HIGHLIGHT ON THE HISTORICAL EVOLUTION OF ETHIOPIA'S POPULATION: GROWTH, DISTRIBUTION AND DIRECTION OF POPULATION CHANGE

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1. DEMOGRAPHIC HISTORY

Despite a long history of civilization we can only trace the population estimate of the country with reasonable accuracy since 1930. Prior to 1930 data were fragmented which were based on general observation by travelers like Alvarez in the 16th century and James Bruce at the end of 18th century. These travelers attempted to estimate the size of population of few towns. Estimates of population for the total country is, however, available since 1930 from various sources and are summarized in Table 1 and Table 2 below.

From the sources summarized below for the period 1930 - 1938 the population estimate was as low as 7.5 million by the Italian sources and as high as 15 million from other sources. The most authentic data emerged in the 1950's with Mesfin Woldemariam's estimate for 1957. He could be considered as the pioneer scholar who laid the foundation for the study of population in the country. His estimate of Ethiopia's population for 1954 stood at 23.4 million and assuming a 2% growth rate per annum, the estimated population he arrived for 1957 was 24.6 million. This was higher than C.S.O estimates for 1962 by 14.4%. Other sources including the UN and the US Bureau of the census were based on secondary data. They relied originally on official sources basically supplied or submitted by the planning Board and C.S.O. Thus previous population estimates relied heavily on historical, anthropological and administrative studies. Modern statistical data collection was introduced in the 1960's where CSO/CSA conducted two major National sample surveys followed by many other surveys in the intervening period. The result of these surveys served as the primary data for administrative, planning and research purposes until the first population census of 1984. According to the population census of 1984 the recorded population stood at 42.1 million. The second and the latest census conducted in 1994 give a figure of 53.4 million. CSO, using the results of 1984 population census, reconstructed the population using reverse projection method. The same procedure was used in this study to reconstruct the population using the 1994 population census results since 1990 and projections to year 2000 for the purpose of this research. The result of the two reconstructions are shown in Table 3 for purpose of comparison.

Table 1. Population Estimates 1930-1967

Period	Original Source	Estimated population (in million)
1930	William Makin & general Fuller	7-15
	Herman Nordea	10
	Stuart Emery	12
1932	Gotha Almanak	12
	Taverna & Zervos	15
1938	Encyclopedia Britannica	12 (Includes Eritrea)
	Guida del Africa Orientale Italiana	7.5 (Includes, Eritrea & Somalia)
1950	Planning Board	17.8
	UN Demographic Year Book	16.3
1955	UN Demographic Year Book	18.0
1956	Planning Board	19.5
1957	Mesfin Woldemariam	24.6
	Planning Board	20.7
	UN	20.1
1962	C.S.O	21.5
1967	C.S.O	22.6

Source: CSO(1987) compiled from "Population Situation in Ethiopia 1900-2000." presented at Population and Development Planning Seminar," organized by the Office of Population and DRTC of Addis Ababa University.

Table 2. Population Estimates 1970 - 1984 and 1994

YEAR	1970	1975	1980	1984	1994
UN	25.5	28.8	31.5	35.6	
US Bureau of Census	25.3	28.2	27.8	32.7	
CSO /CSA	24.3*	27.4*	32.7*	42.1**	53.4***

* Not revised or adjusted on the basis of census results
** Result of 1984 Population Census
*** Result of 1994 Population Census

According to the reconstructed population based on the 1984 population census results, the estimated population for 1960 approximates that of Mesfin Woldemariam's estimate although his estimate is higher than the 1960's reconstructed estimate by 4.2% (1 million). The previous 1960 CSO or Planning Board estimate of 20.7 million is 87.6% of the reconstructed population. In otherworlds the reconstructed 1960 population is higher than the previous estimate by 13%. The reconstructed population based on the 1994 census result was invariably lower by an average of 6.3%. This could probably be attributed to overestimate of 1984 census and underestimate of 1994 census. It could also be attributed to the loss of Eritrea's population which constituted roughly 6.3% of Ethiopia's population, because the 1984 census includes Eritrea whereas the 1994 census excludes it following its sovereignty in1991. According to the reconstructed population, the 1960 CSO or Planning Board estimate of 20.7 million is 93.2% of the reconstructed population. This implies that the reconstructed population is higher than the CSO 1960 estimate by 7%. Nevertheless the results of the population

census of 1994 would serve as a basis for planning, administrative purposes and research in the years ahead because the data is cross-tabulated according to the current eleven political regional state governments.

