.6	10.9	20.9
BEGEMDIR	37.7	56.5	1.2	4.6	21.6	35.3	10.1	33.0	35.3	57.8	3.6	3.3	19.7	33.2	12.6	34.5	36.4	57.2	2.5	3.9	20.5	34.1	11.5	33.9
ERITREA	38.5	54.3	2.3	4.9	21.5	39.2	13.2	25.9	41.8	53.4	2.3	2.5	26.7	47.5	13.1	12.7	39.6	54.0	2.3	4.1	23.1	41.8	13.2	21.9
GEMUGOFA	-	-	-	-	-	-	-	-	37.9	57.0	2.1	3.0	20.3	46.3	11.5	21.9	37.9	57.0	2.1	3.0	20.3	46.3	11.5	21.9
GOJAM	29.9	62.6	2.0	5.5	17.9	40.9	10.1	31.1	34.0	58.2	1.5	6.3	15.4	41.1	10.9	32.6	31.4	61.0	1.8	5.8	17.0	41.0	10.4	31.6
HARARGE	38.0	55.3	2.8	3.9	27.0	49.2	12.3	11.5	39.8	50.9	2.1	7.2	23.0	45.7	11.3	20.0	38.6	53.8	2.6	5.0	25.7	48.0	12.0	14.3
ILLUBABOR	-	-	-	-	-	-	-	-	42.3	50.1	2.7	4.9	18.9	47.6	13.7	19.8	42.3	50.1	2.7	4.9	18.9	47.6	13.7	19.8
KEFA	37.5	56.4	1.2	4.9	19.4	54.2	7.9	18.5	35.9	57.5	1.4	5.2	16.7	53.6	6.7	23.0	36.8	56.9	1.3	5.0	18.3	54.0	7.4	20.3
SHOA	42.0	51.2	1.1	5.7	26.7	47.7	6.9	18.7	34.4	58.3	1.9	5.4	18.5	47.0	10.3	24.4	41.1	52.1	1.2	5.6	25.5	47.6	7.4	19.5
SIDAMO	41.7	53.5	0.8	4.0	16.9	55.9	9.3	17.9	38.8	55.3	0.6	5.3	19.8	55.2	10.5	14.5	40.0	54.5	0.7	4.8	18.6	55.5	10.0	15.9
TIGRE	43.3	52.4	1.5	2.8	27.0	36.3	11.8	24.9	44.5	52.9	1.2	1.4	23.6	33.7	8.4	34.3	43.8	52.6	1.4	2.2	25.5	35.1	10.3	29.1
WOLLEGA	43.8	51.0	2.9	2.3	30.2	46.0	8.1	15.7	35.9	58.8	2.2	3.1	23.4	52.7	12.3	11.6	37.6	57.1	2.4	2.9	25.0	51.2	11.3	12.5
WOLLO	33.6	59.9	1.8	4.7	19.8	43.7	9.0	27.5	33.0	59.8	0.5	6.7	17.2	38.4	4.8	39.6	33.3	59.9	1.1	5.7	18.4	40.8	6.7	34.1
COUNTRY	40.4	52.9	1.5	5.2	24.8	45.5	9.0	20.7	37.7	55.9	1.9	4.5	20.8	45.2	10.6	23.4	39.6	53.8	1.6	5.0	23.5	45.4	9.5	21.6

TABLE X NUMBER OF EVER MARRIED WOMEN IN SURVEY RURAL AREAS BY AGE AT FIRST MARRIAGE AS
% OF TOTAL EVER MARRIED

Age at first marriage	Begemdir	Gemu	Gefa	Hararge	Illubaber	Kefa	Sidame	Tigre	Wollega	Wollo	Arussi	Gojam	Shoa	Total 9 prov.	Total 12 prov.
0-4	0	0.2	0	0	0	0	0	0	0	0	} 1.6	5.5	1.7	0	} 2.2
5-9	6.3	0.2	0	0.2	0	0.1	2.7	0.2	5.2					2.0	
10-14	51.7	11.3	16.3	15.2	15.8	14.2	35.8	9.7	49.8	} 59.1	62.5	62.3	27.4	} 76.8	
15-19	33.4	70.1	69.9	64.2	59.8	70.5	54.5	69.3	35.4						56.5
20-24	1.1	15.2	6.7	9.8	8.9	9.7	2.6	15.0	1.5	} 6.0	0.7	9.3	6.8	} 7.1	
25-29	0.1	0.8	0.6	0	0.4	0.5	0.2	1.8	0.4						0.5
30-34	0	0	0.1	0	0	0.2	0.1	0	0	} 0.5	0	0.4	0	} 0.1	
35-39	0	0	0	0	0	0	0	0	0						0
40-49	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	
N/S	7.4	2.4	6.4	10.6	15.1	4.8	4.1	4.0	7.7	32.7	31.3		6.8	13.8	
Ever married															
total	287,100	148,400	336,240	162,420	277,600	517,580	339,000	276,900	582,200	170,600	346,800	885,950	2,947,440	4,350,790	
as % of all women above 10 years	83.1	85.1	79.8	88.0	87.5	86.0	79.5	76.3	86.3	79.9	85.0	77.7	82.9	82.2	
Average age at first marriage	14.1	17.8	17.1	17.2	17.1	17.3	15.5	17.9	14.4	15.9	14.5	16.2	16.2	16.1	

TABLE XI

NUMBER OF EVER MARRIED WOMEN BY NUMBER OF TIMES MARRIED

No Of Times Married	BEGEMDIR		GEMUGOFA		HARARGE		ILLUBABOR		KEFA		SIDAMO		TIGRE		WOLLEGA		WOLLO		TOTAL 9 PROV.	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
1	162,900	56.7	95,700	64.5	267,560	79.6	102,150	62.9	183,750	66.2	362,220	70.0	244,600	68.1	191,800	69.3	250,800	43.1	1,861,480	63.1
2	82,400	28.7	37,100	25.0	61,240	18.2	45,280	27.9	72,400	26.1	125,620	24.3	89,200	24.8	66,300	23.9	183,200	31.5	762,740	25.9
3	29,500	10.3	11,300	7.6	6,400	1.9	10,570	6.5	16,150	5.8	21,810	4.2	16,800	4.7	14,600	5.3	83,800	14.4	210,930	7.2
4	8,100	2.8	3,100	2.1	840	0.3	2,920	1.8	3,700	1.3	5,410	1.0	4,000	1.1	2,900	1.1	40,000	6.9	70,970	2.4
5	2,400	0.9	700	0.5	100	0	950	0.6	1,100	0.4	1,590	0.3	1,200	0.3	800	0.3	12,000	2.1	20,840	0.7
6	1,500	0.5	300	0.2	100	0	150	0.1	250	0.1	330	0.1	200	0.1	400	0.1	5,400	0.9	8,630	0.3
7	100	0	100	0.1			150	0.1	50	0	150	0					2,000	0.3	2,550	0.1
8							200	0.1			150	0					800	0.1	1,150	
9			100	0			50	0									600	0.1	750	
10-									200	0.1	300	0.1	200	0.1	100	0	1,400	0.2	2,200	0.1
N/S	200	0.1											2,800	0.8			2,200	0.4	5,200	0.2
Total ever married	287,100		148,400		336,240		162,420		277,600		517,580		359,000		276,900		582,200		2,947,440	
Average no of times married	1.64		1.50		1.23		1.50		1.44		1.38		1.40		1.40		1.99		1.53	

TABLE XII DEMOGRAPHIC DETAILS FOR SURVEYED RURAL AREAS, BY PROVINCE; RECORDED FIGURES

	ARUSSI	BEGEMDR	GEMU GOFA	GOJAM	HARARGE	ILLUBABOR	KEFA	SHOA	SIDAMO	TIGRE	WOLLEGA	WOLLO	12 PROVINCES
AGE													
AGE-SPECIFIC FERTILITY RATE	10-14	0	.002	0	.006	0	.006	0	.006	.004	0	0	.003
	15-19	.164	.132	.173	.189	.185	.068	.161	.139	.143	.079	.123	.145
	20-24	.240	.294	.314	.276	.395	.256	.298	.265	.203	.257	.185	.265
	25-29	.313	.268	.323	.223	.414	.215	.281	.254	.243	.233	.269	.261
	30-34	.151	.228	.201	.222	.282	.129	.209	.204	.171	.246	.194	.204
	35-39	.125	.148	.205	.077	.232	.080	.161	.112	.159	.133	.145	.139
	40-44	.055	.045	.043	.024	.097	.047	.098	.043	.090	.055	.050	.056
	45-49	.050	.041	.025	.080	.053	.035	.023	.072	.061	0	.041	.056
CURRENT FERTILITY AT AGE	14.5	0	0.01	0	0.03	0	0.03	0	0.03	0.02	0	0.02	0.01
	19.5	0.82	0.67	0.87	0.98	0.93	0.37	0.81	0.73	0.74	0.72	0.40	0.74
	24.5	2.02	2.14	2.44	2.36	2.90	1.65	2.30	2.05	1.75	2.00	1.88	2.07
	29.5	3.58	3.48	4.05	3.47	4.97	2.73	3.70	3.32	2.97	3.17	3.23	3.37
	34.5	4.34	4.62	5.06	4.58	6.38	3.37	4.75	4.34	3.82	4.40	4.20	4.39
	39.5	4.96	5.36	6.08	4.96	7.54	3.77	5.55	4.90	4.62	5.06	4.92	5.08
	44.5	5.24	5.59	6.30	5.08	8.03	4.01	6.04	5.11	5.07	5.33	5.17	5.36
	49.5	5.49	5.79	6.42	5.48	8.29	4.18	6.15	5.47	5.37	5.33	5.37	5.64
PARITY IN AGE - GROUP	10-14		0.00	0.01	0.02	0.00	0.01	0.00	0.00	0.01	0.00	0.02	0.01
	15-19		0.46	0.30	0.92	0.41	0.23	0.35	0.43	0.45	0.49	0.18	0.47
	20-24		1.69	1.47	2.44	1.92	1.30	1.40	1.59	1.50	1.76	1.55	1.54
	25-29		3.13	2.84	3.54	3.70	2.01	2.31	2.80	2.83	3.06	2.70	2.71
	30-34		4.37	3.71	5.27	4.89	2.54	3.06	3.72	3.72	4.45	3.49	3.64
	35-39		5.34	4.38	4.78	5.67	3.15	3.61	4.25	4.41	4.99	3.74	4.19
	40-44		5.03	4.34	5.18	6.00	3.10	3.94	4.37	4.72	5.58	4.13	4.63
	45-49		5.62	5.44	4.69	6.23	3.35	3.65	4.77	4.89	5.35	4.53	4.97
	50-54		5.68	5.56	4.80	6.16	3.57	4.14	3.33	4.69	4.29	4.28	4.18
	55-59		5.41	6.20	4.98	6.54	3.35	3.94	3.64	4.34	5.16	4.40	5.20
	60-		5.33	4.48	4.51	6.09	3.74	4.42	3.87	4.39	5.75	4.27	4.76
GENERAL FERTILITY RATE	-	.194	.191	.224	.202	.287	.146	.215	.188	.175	.178	.180	.146
TOTAL FERTILITY RATE	49.5	5.49	5.79	6.42	5.48	8.29	4.18	6.15	5.47	5.37	5.33	5.37	5.64
CRUDE													
BIRTH RATE	-	39.0	44.6	53.9	44.2	61.0	39.1	54.9	42.8	40.7	41.0	42.6	34.7
o/oo													
INFANT													
MORTALITY RATE	0	83.7	59.2	61.8	84.6	88.4	94.1	42.3	118.4	47.5	81.4	67.8	80.3
o/oo													
CRUDE													
DEATH RATE	-	12.3	22.4	29.0	16.2	28.5	28.0	16.2	23.0	17.1	25.0	17.5	27.5
o/oo													
RATE OF NATURAL													
YEARLY INCREASE	-	26.7	22.2	24.9	28.0	32.5	11.1	38.7	19.8	23.6	16.0	25.1	7.2
o/oo													

TABLE XIV LIFE TABLE FOR MALES + FEMALES IN 9 PROVINCES, SURVEYED RURAL AREAS

Age	Death rate	Probability of dying between age x and x + n	Probability of surviving between age x and x + n	Survivors at exact age x	Number of deaths between age x and x + n	Years lived between age x and x + n	Total years lived after age x	Average number of years lived after exact age x	Total expectation of life at exact age x
x	1000 M _x	1000 Q _x	P _x	l _x	d _n x	nL _x	T _x	e _x	X+e _x
0	219.10	193.14	.80686	100,000	19,314	87,123	3,618,716	36.19	36.19
1	76.91	74.91	.92509	80,686	6,045	77,662	3,531,593	43.77	44.78
2	31.83	31.69	.96831	74,641	2,365	73,462	3,453,931	46.27	48.27
3	20.52	20.32	.97968	72,276	1,320	71,541	3,380,469	46.77	49.77
4	9.04	9.00	.99100	70,805	793	70,484	3,308,928	46.73	50.73
5-9	9.89	48.23	.95177	70,163	3,384	342,355	3,238,444	46.16	51.16
10-19	10.55	100.18	.89982	66,779	6,690	634,340	2,896,089	43.37	53.37
20-29	11.09	105.06	.89494	60,089	6,313	569,325	2,261,749	37.64	57.64
30-39	12.78	120.09	.87991	53,776	6,458	505,470	1,692,424	31.47	61.47
40-49	19.43	177.09	.82291	47,318	8,380	431,280	1,186,954	25.08	65.08
50-59	28.36	248.40	.75160	38,938	9,672	341,020	755,674	19.41	69.41
60-69	49.63	397.64	.60236	29,266	11,637	234,475	414,654	14.17	74.17
70-79	73.64	538.24	.46176	17,629	9,489	128,845	180,179	10.22	80.22
80-89	155.27	874.10	.12590	8,140	7,115	45,825	51,334	6.31	86.31
90-99	176.54	937.69	.06231	1,025	961	5,445	5,509	(5.37)	(95.37)
100				64					

