CHAPTER SEVEN

POPULATION OF ETHIOPIA AND THE HORN

7.1. Introduction

Human beings are producers and consumers of wealth from natural resources. In their interaction with nature for a living, humans both develop and destroy their environment. Human population can be considered as a point of reference from which all the other elements are observed, and from which they all, derive their significance and meaning.

Many disciplines like Geography, Demography, Economics, Epidemiology, Sociology and many more study human population. Their differences lie in the methodologies they employ and the aspects they emphasize. Since Geography is basically the study of regional/areal differences in the distribution of natural and cultural phenomena, the study of population in Geography aims at showing and explaining regional/spatial differences on population distribution and densities, population numbers, human-environment interactions, population dynamics (fertility, mortality and migration), as well as population characteristics and qualities (age, sex, education and health composition etc.).

Population numbers, dynamics, densities, characteristics and qualities vary in space. These variations can be studied at different levels: district, provincial, regional, national, continental and global. The concern, in our case, is to study the densities, characteristics and some qualities of the population of Ethiopia and some neighboring Horn countries.

7.2. Population Data: Uses and Sources

Regular and reliable population data are vital for effective socioeconomic development planning and administration. Such data are needed to plan for the provision of infrastructures such as schools, hospitals, roads, water and sewerage facilities, housing, establishing voting district boundaries, estimating future tax revenue and designing public programs. Hence, demographic data are crucial to administrators, businessmen, researchers, academicians and planners. The population of a country is an agent as well as a beneficiary of any planned socio-economic development undertaken. Therefore, it becomes inescapable to have population information as the demography influences production, distribution, consumption, defense and administrative services at any administrative or natural unit considered.

There are three conventional sources of obtaining population data namely census, sample survey and vital registration.

A. Census

A census could be defined as the total process of collecting, compiling and publishing demographic, economic and social data pertaining at a specified time (s) to all persons in a defined territory. Its major characteristics include:

- Universality: inclusion of all persons in a given area during the count,
- Periodicity: census undertaking at regular time intervals with reference to a defined point of time usually 10 years and 5 years,
- Simultaneity: undertaking census in a very limited time duration called the census day/night,
- Government sponsorship being an expensive endeavour, and publication

There are two procedures for collecting census data: dejure and defacto approaches

- **Dejure approach**: it involves counting people according to their usual place of residence (where he/she lives most of the time). This system gives a picture of the total permanent population of an area thereby making it suitable for planning and administrative purposes.
- **Defacto approach**: Under this approach each individual is recorded at the place where he/she was found at the time of the census. The defacto enumeration may give enlarged totals to holiday resorts.

B. Sample Survey

This is a method in which a defined population/sample/ is selected with the view that information acquired would represent the entire population. This method is advantageous over census as costs can be greatly reduced; and it is simple to administer and taken much faster. Sampling may also be used with censuses in order to obtain more detailed information to supplement census data. However, sample surveys have the inherent weaknesses related to sampling errors and inadequate coverage thereby demanding caution in their undertaking.

Data from most censuses and sample surveys include geographic location, age, sex, marital status, citizenship, and place of birth, relationship to the head of household, religion, educational characteristics, occupation, fertility, income, language, ethnic characteristics, disabilities and migration.

C. Vital Registration

Vital registration is a system of continuous, permanent, compulsory and legal recording of the occurrence and the characteristics of vital events like births, deaths, marriages, divorces, and adoptions. Vital registration data tend to be more precise than that of census/sample survey and the system provides time series data.

Despite the enormous usefulness of population information, it could be noted that population data could suffer from inaccuracy resulting from: poor and inadequately financed methods of collection; poorly trained enumerator; suspicion and

ignorance of censuses and false statements specially of age and income; constant changes in administrations; omission of more inaccessible areas; as well as wide difference in connotation of terms like language, ethnicity, and occupation. The errors are likely to be introduced at the stage of data collection, data processing, analyses and the writing up of the report. As such, the errors need to be detected and all the necessary adjustments made to enhance their usefulness.

7.3. Population Dynamics: Fertility, Mortality and Migration

Introduction

The population of any particular region (country) grows/declines as a result of the combined effect of the three demographic variables: fertility, mortality and migration. Ethiopia is endowed with a large and fast-growing population ranking 2nd in Africa after Nigeria. According to the first ever census return of 1984, the population of Ethiopia was 42.2 million. The estimated rate of growth of the population in 1984 was 2.9 percent. The total population grew to 53.5 million in the second census held in 1994. The country‟s population reached about 73.8 million in 2007. Based on projected data from CSA, Ethiopia has an estimated 2019 population of 112 million, which ranks 12th in the world, and the current growth rate is about 2.6%. The largest part of the population (80%) is rural based. Like many other developing countries, Ethiopia has a youthful population where about 65 percent of the population is below 24 years of age. The population is also unevenly distributed.

7.3.1. Demographic Measurements

In Ethiopia, fertility and mortality are the two principal determinants of population growth as international migration is insignificant. Some of the basic demographic measurements include:

1. **Crude Birth Rate** refers to the number of live births per 1000 population
$$CBR = \frac{Total\,annual\,birth\,rate}{total\,mid\,year\,population} * 1000$$
2. **General Fertility Rate** refers to the total number of live births per women of reproductive age. GFR is a relatively specific measure of fertility as it specifically relates births to women in the reproductive age.
$$GFR = \frac{total\,annual\,live\,birth}{total\,women\,15-49} * 1000$$
3. **Total Fertility Rate (T.F.R.)** refers to the average number of children that a woman would have at the end of her reproductive period if the current age specific fertility rate remains unchanged.
$$TFR = 5\,x \sum_{n=1}^{7} \frac{Bi}{wi}$$

Where, Bi = Total live births in age group i,

Wi =Total number of women in age group I (i =age group i.e. 1= 15-19, 2=20-24 3=25-29, 4
= 30-34, 5 = 35-39, 6=40-44, 7 = 45-49)