Table 3. Reconstructed Population Based on 1984 and 1994 Population Census Results 1900-2000

Period	Growth rate	Year	Reconstructed population in million based on 1984 census*	Reconstructed population in million based on 1994 census**	Ratio (1984/1994)
1900 - 1905	0.2	1900	11.8	11.1	1.063
1930 - 1935	1.2	1930	14.4	13.5	1.066
1950 - 1955	2.0	1950	19.2	18.1	1.061
1955 - 1960	2.1	1955	21.2	19.9	1.065
1960 - 1965	2.2	1960	23.6	22.2	1.063
1965 - 1970	2.3	1965	26.3	24.7	1.065
1970 - 1975	2.3	1970	29.5	27.8	1.061
1975 - 1980	2.6	1975	33.1	31.1	1.064
1980 - 1985	2.8	1980	33.7	31.7	1.062
		1984	42.2	39.7	1.063
1985 - 1990	2.9	1985	43.3	40.8	1.061
1990 - 1995	3.0	1990	50.1	47.2	1.061
		1994	56.3	53.4	1.054
1995 - 2000	3.1	1995	58.1	54.6	1.064
		2000	67.5	63.5	1.063

Source: * CSA estimate. ** Author's estimate.

2. REGIONAL POPULATION DISTRIBUTION

2.1. Spatial Distribution

Following the downfall of the Derg regime, the EPRDF-led Ethiopian government delineated the country in to nations and nationalities based on ethnic, linguistic and other relevant cultural criteria. Thus eleven regional state governments were formed in accordance with proclamation No.7/1992 which constitute the new Ethiopian map excluding the newly established sovereign state of Eritrea. The second and the latest population census as mentioned earlier was conducted in 1994. The data is available according to the new regions. According to this census the total population count stood at 53.4 million. The regional spatial population distribution is set out in Table 4.

Table 4. Population Spatial Distribution According to the New Regional State Governments, 1994 census

Region	Population* (in 1000)	% (Percentage)	Spatial ** coverage km²	% coverage	Population density persons/km²	% urban
Tigray	3136.0	5.87	50,843	4.60	61.7	14.9
Afar	1060.5	1.98	85,107	7.70	12.5	7.5
Amhara	13834.2	25.86	151,423	13.70	91.4	9.1
Oromiya	18738.5	35.04	353,690	32.00	52.9	10.5
Somali	3198.5	5.98	261,952	23.70	12.2	13.7
Benshangul Gumuz	460.4	0.86	50,843	4.60	9.1	7.8
SNNP	10377.0	19.40	121,581	11.00	85.4	6.8
Gambella	181.8	0.34	28,737	2.60	6.3	15.1
Harari	131.1	0.25	332	0.03	394.9	58.2
Addis Ababa	2112.7	3.95	442	0.04	4779.8	100.0
Dire Dawa Adm.	251.8	0.47	332	0.03	758.4	68.8
Total	**53477.2**	**100.00**	**1,105,281**	**100.00**	**48.4**	**13.7**

Source: * CSA (1998) The 1994 Census Result at country level, Addis Ababa.
** Compiled and computed from Council of Oromiya, (1997) condensed physical geography of Oromiya, Planning & Economic Development Bureau (Estimated from map of Ethiopia in accordance to proclamation No. 7/ 1992).

According to the data on Table 4, Oromiya constitutes 18.7 million (35%) followed by Amhara National Regional State 13.8 million (25.8) of the total population. Southern Nations, Nationalities, and peoples Region (SNNP) stands third in its rank in population size of 10.4 million constituting 19.4 % of the total population and Somali National Regional State ranks fourth in terms of population size with a population of 3.1 million constituting roughly 5.9% of the total population. The spatial coverage/distribution however reveals a different picture. The country in terms of area constitutes 1.11 million km² of which Oromiya covers 353,690 km². This constitutes 32% of the total land area. The spatial coverage is followed by Somali Regional State covering 261,952 km² (23.7%) of the total area. The third and fourth Amhara National Regional state and the Afar Regional State constitute 13.7% and 7.7% respectively of the total land mass. In terms of population density the Amhara National Regional State is the most densely populated region with an average of 91 persons per km² roughly twice the national average of 48 persons per km². SNNP, Tigray and Oromiya rank the second, third and fourth in terms of population density with 85 persons per km², 61 persons per km² and 52.9 persons per km² respectively. The most sparsely populated region is the Gambella people's Regional State with a population density of 6 persons per km² followed by Benshangul Gumuz Regional State with a population density of 9 persons per km². Other sparsely populated

regions include the Afar and the Somali Regional States each with an average of 12 persons per km^2.