LIFE TABLE, MALES, 9 PROVINCES

AGE _x	1000M _x	1000Q _x	P _x	l _x	d _x	nL _x	T _x	e _x	X+e _x
0	234.72	200.86	.79914	100,000	20,086	86,615	3,712,563	37.13	37.13
1	82.91	78.70	.92130	79,914	6,289	76,770	3,625,947	45.37	46.37
2	34.39	33.41	.96659	73,625	2,460	72,395	3,549,177	48.21	50.21
3	21.77	21.28	.97872	71,165	1,514	70,408	3,476,782	48.86	51.86
4	9.76	9.60	.99040	69,651	669	69,316	3,406,374	48.91	52.91
5-9	11.59	56.32	.94368	68,982	3,885	355,200	3,337,058	48.38	53.38
10-19	9.24	88.32	.91168	65,097	5,749	622,220	3,001,858	46.11	56.11
20-29	10.35	98.56	.90144	59,348	5,849	564,230	2,379,638	40.10	60.10
30-39	11.05	104.71	.89529	53,499	5,602	506,980	1,815,408	33.93	63.93
40-49	19.89	180.91	.81909	47,897	8,665	435,640	1,308,428	27.32	67.32
50-59	24.67	219.61	.78039	39,232	8,616	349,240	872,788	22.25	72.25
60-69	38.78	324.82	.67518	30,616	9,945	256,430	523,548	17.10	77.10
70-79	61.87	472.52	.52748	20,671	9,768	157,870	267,118	12.92	82.92
80-89	68.64	511.02	.48898	10,903	5,572	81,170	109,248	10.02	90.02
90-99	182.93	955.42	.04458	5,331	5,093	27,840	28,078	(5.27)	(95.27)
100				238					

LIFE TABLE, FEMALES, 9 PROVINCES

AGE _x	1000M _x	1000Q _x	P _x	l _x	d _x	nL _x	T _x	e _x	X+e _x
0	213.71	185.10	.81490	100,000	18,510	87,662	3,528,347	35.28	35.28
1	74.52	71.02	.92898	81,490	5,787	78,597	3,440,685	42.22	43.22
2	30.80	29.98	.97002	75,703	2,270	74,568	3,362,088	44.41	46.41
3	19.69	19.27	.98073	73,433	1,415	72,725	3,287,320	44.77	47.77
4	8.49	8.36	.99164	72,018	602	71,717	3,214,796	44.64	48.64
5-9	8.01	39.26	.96074	71,416	2,804	350,070	3,143,078	44.01	49.01
10-19	12.21	115.07	.88493	68,612	7,895	646,645	2,793,008	40.71	50.71
20-29	11.62	109.82	.89018	60,717	6,668	573,830	2,146,363	35.35	55.35
30-39	14.41	134.42	.86558	54,049	7,265	504,165	1,572,353	29.09	59.09
40-49	18.95	172.31	.82769	46,784	8,061	427,535	1,068,368	22.84	62.84
50-59	33.35	285.84	.71416	38,723	11,069	331,885	640,853	16.55	66.55
60-69	65.17	491.53	.50847	27,654	13,593	208,575	308,948	11.17	71.17
70-79	132.30	796.27	.20373	14,061	11,196	84,650	100,373	7.14	77.14
80-89	182.18	953.37	.04663	2,865	2,731	14,995	15,743	5.49	85.49
90-99	165.12	904.48	.09552	134	121	735	748	(5.58)	(95.58)
100				13					

TABLE XV.1 LITERACY BY SEX AND AGE-GROUP, IN % SURVEYED RURAL AREAS

AGE GROUP	MALES			FEMALES			TOTAL			MALES			FEMALES			TOTAL		
	LIT	ILL	N/S	LIT	ILL	N/S	LIT	ILL	N/S	LIT	ILL	N/S	LIT	ILL	N/S	LIT	ILL	N/S
	A R U S S I			H A R A R G E														
10-14	8.6	91.4	0	0.5	98.3	1.1	4.7	94.8	0.5	6.5	93.5	0	0.4	99.6	0	3.6	96.4	0
15-19	13.9	86.1	0	0.9	99.1	0	8.4	91.6	0	4.5	95.3	0.2	0.2	99.8	0	2.5	97.4	0.1
20-24	19.5	80.5	0	0	99.2	0.8	9.6	90.0	0.4	6.4	93.4	0.2	0	100.0	0	2.7	97.2	0.1
25-29	16.0	84.0	0	1.6	97.6	0.8	7.9	91.7	0.4	5.0	95.0	0	0	100.0	0	2.2	97.8	0
30-34	11.5	86.2	2.3	0	100.0	0	4.9	94.1	1.0	4.3	95.7	0	0.2	99.8	0	2.1	97.9	0
35-44	10.6	89.4	0	0	100.0	0	5.0	95.0	0	3.9	96.1	0	0	100.0	0	2.0	98.0	0
45-54	10.5	89.5	0	0	99.0	1.0	5.3	94.2	0.5	9.4	90.6	0	0	99.7	0.3	5.1	94.8	0.1
55-	3.3	96.1	0.6	0	99.1	0.9	1.9	97.4	0.7	9.0	90.8	0.2	0.3	99.3	0	5.3	94.6	0.1
Age N/S	5.9	88.2	5.9	0	95.5	4.5	2.0	93.0	5.0	5.9	94.1	0	0	100.0	0	0.1	99.9	0
Total	11.0	88.5	0.5	0.4	98.8	0.8	5.7	93.7	0.6	5.8	94.1	0.1	0.1	99.9	0	3.0	97.0	0
B E G E M D I R																		
10-14	4.2	95.8	0	1.7	98.3	0	3.1	96.9	0	21.2	78.8	0	1.8	98.2	0	13.3	86.7	0
15-19	7.2	92.8	0	0.4	99.6	0	3.8	96.2	0	12.5	87.5	0	0	100.0	0	7.4	92.6	0
20-24	8.2	91.8	0	1.0	99.0	0	4.2	95.8	0	2.8	97.2	0	0.2	99.8	0	1.1	98.9	0
25-29	12.4	87.6	0	0	100.0	0	5.9	94.1	0	4.9	95.1	0	0.2	99.8	0	2.0	98.0	0
30-34	14.4	85.6	0	0	100.0	0	7.0	93.0	0	5.2	94.8	0	0	100.0	0	2.4	97.6	0
35-44	9.6	90.4	0	0	100.0	0	5.1	94.9	0	4.3	95.9	0	0	100.0	0	1.9	98.1	0
45-54	12.4	87.6	0	0.3	99.7	0	6.8	93.2	0	2.4	97.6	0	0	100.0	0	1.2	98.8	0
55-	9.4	90.6	0	0	100.0	0	5.9	94.1	0	3.8	96.2	0	0	100.0	0	2.2	97.8	0
Age N/S	33.3	66.7	0	0	100.0	0	4.8	95.2	0	0	100.0	0	0	100.0	0	0	100.0	0
Total	9.3	90.7	0	0.5	99.5	0	5.0	95.0	0	7.3	92.7	0	0.2	99.8	0	3.6	96.4	0
G E M U G O F A																		
10-14	9.3	90.7	0	2.2	97.8	0	6.5	93.5	0	13.6	86.4	0	1.4	98.6	0	8.7	91.3	0
15-19	5.0	95.0	0	0	100.0	0	2.9	97.1	0	10.3	89.7	0	0	100.0	0	5.8	94.2	0
20-24	11.7	88.3	0	0	100.0	0	4.6	95.4	0	8.5	91.5	0	0.1	99.9	0	2.9	97.1	0
25-29	4.2	95.8	0	0.6	99.4	0	2.1	97.9	0	7.5	92.5	0	0	100.0	0	3.2	96.8	0
30-34	2.4	97.6	0	0.7	99.3	0	1.5	98.5	0	6.2	93.8	0	0.2	99.8	0	3.1	96.9	0
35-44	1.0	99.0	0	0	100.0	0	0.5	99.5	0	4.7	93.3	0	0	100.0	0	2.5	97.5	0
45-54	1.9	98.1	0	0.7	99.3	0	1.4	98.6	0	4.0	96.0	0	0	100.0	0	2.4	97.6	0
55-	2.5	97.5	0	0	100.0	0	1.7	98.3	0	3.2	96.8	0	0	100.0	0	2.0	98.0	0
Age N/S	-	-	-	0	100.0	0	0	100.0	0	8.7	91.3	0	0	100.0	0	1.6	98.4	0
Total	4.3	95.7	0	0.5	99.5	0	2.5	97.5	0	7.0	93.0	0	0.2	99.8	0	3.6	96.4	0
G O J A M																		
10-14	3.0	96.5	0.5	0	99.7	0.3	1.7	97.9	0.4	7.7	91.8	0.5	1.5	98.5	0	5.0	94.7	0.3
15-19	7.2	92.8	0	0.3	99.1	0.6	3.6	96.1	0.3	10.4	89.5	0.1	0.8	98.8	0.4	6.1	93.6	0.3
20-24	6.9	93.1	0	0	99.8	0.2	3.0	96.9	0.1	11.9	88.1	0	0.1	99.8	0.1	5.3	94.7	0
25-29	8.7	91.1	0.2	0.4	99.6	0	4.8	95.1	0.1	10.0	88.7	1.3	0	99.5	0.5	4.6	94.5	0.9
30-34	11.3	88.2	0.5	0.6	98.9	0.5	6.0	93.5	0.5	8.6	90.8	0.6	0	100.0	0	3.9	95.8	0.3
35-44	13.5	86.5	0	0.4	99.2	0.4	7.3	92.5	0.2	3.6	91.4	0	0	98.7	1.3	4.2	95.1	0.7
45-54	11.4	88.1	0.5	0	100.0	0	6.7	93.0	0.3	6.0	94.0	0	0	100.0	0	3.2	96.8	0
55-	12.4	87.1	0.5	0.7	99.3	0	7.4	92.3	0.3	5.0	94.3	0.7	0.3	98.6	1.1	3.3	95.9	0.8
Age N/S	19.8	75.6	4.6	0	99.4	0.6	2.9	96.0	1.1	3.4	90.9	5.7	0	92.9	7.1	1.3	92.1	6.6
Total	8.7	94.0	0.3	0.2	99.5	0.3	4.6	95.1	0.3	8.3	91.2	0.5	0.3	99.0	0.7	4.4	95.0	0.6
S H O A																		

TABLE XV.2 LITERACY BY SEX AND AGE-GROUP, IN %. SURVEYED RURAL AREAS (Cont.)

AGE GROUP	MALES			FEMALES			TOTAL			MALES			FEMALES			TOTAL		
	LIT	ILL	N/S	LIT	ILL	N/S	LIT	ILL	N/S	LIT	ILL	N/S	LIT	ILL	N/S	LIT	ILL	N/S
	S I D A M O									W O L L E G A								
10-14	8.4	91.6	0	2.0	98.0	0	5.9	94.1	0	17.4	82.6	0	0.9	99.1	0	9.5	90.5	0
15-19	9.6	90.4	0	0.8	99.2	0	5.9	94.1	0	15.3	84.7	0	0	100.0	0	8.8	91.2	0
20-24	8.5	91.5	0	0.1	99.9	0	3.3	96.7	0	11.0	89.0	0	0	100.0	0	4.9	95.1	0
25-29	5.7	94.3	0	0	100.0	0	2.2	97.8	0	8.6	91.4	0	0	100.0	0	3.7	96.3	0
30-34	5.4	94.6	0	0.1	99.9	0	2.4	97.6	0	9.7	90.3	0	0	100.0	0	4.1	95.9	0
35-44	3.6	96.4	0	0.1	99.9	0	1.8	98.2	0	8.1	91.9	0	0.5	99.5	0	4.0	96.0	0
45-54	0.4	99.6	0	0.1	99.9	0	0.3	99.7	0	5.1	94.9	0	0.5	99.5	0	2.8	97.2	0
55-	1.1	98.8	0.1	0	100.0	0	0.7	99.2	0.1	2.4	97.6	0	0.6	99.4	0	1.6	98.4	0
N/S	0	100.0	0	0	86.6	13.4	0	92.5	7.5	-	-	-	0	100	0	0	100	0
Total	5.4	94.6	0	0.3	99.7	0	2.8	97.2	0	10.3	89.7	0	0.3	99.7	0	5.2	94.8	0
	T I G R E									W O L L O								
10-14	8.3	91.5	0.4	1.9	97.6	0.5	5.4	94.2	0.4	4.8	95.2	0	0.3	99.7	0	2.9	97.1	0
15-19	12.3	87.7	0	0.3	99.1	0.6	6.3	93.4	0.3	3.8	96.2	0	0.8	99.2	0	2.5	97.5	0
20-24	11.8	88.2	0	0	99.6	0.4	5.3	94.5	0.2	7.5	92.5	0	0	100.0	0	3.3	96.7	0
25-29	16.4	83.6	0	0	98.7	1.3	7.3	92.0	0.7	7.1	92.9	0	0	100.0	0	3.1	96.9	0
30-34	14.1	85.9	0	1.3	97.9	0.8	7.2	92.4	0.4	7.5	92.5	0	0	100.0	0	3.3	96.7	0
35-44	14.7	85.0	0.3	0.5	99.5	0	7.5	92.3	0.2	9.0	91.0	0	0	100.0	0	4.8	95.2	0
45-54	10.5	89.5	0	0	100.0	0	5.5	94.5	0	3.5	96.5	0	0.3	99.7	0	2.0	98.0	0
55-	10.1	89.5	0.4	0.6	99.4	0	6.6	93.2	0.2	3.5	96.5	0	0.3	99.7	0	2.4	97.6	0
N/S	0	100.0	0	0	100.0	0	0	100.0	0	0	100.0	0	0	100.0	0	0	100.0	0
Total	12.0	87.8	0.2	0.6	98.9	0.5	6.4	93.3	0.3	5.8	94.2	0	0.2	99.8	0	3.1	96.9	0