4. **Crude Death Rate** refers to the number of deaths per one thousand population in a year

$$CDR = \frac{total\,annual\,death\,rate}{total\,mid\,year\,population} * 1000$$

5. **Infant Mortality rate** refers to the total number of deaths of infants per one thousand live Birth. Infant mortality draws special attention because of its large size and the heavy impact it has on the crude death rate. The 2016 demographic and health survey result showed that infant mortality in Ethiopia has decreased from 97 deaths per 1,000 live births in 2000 to 48 in 2016.

$$IMR = \frac{total\,annual\,infant\,daeth}{total\,annual\,live\,birth} * 1000$$

6. **Maternal Mortality Rate**: refers to death of mothers in connection from pregnancy and birth complications per hundred thousand live birth.

$$MMR = total\,annual\,maternal\,death\,due\,¿\,birth\,complications\,\frac{¿}{total\,live\,birth} * 100{,}000$$

7. **Life Expectancy at birth:** refers to the average number of years that a newly born baby is expected to live. It is used as a summary measure of the mortality experience of the whole population.
8. **Natural Rate of Increase**: is the difference between crude birth rate and crude death rate expressed in percentage.

NRI= (C.B.R. - C.D.R.)

7.3.2. Levels and trends in Fertility and Mortality rates in Ethiopia

Birth and death rates show significant spatiotemporal variation. Clear differences in birth and death rates are emerging between rural and urban areas of Ethiopia. Urban areas have lower birth and death rates compared to rural areas implying that living and health conditions are better and, perhaps, family planning programme is gaining ground. Women in rural areas have an average of 5.2 children, compared to 2.3 children among women in urban areas.

Looking at TFR by region, in 2016 fertility was the lowest in Addis Ababa (1.8 children per woman) followed by Dire Dawa (3.1), Gambella (3.5), and Amhara (3.7); while regions that have TFR rates more than the national average are Somali (7.2), Afar (5.5), Oromia (5.4), and Tigray (4.7). Recently, fertility is showing a declining trend. Total fertility rate (TFR) declined from 7.52 in 1984 to 6.74 in 1994, and currently, women in Ethiopia have an average of 4.6 children.

Similarly, mortality rates are also showing a declining trend. Before 2000, almost all regional states recorded more than 100 infant deaths per 1,000 live births, but by 2011 infant mortality in all regions was lower than 100, except for BenishangulGumuz. Mortality rates also show considerable variation by reigns. In 2016, IMR at the country level was 54 where it was 48 in urban areas and 62 in rural Ethiopia. Accordingly, lower than national average infant mortality rate was recorded in Addis Ababa followed by Somali and Gambella; while higher IMR was recorded in Benishangul, followed by SNNPR and Tigray.

Life expectancy at birth in Ethiopia increased from about 36.7 years in the 1960s to 62.6 years in 2016. Female life expectancy (65.4 years) is about four years higher than male life expectancy (61.2 years). Life expectancy at birth is greater for urban areas than for rural areas. It exceeds the national average in Addis Ababa; while the lowest is in Benishangul- Gumuz (47 years) followed by SNNPR (49 years). The relatively high life expectancy and low infant mortality rates for Addis Ababa may result from relatively easy access to health services.

Comparison of birth and death rates of Ethiopia with some neighboring Horn countries as well as with world countries experiencing the highest and lowest values for the demographic rates, will help us understand where we stand.

Table 7.1: Comparison of Birth and Death Rates and Life Expectancy of Ethiopia with Selected Countries.

Country	**C.B.R**	**C.D.R**	**I.M.R**	**Life Expectancy (Years)**
Ethiopia	36.5	7	49.6	62.6
Kenya	23.9	6	37.1	64.3
Somalia	36.6	11	94	52.8
Eritrea	29.6	7	45	65.2
Djibouti	23.4	8	45.8	63.6
Highest Values	Angola/ Niger= 44.2	Lesotho=15.0	Afghanistan=110	Monaco=89.4
Mali= 43.9		Lithuania=14.6	Somalia=94	Japan=85.3
Lowest Values	Monaco=6.6	Qatar=1.5	Monaco=1.8	Chad=50.6
Japan=7.7		UAE=1.9	Japan=2	Guinea Bissau=51.0

Source: Population Reference Bureau, population data sheet, 2017

As indicated in Table 7.1, there is an obvious difference between developed and developing countries in the demographic rates. All demographic rates are high and life expectancies are low for developing countries. Even among the five neighbouring countries as part of the developing world, Ethiopia's infant mortality rate is higher than Kenya, Eritrea and Djibouti, giving Ethiopia the lowest life expectancy among the counties. It is wise to note that Ethiopia‟s crude birth rate,

crude death rate, and infant mortality rates are about 5.5, 4.7 and 27.5 times greater than the countries that have the lowest crude birth rate, crude death rate and infant mortality rates in the world respectively. People living in the country with the highest life expectancy at a global level live about 27 years more than ours. It is only the war-torn Somalia that has the highest death rate and the lowest life expectancy from our neighbors.

It is also important to note that the difference between developing and developed countries in crude death rates is not as high as the difference in birth rates. The main reason for this is some degree of improvement in medical services in most developing countries during the last few decades. As opposed to declining death rates, birth rates have remained high due to:

- Little family planning practices and lack of population education;
- Lower status of women
- Early marriage, particularly of females;
- Parents consideration of children as assets, though little obliged for their education, health;
- The relatively high infant and child mortality rates, that trigger couples to have more births to compensate for the loses and
- Perhaps religious influences.

Countries of the Horn of Africa have higher population growth rate that exceeds 2.6 percent. Their population is growing faster and annual addition to the total population is enormous. Some of the consequences of this rapid population growth under conditions of slowly growing economy include:

- low per capita GNP
- increased unemployment and under –employment
- mounting social ills such as destitution, begging, theft, prostitution
- continuous inflation that erodes purchasing power of the currency
- shortage of cultivated land and food shortages
- overcrowding of infrastructural and social facilities; housing problems and increase in urban slums and squatter settlements
- Environmental problems such as deforestation, soil erosion, loss of biodiversity and pollution.