2.2. Rural Urban Distribution

There is a fundamental problem with many countries regarding the concept and measurement of urbanization. There is no single criterion for distinguishing between the rural and the urban. Egypt for instance considers all capitals of the provinces and districts as urban. There are some countries as well, which categorize localities according to the choice of the local population. Some countries for example like Kenya, Zaire, Angola, Swaziland and Liberia, adopt population size of 2000 and over as urban. Whereas Ghana adopts a population size of 5000 and over and Nigeria a population size of 20,000 and over. ECA recommends localities with population size of 2000 and over to be designated as urban and localities of 100,000 and over as city population and localities with 500,000 and over as big city population localities. The definition, however, includes some localities which are rural in character. If the minimum population size criterion in defining urban is not accompanied by the availability of services such as electricity, piped water supply, medical facilities, non agricultural activities and employment, the distinction between rural and urban becomes unclear. Thus the population size criteria may not be adequate.

No matter what the appropriate definition of urban, the country has adopted the ECA recommendation of a population size criterion with a cut off point of 2000 and over. According to the 1994 population census results, out of the total population of 53.4 million, 7.3 million people reside in urban areas. This constitutes 13.7% of the total population. This implies that Ethiopia's level or rate of urbanization is far below the African average of 27.8% in 1980. Ethiopia's current level of urbanization has been achieved by African average in 1948 whereas for Eastern Africa this level was achieved in 1978. There is a lag of twenty to fifty years to achieve the level of urbanization of the average African country.

Regional pattern of level of urbanization indicate that Gambella peoples Regional State records the highest level of urbanization of 15.1% followed by Tigray National Regional State of 14.9%. The third and the fourth rank in the level of urbanization are Somali Regional State (13.7%) and Oromiya 10.5% respectively. The least urbanized is the Benshangul Gumuz National Regional State with a level of urbanization of 6.8%.

The four largest towns in terms of population size are Addis Ababa with a population of 2.15 million followed by Dire Dawa (164,851), Dessie with a population of (97,314) and Harar with a population of (76,387). The city of Addis Ababa generally overshadows other towns. Addis Ababa city comprises 29.5% of the total urban population. This indicates a large proportion of urban population concentrating in one city. The total population of the city is approximately 6.4 times the size of the population of the three next largest towns combined indicating high level of primacy.

There is also prevalence of level of primacy in the Regions with the Regional capitals overshadowing disproportionately in terms of population size and socioeconomic indicators. Urban growth rates computed from population projections for the country indicate an average annual growth rate of 4.6%, this approximates the average annual growth for Africa for 1995 - 2000. Comparison of the level of urbanization and urban growth rates as published in the Revised 1994 World Urbanization Prospects illustrate the following. The level of urbanization of least developed countries is expected to increase from 12.6% in 1970 to 21.9% in 1997 and 43% in year 2025. Whereas Africa's direction of change for level of urbanization indicate an increase from 84 million (23%) in 1970 to 240 million (33.9%) in 1994 and to 804 million (53.8%) in the year 2025. According to this data Ethiopia's 1994 total population constitute 7.5% of the total Africa's population and the urban population constitute 3% of Africa's urban population. According to the trend of the level of urbanization of least developed countries Ethiopia falls by a lag of an average of 21 years whereas compared to Africa's average it lags by an average of 44 years. The current Ethiopia's level of urbanization approximates the level of urbanization achieved by Africa, on average, in 1950. As regards urban growth rates the same data indicate an average annual urban growth rate of 4.9% between 1965-1970 and 4.7% between 1990–1994. Offical government data also fall in that range.

The contribution of rural-urban migration to this growth stands at an average of 40% to 48%. Both the push and the pull migration theory is at work in the Ethiopian context. Heavy Rainfall and floods, soil erosion, lack of rainfall and drought, recurrent famine, depleting arable land against increasing rural population and the absence of employment outside agriculture has created a stagnating and worsening situation in rural areas and thus has created a stimulus to migrate to the towns. The pull factor however provides a stronger stimulus. Aspiration for wage employment, for better education, health facilities and general aspiration of city life form the main motive for migration by the rural youth and adult population. They may be temporarily stranded but they may survive through casual labor or through support of extended families, friends and relatives. Even under tense depressing situations rural urban migrants opt to remain in the towns because of the intuitive understanding and feeling that things will improve and inner feelings of hope and assimilation with the town population and the prevailing conditions. With respect to doubling period of the urban population, the above data reveal a doubling period of 10 to 11 years between 1995-2005 and an increase of doubling period to 15 years between 2000-2020 implying a declining trend of urban growth rates.

Despite low levels of urbanization, urban social and economic problems are rampant, which require policy attention. This include, among others, open unemployment, open and disguised prostitution, high crime rates, in addition to shortage of housing, overcrowded housing, and poor housing conditions and facilities. This is clearly visible in many over-crowed towns in the country. High-income earners and the better off in general are threatened by the situation and the government itself will be threatened when the situation explodes to political unrest.