12 P R O V I N C E S

	ABSOLUTE NUMBERS (ONLY LIT. AND N/S)						RELATIVE NUMBERS (%)					
	MALES		FEMALES		TOTAL		MALES		FEMALES		TOTAL	
	LIT	N/S	LIT	N/S	LIT	N/S	LIT	ILL	N/S	LIT	ILL	N/S
10-14	76,540	1,960	8,540	1,000	85,080	2,960	8.06	91.73	0.21	1.17	98.69	0.14
15-19	63,610	290	2,910	1,310	66,520	1,600	8.97	90.99	0.04	0.48	99.30	0.22
20-24	49,520	100	760	670	50,280	770	9.70	90.28	0.02	0.11	99.79	0.10
25-29	53,570	1,740	880	1,730	54,450	3,470	8.92	90.79	0.29	0.12	99.65	0.23
30-34	47,190	1,330	1,260	600	48,450	1,930	8.24	91.43	0.23	0.19	99.72	0.09
35-44	71,850	200	1,040	2,590	72,890	2,790	7.86	92.12	0.02	0.11	99.60	0.29
45-54	35,110	240	660	300	35,770	540	6.03	93.93	0.04	0.13	99.81	0.06
55-	33,830	1,790	1,140	1,170	34,970	2,960	5.24	94.48	0.28	0.28	99.43	0.29
Age N/S	2,260	2,260	0	4,400	2,260	6,660	5.17	89.66	0.17	0	95.48	4.52
Total	433,480	9,910	17,190	13,770	450,670	23,680	7.84	91.98	0.18	0.32	99.42	0.26

**TABLE XVI LITERACY OF SURVEYED AREAS, IN %
(POPULATION 10 YEARS AND ABOVE)**

PROVINCE	RURAL			URBAN			RURAL + URBAN		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Arussi	11.2	0.4	5.8	49.3	10.8	27.7	12.8	0.8	6.7
Begemdir	9.5	0.5	5.1	55.5	10.7	27.5	12.1	1.1	6.4
Gemu Gofa	4.3	0.5	2.5	42.9	7.9	23.4	5.1	0.7	3.0
Gojam	8.8	0.2	4.6	52.7	7.9	25.2	10.5	0.5	5.4
Hararge	6.0	0.1	3.1	48.9	12.7	29.5	9.9	1.2	5.5
Illubabor	7.5	0.2	3.7	46.6	11.6	28.8	8.9	0.6	4.6
Kefa	7.1	0.2	3.6	38.8	8.2	23.0	8.7	0.6	4.6
Shoa ¹⁾	8.4	0.3	4.5	56.9	22.5	39.0	17.5	4.5	11.0
Shoa (exd.AA ²⁾)	8.4	0.3	4.5	44.2	10.9	25.6	10.1	0.8	5.5
Sidamo	5.5	0.3	2.9	36.1	7.4	21.8	6.6	0.6	3.6
Tigre	12.1	0.6	6.4	47.2	8.5	23.6	14.1	1.1	7.4
Wollega	10.7	0.4	5.3	52.7	11.1	32.2	12.2	0.8	6.3
Wollo	5.8	0.2	3.1	37.8	8.2	20.0	7.1	0.5	3.8
12 Provinces	7.98	0.35	4.19	52.08	16.83	33.00	11.60	1.70	6.56
12 Provinces ²⁾ (exd.Addis Ababa)	7.98	0.35	4.19	45.65	9.98	25.52	9.80	0.82	5.22

1) Literacy figure for the town Nazareth, Shoa province, is relatively uncertain. This influences literacy of Shoa-urban to some degree, but not Shoa - total.

2) Literacy of Addis Ababa is male: 60.5% female: 25.8% and male + female: 42.8%

Note: Literacy of Eritrea, urban, is male: 62.4%, female: 19.0% and both sexes: 38.4% (Asmara 71.6%, 23.9% and 43.5% resp.)

TABLE XVII LITERACY BY PROVINCE AND RURAL - URBAN, IN %. RECORDED AND ASSUMED⁴⁾ FIGURES

PROVINCE	SURVEYED AREAS RECORDED LITERACY			NOT SURVEYED AREAS ESTIMATED LITERACY			ALL AREAS		
	RURAL	URBAN ¹⁾	TOTAL	RURAL	URBAN	TOTAL	RURAL	URBAN	TOTAL
ARUSSI	5.8	27.7	6.7				5.8	27.7	6.7
BALE				2.0-3.0	20-25	3.6-5.0	2.0-3.0	20-25	3.6-5.0
BEGEMDIR	5.1	27.5	6.4	5.1 ²⁾		(5.1)	5.1	27.5	6.4
ERITREA	-	38.4	(38.4)	5.0-7.0		(5.0-7.0)	5.0-7.0	38.4	10.2-11.9
GEMU GOFA	2.5	23.4	3.0	2.5 ²⁾		(2.5)	2.5	23.4	3.0
GOJAM	4.6	25.2	5.4	4.6 ²⁾		(4.6)	4.6	25.2	5.4
HARARGE	3.1	29.5	5.5	2.0 ³⁾		(2.0)	2.6	29.5	3.8
ILLUBABOR	3.7	28.8	4.6	3.0 ³⁾		(3.0)	3.6	28.8	4.5
KEFA	3.6	23.0	4.6	3.0 ³⁾		(3.0)	3.5	23.0	4.5
SHOA	4.5	39.0	11.0				4.5	39.0	11.0
SIDAMO	2.9	21.8	3.6	2.0 ³⁾		(2.0)	2.8	21.8	3.5
TIGRE	6.4	23.6	7.4				6.4	23.6	7.4
WOLLEGA	5.3	32.2	6.3				5.3	32.2	6.3
WOLLO	3.1	20.0	3.8				3.1	20.0	3.8
EMPIRE	4.2	33.8	6.6	3.3-4.2	20-25	3.4-4.2	4.0-4.2	33.6-33.7	6.5-6.7

1) It is assumed that literacy of not surveyed towns is the same as that of surveyed towns. Thus, except for Bale, this column includes also not surveyed towns.

2) In these three provinces, the number of classrooms in primary school per thousand population is higher in not surveyed than in surveyed areas. Even if this most probably is due to an underestimated population in these not surveyed areas, there is no ground to assume that literacy differs from that of surveyed areas.

3) In these four provinces, the number of classrooms in primary school per thousand population is lower or much lower in not surveyed than in surveyed areas which motivates the lower literacy. The population of not surveyed areas of Hararge and Sidamo is mainly nomadic, which explains the very low estimated literacy of these areas. The latter is also true for Bale.

4) Estimation procedure: Comparison between number of classrooms per thousand population and literacy of surveyed areas shows - as expected - a positive correlation. The regression, applied on not surveyed areas (where classroom frequency is roughly known), gives an estimate of literacy in those areas.

TABLE XVIII ECONOMICALLY ACTIVE POPULATION BY PROVINCE OCCUPATION AND SEX, SURVEYED
RURAL AREAS

PROVINCE	FARMER		CULTIVATOR		SHARE CROPPER		AGR. LABOURER		HERDER		NON AGR. LAB.		MERCHANT		WEAVER		TOTAL
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
Arussi	161,200	3,400	a	a	a	a	2,000	1,400	27,200	2,800	9,200	6,000	1,400	600	a	a	215,200
Begemdir	2,800	600	164,500	2,400	19,700	300	111,800	4,400	73,800	3,800	9,400	35,700	2,600	200	4,100	600	436,700
Gemugofa	100	700	61,600	900	50,800	900	35,000	200	22,500	900	6,700	10,000	1,900	200	8,500	-	200,900
Gojam	335,300	3,200	a	a	a	a	2,100	1,900	66,600	12,600	21,100	25,800	2,200	1,100	a	a	471,900
Hararge	430	100	150,680	2,800	105,680	2,410	112,700	500	47,970	6,160	2,360	3,570	400	300	300	-	436,360
Illubabor	600	-	29,475	200	80,875	1,000	32,650	350	15,225	325	3,325	3,275	550	50	-	50	167,950
Keffa	800	300	87,350	750	112,750	2,250	55,050	200	31,600	1,050	6,000	6,650	1,500	550	200	-	307,000
Shoa	932,629	19,630	a	a	a	a	6,424	2,703	213,932	59,089	27,959	35,187	5,733	8,158	a	a	1,311,444
Sidamo	2,685	3,350	251,490	2,145	135,120	2,320	90,385	1,275	134,740	13,320	9,105	9,115	4,365	1,220	200	-	660,835
Tigre	12,400	9,600	279,400	6,200	9,600	600	32,000	4,800	108,000	15,800	17,420	25,800	2,800	600	a	a	525,020
Wollega	1,900	300	86,900	1,400	98,900	3,200	84,800	1,500	62,400	6,400	3,400	9,400	1,000	600	900	200	363,200
wollo	19,000	4,600	387,800	5,400	54,600	1,000	102,000	3,600	163,200	25,200	16,800	20,200	2,000	1,600	a	a	807,000
TOTAL	1,469,844	45,780	1,499,195	22,195	668,025	13,980	666,909	22,828	967,167	147,444	132,769	190,697	26,448	15,178	14,200	850	5,903,509

Note

a) Not recorded

TABLE XII NON-ACTIVE POPULATION BY PROVINCE, BY REASON OF NON-ACTIVITY,
AND SEX, SURVEYED RURAL AREAS

PROVINCE	STUDENT		HOME MAKER		RENTIER		PENSIONER		DISABLED BEGGAR		NOT STATED		TOTAL NON-ACTIVE POPULATION
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
Arussi	9,200	400	-	202,400	a	a	a	a	a	a	70,500	61,000	343,800
Begemdir	7,400	1,100	700	308,600	3,100	3,600	500	2,300	2,300	2,300	67,000	67,300	466,200
Gemugofa	5,000	400	300	164,600	400	400	200	1,400	1,300	600	47,200	38,800	280,600
Gojam	10,900	1,000	300	392,200	a	a	a	a	a	a	131,800	105,000	641,200
Hararge	9,590	340	350	395,310	2,400	2,050	2,030	6,920	2,800	3,000	131,280	130,500	686,570
Illubabor	8,350	425	525	172,975	950	1,025	200	2,600	2,050	1,600	36,650	39,675	267,025
Keffa	12,650	500	900	298,250	2,650	1,400	1,000	3,950	3,850	1,250	88,300	68,350	483,050
Shoa	54,309	13,138	1,800	1,031,643	a	a	a	a	a	a	311,525	294,147	1,706,562
Sidamo	21,985	2,080	1,740	565,755	2,250	2,560	1,135	4,600	2,225	540	146,840	161,705	913,415
Tigre	25,200	2,400	3,400	384,400	2,400	11,800	600	2,600	3,600	5,000	94,600	103,200	639,200
Wollega	23,000	700	-	343,800	1,400	1,600	500	6,200	2,100	2,900	69,800	69,500	521,500
Wollo	17,200	400	-	608,200	8,800	8,600	2,400	11,800	6,600	11,000	128,800	144,200	948,000
TOTAL	204,784	22,883	10,015	4,868,133	24,350	33,035	8,565	42,370	26,825¹⁾	28,190²⁾	1,324,595	1,283,377	7,877,122

a = Not recorded

1 recorded male beggars = 5175

2 " female " = 11975

TABLE XX ECONOMICALLY ACTIVE POPULATION BY FIELD OF ACTIVITY,
AGE GROUP AND SEX. 12 PROVINCES, SURVEYED RURAL AREAS

AGE GROUP	SEX	WORKERS IN AGRICULTURE				WORKERS OUTSIDE AGRICULTURE				ECONOMICALLY ACTIVE POPULATION TOTAL
		FARMER	CULTIVATOR	SHARE CROPPER	HERDER	AGRICULTURAL LABOURERS	NON-AGRICULTURAL LABOURERS	MERCHANTS	WEAVERS	
5-9	M	-	600	-	290,058 ²⁾	28,825	7,566	-	100	327,149
	F	1,554 ¹⁾	60	-	65,354 ³⁾	3,820	5,964	2,160 ⁴⁾	-	78,912
10-14	M	83,284	15,860	980	542,235	118,195	12,039	310	1,400	774,303
	F	2,763	320	-	67,718	2,850	25,734	-	-	99,385
15-19	M	177,450	77,340	12,910	112,244	242,724	16,193	1,956	1,200	642,017
	F	1,803	660	100	10,816	2,056	19,857	159	-	35,451
20-24	M	180,986	96,020	41,945	12,468	147,767	12,769	2,710	900	495,565
	F	3,361	660	200	200	2,123	15,304	200	-	22,048
25-29	M	193,521	202,295	83,480	2,734	69,970	14,844	4,986	1,600	573,430
	F	2,746	360	560	314	1,512	16,581	446	-	22,519
30-34	M	185,902	211,015	123,015	1,761	28,779	12,856	4,992	2,800	571,120
	F	4,544	2,160	2,470	100	2,757	18,649	3,052	-	33,732
35-39	M	143,013	221,390	109,790	1,369	11,028	11,930	2,928	2,400	503,848
	F	3,699	2,910	1,435	477	1,050	21,544	2,716	300	34,131
40-44	M	125,733	168,075	87,485	791	6,978	10,371	3,464	1,800	404,697
	F	6,419	4,080	2,050	706	2,700	20,522	830	200	37,507
45-49	M	94,095	119,740	55,020	600	3,662	8,195	1,449	400	283,161
	F	5,146	3,450	1,695	-	400	11,387	2,325	100	24,503
50-54	M	91,880	127,555	58,400	1,716	2,834	8,914	1,668	800	293,767
	F	5,101	3,115	1,730	600	1,290	14,291	793	100	27,020
55-59	M	60,832	91,470	32,035	300	1,450	6,139	813	300	193,339
	F	2,818	800	320	300	500	7,661	1,187	-	13,586
60 +	M	133,148	167,835	62,965	891	4,697	10,953	1,152	500	382,141
	F	5,826	3,620	3,420	859	1,770	13,203	1,310	150	30,158
TOTAL	M	1,469,844	1,499,195	668,025	967,167	666,909	132,769	26,448	14,200	5,444,557
	F	45,780	22,195	13,980	147,444	22,828	190,697	15,178	850	458,952
	M+F	1,515,624	1,521,390	682,005	1,114,611	689,737	323,466	41,626	15,050	5,903,509