7.3.3. Migration in Ethiopia and the Horn

Migration is an old and inevitable phenomenon, although human mobility has accelerated these days as a result of economic and technological progress especially in the fields of communication and transportation. It is considered as a form of geographic mobility involving a permanent or semi-permanent change of residence between clearly defined geographic units.

An assessment of human mobility is pivotal for its diverse effects. Some of the multifaceted implications of migration are indicated hereunder:

- Migration yields an increased level of urbanization;
- It enhances rural-urban linkages in creating an integrated economy
- It influences spatial population distribution
- Migration negatively influences human fertility and mortality patterns and levels; and affects age and sex composition of the population.
- It is a means of achieving economic efficiency.
- It can also be a cause and consequence of inequality and unequal development
- It is regarded as a cause and consequence of diversity; and a mechanism of spreading cultures
- It is a necessary condition for the creation and strengthening of a sense of nationhood and national unity
- It creates a creative and open society to new ideas than a homogenous group of people.

A. Internal Migration in Ethiopia

Ethiopia is an ancient original abode of human migration before the various parts of the world are occupied. In Ethiopia, both short and long migratory movements have been going on for millennia in time and space influenced by demographic, environmental, socio-economic and political factors.

Population movement in Ethiopia accelerated in the early twenty century with the rise in urban centers as well as the Italian occupation. However, voluntary and individual rural out migration during the Derg Regime was low for the following reasons.

- The 1976/77 „land to the tiller" granted land to the rural landless farmers, which in turn reduced their motivation for out migration.
- Establishment of urban dwellers association and rural peasant associations that demanded a person to be either a member of an urban kebele or PA that did not encourage rural-urban or urban-rural migration.
- The 1975 urban land nationalization that dispossessed landlords" rights to own more than one house that further led to a chronic shortage of urban housing which in turn discouraged migration.
- The high level of urban unemployment and underemployment coupled with declining real incomes and growing poverty was a disincentive for potential migrants.
- The Derge was also taking away whoever is scrounging around in the city as soldiers to the warfront that kept the youth from moving to the urban areas.

During the current regime, the ethnic politics in the country and associated administrative barriers are said to discourage inter-regional migration and sound spatial distribution of the rural population. The incumbent government"s policy that demands continued residence in one"s rural kebele/PA as a condition for claiming access to land also discourages the movement of rural population out of

agriculture. Another restriction to distant migration out of rural areas is the high cost of migration relative to expected employment opportunity and return.

However, landlessness of emerging rural youth; drought and rainfall unreliability in the highlands; and land degradation and the resultant diminished carrying capacity of the land could be important push factors in the out migration of people out of their rural domicile. Internal migration in Ethiopia is, therefore, among the highest in Africa. According to the 2007 Census result, the country has a relatively high level of internal migration where out of the total population of the country, 16.6 percent is labeled as migrant population.

B. International migration

International migration in Ethiopia accelerated after the 1974 revolution where many refugees were attempting to escape political conflict, persecution and famine. Attempt of political centralization and oppression; the independence struggle of Eritrea from 1961-1991 that led to violent clashes in the North; and the period of Red Terror between 1976-79 generated massive emigration from Ethiopia.

Today, Ethiopia could be considered as one of the countries that has a large number of emigrants overseas. Ethiopia‟s diaspora, estimated to be about four million, is also considered one of the largest of all African countries. Large numbers of Ethiopian migrants are found in the Middle East, USA, Canada, Europe and African countries such as Sudan, Kenya, South Africa and Botswana.

The causes of cross-border migration include:

- Lack of employment and livelihood opportunities, and negative attitudes attached with low paying and informal job and poor work ethics amongst the youth.
- Rural underemployment and lack of resources
- Unfavorable political context and insecurity, civil war and political turmoil,
- Ethiopia‟s location in the fragile region of the Horn of Africa and its long boundary that extends over 5,328 km which makes border management difficult
- Existence of large number of local brokers with networks extending to countries of destination;
- Misinformation and false promises by brokers/traffickers; success stories of pioneering migrants; family and peer pressure
- Emergence of „culture of migration‟ and migration networks

- ❖ Demand-side factors of migration (shortage of labour in low-paying, informal, and perilous jobs, such as domestic work, construction, agriculture in destination countries)

Ethiopia is a country of origin, transit and destination for international migration. Ethiopia appears to be a hub on three land routes of which one leads from the Horn of Africa via Sudan, Chad, Egypt and Libya to the Mediterranean Sea towards Europe; the second through Somalia and Djibouti to Yemen across the Gulf of Aden and Red Sea towards the Middle East. 60 to 70% of Ethiopians migrating to the Middle East are irregular migrants. The third migration route is the Southern irregular route that is an overland route Kenya Tanzania towards to South Africa. Bole International Airport is also reported to be a hub of transit on the air route leading to Europe, and the Middle East.

International Labour Organization/ILO/ in 2016 identified the following migration source areas of Ethiopia with high and growing incidence of emigration:

a. Dessie (North and South Wollo) area: it includes Kemise, Bati, Kalu (Kombolcha), Dessie and its surroundings, Tehuledere (Haiq, Girana, Bistima, Bakaksa, Worebabo), Mersa, and Woldia.
b. Shashemene (Western Arsi and Bale) area: it include Shashemene-Zuria, Kofele, Kore, and Assassa.
c. Jimma (Western Ethiopia) area: includes Kaffa, Wolega and Iluababora, and more specifically Mana, Kerisa, Dedo, Agaro, Setema, Sigmo, and Gomma areas.
d. Mekelle/Tigray area: specific localities include Alamata, Kobo, Raya, Erob, Edagahamus, Gulomehadi, Etsebi, and Weneberta.

Other prominent emigration source areas include (Assela-Zuria, Adama-Zuria, Ambo, Fitche, Chancho, and Western Hararghe (Hirna, Gelemso); Shewa Robit, DebreBirhan, and Debre Tabor).

As a major destination country, Ethiopia hosts the second largest number of refugees in Africa. According to UNHCR 2019, refugee and asylum seeker population in Ethiopia was about one million. Many migrants, refugees and asylum seekers entering Ethiopia are escaping political and civil unrest as well as harsh or undesirable conditions (e.g. drought) in neighboring countries of South Sudan, Somalia, Eritrea and Sudan.