2.3. Age Distribution of the Population

The age and sex distribution of the population are useful indicators of manpower potential. They also provide crude measures of the dependency load, consumption needs and social requirements in the present and the future. Age distribution is exculsively determined by the past and the prevailing level of fertility and mortality. The contribution of the migration component is virtually negligible at country level. With high fertility and decreasing mortality the age pyramid has a wide base but tapers off rapidly. This pattern is typical of pre-industrial economies. Ethiopia's young age structure in addition to its potential for rapid growth places a high dependency load on the labor force. To highlight the dependency load, a dependency ratio is calculated as the number of persons under age 15 and aged 65 years and over for every 100 persons aged 15-64 giving a rough indication of how many persons are economically supported by each 100 persons who are economically active. For purposes of comparison dependency ratio for developed and developing countries are compiled and shown in the next table.

Dependency Ratio per 100 (1995–2025) (Total Dependency Ratio and Young Age Dependency Ratio)

	Ethiopia		Developed countries		Developing countries		Africa	
Year	Total	Age 0-14	Total	Age 0-14	Total	Age 0-14	Total	Age 0-14
1995	96.1	90.5	50.8	30.2	66.2	58.4	92.1	86.3
2000	96.9	91.3	50.7	30.1	64.9	56.6	90.3	84.4
2005	95.5	89.9	51.1	29.3	61.6	53.0	87.4	81.5
2010	91.8	86.3	50.8	28.6	57.3	48.4	83.1	77.3
2025	70.5	64.9	58.0	28.2	51.0	38.9	63.7	57.0

Source: UN (1991) World Populaion Prospects 1990.

The above table illustrates that in 1995 in Ethiopia there were about 4 or 4.5 persons dependent for every 5 persons in the working age. Comparison with the developed countries indicate 3 dependents for 10 persons in the working age or 1.5 persons dependent for every 5 persons in the working age group. Population forecasts indicate an improvement in the dependency burden in year 2025 when the number of dependents will decrease from 4.5 to 3 persons per 5 persons in the working age. Whereas the dependency load in developed countries will decrease from 1.5 to 1.4 persons per 5 persons in the working age group. The dependency burden of developed countries will remain at low and constant level. High dependency load is bound to create economic crises. Limited domestic resources will be allocated for social expenditures providing education, health, housing and other urban services. The country would thus be left to look for foreign sources of finance, multilateral and bilateral loans to finance its capital projects. This situation pushes the country to enter in to insurmountable debt problem due to problem of unsustainable economic growth.

2.4. Ethnic Distribution of the Population

Although the prevalence of more than hundred ethnic groups were identified in historical, anthropological, ethnological and linguistic studies hitherto conducted, numerical size of these ethnic groups was not established. The earliest data available refer to the results of rural demographic survey of 1981 carried out in twelve regions. Eritrea and Tigray were excluded from this survey. According to this survey the 1981 total population size reported for the twelve regions was 25.7 million. 39.9% of this population constituted the Oromo population followed by Amhara 30.5% whereas Gurage consitituted 4.5% of the enumerated population followed by Sidama 4.1%, and Wolayita 3.7%. Other ethnic groups were minority ethnic population constituting each less than 1% of the population. Furthermore, the results of the 1981 rural demographic survey regarding the relative distribution of the Amhara and Oromo population over twelve regions indicate that Arsi, Bale, Harrarghe, Illubabor and Wellega regions were inhabited by 80% -90% Oromo society. Whereas Keffa and part of Shoa comprise 40%-50% Oromos. Gojam and Gondar were predominately inhabited by the Amharas constituting 80%-90% of the population. Out of shoa rural population 25% were Amharas and the Amharas of Wello constituted 68% of the total rural population of the region as evidenced by the survey.

The latest and probably the most reliable ethnic distribution of the population refer to the results of the 1984 & 1994 population census. The result of the two censuses is summarized in the table below.

Before analyzing the table the following note is made concerning The Tigrean ethnic population. The 1984 Population census recorded Tigrean Ethnic group or Tigrean ethnic population as 4.1 million whereas the 1994 census recorded the Tigrean ethnic population as 3.2 million which is significantly lower than the 1984 census. This doesn't make sense. Thus the Tigraway ethnic group or the Tigrean ethnic population of 1984 has been adjusted as follows. To the population of Tigray in 1984 recorded as 2.4 million, was added 1% of the total urban population assuming 1% of urban population of 1984 as Tigreans residing outside Tigray regional state giving the Tigray ethnic group as approximately2.5 million.

