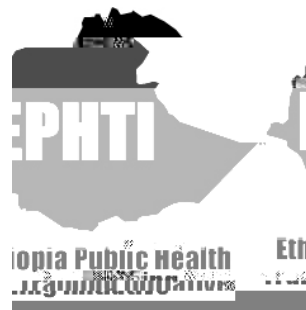


LECTURE NOTES

For Health Science Students

Population and Development



Melake Demena

Haramaya University

In collaboration with the Ethiopia Public Health Training Initiative, The Carter Center,
the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education

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PREFACE

Studies within particular countries, suggest that population growth above 2% a year inhibits efforts to raise income in poor countries with high birth rates and young age structure. In countries that are already poor, then, rapid population growth only makes matters worse leading to economic insecurity. Economic insecurity, in turn, encourages people to have large families. Poverty and lack of economic opportunities increase incentives to exploit marginal resources, such as overgrazed land, over harvested forests, and thereby further environmental degradation. Rapid population growth although not a direct cause, appears to exacerbate all these trends and makes solutions harder to implement. Governments need to provide basic social services (such as health care and education), infrastructure and investments that will lead to job opportunities.

The lecture notes on population and Development Provide information on demographic concepts, current trends of population growth, patterns and

interpretations; and the Impact of rapid population growth on health and other socio-economic development.

In the absence of relevant text and reference books that are specifically prepared for undergraduate students of health sciences, the lecture notes help to maintain standard of course contents among the different health sciences training institutions and alleviate the scarcity of text books.

The lecture notes are primarily prepared for health officer students; however, they could also be used by other categories of medical and health sciences students of diploma or degree level.



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CHAPTER ONE



Demography, as understood today, is the scientific study of human population and its dynamics. It is derived from two Greek Words:

- Demos means population
- Graphics means to draw

Demography focuses its attention on three readily available human phenomena:

- Changes in population size (growth or decline)
- The composition of the population and
- The distribution of population in space.

Demography deals with major “demographic processes” namely fertility, mortality and migration. These processes are

The major sources of demographic data include:

- 2.1. Census
- 2.2. Registration of vital events (Records)
- 2.3. Sample surveys
- 2.4. Ad-hoc Demographic studies

2.1. Census

Census is defined as an enumeration or complete population count at a point in time within a specified geographical area. A census provides more reliable and accurate data if properly enumerated.

The conducting of censuses has a long history, but modern censuses were first held in the 17th century. By the end of eighteenth and beginning of the nineteenth century many countries had held their first censuses. Some countries including Ethiopia have only recently held their first censuses.

Old Censuses

- Babilonia in about 3800 B.C.
- China in about 3000 B.C.
- Egypt in about 2500 B.C

Modern Censuses

- Quebec (Canada) in 1666 A.D.
- USA in 1790 A.D
- England and France in 1801 A.D.
- Zaire in 1984 A.D
- Ethiopia in 1984 A.D.

2.1.1. Techniques of Census Taking

There are two techniques of conducting census, de jure and de facto.

A. DE JURE

This technique is the counting of people according to the permanent place of location or residence.

Advantages

- It gives permanent picture of a community.
-

B. DEFACTO

This technique of conducting census refers to counting persons where they are present at the time of the census period.

Advantages

- There is less chance for the omission of persons from the count.

Disadvantages

- Difficult to obtain information regarding persons in transit. These are persons who are, for example travelling and have left their area of permanent residence but haven't reached the area of destination during the census day.
- It provides incorrect picture of the population in a community.
- Vital statistics are usually distorted (in areas with high migration).

2.1.2. Use of Census

A census is useful for:

- Planning
- Calculating health indicators and vital indices.

2.1.3. Steps in Conducting Census

The major steps to be followed in a census include.

- Planning and preparation
- Collecting information
- Compilation and analysis
- Evaluation

2.1.4. Qualities of a Census

A census must have the following qualities

- It should include every individual in the area (no omission or duplication).
- Information should relate to a well – defined point in time.
- It should be taken at regular intervals (preferably every 10 years).
- It should refer to people inhabiting a well defined territory.
- Information be obtained from personal contact.

2.2. Registration of Vital Events (Statistics)

It is a regular and continuous registration of vital events. Civil registration system, which records births, deaths, marriages etc. (vital statistics), enables rates of population growth to be calculated; but are much less adequate than national censuses. In developing countries where illiteracy rates are high and communications are poor, the problems of recording births and deaths are immense not only in rural populations but also in urban areas. However, efforts are being made to improve the collection of these data in many countries.