7.4. Age and Sex Structure of Ethiopian Population

Age Structure refers to the distribution of population by age groups. The most used age groups are five-year age groups (0-4, 5-9, 10-14, ..., 60-64, 65 and above) and broad age groups (0-14, 15-64, 65 and above).

Table 7.2: Percentage distribution of the population of Ethiopia by broad age groups in the three consecutive censuses (1984, 1994 and 2007).

Census year	Broad Age Groups					Dependency ratio
	Youth Old age dependencydependency					Total dependency
	O – 14 1	5 – 64 65	+			
1984	49.8	50.2	3.4	107.8	16.2	124.0
1994	45.4	51.4	3.2	92.0	10.7	102.7
2007	45.0	51.9	3.2	86.7	6.1	92.8

Age groups 0-14, 15-64 and 65 and above are known as young age, working age and old age, respectively. Our young age population is very large, about half of the population, while the old age population is very small. Because of the predominance of young age population, the median age of the population is about 17 years. The high percentage for the young age group is the result of high birth rate and natural increase, while the small percentage of the old age group is the reflection of high mortality rate, which results in low life expectancy. On the contrary most developed countries have working age population of about 60 percent or more, and old age population of about 10 percent or more.

It is generally accepted that people in the young and old ages are dependent on the working age population. Age dependency ratio (A.D.R.) can roughly be used to show the magnitude of dependency. It is expressed as:

$$ADR = P0-14 + \frac{¿}{P15-64} \ldots\ldots * 100 ¿$$

Where: P is population in the age groups

Another ratio that can be calculated out of the broad age groups of the population is the old age index. This index expresses the old age population as the percentage of the working age population as follows:

$$OI = P65+ \frac{¿}{P15-64} * 100 ¿$$

Youth dependency ratio and old age index for Ethiopia's population in 2007 were about 93 and 6 respectively. This means that for every 100 persons in the working age there were about 93 young dependents and 6 old persons of 65+. In 2015 the total dependency ratio declined to82.1; and youth dependency ratio was75.8.

If male and female population is classified into five-year age groups, a population pyramid can be constructed. From population pyramids we can tell which groups have large number of people, which age groups have male-female imbalances, and the fertility and mortality situations.

In general population pyramids of developing countries like Ethiopia have very broad bases showing the preponderance of young age population, and become thinner and thinner upwards as age advances. So the percentages of population in upper age groups are very small.

The age distribution of the population of Ethiopia shows that the country has a youthful population resulting in heavy youth dependency. Heavy youth dependency has many serious implications on socioeconomic development, which include:

a. Imposition of heavy burden on the working population
b. allocation of most of the household budget to food and other household needs with little/nothing left for saving; which then affects investment
c. diversion of limited resources on social services - building of schools and hospitals and purchase of medicines, etc. which could have been geared to directly productive investment; and
d. creation of a society with booming babies that require an expansion of employment opportunities by the time they are of age
e. Further promotion of high-level fertility by increased number of women entering the reproductive age (ages 15-49) annually.

All these mean that the capacity to save is seriously constrained at both household and national levels, thereby negatively affecting capital formation, investment and development; and this could continue for years to come.

Sex Structure

Sex structure refers to the ratio of male population to female population at different age groups. It is usually expressed as:

$$Sex\,Ratio = \frac{male}{female} * 100$$

According to the 1984 census result, sex ratio for the population of Ethiopia was 99.4. This means that there were about 99 males for every 100 females. The respective figures for rural, urban and Addis Ababa populations were 100.9, 86.8 and 90.2. The 1994 census result shows that it was 101.3 for the country and 102.6, 93.3 and 94, respectively, for rural areas, urban areas and Addis Ababa. In 2015, male to female ratio for Ethiopia was 99.96 males per 100 females. Sex ratios are generally lower for urban areas, and higher for rural areas primarily due to larger female in-migration to urban areas. Sex composition of the population also shows some variation by region. In Afar, Somali and Gambella, the number of males exceeds that of females, while in Addis Ababa the number of females is considerably higher than the number of males.

Sex ratios also vary with age. At birth and young ages males tend to be greater in number, but they become increasingly less as age increases. Hence, sex ratios are high in young age groups and low in adult and old age groups. Greater male births

account for greater number of males and high sex ratio in young ages, but because mortality of male children is greater, the gap narrows down and the sex ratios decline to fall below 100 in twenties and thirties.

7.5. Population Distribution in Ethiopia

Population distribution refers to the arrangement of people over space that is provided for them to settle and make a living through exploiting resources. The distribution of population in Ethiopia is very uneven as a result of physical and human factors operating together. The most important physical factors that affect population distribution include climate, soil, vegetation, drainage and slope while the historical pattern of population movement, the type of economic activity, urbanization, industrialized and the demographic variables are important human influences.

7.5.1. Measures of Population Distribution

Population Density

Population density refers to the number of people per unit area. There are several ways of expressing population density, three of which will be mentioned here.

A. Crude Density

Crude density is found by dividing total population to total area. This kind of density is called crude because it does not show variations in population distribution within a given area. In 1990 crude density for Ethiopia was 40.74 people/km2 and this has increased to 52 people /km2 in 1998; and it amounted to more than 100 currently.

There is considerable variations in population density among the administrative regions of the country. Excluding the urban based administrative regions, Southern Nations, Nationalities and Peoples (SNNP) region is the administrative area with the largest population density (173 people/km2) followed by Amhara region. Gambella (13 people/km2), Somali, Afar and Benishangul-Gumuz are regions with low densities of population. Crude population density conceals /much of the variations within regions.