Extending this analysis from the above table the following evidence is being established. The Oromo ethnic group increased from 12.4 million in 1984 to 17 million in 1994, an increase of 4.7 million over ten year period. The relative proportion out of the total population increased from 29% to 32%. By the same analysis, the Amharas increased from 12 million in 1984 to 16 million in 1994 census, an increase of 3.9 million over a decade. The relative proportion increased from 28% in 1984 to 30% in 1994. The Tigrean population identified as Tigraway increased from 2.5 million in 1984 to 3.3 million in 1994 with an increase of roughly 824 thousand people over ten year period. The relative distribution increased from 5.8% in 1984 to 6.2% in 1994. For the country as a whole the increase of population over 10 years is approximately 10.5 million. 44.8% of the increase is contributed by the Oromo ethnic group whereas the Amhara population contribute to 37% of the

increase. The Tigrean population contributed to 7.6 % of the increase. And since the Amhara and the Oromos combined constitute 62% of the country's population and both ethnic groups contribute to 82% of the increase, it is thus logical to assume the future trend in size and growth of the country's population will be significantly determined by the two ethnic groups in conjunction with the social, economic and population policies that will be implemented in the future.

Numerical and Percentage Distribution of the Country's Population by Major Ethnic Groups 1984 and 1994 censuses

Ethnic group	1984 census		1994 census		Population Change over 10 years (Increase or Decrease)
	Number	%	Number	%	
Oromo	12,387,664	29.06	17,080,318	32.15	4,692,654
Amhara	12,055.250	28.28	16,007,933	30.13	3,952,683
Tigraway*	2,459.699	5.77	3,284,568	6.18	824,869
Gurage	1,855.905	4.35	2,290,274	4.31	434,369
Somalie	1,613,394	3.78	3,160,540	5.95	1,547,146
Sidama	1,261,721	2.96	1,842,314	3.47	580,593
Welayta	1,092,958	2.56	1,269,216	2.39	176,258
Hadiya	643,512	1.51	927,933	1.75	284,421
Affar	583,120	1.36	979,367	1.84	396.247
Agew	489,834	1.15	555,231	1.06	65,397
Other Ethnic group	8, 173, 844	19.22	5, 734,582	10.77	- 2,439,262
Total	**42,616,897**	**100.00**	**53,132,276**	**100.00**	**10,515,375**

Source: CSA(1989&1997) Analysis of 1984 &1994 Census Results.
* The 1984 Census/delination of Tigraway includes Tigrigna speakers of Eritrean origin.

3. COMPONENTS OF POPULATION CHANGE

The three determinant demographic factors or variables that influence and determine the direction and level of population change are the level of fertility, mortality and international migration. Evidence at country level show that the contribution of net international migration to population change or growth has been and is negligible. Thus population prospects or trends, will largely depend on the trends of fertility and mortality. Fertility, mortality and average annual growth rate of population as depicted in the 1994-population census are summarized in Table 5.

Table 5. Estimates of Fertility, Mortality, Population Growth and Average Household Size by Region.

	Mortality				Fertility			
Region	IMR per 1000 live births	Child mortality per 1000	Life expectancy at birth in years (both sexes)	Crude death rate per 1000 population	Crude birth rate per 1000 population	Total fertility rate (TFR per woman)	Average household size	Population growth rate (%)
Tigray	123	181	49.6	16.2	44.7	6.7	4.3	2.9
Afar	118	174	50.3	13.2	37.1	6.2	5.7	2.4
Amhara	116	170	50.8	15.2	43.8	6.5	4.5	2.9
Ormoiya	118	173	50.4	15.5	46.4	7.0	4.8	3.1
Somali	96	137	54.8	11.2	37.0	6.3	6.6	2.6
Benshangul Gumuz	139	206	46.8	17.3	43.0	6.3	4.5	2.6
SNNP	128	189	48.6	16	48.6	6.9	4.7	3.3
Gambella	99	142	54.2	10.3	36.5	4.6	4.5	2.6
Harari	113	166	51.4	14	37.2	4.6	4.3	3.5
Addis Ababa	78	109	58.4	8.3	20.4	2.1	5.1	2.9
Dire Dawa	115	168	51.1	13.5	38.9	4.9	4.7	4.0
Total	**116**	**171**	**50.7**	**14.9**	**44.2**	**6.5**	**4.8**	**2.9**

Source: CSA (1998) 1994 Population Census Result at Country Level, Addis Ababa.

According to the estimates shown in the table above the following conclusions can be inferred.

3.1 Mortality

Infant mortality rate stands at an average of 116 per thousand population for the country as a whole. Three regions record infant mortality rate well above the average for the country. These include Benshangul Gumuz, SNNP and Tigray with the highest peak of 139 per thousand for Benshangul Gumuz. Average infant mortality rate for the country according the UN data for 1990-1995 stands at 132 per thousand population. This tallies approximately with findings of three regions of high record of infant mortality. Comparisons of Infant mortality with the rest of the world are indicated in Table 6.