1. 199 }
 2. 8142 } Of (0-4) age group have been included
 3. 3457 }
 4. 938 }

TABLE XXI ECONOMICALLY NON-ACTIVE POPULATION BY REASON OF NON-ACTIVITY,
SEX AND AGE GROUP. 12 PROVINCES, SURVEYED RURAL AREAS

AGE GROUP	SEX	STUDENT	HOME-MAKER	RENTIER	PENSIONER	BEGGAR/ DISABLED	NOT STATED	ECONOMICALLY NON-ACTIVE TOTAL
5-9	M	36,713	4,429	410	-	100	1,125,653	1,167,305
	F	10,340	283,110 *	-	-	-	991,834	1,285,284
10-14	M	101,426	3,723	780	-	1,320	68,687	175,936
	F	10,788	578,319	60	-	470	46,367	636,004
15-19	M	52,489	1,013	780	-	2,920	39,048	96,250
	F	1,655	566,613	560	-	1,300	8,693	578,821
20-24	M	11,895	150	600	200	870	6,091	19,806
	F	100	656,626	300	-	1,800	26,063	684,889
25-29	M	1,785	200	2,000	-	2,640	26,098	32,723
	F	-	750,380	1,660	200	2,000	3,186	757,426
30-34	M	276	-	1,210	100	2,960	2,942	7,488
	F	-	645,205	4,960	575	2,400	4,712	657,852
35-39	M	200	-	2,900	-	2,050	1,310	6,460
	F	-	417,442	5,900	-	1,700	4,172	429,214
40-44	M	-	-	2,150	135	2,275	1,845	6,405
	F	-	402,597	4,950	2,450	2,800	10,093	422,890
45-49	M	-	100	1,000	-	1,550	1,831	4,481
	F	-	186,968	3,490	2,325	1,000	4,178	197,961
50-54	M	-	100	1,260	700	1,000	2,652	5,712
	F	-	211,001	4,480	8,075	5,700	23,949	253,205
55-59	M	-	-	1,230	620	2,640	1,087	5,577
	F	-	62,753	1,600	3,775	1,410	11,609	81,147
60 +	M	-	300	10,030	6,810	6,500	47,351	70,991
	F	-	107,119	5,075	24,970	7,610	148,471	293,245
TOTAL	M	204,784	10,015	24,350	8,565	26,825	1,324,595	1,599,134
	F	22,883	4,868,133	33,035	42,370	28,190	1,283,377	6,277,988
	M+F	227,667	4,878,148	57,385	50,935	55,015	2,607,972	7,877,122

*4960 females in (0-4) age-groups have been included.

TABLE XXII ECONOMICALLY ACTIVE POPULATION BY PROVINCE, AGE GROUP AND SEX
SURVEYED RURAL AREAS

AGE GROUP	SEX	ARUSSI	BEGEMDIR	GEMUGOFA	GOJAM	HARARGE	ILLUBABOR	KEFFA	SHOA	SIDAMO	TIGRE	WOLLEGA	WOLLO	TOTAL
5-9	M	200	32,700	9,300	700	12,490	2,775	6,300	100,609	51,255	30,420	26,600	53,800	327,149
	F	200	5,500	1,000	300	1,670	100	400	35,037	6,705	8,000	3,800	16,200	78,912
10-14	M	32,700	61,700	23,900	78,200	62,830	18,450	33,950	143,374	42,700	77,400	45,800	103,300	774,303
	F	3,300	5,300	1,200	17,000	4,990	575	1,700	30,635	8,585	10,400	3,700	12,000	99,385
15-19	M	28,700	48,700	20,400	61,800	56,510	15,150	28,450	126,337	64,670	62,400	39,800	89,100	642,017
	F	1,300	4,400	1,400	4,600	300	150	850	11,266	1,285	4,800	2,300	2,800	35,451
20-24	M	23,900	33,000	13,900	48,400	41,670	12,425	22,250	114,420	48,800	42,700	31,900	62,200	495,565
	F	1,300	3,300	200	2,300	500	250	1,350	5,488	360	3,200	600	3,200	22,048
25-29	M	19,700	44,200	21,200	59,600	48,930	19,900	22,250	120,780	61,970	47,800	36,100	71,000	573,430
	F	600	4,800	1,700	2,300	500	450	600	4,569	1,300	3,200	-	2,500	22,519
30-34	M	17,900	34,900	24,100	36,800	51,710	20,950	40,350	134,825	64,505	41,500	35,700	67,900	571,120
	F	1,100	3,300	2,200	3,000	2,130	550	1,050	5,487	2,015	5,800	1,700	5,400	33,732
35-39	M	16,300	36,700	21,800	39,300	36,520	18,300	37,150	90,258	56,920	42,200	30,300	78,100	503,848
	F	800	3,800	1,100	1,600	1,480	575	1,350	9,376	1,850	6,000	1,900	4,300	34,131
40-44	M	13,800	24,600	17,100	23,300	35,590	13,300	30,450	94,167	45,790	30,200	26,000	50,400	404,697
	F	1,500	5,300	1,700	3,500	1,640	400	1,100	5,847	2,420	7,800	2,300	4,000	37,507
45-49	M	11,700	22,700	9,400	24,500	18,020	9,475	19,450	60,351	34,565	17,200	19,400	36,400	283,161
	F	600	4,300	800	2,700	520	625	1,150	3,348	2,060	3,800	1,600	3,000	24,503
50-54	M	9,300	15,300	11,200	19,100	21,350	10,650	22,300	67,437	36,930	22,400	15,800	42,000	293,767
	F	1,500	4,100	1,500	2,100	720	250	550	4,955	2,745	3,400	1,600	3,600	27,020
55-59	M	6,400	14,000	5,800	13,100	6,590	5,875	10,450	41,404	23,220	20,600	10,300	35,000	193,339
	F	400	1,400	200	1,800	120	350	350	1,846	1,220	3,600	900	1,400	13,586
60 +	M	20,400	20,200	9,000	22,500	28,310	15,450	21,900	92,716	46,165	26,800	22,500	56,200	382,141
	F	1,600	2,500	800	3,400	1,270	975	1,300	6,913	2,200	3,400	2,600	3,200	30,158
TOTAL	M	201,000	388,700	187,100	427,300	420,520	162,700	295,250	1,186,677	628,090	461,620	340,200	745,400	5,444,537
	F	14,200	48,000	13,800	44,600	15,840	5,250	11,750	124,767	32,745	63,400	23,000	61,600	458,953
	M+F	215,200	436,700	200,900	471,900	436,360	167,950	307,000	1,311,444	660,835	525,020	363,200	807,000	5,903,509

*Active
Active + Non-Active*

TABLE XXIII ECONOMICALLY NON - ACTIVE POPULATION BY PROVINCE, AGE GROUP
AND SEX - SURVEYED, RURAL AREAS

AGE GROUP	SEX	ARUSSI	BEGEMDIR	GEMUGOFA	GOJAM	HARARGE	ILLUBABOR	KEFFA	SHOA	SIDAMO	TIGRE	WOLLEGA	WOLLO	TOTAL
5-9	M	60,200	66,200	46,700	122,700	130,570	35,875	68,600	202,220	146,840	97,600	68,600	121,200	1,167,305
	F	54,700	82,600	44,600	120,000	130,840	37,900	68,050	236,159	159,835	113,600	81,200	155,800	1,285,284
10-14	M	7,700	4,300	3,000	8,200	6,670	6,650	8,200	83,546	12,770	12,000	14,500	8,400	175,936
	F	35,000	46,800	16,800	51,500	57,470	16,475	27,600	145,214	57,445	62,400	52,200	67,100	636,004
15-19	M	3,800	3,100	1,500	4,500	2,350	1,850	3,650	49,255	6,545	7,600	6,500	5,600	96,250
	F	23,200	46,900	14,200	68,300	51,110	11,600	23,650	118,491	50,470	65,000	31,900	74,000	578,821
20-24	M	400	1,000	600	2,200	1,070	150	1,300	7,596	1,190	1,600	700	2,000	19,806
	F	24,300	38,500	22,100	63,900	58,710	23,200	46,600	155,354	80,625	50,700	39,900	81,000	684,889
25-29	M	900	100	200	400	420	200	20,950	4,203	1,150	1,000	1,000	2,200	32,723
	F	26,500	44,800	30,400	53,400	64,510	32,975	56,750	146,111	99,680	58,200	48,400	95,700	757,426
30-34	M	-	700	500	600	220	450	1,000	1,798	220	-	400	1,600	7,488
	F	24,100	34,800	25,300	34,900	49,350	24,275	45,800	163,027	83,400	42,300	46,700	83,900	657,852
35-39	M	700	500	200	-	400	300	450	810	300	1,000	200	1,600	6,460
	F	16,200	26,200	18,400	26,700	31,990	16,925	33,800	83,174	56,425	30,200	36,100	53,100	429,214
40-44	M	400	500	400	200	540	150	850	1,265	300	200	400	1,200	6,405
	F	17,800	21,400	14,600	25,700	32,050	18,250	26,800	102,695	53,495	32,400	25,700	52,000	422,890
45-49	M	600	500	100	500	300	400	450	731	100	200	200	400	4,481
	F	7,600	12,600	7,200	15,000	11,230	8,700	12,150	44,231	24,750	12,000	13,100	29,400	197,961
50-54	M	-	100	-	500	100	400	500	1,677	235	400	200	1,600	5,712
	F	12,100	12,200	5,700	13,300	21,220	12,125	12,950	60,745	28,665	17,200	21,000	36,000	253,205
55-59	M	200	100	-	-	60	-	450	407	160	1,200	200	2,800	5,577
	F	1,900	4,500	1,800	4,400	6,540	3,150	3,550	19,457	10,250	7,400	6,400	11,800	81,147
60 +	M	5,100	3,900	1,200	3,200	5,750	2,300	2,950	14,126	6,365	7,000	3,900	15,200	70,991
	F	20,400	13,900	5,100	21,100	23,100	12,725	16,000	64,270	32,200	18,000	22,100	44,400	293,295
	M	80,000	81,000	54,400	143,000	148,450	48,725	109,350	367,634	176,175	129,800	96,800	163,800	1,599,134
	F	263,800	385,200	206,200	498,200	538,120	218,300	373,700	1,338,928	737,240	509,400	424,700	784,200	6,277,988
	M+F	343,800	466,200	260,600	641,200	686,570	267,025	483,050	1,706,562	913,415	639,200	521,500	948,000	7,877,122

TABLE XXIV ACTIVITY STATUS BY PROVINCE, SURVEYED RURAL AREAS ONLY

PROVINCE	SEX	EMPLOYER	OWN ACCOUNT WORKER	EMPLOYEE	UNPAID FAMILY WORKER	TOTAL
Arussi	M	-	-	-	-	-
	F	-	-	-	-	-
	M+F	800	125,000	4,200	85,200*	215,200
Begemder	M	200	202,500	18,000	168,100	388,800
	F	-	29,100	8,900	10,000	48,000
	M+F	200	231,600	26,900	178,100	436,800
Gemugofa	M	100	122,900	5,200	58,900	187,100
	F	300	8,100	2,500	3,100	14,000
	M+F	400	131,000	7,700	62,000	201,100
Gojam	M	-	-	-	-	-
	F	-	-	-	-	-
	M+F	2,600	257,300	14,700	197,300*	471,900
Hararge	M	300	263,210	9,130	142,380	426,320
	F	-	7,980	1,400	6,460	15,840
	M+F	300	271,690	10,530	153,840	436,360
Illubabor	M	-	116,700	2,875	43,125	162,700
	F	-	3,475	850	925	5,250
	M+F	-	120,175	3,725	44,050	167,950
Keffa	M	-	210,200	5,150	79,900	295,250
	F	-	7,250	2,550	1,950	11,750
	M+F	-	217,450	7,700	81,850	307,000*
Shoa	M	-	-	-	-	-
	F	-	-	-	-	-
	M+F	11,219	683,552	12,484	604,185*	1,311,440
Sidamo	M	420	378,885	5,970	242,595	627,870
	F	-	14,150	2,120	16,475	32,745
	M+F	420	393,035	8,090	259,070	660,615
Tigre	M	3,600	237,800	22,000	198,000	461,400
	F	6,800	28,000	8,800	19,800	63,400
	M+F	10,400	265,800	30,800	217,800	524,800
Wollega	M	1,200	188,100	14,000	136,900	340,200
	F	-	9,000	4,700	9,300	23,000
	M+F	1,200	197,100	18,700	146,200	363,200
Wollo	M	3,400	403,000	42,800	296,200	745,400
	F	800	23,800	8,600	28,400	61,600
	M+F	4,200	426,800	51,400	324,600	807,000
TOTAL	M	-	-	-	-	-
	F	-	-	-	-	-
	M+F	31,739	3,320,502	196,929	2,354,195	5,903,365

* Note: Figures for Arussi, Gojam, Keffa and Shoa have been adjusted.