Table 7.3: Population Density of Ethiopia for 2015 by Administrative Regions

Region	**Population**	**Area(km2)**	**Density(p/km2)**
Tigray	5,247,005	84,722	61.9
Afar	1,723,000	72,053	23.9
Amhara	20,401,000	154,709	131.9
Oromia	33,692,000	284,538	118.4
Somali	5,453,000	279,252	19.5
BenishangulGumu	1,005,000	50,699	19.8

z			
SNNPR	18,276,000	105,476	173.3
Gambella	409,000	29,783	13.7
Harari	232,000	334	716
Addis Ababa	3,273,000	527	6,210
Dire Dawa City Adm.	440,000	1,559	282
Total	90,078,000	1,063,652	84.7

Source: CSA, Statistical Abstract,2015.

The variation in crude density could be more pronounced if we consider subordinate administrative units in the hierarchy. For example, there is an enormous variation in density among the zones in Ethiopia. Some of the zones with very high densities are Gedeo, Sidama, Kambata, Guraghe, Wolayta and Hadiya; where densities exceed 300 persons per sq.km. On the other hand, peripheral zones such as Kamashi, and Metekel have population densities of less than 20 persons/km2. Likewise, if population densities of lower administrative units are considered the variations could still be greater.For instance, Wanago, Damot Gale, AletaWendo, YirgaChefe, Dara, KachaBira, Angacha, SodoZuria, Shebedino and KedidaGamela have crude densities of exceeding 500 people/km2; while Weredas with extremely low densities include Guba of less than 10 people/km2) include Gog, Vaso, Dolo Bay, andLiben. Therefore, it could be generalized that "the lower the administrative unit considered, the greater the variations in population density "

Physiological Density

Physiological density is a ratio between total population and arable part of a country. Ethiopia's physiological density (for 1998) is 61.8 people/km2. Arable part of Ethiopia, which is used as a denominator here is 969,680 km2. Compared to Physiological densities of countries like Japan (1,732 people/km2), Egypt (1,575 people/km2) and Netherlands (1,220 people/km2), Ethiopia's physiological density is very low.

Agricultural Density

This is a kind of density, which takes only agricultural population as a numerator and cultivated land as a denominator. It is also called rural density since in most developing countries there is not a significant difference between rural and agricultural population. This density measure is more meaningful than both crude and physiological density measures as it gives a better indication of the pressure of population on land resources.

Rural population per square kilometer of cropland is the highest for Somali Afar and Gambella. The large ratio is due to the smaller proportion of land that is appropriate for agriculture relative to the large landmass and small population. It is also highly likely that through the proper utilization of the land for example by

using irrigation in Somali and Afar and investment in Gambella regions, the agricultural density would decline in the years ahead. SNNP region also has a high ratio compared to the national average owing to the high population relative to their agricultural land. The smallest agricultural density lies in Benishangul (3.8), Amahra (5), Oromia (5.6) and Tigray (5.9).

The two factors that explain variations in agricultural density are the proportion of cultivated land and urban population of the regions. Other things being equal, agricultural density tends to be higher where both the percentage of cultivated land and the percentage of urban population are low.

7.5.2. Factors Affecting Population Distribution in Ethiopia

The distribution of population in Ethiopia is very uneven. This extreme unevenness is the result of the combined effect of physical and human factors which shall be discussed hereinafter.

Physical Factors

The most important physical factors that affect the distribution of population in Ethiopia include climate, mainly rainfall and temperature, soil and vegetation. The other physical factors include drainage and slope. High temperatures in combination with low and irregular rainfall diminish habitability I the lowlands of Ethiopia. On the other hand, the highland plateaus of Ethiopia where rainfall is high and temperature is moderate tend to be densely settled. The effect of climate upon population distribution is immensely important not only directly upon humans but also indirectly through its influence upon soils, vegetation and agriculture.

Steep slopes and surface ruggedness play their own part in restricting human access, habitation and cultivation. Since soil formation and vegetation growth are closely associated with relief, wherever the landscape is not significantly broken or dissected, soils tend to be good and vegetation cover richer. Likewise, attractiveness of a region for human occupation may depend partly on the nature of the soil. The fertile volcanic highland soils of Ethiopia offer a partial explanation for the high concentration of the population in the plateaus. In Ethiopia most of these physical factors are influenced by altitude.

Table 7.4: Population-Altitude Relationships

Altitude (m)	Percentage of area	Percentage of population
> 2,600	5.8	10.4
1,800-2,600	31.8	67.1
1,400- 1,800	28.1	11.5
1,000-1,400	13.4	8.2
<1,000	21.5	2.8
Total	100.0	100.0

Source: AynalemAdugna, 1987.

Table 7.4 shows that 77.5 percent of the population of the country lives in areas above 1,800 meters above sea level which makes37.6 percent of the total area. The area above 1,400,which makes up 65.7 percent of the total area of Ethiopia, supports 89.0 percent of the population of the country. However, caution could be made as there are many severely dissected areas within the highlands with a few or no people.

Lowlands are characterized by scarcity of rainfall, high temperature, and poor vegetation and soil conditions. In addition, the lowlands tend to be infested with tropical diseases like malaria and yellow fever that contribute to the sparse population distribution. Unlike the high population concentration along the valleys of major rivers of the world such as the Nile, Indus and Huang He; the disease infested narrow and steep valleys of major rivers of Ethiopia are areas of sparse population distribution. However, with improvements in irrigation agricultural and other development projects as well as medical technology, the lower valleys of the major rivers of Ethiopia are likely to attract more people from the highlands.

Human Factors

Human factors which have influenced population distribution in Ethiopia may be divided into two:

- The historical pattern of population movement and
- Types of economic activities.

The Historical Pattern of Population Movement

After the decline of the Axumite Empire, there was southward movement of the Tigre, Amhara, Agew and Guraghe populations starting from the 7th century. There was also large-scale northward movement of the Oromos during the 16th and 17th centuries. The two waves of population movements, one from the north, and the other from the south, offer a significant explanation of denser population distribution in and around the central highlands.

Economic Activities

Types of productive activities strongly influence the carrying capacity of land; and the carrying capacity in turn influences the number of people that can inhabit an area. The arid and semi-arid lowlands of Ethiopia that are inhabited by pastoralists and semi-pastoralists are sparsely settled. Hence, with pastoral herding, population densities are extremely low.