Table 6. World Infant Mortality 1985 - 90 & 1990 - 1995

	1985-1990	1990-1995
World average	68	62
Developing counties	76	69
Africa	103	95
East Africa	115	108
Western Africa	111	102

Source: UN (1993) World Population Prospects, the 1992 Revision.

By standards of infant mortality data for the world and for Africa, Ethiopia stands, among the highest in the world. Although advances in medical science and capital investments in health services could bring down infant mortality rate, there are other factors which could prevent increase of infant mortality if efforts are made to influence them at policy level. These include:

a) Low level of socioeconomic status of women which perpetuate high fertility in compensation of high infant and child mortality.
b) Low level or degree of urbanization and availability of urban services.
c) Women and child health services which promote personal hygiene.
d) Improvement in the supply of safe drinking water

Expectation of life at birth (life expectancy at birth)

Life expectancy measures indirectly the level of mortality as measured by crude death rates and infant mortality rate. Low level of life expectancy implies high level of mortality condition and vice versa. According to the data in review, average life expectancy at birth for both sexes stand, at 50.7 years for 1994 with the highest for Addis Ababa city Administration, Somali and Gambella regions above the average and as low as 46.8 years for Benshangul Gumuz. The future prospects of improvement in life expectancy at birth depends on morbidity and mortality influencing population policies. With respect to reducing morbidity, impacts of infectious, parasitic diseases as well as other public health programs must be assessed and addressed to enable significant reduction in mortality. Table 7 provides comparisons of life expectancy with the rest of the world.

Table 7. Life expectancy at birth for the world 1985 - 90 and 1990 - 1995

	1985-1990	1990-1995
World average	63.3	64.7
Developing countries	60.7	62.4
Africa	51.7	53.0
Eastern Africa	48.8	49.0
Western Africa	49.3	51.1

Source: UN (1993) World population Prospects, the 1992 revision.

In light of the above figures Ethiopia's mortality level as depicted by the average life expectancy at birth is far below the average for the developing countries but falls closer to Eastern and Western Africa. Regarding future prospect of average life expectancy at birth an optimistic assumption of 0.2 years annual increase would increase from 50.7 years in 1994 to 51.9 years in year 2000. This means an average life expectancy at birth that has been reached by Africa on average in 1985 - 1990, Ethiopia would reach it in year 2000 with a lag of ten years.

3.2. Fertility Level

The best measure of Fertility level is the total fertility rate which is easily computed by the number of births in the calendar year to mothers in each age group from age 15 to the end of the reproduction period. It is expressed either for 1000 women or for a woman. The 1994 population census data for Ethiopia reveals that 6500 children were born to 1000 women if they survived to the end of their reproductive age or 6.5 children per woman.

The meaning is plain. The highest TFR recorded in the census was observed for Oromiya (7.0), SNNP (6.9) followed by Tigray (6.7). Comparison of TFR levels with the rest of the world is illustrated in Table 8.

Table 8. World Fertility Level by TFR for 1985-90 and 1990-1995

	1985-90	1990-1995
World average	3.43	3.26
Developing countries	3.90	3.64
Africa	6.25	6.00
Eastern Africa	6.86	6.76
Western Africa	6.85	6.53

Source: UN (1993) World Population Prospects, the 1992 Revision.

In light of the above figures Ethiopia's fertility is in the high range, approximates Western and Eastern Africa average but is higher than the average for Africa as a whole.

3.3. Trends in Fertility and Mortality

To be able to assess the direction and the pace of change with respect to fertility and mortality, data hitherto available were assembled. These set of data refer to the1970 National Sample Survey 2nd Round, 1981 Demographic Survey, the 1984 and the 1994 population census. Estimates produced from these data are set out in Table 9

Table 9. Trends in Fertility and Mortality 1970-1994 at Country Level

	(a) Mortality			
	1970	1981	1984	1994*
Crude death rate 1000 population	20.0	17.9	15.2	14.9
Infant mortality rate per 1000 live births	153	139	110	116
Life expectancy at birth (both sexes) in years	43.9	46.9	51.9	50.7
	(b) Fertility			
Crude birth rate per 1000 population	42.8	47.6	46.4	44.2
Total fertility rate (TFR) (Number of births per woman)	**5.8**	**6.8**	**7.0**	**6.5**

Source: CSA (1988) Population Studies Series No.1 & No.2 Addis Ababa.