2.3. Sample Surveys

A sample survey is another source of demographic data carried out in a scientifically selected area which covers only a section or portion (sample) of the population under consideration.

As countries have begun increasingly to formulate population policies as part of their development programs, especially since 1970; so they have required more data about their populations. Demographic surveys have become increasingly important as a comparatively rapid method of obtaining such information. It was recognized that the quality of demographic data available for the developing world was poor and the need

for better data both for scientific study and for policy application is also recognized.

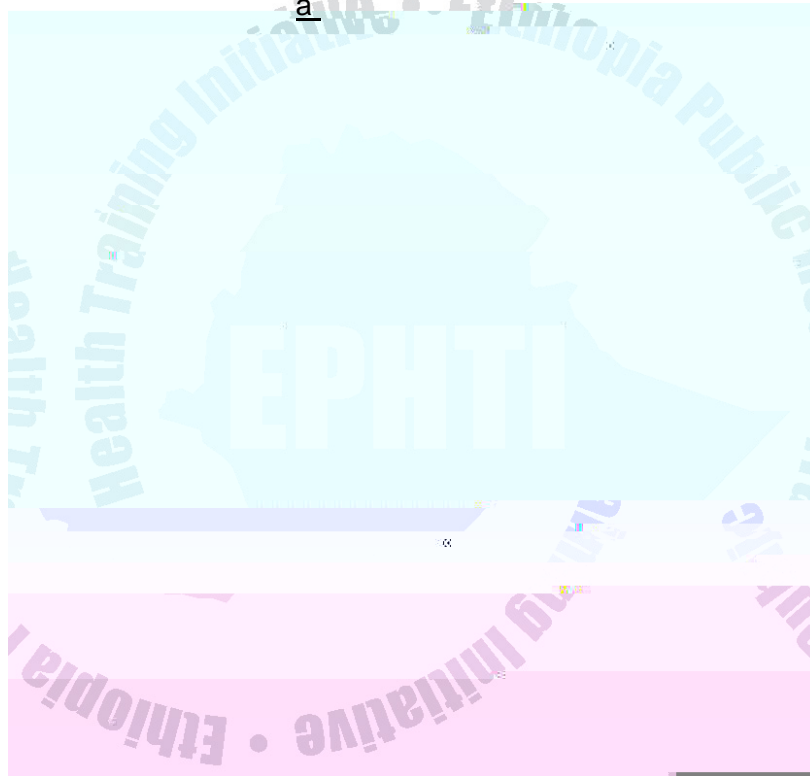
For example, the first ever nation wide population census taken in 1984 in Ethiopia revealed a total population of 42,184,952. However, the population projection based on the two National sample surveys of 1964-71 put the population figure at around 34.6 million for 1984. Thus the census produced an excess population of about 7.4 million (21 % above the projected figure).

Study Questions

1. What is Demography?
2. Name and explain the different sources of demographic data?
3. State the steps that should be followed to undertake a population census.
4. Explain the advantages and limitations of sample surveys.

1.1. Ratios: Ratio is a quotient of any two demographic quantities. It is the result of dividing one quantity by another. Ratio quantifies the magnitude of one occurrence or condition in relation to another. It is expressed in the form of:

a



denominator. A proportion is usually expressed as a percentage.

Example: Males to total population ratio

$$\frac{\text{Males}}{\text{Males} + \text{females}} \times 100$$

- Illegitimate Birth Ratio = $\frac{\text{No. of illegitimate live births}}{\text{Total No. of live births}} \times 100$

1.3. Rates: A rate measures the occurrence of some particular event (example death) in a population during a given time period. It is a statement of the risk of developing a condition. It indicates the change in some event that takes place in a population over a period of time. It is defined per unit of time.

$$\text{Rate} = \frac{\text{Vital event}}{\text{Population at risk}} \times (K)$$

Example: Death Rate = $\frac{\text{No. of deaths in one year}}{\text{Mid year population}} \times 1000$

A rate comprises the following elements:

- Numerator
- Denominator

- Time specification and
- Multiplier or constant (100, 1000, 10000, 100,000 etc)

A Rate is a ratio or a proportion in which the numerator is part of the denominator. All rates are ratios, but all ratios are not rates.