Compared to areas of pastoral herding, cultivated lands have greater carrying capacity thereby supporting higher population densities. However, the type of crop cultivated could also result in varying densities. For instance, the northern and north central areas of Ethiopia with cereals as the main crops have relatively low yield per unit area; and hence they have relatively low carrying capacity and moderate density. On the contrary the enset and coffee regions of Ethiopia have

greater yield per unit area that gave rise to the very high density of population in some South-central Zones and weredas.

The development of commercial farms in some parts of Ethiopia like the Awash valley is also a significant factor in causing population movements and changes in the population concentration. Likewise, urban and industrial growths as well as transportation routes can be considered as some of the important elements in bringing about population re-distribution over time and explaining density variation. 7.6. Socio-cultural Aspects of Ethiopian Population: Education, Health and Languages

7.6.1. Education

Education is the bacon of opportunity which provides a platform for a decent livelihood. Literacy is a means by which members of a society are enabled and empowered to effectively participate in the development process. High level of education correlates with higher incomes, better health, longer life span, and lower mortality. Hence, human capital development is a cause and consequence of development. Education is also a human right.

The total number of primary schools in Ethiopia was 34,867 in 2016; while gross enrollment at primary first and second cycles (grade 1-8) was 9,407,490. The Gross Enrolment Rate (GER)that shows the total number of children that have enrolled in grades 1-8, irrespective of their age, as a proportion of the school age population (7- 14 years) was 108.7%. This shows that nationally there are more children in primary grades than there are children between 7 and 14 as children younger than 7 and older than 14 are enrolling into primary schools. There is wide regional variation, with Dire Dawa and Afar having the lowest GER at 70% and 66% respectively. Gambella and Addis Ababa have very high GERs both over 140%.

As regards to the gender parity, in Addis Ababa more females are attending school than males. Lower female participation is found in Somali and Harari regions. In terms of student-section ratio, the national average is 55 for grades 1-8. Somali region has the highest ratio indicating that children in this region learn in overcrowded classrooms compared to children in other regions. The Pupil-Teacher Ratio (PTR) at the national level is 46 for grades 1-8. PTR is highest in Ethio-Somali, followed by Oromiya and SNNP; whiled Addis Ababa has the lowest.

There were 3,156 secondary schools in 2016 in Ethiopia. The national gross enrolment ratio for all secondary grades was 29.04%, (Addis Ababa has the highest GER at 82.27%.) implying that there are many children who are not completing primary education and proceeding to secondary education. Nationally GER for males is higher compared to females, though in Tigray, Amhara and Addis Ababa more females are attending secondary education. Afar and Somali regions have the lowest enrolment rate in secondary education.

However, the recent developments are encouraging and primary education is almost universalized and there is at least one primary school in each rural kebele. The number of secondary schools in both urban and rural areas in 2016 was 3156. The number of public universities has reached 45 today from only 2 in the early 1990s; where hundreds of thousands of students are enrolled in the tertiary level of education every year

7.6.2. Health

The Government of Ethiopia has been investing heavily in health system strengthening through its pro-poor policies and strategies that brought about significant gains in improving the health status of Ethiopians. Despite recognizable improvements, Ethiopia has still a heavy burden of diseases but a low rate of self-reported illness and low health facility coverage and utilization. The available literature indicates that the majority of ill health in Ethiopia is related to potentially preventable, communicable diseases and nutritional disorders.

Some of the root causes of the poor health status of the population are:

1. Lack of access to clean water: rivers and lakes remain the most important sources of water particularly for people in rural areas although such waters are largely unsafe.
2. Lack of adequate nutrition: studies reveal that malnutrition is rampant and is among the highest in the world. About half of children under the age of five are malnourished, stunted or wasted. Malnutrition still remains high as the country has not attained food security or due to poor knowledge about nutritional requirements and dietary habits.
3. Disease related to beliefs, behaviors and traditional practices which have a negative effect on health status include circumcision, early marriage, and low value of girls and children
4. Lack of health services: The health care infrastructure of the country had suffered from under funding; and health service coverage is less than 50% of the population. The services tend to be urban biased.

The combined problem of poor health and inadequate nutrition are likely to have life-long effect on children making them physically unfit, unproductive, mentally inactive and less dynamic. Since protein and energy malnutrition affects adult working population, the impact on agricultural production and productivity is likely to be high.

The major killer diseases accounting for about ¾ of all deaths include prenatal-maternal conditions, acute respiratory infection, malaria, nutritional deficiency for children under 5 years, diarrhea, AIDS and Tuberculosis.

Despite significant improvements, Ethiopia's health situation is still at a staggering situation. The current health workforce consists of 0.04 doctors, 0.43 nurses and 0.05 midwives per population of 1000, also represented as: one doctor for 26,943

people, one nurse for 2,311 people, and one midwife for 21,810 people. In order to overcome the lack of human resources for health and low utilization of health services, the country adopted a strategy to train the health extension workers (HEP) and midwives as well as scaling up family planning.

There are variations among the regions of Ethiopia in population per hospital and per hospital bed. Regions like Amara, Somali and SNNP have population-hospital ratios of over 10,000 in each case. These three regions also have high population - hospital bed ratios. The implication is that there could be many people with no chance of seeing a doctor or having an access to a hospital bed even if they wished to. Large numbers of people should also travel several tens of kilometers to arrive at the location of the nearest hospital. Since Ethiopia's high population growth rate will continue for the coming couple of years, and given the low rate at which the services are expanding, it could be assumed that problems in education, health and other areas of services will continue.

7.6.3. Languages Families and Languages of Ethiopia

Ethiopia is a country where about 80 languages are spoken. According to the 2007 Population and Housing Census of Ethiopia, Afan Oromo and Amharic were the major mother tounges in the country accounting 33.8% sand 29.3% respectively. Somaligna (6.2%), Tigrigna (5.9%), Sidamigna (4.0%), Wolaytigna (2.2%), Guragigna (2%), Afarigna (1.7%), Hadyiyagna (1.7%), and Gamogna (1.5%) do have significant number of speakers. On the other hand, some of the languages are spoken by a few thousands.