Examining the mortality trends between 1970 and 1984 and between 1984 and 1994 illustrate the following. Expectancy of life at birth consistently increased form 43.9

years in 1984 to 51.9 years in 1994 indicating an increase of 8yrs over 14yrs period with an average annual increment of 0.57yrs. This is due to the fact that crude death rate declined from 20 per thousand in 1970 to 15 per thousand in 1994 i.e. 25% decline whereas IMR (Infant mortality rate) declined from 153 per thousand to 110 per thousand, a 29% decline relatively higher than crude death rate decline. The disturbing mortality trend situation occurred between 1984 and 1994 where life expectancy at birth declined from 51.9yrs to 50.7yrs with an associated decline of crude death rate from 15.2 per thousand to 14.9 per thousand with an 8% decline. By the same analysis IMR increased from 100 per thousand in 1984 to 116 per thousand in 1994 giving an increase of 5.5 %. It's difficult to explain these statistics at face value, this could be attributed to data collection error or to estimation method. Whatever the case expectancy of life at birth of 50.7 years as depicted for 1994 can reliably reflect the current social and economic situation. Thus the 1994 life expectancy at birth can tentatively be taken as correct or reliable base figure until future post census surveys prove or disprove this base figure.

Fertility levels depicted by TFR does not show a systematic pattern. An increase from 5.8 in 1970 to a peak of 7.0 in 1984 to a trough of 6.5 in 1994 is observed. Given the prevailing socioeconomic conditions accompanied by cultural factors, the 1994 estimate of 6.5 children per woman can be taken to approximate a reliable estimate that depict the prevailing situation.

4. PHASES OF POPULATION GROWTH AND POPULATION PROSPECTS

4.1. The Phases of Population Growth is Summarized in Table 10 below

Table 10. Past and Future Phases of Population Growth

	Crude birth rate (1000)	Crude death rate (1000)	Growth rate %	Total fertility rate (TFR)	Average life expectancy at birth (both sexes) (years)
		Phase 1: 1950-1955 to 1985-1990			
1950-1955	52.3	31.9	2.04	6.7	33
1985-1990	49.5	20.0	2.91	6.7	44
Change	-2.8	-11.9	+0.87	0.0	+11
		Phase 2: 1985-1990 to 1995-2000			
1985-1990	49.5	20.0	2.92	6.7	44
1995-2000	44.0	15.0	2.92	6.5	52
Change	-5.5	-5.0	+0.00	-0.2	+8
		Phase 3: 1995-2000 to 2025-2030			
'1995-2000	44.0	15.0	2.92	6.5	52
2025-2030	25	6	1.85	3.3	66
Change	-15	-9	-1.07	-3.2	+14

Source: Compiled from UN (1993) World Population Prospects, the 1992 Revision and CSA (1988), The 1994 Population Census results at country level.

Ethiopia's population growth since 1950's is characterized principally by three phases. Phase 1 covers the period 1950 to 1990. This period is characterized by rapid population growth. An increase of population growth from 2% in 1950 to 2.9% in 1990 for a total increase of 43% over four decades. This has resulted from a rapid decrease in mortality as depicted by the trend in the crude death rate. That is a decline from 32 deaths per 1000 to 20 deaths per thousand persons indicating a 27% decline in mortality. The fall or decline in mortality is manifested in the increase in average life expectancy at birth from 33 years in 1950 to 44 years in 1990, an increase of 11 years in 40 years. This implies average annual increment of 0.28 years. This phase is essentially mortality induced or driven. The second phase covers the period 1985 to 2000. This period is a continuation of high population growth remaining stable at around 2.9%. Beyond 1995 that is the period 1995-2030 the prediction is for a faster decline in crude birth rate, that is a fall of crude birth rate from 44 births in 1995 to 25 births per 1000 in year 2030 indicating a 43% decline over the period. With respect to total fertility rate however, a faster decline is observed. That is a decline of TFR from 6.5 children per woman in (1995 -2000) to 3.3 children per woman in year (2025 - 2030) indicating a 49% decline. This is manifested in the decline of population growth rate from 2.9% to about 1.9% indicating a 34% decline. This phase in a parallel manner can be described as both fertility and mortality driven because the average annual increment in life expectancy rises from 0.28 to 0.47 years enabling average life expectancy at birth to reach 66 years in year 2030.

4.2. Population Prospects

For purposes of analyzing population prospects two sets of tables are used, i.e. Table 3 and Table 11. Table 3 refers to population reconstruction to 1900 based on 1994 census for the purpose of this research and Table 11 refers to CSA's population projection based on 1994 census. For comparison purposes, CSA's population projections based on the 1984 Population Census is incorporated in table 11.