TABLE XXV ECONOMICALLY ACTIVE POPULATION , AS % OF TOTAL POPULATION,
BY SIZE OF TOWN AND PROVINCE

PROVINCE	SMALL TOWNS MAL + FEM.	L A R G E T O W N S			ALL TOWNS	
		MALES	FEMALES	BOTH SEXES	AS % OF TOTAL POP.	AS % OF POP. 5-60 YEARS
ARUSSI	72.3	37.6	12.6	23.0	51.2	61.6
BEGEMDIR	70.1	53.1	17.1	32.4	53.2	64.5
ERITREA	71.7	46.2 ¹⁾	26.3 ¹⁾	35.2 ¹⁾	47.4	57.1
GEMU GOFA	73.9	-	-	-	73.9	87.5
GOJAM	73.9	43.2	23.9	31.8	46.9	56.3
HARARGE	72.9	43.0	13.8	27.4	42.4	51.7
ILLUBABOR	75.0	-	-	-	75.0	88.8
KEFA	53.7	49.2	13.0	30.3	39.7	47.8
SHOA	75.0	50.2 ²⁾	16.9 ²⁾	33.2 ²⁾	38.5	46.4
SIDAMO	71.0	49.5	14.9	32.4	54.8	66.6
TIGRE	69.4	39.4	21.4	29.2	47.0	57.0
WOLLEGA	53.2	41.1	60.8	51.6	52.6	65.8
WOLLO	78.7	45.0	17.8	29.6	54.6	63.8
COUNTRY	70.7	48.1	18.7	32.6	44.5	53.6

1) Only Asmara and Assab

2) Only Addis Ababa and Debre Zeit

TABLE XXVIECONOMICALLY ACTIVE URBAN POPULATION BY
MAIN ACTIVITY AND PROVINCE

PROVINCE	MANUFACT., CONSTR., EL. & WATER	TRADE	TRANSP.& COMM. SERVICES	TOTAL	MAN.CONST., EL. & WATER AS % OF TOTAL
Arussi	128	659	427	1,214	10.5
Begemdir	405	1,036	769	2,210	18.3
Eritrea ¹	1,516	1,660	1,429	4,605	32.9
Gemu Gofa	47	205	150	402	11.7
Gojam	2,122	886	746	3,754	56.5
Hararge	4,311	4,832	3,210	12,353	34.9
Illubabor	199	656	941	1,796	11.1
Kefa	510	1,568	1,369	3,447	14.8
Shoa ²	6,003	3,225	3,790	13,018	46.1
Sidamo	633	2,174	1,468	4,275	14.8
Tigre	796	1,560	1,467	3,823	20.8
Wollega	467	1,464	2,067	3,998	11.7
Wollo	445	1,792	1,390	3,627	12.3
Addis Ababa	52,911	28,225	118,749	199,885	26.5
Asmara	17,442	5,770	35,064	58,276	29.9
TOTAL	87,935	55,712	173,036	316,683	27.8

1) Excl. Assab and Asmara

2) Excl. Addis Ababa and Nazreth

MANUFACTURE, CONSTRUCTION, TRANSPORTATION, AND COMMUNICATIONS, AS % OF TOTAL PRODUCTION, 1929-30

PROVINCE	MANUFACTURE, CONSTRUCTION, TRANSPORTATION, AND COMMUNICATIONS, AS % OF TOTAL PRODUCTION	MANUFACTURE, CONSTRUCTION, TRANSPORTATION, AND COMMUNICATIONS, AS % OF TOTAL PRODUCTION	MANUFACTURE, CONSTRUCTION, TRANSPORTATION, AND COMMUNICATIONS, AS % OF TOTAL PRODUCTION	MANUFACTURE, CONSTRUCTION, TRANSPORTATION, AND COMMUNICATIONS, AS % OF TOTAL PRODUCTION	MANUFACTURE, CONSTRUCTION, TRANSPORTATION, AND COMMUNICATIONS, AS % OF TOTAL PRODUCTION
Alberta	17.4	27.7	27.7	17.4	27.7
British Columbia	12.5	12.5	12.5	12.5	12.5
Manitoba	12.5	12.5	12.5	12.5	12.5
Ontario	12.5	12.5	12.5	12.5	12.5
Quebec	12.5	12.5	12.5	12.5	12.5
Saskatchewan	12.5	12.5	12.5	12.5	12.5
Yukon	12.5	12.5	12.5	12.5	12.5
Canada	12.5	12.5	12.5	12.5	12.5

1) Excl. Annap and Annap
 2) Excl. Abita Ababa and Annap
 3) Excl. Annap and Annap

SAMPLE DESIGN FOR RURAL AREAS

As the survey of rural areas was conducted during a long period of time, the experiences successively gained made it advisable to change some details of the sample design. However, the principal features of the design were as follows: Within each awraja¹⁾ 50% of the mikutil weredas were selected by systematic sampling (except in special cases where some mikutils were selected with varying probabilities). In each selected mikutil a list of the sub-divisions was compiled. In the next stage two sub-divisions within each selected mikutil were selected with probability proportional to the roughly estimated population size (when no estimate existed, the sub-divisions were selected with equal probability). All households withing each selected sub-division were listed. Systematic samples of these households were taken, the sampling interval being so determined that the sample became self-weightin^{ed} for an expected over-all sampling fraction (varying between 0.5 and 2.0% - see table below).

The estimation procedure is then as follows: Let n be the number of mikutils in the sample taken from any awraja, and let t_{ij} be the sample total for a characteristic y as obtained in the j th sample sub-division in the i th mikutil. Then an estimate of the total Y for the characteristic Y for the awraja will be given by

$$Y = R \sum_{i=1}^n (t_{i1} + t_{i2})$$

$i = 1$

I/R being the overall sampling fraction for the awraja.

Approximate expressions for the estimate of the variance of Y are given by:

¹ The administrative units are: province (14), sub-province or "awraja" (98), district or "woreda" (450), sub-district or "mikutil woreda" (1,330) and sub-division.

a) when $P=1/2$, i.e. 50% of the mikitils are selected

$$\text{var}(Y) = R^2 \frac{1}{n-1} \left[n \sum_{i=1}^n (t_{i1} + t_{i2})^2 - \left[\sum (t_{i1} + t_{i2}) \right]^2 \right]$$

b) when $P=1$, i.e. all mikitils are selected

$$\text{var}(Y) = R^2 \sum_{i=1}^n (t_{i1} - t_{i2})^2$$

Table I.1 Approximate mid-date of survey, sampling fractions, number of households in the sample and relative standard error of the population estimate by province, rural areas.

Province	Appr. mid-date of survey	Sampling fraction	Number of households in the sample	Relative standard error (%)
Arussi	June 1965	1:200	686	11.2
Begemdir	Oct. 1966	1:100	2,385	10.8
Gemu Goffa	Aug. 1966	1:100	1,370	15.4
Gojam	Apr. 1965	1:200	about 1,600	8.5
Hararge	July 1967	(1:96)	2,950	10.8
Adal & Issa awr.		1:50	(212)	(58.1)
Other awrajas		1:100	(2,738)	-
Illubabor	Feb. 1967	(1:51)	2,427	11.7
Motcha awraja		1:75	(124)	(18.1)
Other awrajas		1:50	(2,303)	-
Kefa	Feb. 1967	(1:74)	3,315	7.6
Limu awraja		1:50	(1,710)	(15.3)
Other awrajas		1:100	(1,605)	-
Shoa	June 1964	varying	2,880	5.5
Sidamo	May 1966	(1:77)	5,368	14.8
Wollamo awr.		1:60	(1,869)	(8.9)
Sidama awr.		1:75	(1,743)	31.9
3 nomadic wer.		1:50	(86)	-
Other awrajas		1:100	(1,670)	-

Province	Appr. mid-date of survey	Sampling fraction	Number of households in the sample	Relative standard error (%)
Tigre	Dec. 1965	1:200	1,558	8.8
Wollega	May 1966	1:100	2,035	8.1
Wollo	Jan. 1966	1:200	2,348	6.7
Country	-	1:120	28,922	2.9

When comparing the respondents' estimate of one year" by Gross method, it was found that for the 12 provinces this estimate was on the average about 11 months. This means that the length of the year is thus the number of new-born children is under-stated by around 9%. A reasonable explanation to this bias in the reference period is that the respondents refer to some event "that occurred about one year ago". In those provinces, which were surveyed in October - May, the estimates were less than 11 months (except for the province of Kefa) and in the rest the estimates were more than 11 months. If D_1 is the date of the survey in province 1 (independent of the year), T_1 is the respondents' estimate of length of 12 months and $S(x)$ is the standard deviation of the variable x , then it was found that

$$S(D_1 - T_1) / S(D_1) = 0.79$$

which shows that the respondents' reference points "one year back" were more dispersed than the dates of the survey.

11.2 Bias in the Stated Number of Children Born and Deceased

In addition to the under-stated number of children born and deceased, during the year that preceded the survey, due to wrong time-estimation, many of the children born alive but deceased before the survey will never be mentioned. Logically, the same is to some degree true even when asked about children ever born.

DISCREPANCIES IN DATA OF RURAL AREAS

The errors in the data of rural areas can be divided into three main groups: errors in the reference period of one year, errors in the stated number of children born and deceased, and errors in age-reporting.

II.1 Errors in the Reference Period of One Year

When testing "the respondents' estimate of one year" by Brass' method, one finds that for the 12 provinces this estimate was on the average about 11 months. This means that the length of the year and thus the number of new - born children is under - stated by around 7%. A reasonable explanation to this bias in the reference period is that the respondents refer to some event "that occurred about one year ago". In those provinces, which were surveyed in October - May, the estimates were less than 11 months (except for the province of Kefa) and in the rest the estimates were more than 11 months. If D_i is the date of the survey in province i (independent of the year), T_i is the respondents' estimate of length of 12 months and $S(x)$ is the standard deviation of the variable x , then it was found that

$$S(D_i - T_i) / S(D_i) = 0.79$$

which means that the respondents' reference points "one year back" were less dispersed than the dates of the survey.

II.2 Errors in the Stated Number of Children Born and Deceased

In addition to the under-stated number of children born and deceased, during the year that preceded the survey, due to wrong time-estimation, many of the children born alive but deceased before the survey will never be mentioned. Logically, the same is to some degree true even when asked about children ever born alive, presumably more significant at lower age of the deceased child.

Thus, for the 12 provinces, rural areas, the recorded infant mortality is only 84 per thousand live - born, whereas the

adjusted rate is more than two times higher. The recorded birth rate is 44.0 per thousand, whereas the adjusted rate is 51.1.

Another source of error in death-reporting, for which is difficult to adjust, is when a person who has lived alone and who has died, will in many cases not be mentioned, as there is nobody left in the household who can warrant his death.

It seems that deceased adults are not under-stated at all or under-stated to a much less degree than children. Actually, it is assumed in the calculations (appendix III) that deaths of people above 5 years of age is not understated. Thus, the difference in adjusted and recorded crude death rate, which is as much as 0.5%, is in this paper entirely explained by under-stated number of deceased children below 5 years.

II.3 Errors in Age-Recording

Many rural dwellers are so unfamiliar with counting ages that they are unable to state their own age as well as the ages of most other members of the household.

The highest percentages "age not stated" were in Arussi (2.9%), Shoa (2.3%), Gojam (1.5%) and Kefa (0.7%). The other provinces had less than 0.3%. 0.8% could not state their ages in all the 12 provinces (males 0.5% and females 1.2%). There is a tendency to round off the age to 30, 40, 50 years etc. This type of discrepancy affects the age-distribution; so that there are more people in the age-groups 30-34, 40-44, 50-54 etc. than the average of the two adjacent age-groups. This is reflected in the population pyramid of rural areas. A measure of age-misstatement is the age-group ratio

$R_i = \frac{2X_i}{X_{i-1} + X_{i+1}}$ ¹ where X_i is the number of people in the 5-year age-group i . The table below gives average ratios by

¹The age - group ratio is the ratio of recorded number of people in a certain age group to the recorded average number of people in the two adjacent age groups.

sex and province (9 provinces, rural areas), which are calculated in the following way: when the ratio of a certain age-group, j, is below 1.00, the reciprocal is taken, i.e.

R_j equals $1/R_i$. Ten age-groups are examined: 5-9, 10-14, and 50-54. The average ratio is $R = \frac{1}{10} \left(\sum_{i=1}^k R_i + \sum_{j=k+1}^{10} R_j \right)$

where k is the number of age-groups with ratio equal to or above 1.00. The average ratio, which gives a rough measure of degree of age-misstatement, should be around 1.02-1.04 in the stable population. See also figure II,2.

Table II.1 Average Age-Group Ratios by Sex and Province, and Literacy by Province, rural areas.