2. Techniques of Demographic Measurement

A change in the overall size of a population is the result of three cumulative changes in the number of births, deaths and migrants. Since births and deaths occur continuously, and since people frequently change their place of residence, they are the bases of demographic analysis. Depending on their direction and magnitude these processes are important for social and economic planning, in assessing the present needs and the needs of the future expansion of socio-economic infrastructure. The techniques for measuring fertility, mortality and migration are described further.

2.1. Measure of Fertility

Fertility is the reproductive performance of an individual, a couple, a group or a population. It is meant the actual bearing of children. Some demographers prefer to use natality in place of fertility.

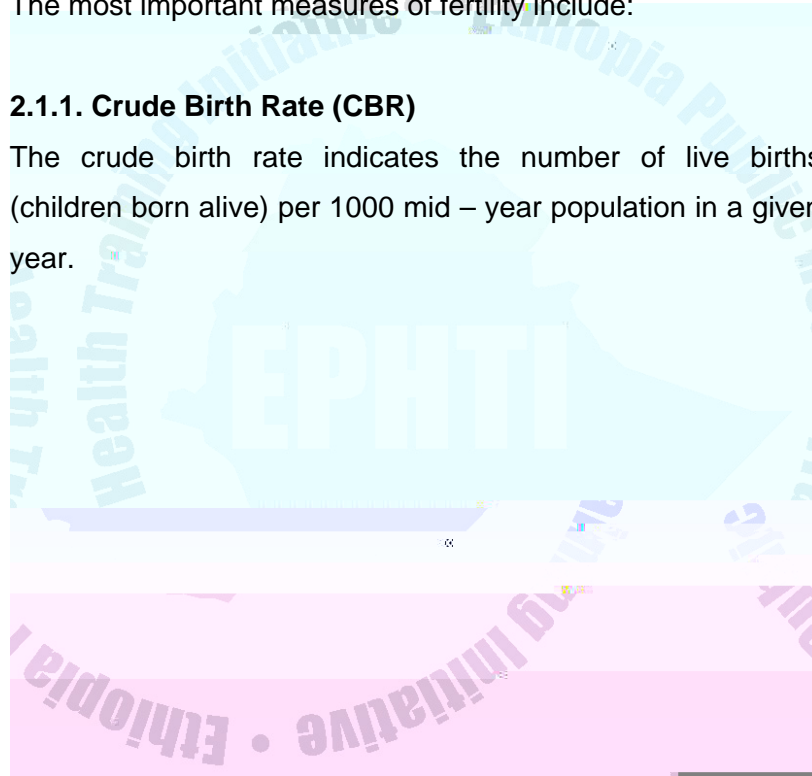
Fertility leads to increase of population. It differs from fecundity – which refers to the physiological capability of a woman to reproduce. A woman’s reproductive period is roughly 15 – 49 years of age.

The most important measures of fertility include:

2.1.1. Crude Birth Rate (CBR)

The crude birth rate indicates the number of live births (children born alive) per 1000 mid – year population in a given year.

e



- Less developed countries = 24/1000 Population
- Less developed (except China) = 28/1000 population
- Africa = 38/1000 population
- Sub-Saharan Africa = 40/1000 population
- Eastern Africa = 41/1000 population
- Ethiopia = 40/1000 population
- Ethiopia = 45/1000 (1984 population census)
- Ethiopia = 44/1000 (1994 population census)

Fertility may be grossly determined as high, medium or low based on CBR values.

High fertility Rate = > 30/1000

Medium fertility rate = 20-30/1000

Low fertility rate = < 20/1000

2.1.2 General Fertility Rate (GFR)

The General Fertility Rate is the number of live births per 1000 females aged 15-49 years (fertile age group) in a given year. The GFR is a more sensitive measure of fertility than the CBR, since it refers to the age and sex group capable of giving birth (females 15-49 years of age). It eliminates distortions that might arise due to different age and sex distributions among the total population. The major limitation of GFR is that not all women in the denominator are exposed to the risk of child birth.

GFR = Number of live births in a year / GFR =

Number of females 15-49 years of age

The GFR is approximately four times the CBR.

2.1.3 Age specific fertility rates (ASFR)

The Age specific fertility rate is defined as the number of children born alive to females in a specific age group per 1000 females in that specific age group, example (15-19), (20-24),..... (45-49) years of age.