The following inferences could be made from the analysis of the tables. CSA's projections based on 1984 census were invariably higher than projections prepared based on 1994 census. The variation was 3.1% higher in 1994 to 9% for the year 2000 and 22.9% higher than the population forecast for 2020. As regards the level of urbanization, the first projection envisaged an increase in level of urbanization from 15.7% in 1994 to 29.3% in year 2020, whereas the second and the latest population projections, based on the 1994 census, envisages an increase in level of urbanization from 13.7% in 1994 to 19.9% in year 2020. Population reconstruction based on 1984 census was also on the high side. Thus, CSA's new projections and the population reconstruction prepared for this research is assumed to be reliable and is therefore analyzed hereafter.

Table 11. Comparison of Two sets of CSA Projections 1995-2020, one based on 1984 Census Result and the other based on 1994 Population Census Result

	Based on 1994 Census*			Based 1984 Census **			
Year	Total population (in 1000)	Urban population (in 1000)	% urban	Total population (in 1000)	Urban population (in 1000)	% urban	1984 Census Projection divided by 1994 Projection (%)
1994	53,447	7,322	13.7	55,115	8,646	15.7	3.1
1995	54,649	7,587		56,879	8,751		4.1
1996	56,372	7,950		58,716	9,288		4.2
1997	58,117	8,315		60,681	9,897		4.4
1998	59,882	8,691		62,737	10,545		4.8
1999	61,672	9,074		64,850	11,200		5.2
2000	63,495	9,474	14.9	67,003	11,850	17.7	5.5
2005	73,004	11,675	15.9	79,670	16,085	20.2	9.1
2010	83,483	14,351	17.2	94,612	21,577	22.8	13.3
2015	94,526	17,479	18.5	111,583	28,865	25.9	18
2020	106,003	21,077	19.9	130,345	38,168	29.3	22.9

Source: *CSA (1998) The 1994 population census result at country level

Population prospects indicate that the number of population grew from 11.1 million in 1900 to 22.2 million in 1960. It took 60 years to double. The population reached 44.4 million in 1988, this implied a 28 years time required for the second doubling period. The third doubling period of 88.8 million is expected to be reached in year 2012– a doubling period of 24 years. The trend indicated a declining pattern in the number of years to double.

5. CONCLUSIONS AND POLICY IMPLICATIONS

Data relating to fertility and mortality and therefore to population change used in the foregoing analysis were the major multi-purpose socioeconomic and demographic surveys conducted up to the 1960's in addition to the 1984 and the 1994 population census. Demographic indicators computed or estimated from these data are still far from satisfactory. Ethiopia is still statistically underdeveloped in terms of providing reliable quantitative information. Despite limitations of data the following conclusions could be drawn. The country is experiencing rapid population growth which is an outcome of high fertility but declining mortality. The decline in mortality has been the outcome of advances in medicine and control of epidemics rather than major improvement in social and economic conditions because one could observe there has not been significant rise in per capita income to justify such a betterment. The socioeconomic changes that characterized Western Europe in the 19th century during the period of demographic transition is not repeated in the least developed

countries of which Ethiopia is not an exception. Thus Ethiopian policy makers and planners are aware of the negative consequences of rapid population growth on the Ethiopian economy. In addition to the problem of population, the country's economy is beset by lack of domestic finance. It relies heavily on foreign multilateral and bilateral loans for financing its capital investment which is subject to delay of disbursement of financial outlay, high interest rate and other loan commitments. In addition to scarcity and limited finance, trends of National and Regional budget allocation indicate that the recurrent budget is invariably greater than the capital budget and at times funds are diverted or reallocated from capital budget to finance social expenditure creating serious budget imbalance and deteriorating economic development efforts. Moreover the country relies heavily on output from the agriculture sector. The sector is predominantly beset by backward technology, limited trained human resource, unpredictable climate conditions and recurrent famine. Understanding this situation the government has adopted and launched population policy as part and parcel of the economic development package with the objective of harmonizing the growth of population and the growth of the economy.

The impact of this population policy will not be felt in the short run. It is important therefore that population policy implementation should be uninterrupted process and should be monitored and evaluated periodically. In addition, along with population policy necessary economic and social reforms must be introduced. Moreover, the selection of capital investment projects, monitoring and evaluations must also be improved.

To summarize, in order to achieve sustainable development it is essential to incorporate the population factor in development planning. It is thus important to concretely formulate fertility and mortality influencing population polices, migration and urbanization, women in development polices (WID) with a broad based structure covering uniformly the whole country to enable to monitor the growth of population in tune with the growth of the economy. Along this line, government efforts must also be made in areas of improving data collection and processing requirement for purposes of population planning and socioeconomic development plans. This question is important and need to be addressed consistently and periodically to enable monitoring and evaluation of economic plans.

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