The Ethiopian languages belong to two Supper Families: Afro-Asiatic and Nilo-Saharan. Most Ethiopian languages belong to the Afro-Asiatic Supper Family.

A. Afro-Asiatic

The Afro-Asiatic Supper Family, is divided into three families, namely: Semitic, Cushitic and Omotic.

Cushitic

The Cushitic languages are predominantly spoken in central, southern, eastern and northeastern parts of Ethiopia mainly in Afar, Oromia and Somali Regional States. It has the largest number of speakers and the widest spatial coverage. This family of languages consists of many individual languages such as Oromigna, Somaligna, Sidamigna, Afarigna, Kembatigna, Hadiyigna, Alabigna, Gedeogna, and others.

Semetic

The Semitic languages are spoken in northern, central and eastern parts of Ethiopia particularly in the regional states of Tigray, Amhara, Harari and northern Southern Nations, Nationalities and Peoples' Regional State. Some of the Semitic

Languages include Amarigna, Tigrigna, Guragigna, Siltigna, Aderigna, and Argobigna.

Omotic

The Omotic languages are predominantly spoken in the south–central and south-western parts of Ethiopia mainly between the Lakes of southern Rift Valley and the Omo River. The languages, which make up this family, are numerous although they are not as widely spread as the Cushitic and Omotic. Wolaitigna, Gamogna, Kullogna, Kefigna, and Kontigna are some of the languages in this family spoken by millions and many thousands of people. Relatively small number of people speaks most of the languages in this group.

B. NiloSaharan

The Nilo-Saharan languages are spoken in the western lowlands of Ethiopia along the border with Sudan, inGambella and BenishangulGumuz Regional States. These Languages are spoken by small numbers of people often less than 500,000 people. The individual languages of Nilo-Saharan Supper Family include Kunamigna, Bejigna, Gumuzigna, Maogna, Kewamigna, Nuerigna, Annukigna, and others.

7.7. Settlement Types and Patterns

7.7.1. Types of Settlement

Settlements are places that are inhabited by people more or less on a permanent basis, as distinct for example from camps, and where people carry out a variety of activities such as agriculture, manufacturing and commerce. Different settlement types develop mainly in response to some physical and human factors.

Settlements are divided into two, namely, rural and urban on the bases of the dominant economic activity, population densities and availability of socioeconomic and infrastructural facilities. Towns or urban centers have non-agricultural activities as dominant, while rural areas are almost totally agricultural. Population densities are generally very high in urban area compared to densities in rural areas.

- **Rural Settlement**

The vast majority of the Ethiopian population still lives in rural settlements consisting of hamlets and villages. Rural settlements can be temporary or permanent depending on whether there is frequent change in the site of the settlements.

Temporary / Mobile Settlements

The lowlands in most parts of the Rift Valley and peripheral areas, being generally hot and dry, are characterized by pastoral herding and mobile settlements. The settlements are mobile because pastoralists have always been searching for new sites for water and pasture for their livestock.

The major problem often mentioned about mobile settlements is that of providing social services like clean water, schools, hospitals, electricity etc to the people. These fixed physical infrastructures and services cannot move from place to place like the pastoralists, and to benefit from such services people have to be in permanent settlements. However, it must also be noted that settling pastoralists is not something that can be done in a year or two since it involves change of livelihood strategies, attitudes and value systems. So, it has to be considered as a serious development task that could involve the pastoralist community and governmental and non-governmental stakeholders; and perhaps it could last for generations.

Permanent Settlements

Settlements are considered as permanent if there are no frequent changes in their locations. Most Ethiopian rural highland settlements where crop cultivation is practiced are permanent.

Permanent settlements are of two types. One of them is scattered (also called diffused or dispersed), while the other one is known as grouped/ clustered or nucleated. In areas of dispersed settlements homesteads are separated by relatively long distances which could be associated with individual land tenure and desire of people to live near to their farm holdings. Grouped settlements, on the other hand, are characterized by concentration of large number of homesteads and households at one place as for example for reasons of defense, to provide threshold population to support basic social services as was the case of villagization program during the Dergue.

7.7.2. Urban Settlements and Urbanization in Ethiopia

Urbanization refers to the increase in the percentage of the population living in urban centers. It entails the process of becoming urban, moving to cities and changing from agriculture to other pursuits of life which are common to towns and, with a corresponding change of behavioral patterns.

Urbanization is crucial to sustain the pace of economic development and improve the quality of life for both urban and rural populations. Linkage between urban and rural areas could foster efficiency of value chains in agro-industry, improve agricultural productivity, promote service expansion and create sufficient industrial jobs in urban centers to absorb the perpetual influx of population from rural areas. However, if the rapid urbanization is not properly managed, it is presumed to bring with it a number of development challenges such as

unemployment, housing shortages and informal settlements, infrastructural and service shortages, poverty and social distress.

The major criteria used to classify settlements as urban in Ethiopia are:

i. Minimum of 2,000 people;
ii. Two-thirds of the population engaged in non-agricultural activities;
iii. Chartered municipality;
iv. The presence of social services and amenities

The number of settlements meeting these criteria in 1984 was about 322. These settlements had 10.23 percent of the total population of the country and this is one of the least urban population sizes in the world. The number of settlements with greater than 2,000 people in 1994 had increased to 539. These have 12.8 percent of the country's population. In 2007, the number further rose to 927. Today, the urban population is about 20 percent of the country‟s population.

An overview of the History of Urbanization in Ethiopia

Before the foundation of Addis Ababa as a capital city, the earliest capitals and other towns did not have a permanent population exceeding 6000. These centers were not capable of acting as centers of influence for the life of the population of the rural hinterland in their years of existence. The only prominent urban centers were Axum, Lalibela and Gondar. For many years, in place of a fixed capital, there had been mobile military camps that followed their peripatetic rulers.

Modern urbanization in Ethiopia is associated with the establishment of Addis Ababa as a capital by Emperor Menelik II in the late 19th century. Unlike earlier capitals, there had been different factors that contributed to the growing and permanency of Addis Ababa as a capital city that are indicated as follows.