	Har.	Ill.	Kefa	G.G.	Sid.	Wo:o	Tig.	Beg.	Wo:a	9 prov.
Male	1.22	1.20	1.24	1.26	1.18	1.19	1.17	1.20	1.11	1.19
Fem.	1.46	1.43	1.31	1.28	1.38	1.32	1.34	1.20	1.29	1.33
Both sex	1.34	1.31	1.27	1.27	1.27	1.25	1.25	1.20	1.20	1.26
lit. (%)	2.6	3.6	3.5	2.5	2.8	3.1	6.4	5.1	5.3	

Age-misstatement of females was more pronounced than that of males. The highest ratios were found in Hararge and in the four southern provinces and the lowest ones in Wollega and in the three northern provinces. Knowledge of age might be considered as a consequence of degree of education. Therefore, literacy is shown in the table in order to compare with the age-group ratios. With a few exceptions, it is found that there is a connection between literacy rate and age-group ratios: the higher the literacy the lower the ratio, i.e. the less is age-misstatement manifested.

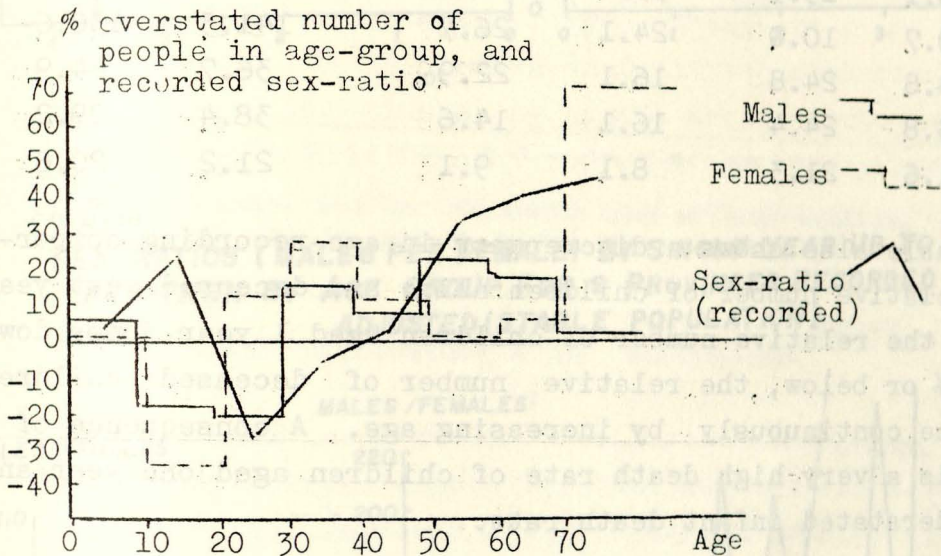
Another measure of age-misstatement is the age-ratio, here defined as $S_i = 2Y_i / (Y_{i-1} + Y_{i+1})$, where Y_i is the number of people aged i years. Figure II.3 shows how S_i increases with

age when ranging from 10 to 50 years (ages ending with zero) and from 15 to 55 years (ages ending with five). There is a sharp incline in age-ratio by increasing age, especially for females. Unweighted average age-ratio for ages ending with five is 5-6, almost the same for males and females, whereas the one for ages ending with zero is 12 - 13 for males and 20 for females. Age-misstatement is more pronounced for females than for males, except for the ages 10, 15 and 20 years, where the reverse holds.

The errors in age discussed above is just one type of age-misstatement, namely when people round off their ages to the nearest (?) age ending with five or, more often, with zero. Another type of age-misstatement is when the respondents place themselves in the wrong age-group, not because they round off their age, but because they believe themselves to be older or younger than they really are. So, for example, there is a large number of children 5-9 years and then a pronounced drop in the age-groups 10-14, 15-19 and 20-24 - more accentuated for females than for males in the two first groups and more accentuated for males than for females in the last one. There is an extreme bulge for females aged 25-44 years, i.e. at ages of high fertility, for males this bulge is found at the ages 29-44 years, however less pronounced. This bulge is partly explained by over-estatement of age in the age-groups below the bulge. For females it might also be explained by under-statement of age in the age-group above the bulge. This latter explanation is however, partly denied by the fact that the adjusted proportion of females below 44 years is almost the same as the recorded one. At ages above 20, males show a consistent over-statement of age, which is successively more pronounced by increasing age. Figure II.1 below shows direction and degree of misstatement of age by sex.

See also figure II.5, which shows how age-misstatement by sex influences the sex-ratio. 10-year age-groups is used in order to eliminate for the type of error where ages are rounded off to 30, 40, 50 years etc.

Fig. II.1 Age-Misstatement by Sex. 9 Provinces, Rural Areas



As can be found from the table below (see also figure II.4) there are more children recorded 2, 3 and 4 years than 0 year; and there are much less children recorded 1 year than 2, 3 and 4 years. The recorded number of children aged 0 year is 395,505, whereas the number of children born during the 12 months previous to the survey and alive at the survey is 470,030. Presuming the last figure is the correct one, this means that the recorded number of children aged 0 year is under-stated by almost 16%.

Table II.2 Recorded Relative Number of Children and Number of Deaths at Ages 0-4 Years. 9 Provinces, Rural Areas.

Age	rec. number of ch. (%)		rec. number of deaths (%)		rec. death rate	
	Males	Females	Males	Females	Males	Females
0	20.1	19.5	35.6	26.7	100.4	66.5
1	9.7	10.0	24.1	26.7	141.5	130.6
2	24.8	24.8	16.1	22.9	36.7	44.9
3	23.8	24.4	16.1	14.6	38.4	29.2
4	21.6	21.3	8.1	9.1	21.2	20.6

The table also shows a discrepancy in age-recording comparing relative number of children alive and deceased last year. While the relative number of children aged 1 year jumps down to 10% or below, the relative number of deceased children decline continuously by increasing age. A consequence of this is a very high death rate of children aged one year and an understated infant death rate.

There is also a more pronounced tendency of over-stating the age of deceased people than of those alive. No adjustment has been made for this type of error, which explains the relatively high average number of years lived after age 90 in the life tables, Table XIV.

Fig. XVIII

**AGE DISTRIBUTION BY SINGLE YEAR UP TO 5 YEARS
RECORDED AND ADJUSTED**

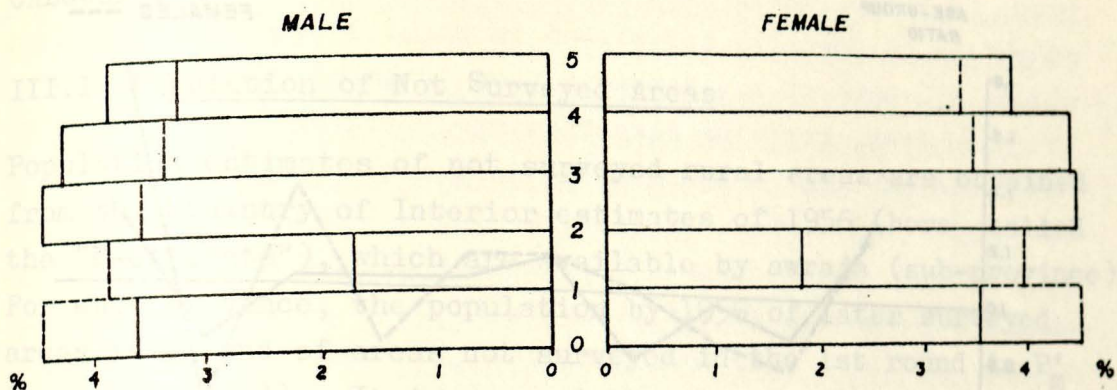


Fig. XVIII

**SEX RATIOS (MALES PER FEMALE) BY SINGLE YEAR UP TO 5 YEARS
AND THEN BY AGE GROUP FOR 9 PROVINCES RECORDED AND
ADJUSTED (STABLE POPULATION)**

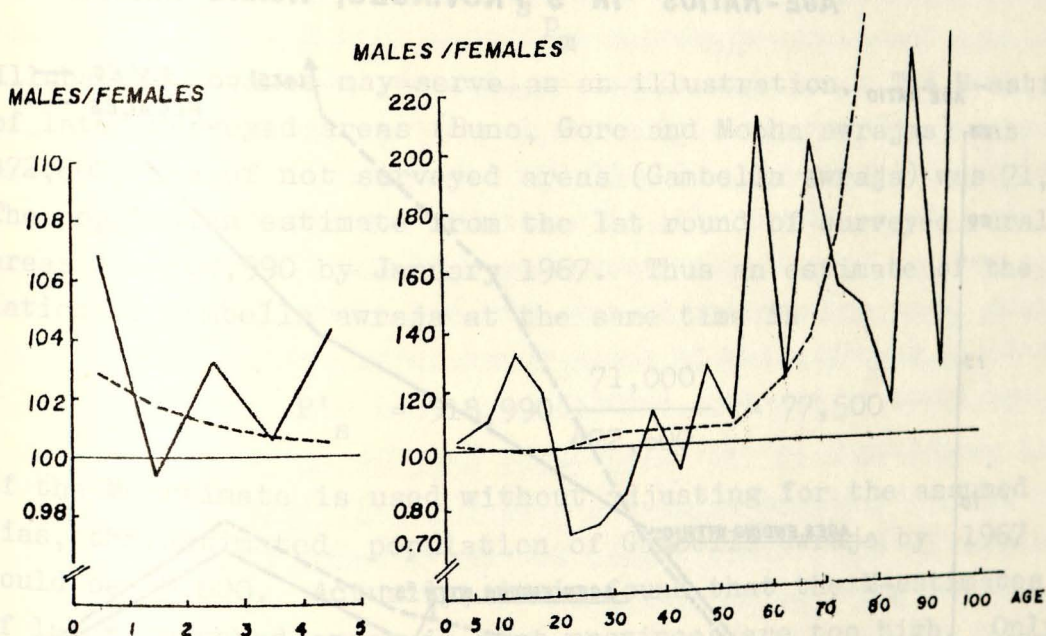
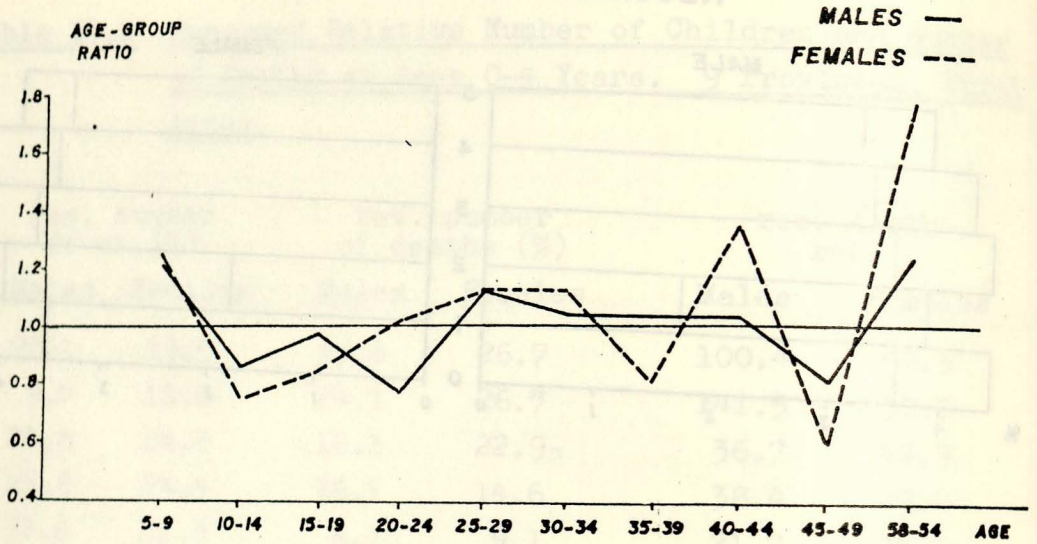


Fig. XIX

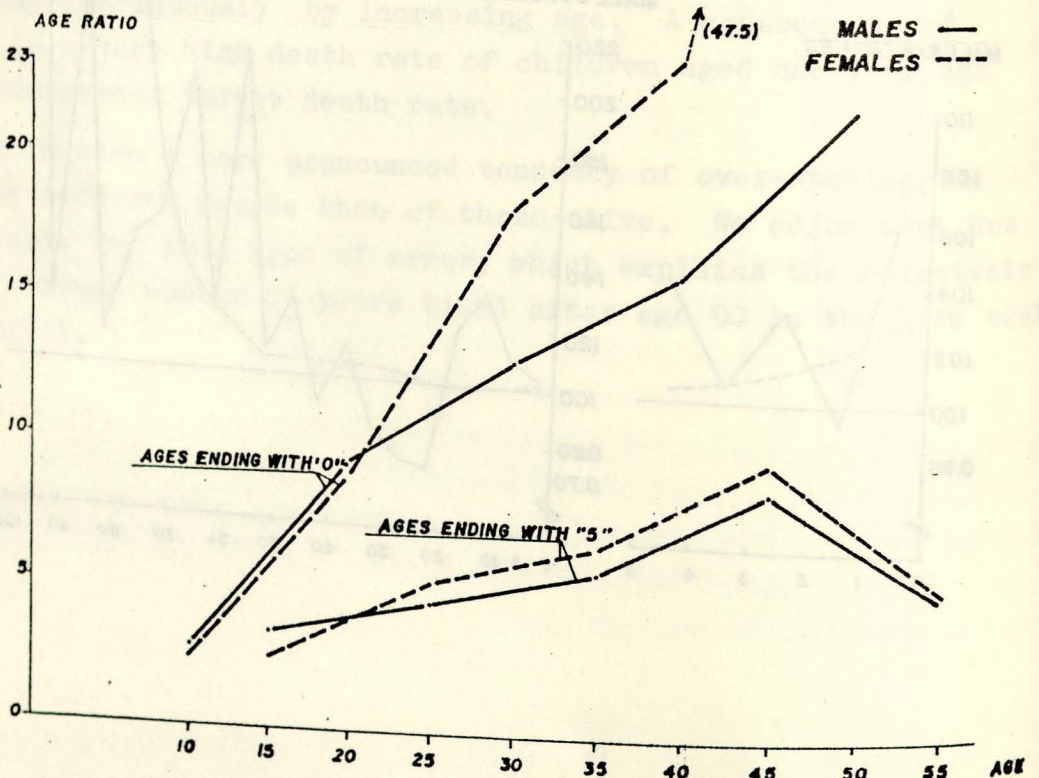
AGE-GROUP RATIOS IN 12 PROVINCES, RURAL AREAS



NOTE. AGE-GROUP RATIO IS HERE DEFINED AS THE SIZE (NUMBER OF PEOPLE) OF AN AGE-GROUP DIVIDED BY THE AVERAGE OF SIZES OF TWO ADJACENT AGE-GROUPS.

Fig. XX

AGE-RATIOS IN 9 PROVINCES, RURAL AREAS.



NOTE. AGE RATIO IS HERE DEFINED AS THE SIZE (NUMBER OF PEOPLE) OF AN AGE DIVIDED BY THE AVERAGE OF SIZES OF TWO ADJACENT AGES.

CALCULATIONS

III.1 Population of Not Surveyed Areas

Population estimates of not surveyed rural areas are obtained from the Ministry of Interior estimates of 1956 (here called the "M-estimate"), which are available by awraja (sub-province). For each province, the population by 1956 of later surveyed areas is P_m and of areas not surveyed in the 1st round is P'_m (towns included). It is assumed that within each province the biases in the M-estimates by awraja are of the same magnitude. If the population of surveyed areas by January 1967 is P_s , an estimate of the population of not surveyed areas at the same time is then

$$P'_s = P_m \frac{P'_m}{P_m}$$

Illubabor province may serve as an illustration. The M-estimate of later surveyed areas (Buno, Gore and Mocha awrajas) was 472,600, and of not surveyed areas (Gambella awraja) was 71,000. The population estimate from the 1st round of surveyed rural areas was 518,990 by January 1967. Thus an estimate of the population of Gambella awraja at the same time is

$$P'_s = 518,990 \frac{71,000}{472,600} = 77,500$$

If the M-estimate is used without adjusting for the assumed bias, the estimated population of Gambella awraja by 1967 would be 85,600. Actually, it is found that the M-estimates of later surveyed areas in most provinces are too high. Only in two cases, Kefa and Sidamo, are the estimates too low. Population estimates of Bale and Eritrea and of not surveyed towns are the same as the M-estimates, projected to 1967.

III.2 Urban and Rural Growth

It is assumed that the rate of yearly natural increase of

towns is 2.5%. The growth of urban population due to immigration to towns is calculated in the following way: Population by length of residence in town is known for each town (born in town, residing less than one year, residing 1-5 years and residing 6 years and more). Assuming the relative number of people (relative to the size of town) immigrating to towns is constant, which means that the absolute number increases each year, one can show that an estimate of the number of people "residing less than one year" (R'_0) is approximately one fourth of those "residing 1-5 years" (R_{1-5}), i.e. $R'_0 = 1/4 \times R_{1-5}$. R'_0 is then compared with R_0 , the recorded number of people "residing less than one year" and the lowest figure is chosen. As information on out-migration is not available, it is assumed that the number of people out-migrating from towns amounts to 20% of those in-migrating. This last assumption is rough and holds probably only for a smaller part of the towns. Actually, in some towns, out-migration is higher than in-migration, and in some few cases even almost as high as in-migration + natural increase. This source of error is partly eliminated by taking the smaller towns (2,000 - 10,000 inhabitants) together by province. Thus, if the size of a certain town at the survey was H , the rate of urbanizations was then $0.80 \min(R_0, R'_0)U$. Since there is no information on not surveyed towns, it is assumed that the in-migration to these towns is the same as to the surveyed towns of the same province.

The growth rate of the total rural population equals the rate of natural increase minus the urbanization. The calculation is done on the country level, but the situation in Kefa province may serve as an example:

For Jimma (the only town with more than 10,000 inhabitants) $R_0 = 2,150$, $R_{1-5} = 5,390$ and thus $R'_0 = 1,350$, i.e. R'_0 is less than R_0 . The population of Jimma at the survey was 29,420 and thus the rate of urbanization was $0.80 \times 1,350 / 29,420 = 3.7\%$. Adding the assumed rate of natural increase of 2.5%, this gives

a yearly growth rate of 6.2%. The calculation for the smaller towns of Kefa, taking together, is conducted in the same way giving a yearly growth rate of 6.2% of which 3.7% is in-migration. The number of people that moved to towns in 1966 was then 1,820 (the urban population in mid-1966 was 49,100) of which it is assumed 85% came from rural areas, i.e. 1,550, which is 0.15% of the mid-year rural population of Kefa. Thus, whereas the rate of yearly natural increase of the rural areas of Kefa was 26.0, the growth rate was only 24.5 per thousand.

III.3 Life Tables

Construction of the life tables is based on the adjusted childhood mortality up to 5 years of age and on the recorded mortality thereafter, as a consequence of the assumption that the recorded number of deaths above 5 years is approximately correct. An adjustment of this number can not be justified, although it is presumably under-estimated. If the adult mortality had been adjusted, for example with Brass' factor due to errors in the reference period of one year (in this case 1.076), the crude death rate would be increased by almost 4%, which for the 12 provinces means from 27 to 28 per thousand. Thereby, the proportion of females below 35 years would have increased. Bearing in mind that the recorded (and used) adult mortality is at least not over-estimated, the adjusted proportion of females below 35 is therefore most probably underestimated presuming it is biased at all. The adjusted proportion for the 9 provinces is higher than the recorded one by 2.5%, i.e. the recorded proportion of females below 35 years is with almost certainty underestimated. This explains the discussion in appendix V on the "West" Model Stable Populations when recorded proportion of females below 35 years is used.

Due to inconsistency in the age reporting of people alive and deceased, the recorded 5-year age-group specific death rates are constantly higher in the age-groups 25-29, 35-39 etc. than

in the age-groups including ages ending with zero. It was therefore advantageous to use 10-year age-groups above 10 years of age in the life table, even if this slightly lessens the precision in e.g. expectation of life.

METHOD FOR DERIVATION OF FERTILITY AND INFANT AND CHILD MORTALITY

1. Assumptions

- a) reported number of children aged 0-14 years is correct
- b) there exists an unbiased estimate of number of children aged 0 year (or, which is the same, number of children born last 12 months and alive at the survey)
- c) people in the first three 5-year age-groups are distributed according to a stable population, which means that fertility and mortality rates have remained constant the last 15 years.

The following symbols are used:

- L_x number of people aged x years at the survey
- l_x survivors at exact age x in the stationary population
- d_x number of people x years old that died during the year in the stationary population
- B number of children born alive last 12 months preceding the survey (adjusted by Brass' method on fertility due to errors in the reference period)
- ${}_x p_y$ probability of surviving from exact age x to exact age y
- ${}_x q_y$ $1 - {}_x p_y$, i.e. probability of dying between exact age x and exact age y
- r rate of yearly natural increase of the population

When applying the model, the only data needed are L_{0-14} , L'_0 and r, where $L'_0 = fL_0$ (f is the adjustment factor used in Brass' method).

2. The Model

In the stable population, the relative number of people in the first 5-year age-groups is almost constant, when the number below 15 years ranging from 44 to 47 % of the population and above 45 years from 10 to 14 %. As the age-distribution in

this case is supposed to be found within these limits, the distribution of the stable population will be used:

40.7 %	in age-group	0-4	years
32.2 %	" "	5-9	" "
27.1 %	" "	10-14	" "
total 100.0%	" "	0-14	" "

The recorded number of children aged 0-4 years is in African cases often under-stated due to a loss of children aged 4 years into the age-group 5-9. There is however reason to assume the recorded number of children 0-14 years being biased to a much less degree. Thus an estimate of number of children aged 0-4 years at the survey is

$$L'_{0-4} = 0.407 L_{0-14} \quad (1)$$

Number of children aged x years at the survey is

$$B \cdot {}_0p_{x+0.5} \cdot e^{-rx} \quad (2)$$

and total number of children aged 0-4 years is then

$$L'_{0-4} = \sum_0^4 B \cdot {}_0p_{x+0.5} \cdot e^{-rx} \quad (3)$$

which together with the equality

$${}_0p_{0.5} \cdot 0.5^p_{x+0.5} = {}_0p_{x+0.5} \quad \text{gives} \quad (4)$$

$$(L'_{0-4}/L'_0) \cdot 1 = \sum_1^4 0.5^p_{x+0.5} \cdot e^{-rx} \quad (5)$$

where $L'_0 = B \cdot {}_0p_{0.5}$

The following definition is introduced:

$$1 - \sum_1^x a_j = 0.5^p_{x+0.5} \quad (6)$$

Then the following equality holds (from (5) and (6)):

$$A(r) = \sum_{k=1}^4 e^{-rk} + 1 - L'_{0-4}/L'_0 = \sum_{k=1}^4 \sum_{j=1}^k a'_j \cdot e^{-rk} \quad (7)$$

If the relation between the a'_j - values is known, i.e. if a'_j is known in the equality $a'_j = C \cdot a'_j$, where C is a constant, then an estimate of C is (from (7))

$$\hat{C} = \frac{A(r)}{\sum_{k=1}^4 \sum_{j=1}^k a'_j \cdot e^{-rk}} \quad (8)$$

and an estimate of a'_j is $\hat{a}'_j = \hat{C} \cdot a'_j$ and hence (from (6) and (8))

$$0.5^{\hat{p}}_{x+0.5} = 1 - \frac{A(r) \sum_{j=1}^x a'_j}{\sum_{k=1}^4 \sum_{j=1}^k a'_j \cdot e^{-rk}} = 1 - A(r) \cdot B(r, x) \quad (9)$$

Table 1 in this appendix shows values of $A'(r) =$

$$= A(r) + L'_{0-4}/L'_0 \quad \text{and of } B(r, 1) = \frac{a'_1}{\sum_{k=1}^4 \sum_{j=1}^k a'_j \cdot e^{-rk}}$$

when $a'_j = (9, 4, 2, 1)$ is used as a supposed relation and when r ranging from 1.0 to 3.5%.

The number of people by age in the stationary population

is $L'_x = L'_0 \cdot 0.5^{\hat{p}}_{x+0.5}$

and survivors at exact age x is approximately

$$l_0 = \frac{1}{0.3} (L_0 - 0.7 \cdot l_1) \quad \text{and}$$

$$l_x = 2L_x - l_x + 1 \quad \text{when } x = 1, 2, 3 \text{ and } 4$$

To solve the system, one adding equation is needed. namely,

$$l_2 = \frac{1}{8} (5L_1 + 5L_2 - L_0 - L_3) l_1$$

3. Calculation of Fertility and Infant and Child Mortality

The calculations are carried out in the following way:

a) Calculate $L'_{0-4} = 0.407 L_{0-14}$, $L'_0 = fL_0$ (by Brass' method) and L'_{0-4}/L'_0 .

c) Calculate $A(r).B(r,1)$ and

$$\begin{aligned} L'_1 &= L'_0(1 - A(r)B(r,1)) \\ L'_2 &= L'_0(1 - 1.4444 A(r)B(r,1)) \\ L'_3 &= L'_0(1 - 1.6667 A(r)B(r,1)) \\ L'_4 &= L'_0(1 - 1.7778 A(r)B(r,1)) \\ l'_0 &= L'_0(1 + 1.3612 A(r)B(r,1)) \\ l'_1 &= L'_0(1 - 0.6806 A(r)B(r,1)) \\ l'_2 &= L'_0(1 - 1.3194 A(r)B(r,1)) \\ l'_3 &= L'_0(1 - 1.5695 A(r)B(r,1)) \\ l'_4 &= L'_0(1 - 1.7639 A(r)B(r,1)) \\ l'_5 &= L'_0(1 - 1.7917 A(r)B(r,1)) \end{aligned}$$

1) This equation is derived from the equality $0.5(L_0+L_1)-l_1-0.5(L_1+L_2)+l_2=0.5(L_1+L_2)-l_2-0.5(L_2+L_3)+l_4$ which can be shown to be almost exact.

$$d'_0 = l'_0 - l'_1 = 2.0418 A(r)B(r,1)L'_0 \text{ etc.}$$

$$q'_0 = \frac{d'_0}{l'_0} = \frac{2.0418 A(r)B(r,1)}{1 + 1.3612 A(r)B(r,1)} \text{ (inf. mort.)}$$

$${}_5q'_0 = 1 - \frac{l'_5}{l'_0} = 1.5442 q'_0 \text{ (child mort.)}$$

$$R \approx \frac{l'_0}{T} = \frac{L'_0}{T} (1 + 1.3612 A(r)B(r,1)), \text{ where}$$

T is the mid-year total population (R is the birth rate).

4. Discussion

The model is rather sensitive for errors in L'_{0-4} and in L'_0 . If for example infant mortality rate shall be correct within the limits $\pm 5\%$, the bias in one of the two variables, when the other is fix, must not exceed 3% . As there is mostly a positive correlation in bias between the two estimates, it is supposed that in most cases this matter will not affect the result too much. However, when testing the model on data of some African countries, This source of error has shown to be the greatest problem, mainly because information on "number of children born last 12 months and alive at the survey", has not been available.