- Introduction of the fast-growing Australian eucalyptus tree which satisfied the firewood needs of the ever-growing urban population.
- Water supplies improved due to the introduction of wells and reservoirs.
- Introduction of modern schools, hospitals and health centres, hotels, cafes, bars, bakeries, butcher‟s shops, cinema, post office, modern cathedrals, telephone and telegraph system, bank, printing press etc.
- The construction of roads that radiate from Addis Ababa; and the arrival of the Franco-Ethiopian railway at Addis Ababa in 1917.
- The Italian occupation had also intensified the establishment of small-scale industries and institutions, road construction thereby contributing to the growth of the city.

Today, Addis Ababa is not only the capital of Ethiopia; it is also the diplomatic capital of Africa. Numerous embassies and consular representatives cluster in the mountainous city where the Organization of African Unity, now the African Union, and the UN Economic Commission for Africa have their headquarters. Addis Ababa is geographically at the very heart of Ethiopia. It has a congenial climatic condition. The city enjoys excellent connections with all Ethiopia‟s economic

zones. It is also connected to the rest of the world via its reputed airlines and various international airlines.

For the past several decades, the country has experienced a very low level of urban development, despite its high rate of urbanization. Ethiopia is a least urbanized country even by African standards. In the words of some writers, Ethiopia is regarded as a „vast urban desert". The country"s low level of urbanization can be attributed to:

- The self-sufficiency of agriculture which reinforced rural peasant life
- Low level of industrialization, low level structural transformation and economic development
- The morphology of the country that hindered transportation and communication
- The continual warfare for centuries between kingdoms in to which the country is divided; and the frequent changes of the royal residence
- Lack of employment, and housing shortage in urban areas that discourage in migration;
- Political instability, ethnic conflict and social unrest during the late 1970s and 1980s;

Drivers of and Opportunities for more Urbanization in Ethiopia

These days, urbanization is proceeding at a much faster rate in Ethiopia. The urban population is growing at about 5% a year, primarily driven by migration to urban areas. The proportion of the urban population of Ethiopia in 2015 (20%) is projected to mount to 37% by 2035.Some of the conditions which have been contributing to expansion of urban areas are (drivers of urbanization):

- The establishment of Addis Ababa as a centre of expansion, and its permanency thereof.
- The construction of the Ethio-Djibouti railway line along which many stations have developed into important towns.
- The five-year Italian occupation which has contributed to road building, the establishment of small-scale industries and service giving institutions.
- The integration of the provincial capitals and major administrative centres found in all directions by all-weather roads radiating from Addis Ababa.
- Political decentralization and provision of administrative status of some urban settlements
- Proximity to existing cities and main transportation corridors trigger new urban development through agglomeration and metropolisation effects
- High Population density and growth rates in the populous highlands of Ethiopia facilitate the emergence of towns
- Presence of new and large commercial farms, mining areas, and agro-industries such as sugar factories; as well as mega projects like fertilizer factories, cement factories that attract people
- Large infrastructure investments such as airports and highways, and dry ports that attract investment and create jobs encourage urbanization

- Opening of Universities that support entrepreneurial activity and innovation in their local economies
- Tourism assets and attractions such as parks, resort centres, and heritage cities and sites contribute to urban expansion.
- Development of border towns with strengthened inter-country trade

Distribution of Urban Centers in Ethiopia

The distribution of urban centers in Ethiopia shows considerable spatial variation. This could be explained in terms of the varying concentration of industries; and services such as schools, health institutions, water supplies, electricity, means of transport, etc. Based on varying concentrations of urban centers and urban populations, the Ministry of Urban Development and Construction identified the following hierarchy of urban centers:

i. The Addis Ababa Metropolitan cluster includes Addis Ababa and its surrounding towns; and Adama and its surrounding towns

ii. Secondary city clusters consist of:
   - Lake Tana Urban Cluster: Bahir Dar, Gondar DebreTabour, Debre Markos
   - South Rift Valley Urban Cluster: Hawassa-Shashemene-Dila; and Hosana-Sodo-Arba Minch
   - Eastern Urban Cluster: Dire Dawa, Harar, Jigjiga
   - Mekelle Urban Cluster: Mekelle, Adigrat, Shire, Axum
   - Dessie- Kombolcha Urban Cluster.
   - Jima Urban Cluster: Jima, Agaro, Mizan, Tepi, Gambella

iii. Tertiary urban clusters include:

   - Nekemte Urban Cluster: Nekemte, Dembidolo, Gimbi, Metu, Assosa
   - Gode - Kebri Dar oasis city network
   - Semera-Mille – Asaita oasis city network

Like most developing countries, Ethiopia‟s urban population is concentrated in one primate city, Addis Ababa. The population of Addis Ababa grew from 1.4 million in 1984 to 2.2 million in 1995, and to 2.7 million in 2007 representing about 29% of the urban population of the country. Its current estimated population is over four million.

Growth Rate of Urban Centers

The annual average national growth rate of urban population is about 5.0 percent. But this being an average, rate of growth of urban population varies from town to town and from time to time. Ethiopia‟s towns are characterized by wide range of growth rates that could be classified into one of the following three broad categories:

- Declining Towns: it includes towns whose populations are actually declining in absolute numbers because net out migration is greater than natural increase. This could be due to lack of employment opportunities and worsening living

conditions. Some of the towns that have at least once experienced a decline include, Axum, Goba and Maichew.

- ❖ Slow Growing Towns: This category is composed of towns that grow at the rate which is less than the rate of natural increase. Towns such as Holeta, Harar and Gore have been indicated to grow slowly in the recent past.
- ❖ Fast Growing Towns: All towns with growth rates of greater than the natural rate of increase make up this group. These towns pull large numbers of people from the declining or slowly growing towns and rural areas due to the opportunities they offer associated with expansion in industries, social services or a change in their administrative status as zonal or regional capitals. Given the dynamism, however, it is wise to note that a once declining town could be slowly or even fast growing after sometime and vice versa.