A 1% error in the estimate of y ($y=0.3$) in the relation $L'_0 = y.l'_0 + (1-y)l'_1$ causes a less than 1% bias in the estimate of infant mortality. $y=0.3$ is, however, supposed to be close to the true value.

The choice of a'_j decides the relationship between the age-specific mortality rates (see above, where child mortality is expressed proportional to infant mortality). This is an obvious disadvantage, and the model should benefit from making

a'_j variable, dependent upon the population data. If for example $a'_j = (9, 6, 4, 3)$ is chosen instead of $(9, 4, 2, 1)$, the infant mortality is affected by 4-5%.

Fertility is less affected than mortality by the above mentioned sources of possible errors.

Table IV.1 Values of $A'(r)$ and $B(r,1)$.

$r(\%)$	$A'(r)$	$B(r,1)$	$r(\%)$	$A'(r)$	$B(r,1)$	$r(\%)$	$A'(r)$	$B(r,1)$
1.0	4.9014	.1745	1.9	4.8153	.1788	2.8	4.7314	.1831
1.1	4.8917	.1750	2.0	4.8059	.1793	2.9	4.7223	.1836
1.2	4.8821	.1755	2.1	4.7965	.1797	3.0	4.7130	.1841
1.3	4.8725	.1759	2.2	4.7871	.1802	3.1	4.7039	.1846
1.4	4.8630	.1764	2.3	4.7777	.1807	3.2	4.6948	.1851
1.5	4.8533	.1769	2.4	4.7683	.1812	3.3	4.6858	.1856
1.6	4.8437	.1773	2.5	4.7590	.1817	3.4	4.6768	.1861
1.7	4.8343	.1778	2.6	4.7498	.1822	3.5	4.6677	.1866
1.8	4.8247	.1783	2.7	4.7405	.1827			

DIFFERENT METHODS OF ESTIMATING FERTILITY AND MORTALITY
APPLIED ON 9 PROVINCES, RURAL AREAS

V.1 The Methods

Some existent methods of estimating fertility and mortality are applied on 9 of the surveyed provinces, rural areas (Begemdir, Gemu Gofa, Hararge, Illubabor, Kefa, Sidamo, Tigre, Wollega and Wollo) and are discussed in this appendix in order to compare with the results from the method used, which is explained in appendix IV. "Adjusted figures" in this appendix refers to measures adjusted with this latter method.

- a) When the number of infants aged 0 year recorded dead during the year preceding the survey (33,630), is added to the recorded number of children born during the same year and alive at the survey 470,030, the crude birth rate comes to 46.0¹
- b) Same as a), but the number of children born and alive at the survey is adjusted with Brass' method (505,750). Birth rate then comes to 49.3.
- c) Brass' method² on fertility gives a crude birth rate of 48.0, and on childhood mortality gives an infant mortality of 153 per thousand.
- d) The table below gives some demographic measures from six sources: 1) recorded figures, 2) adjusted figures, 3) "West" Model Stable population³ using the recorded proportion of females below 35 years (77.2%) and assuming a rate of natural increase of around 2.5%, 4) Brass-Carrier Stable Population Models⁴ using the recorded proportion below 15 and above 45 years (44.9% and 12.9% resp.),

¹Provisional Estimates of Fertility, Mortality and Population Growth for Tanzania, Central Statistical Bureau, Ministry of Economic Affairs and Development Planning, Dares Saleam, Dec. 1968, p8. (This method, applied on Tanzanian data, gave "The best estimate, giving a birth rate of 45.6....")

Table V.1 Demographic Measures Estimated With Different Methods. 9 Provinces, Rural Areas.

	Rec. (1)	Adj. (2)	West (3)	Br-C (4)
Birth rate	4.46	5.24	4.84	-
Death rate	2.30	2.84	2.31	-
Rate of incr.	2.16	2.40	(2.53)	2.8
Inf. mor. rate	.068	.193	.184	.158
Exp. of life	(40)	36.2	39.8	44

Note: Column number refers to text above

V.2 Discussion

The reason for using, in a) and b), "the number of children born during the year preceding the survey and alive at the survey" instead of the recorded number of children aged 0 years, is that the latter is much under-stated (395,500, i.e. around 74,500 less than the figure used - see also appendix II). These two rather rough methods as well as Brass' method under c) underestimate the birth rate as none of them take the non-reported deceased infants into account. The birth rate under b), 4.93% must therefore be regarded as a lower limit.

² W.Brass, A Coale, P Demeny, D Heisel, Florimer, A Romaniuk and E van de Walle: "The Demography of Tropical Africa", Princeton Univ. Press 1968, p 92-105 (fert.) and p 105-117 (mort).

³ UN Manual IV, "Methods of Estimating Basic Demographic Measures from Incomplete Data", St/SOA/Series A/42.

⁴ ECA-document no E/CN.14/CPH/13.

The same holds for Brass' method on mortality - it assumes that the recorded number of children ever born alive is correct, yet many of those who were born and later have deceased would not be mentioned - not even by younger mothers.

The infant mortality under c) is therefore an underestimation. On good grounds, it is also assumed that the infant mortality rate from Brass-Carrier Models are under-estimated, as they equal Brass' estimate. These stable population models also show an inconsistency in the fact that lower expectation of life, due to higher mortality, implies a lower infant mortality, whereas a positive correlation between general mortality and infant mortality is expected.

Rates derived from the "West" Model, based on the recorded proportion of females below 35 years, are reasonable, but probably underestimated as the recorded proportion is with almost certainly under-stated (see appendix III.3)

A difficulty when applying the "West Model in this case is that male mortality is higher than that of female in the model, whereas the reverse is valid in the 9 provinces. Female mortality is evidently higher than male mortality in Ethiopia.

RECENT POPULATION ESTIMATES OF AREAS NOT SURVEYED IN THE NATIONAL SAMPLE SURVEY, FIRST ROUND

At the time of the preparation of this report, population figures from the 2nd round of the National Sample Survey are available for a few provinces only. Some of the awrajas not covered in the first round were covered in the second round, but only the second round figures for Bale province, for two weredas in Begemdir province and for Gambella awraja in Illubabor province are given below.

Bale Province

Rural population according to the National Sample Survey, 2nd round, in January 1970 (provisional figures):

Dello awraja (Meda-Wolabu wereda not included)	40,000
Fasil awraja	182,000
Genale awraja	137,000
Wabie awraja (Raitu wereda not included)	206,000

Rural population according to Mr. G. Last, Planning Unit at the Ministry of Education (provisional figures):

Meda-Wolabu wereda	40,000
Raitu wereda	40,000
Elkere awraja	138,000

Locations with less than 2,000 inhabitants, but included in the urban survey: about 6,000 people.

Thus, the total Bale rural population was about 789,000 at the beginning of 1970, which corresponds to about 734,000 in January 1967. The Ministry of Interior estimate, raised to 1967 by 2.5% yearly, is 163,000.

Urban population according to the urban survey in 1970:

Adaba	2,990
Dodola	3,240
Ginir	4,300
Goba	11,780
Robi	2,150
Total	24,460, i.e. about <u>21,300</u> in January 1967.

Ogaden

Population estimates of 1968, according to "Report on a Survey for Educational Development in the Ogaden Region", Dep. of Programme, Planning and Research, Ministry of Education, February 1969:

	Settled population	Nomadic/Semi-nomadic population	Total population
Awraja			
Jijiga	91,600	103,400	195,000
Degeh Bur	23,000	257,000	280,000
Gode	15,000	45,000	60,000
Kebri Dehar	9,300	56,700	66,000
Warder	6,700	153,300	160,000
Kelafo	14,900	45,100	60,000
Ogaden	160,500	660,500	821,000

The population estimates were supplied by local governors and the total, 821,000, compares closely with the estimates worked out by the Committee on Regional Aspects of National Planning. Assuming a yearly growth rate of 25 per thousand, the Ogaden total population is estimated to have been approximately 800,000 at the beginning of 1967. The Ministry of Interior estimate, raised to 1967 by 2.5% yearly, is 1,421,000. From the figure 800,000 should be subtracted the urban population, 13,000 (Jijiga, Deder and Gora), to get the rural population of Ogaden, which then was 787,000.

The North-Eastern Lowlands, Except Eritrea

Estimates based on information supplied by officials in the region:

Upper and Middle Awash Valley (eastern lowlands of Shoa and western lowlands of Hararge): approximately 100,000 (Afar about 50,000 and nomadic Galla and Isa approximately the same).

Awsa and Afambo weredas in Awsa awraja in Wollo province and the Tigre eastern lowlands: approximately 150,000.

Eritrea

The only known reliable estimates that exist are the one by the Ministry of Interior of 1956 and urban estimates by Department of Geography at the HSIU. The rural population at the beginning of 1967, according to the Ministry of Interior: 1,422,000.

Towns not covered by the National Sample Survey as estimated by HSIU:

Agordat	24,000
Barentu	3,000
Keren	30,000
Nefasit	3,000
Tessenei	5,000

The Western Lowlands

Setit and Welkait weredas in Weghera awraja, Begemdir province. The National Sample Survey, 1st round, gave 97,800 when the two weredas were excluded, which would mean about 99,000 at the beginning of 1967. The second round in April 1969 gave 204,000, including all weredas, which means 193,000 in January 1967. The difference, 94,000 is then an estimate of the population of the two weredas.

Metekel awraja in Gojam province had a population at the beginning of 1967 of 70,000 as estimated by the Ministry of Interior

(the figure raised by 2.5% yearly from 1956). For certain reasons it is suspected that this figure may be slightly underestimated, and a population of 80,000 is assumed instead.

Gambella awraja in Illubabor province was surveyed in the 2nd round in March 1968. However, the population figure, 32,200, does not include Akobo wereda and the Sudanese refugees, The Ministry of Interior estimate, which gives a population of about 78,000 in January 1967 is therefore assumed to be comparatively reliable.

The Ministry of Interior Estimate of Maji awraja in Kefa province is probably too high (124,000 in January 1967). It is arbitrarily assumed that the rural population of Maji was 100,000 in January 1967.

The Ministry of Interior population figure for Geleb & Hamer Bako awraja in Gemu Gofa province is 12,000, which is known to be an underestimate. It is arbitrarily assumed that the rural population of this awraja was 20,000 in January 1967.

Southern Sidamo

According to local officials, the nomadic population of Arero awraja and the total rural population of Borana awraja was about 130,000 at the beginning of 1967, a figure which corresponds well with the estimate given by the Ministry of Interior.

Summary

According to these estimates (see Table VI.1), the total population of the country in January 1967 was 22,804,000 of which 1,967,000 was urban, i.e. 8.6%.

The main changes are to be found in Bale and in Ogaden. The population of Bale was much underestimated before, whereas the reverse holds for the Ogaden figure. With these new estimates the rural population density of

Bale is 5.9 persons per sqkm, and of
Ogaden is 4.5 persons per sqkm.

Since the both regions are mainly nomadic, except for the northern part of Bale, these density figures seem reasonable, seen separately as well as compared to each other.

The proportion urban population in Bale is now 2.8% which is also more reasonable than the previously estimated 8.9%.

The population of two towns in Shoa, Ankober and Hosanna, have been overestimated in the report. This explains the discrepancy in the Shoa urban figures in Table VI.1 and Table III.

Table VI. 1 Population of Surveyed and not Surveyed Areas, January 1967

PROVINCE	Surveyed areas, 1st round			Not Surveyed areas, 1st round			Total population		
	RURAL	URBAN	TOTAL	RURAL	URBAN	TOTAL	RURAL	URBAN	TOTAL
Arussi	723,700	30,000	753,750		10,500	10,500	723,700	40,550	764,200
Bale				734,000	21,300	755,300	734,000	21,300	755,300
Begemdir	1,099,000	65,350	1,164,350	94,000	3,010	97,000	1,193,000	68,400	1,261,400
Eritrea		263,500	263,500	1,422,000	65,000	1,487,000	1,422,000	328,500	1,750,500
Gemu Gofa	589,100	13,020	602,120	20,000	10,780	30,800	609,100	23,800	632,900
Gojam	1,426,100	54,830	1,480,930	80,000	10,250	90,300	1,506,100	65,100	1,571,200
Hararge	1,429,000	144,880	1,573,880	787,000 ¹	6,310	793,300	2,216,000	151,200	2,367,200
Illubabor	519,000	18,900	537,900	78,000	2,080	80,100	597,000	21,000	618,000
Kefa	970,100	50,820	1,020,920	100,000		100,000	1,070,100	50,800	1,120,900
Shoa	3,747,800	834,810	4,582,610	100,000 ²	15,080	115,100	3,847,800	849,900	4,697,700
Sidamo	1,999,800	75,580	2,075,380	130,000	14,020	144,000	2,129,800	89,600	2,219,400
Tigre	1,449,400	87,660	1,537,060	150,000 ³	20,650	170,600	1,599,400	108,300	1,707,700
Wollega	1,096,500	39,860	1,136,360				1,096,500	39,900	1,136,400
Wollo	2,092,000	86,730	2,178,730		22,290	22,300	2,092,000	109,000	2,201,000
Total	17,141,500	1,765,990	18,907,490	3,695,000	201,300	3,896,300	20,836,500	1,967,300	22,803,800

¹Ogaden only

²Including the Western lowlands of Hararge province.

³Including Awsa and Afambo weredas in Awsa awraja , Wollo province.