ASFR = $\frac{\text{No. of live births to females in a specific age group in a year}}{\text{Mid-year population of females of the same age group}} \times 1000$

For example, ASFR for women 20 – 24 years of age is expressed as:

ASFR (20-24) = $\frac{\text{Live births to women 20- 24 years of age}}{\text{Total No. of females 20 – 24 years of age}} \times 1000$

4,000,000

That is, there are 50 live births for every 1000 women 20-24 years of age.

2.1.4. Total Fertility Rate (TFR)

The total Fertility Rate is the average number of children that would be born to a woman throughout her life time or her child bearing age (15-49 years), if she were to pass through all her child bearing years at the same rates as the women now in each age group.

The TFR sums up in a single number the Age Specific Fertility Rates of all women at a given point in time. If 5 – year age groups are used, the sum of the rates is multiplied by 5. This measure gives the approximate magnitude of “completed family size”.

The TFR is one of most useful indicators of fertility, because it gives the best picture of how many children women are having currently.

TFR = Sum of all Age specific fertility rates multiplied by age interval

(Usually 5).

Example:

Table 2.1: Calculation of Total Fertility Rate

Age group of mothers	Number of Women	Number of live births to the age group	Age specific birth rates
15-19 years	1,237,721	117,583	0.095
20-24	978,136	268,987	0.275
25-29	979,623	283,111	0.289
30-34	989,693	254,351	0.257
35-39	814,243	162,034	0.199
40-44	548,882	57,633	0.105
45-49	406,540	22,766	0.056
Total	5,954,838	1,166,465	1.276

$$TFR = 5 \times 1.276 = 6.38$$

i.e. 6.38 children per woman in her reproductive life.

Total fertility rate also varies widely between populations in the world. It is higher for developing countries than developed ones. According to World Population Data Sheet of the population Bureau the TFR for 2003 was:

- World = 2.8 children per woman
- More Developed Countries = 1.5 children per woman

- Less developed countries = 3.1 Children per woman
- Less Developed countries = 3.5 Children per woman
(Excluding china)
- Africa = 5.2. Children per woman
- Sub – Sahara Africa = 5.6 Children per woman
- Eastern Africa = 5.6 Children per woman
- Ethiopia = 5.9 Children per woman
- Ethiopia 1994 = 6.5 Children per woman
- Ethiopia 1984 = 7.2 Children per woman

2.1.5. Gross Reproduction Rate (GRR)

The Gross Reproduction Rate is the average number of daughters that would be born to a woman throughout her lifetime or child bearing age (15-49 years), if she were to pass through all her child bearing age.

This rate is like the TFR except that it counts only daughters

Example: - The sex ratio at birth of Ethiopia (2001) = 100.6
(i.e 100.6 males for every 100 females)

- and the TFR (2001) = 5.9 (5.9 children per women)

GRR = TFR X proportion of female births

$$\text{GRR} = 5.9 \times \frac{100}{200.6} = 2.94$$

= 2.9 daughters /woman

2.1.6. Child – Woman Ratio (CWR)

Child woman ratio is defined as the number of children 0 – 4 years of age per 1000 women of child bearing age, (15 -49 years). This ratio is used where birth registration statistics do not exist or are inadequate. It is estimated through data derived from censuses.

$$\text{CWR} = \frac{\text{No of children 0 – 4 years of age}}{\text{Total No of women 15 – 49 years age}} \times 1000$$

Example:

If the number of children under 5 years of age in an area is 2,000,000 and the number of women 15 – 49 years of age is 8,000,000.

$$\text{The CWR} = \frac{2,000,000}{8,000,000} \times 1000 = \frac{250}{1000}$$

That is 250 children 0 – 4 years of age (under five) per 1000 women of the reproductive age.

2.2. Measures of Mortality (Death)

Mortality refers to deaths that occur within a population (reduction of population). The incidence of death can reveal much about the living standard, the health status of a population and the availability of health services.

Mortality (Death) rates have three essential elements:

- A population group exposed to the risk of death (denominator)

2.2.1. Crude Death (Mortality) Rate (CDR)

The crude death rate is the number of deaths per 1000 population in a given year.

$$\text{CDR} = \frac{\text{Total number of deaths in a year}}{\text{Mid-year population}} \times 1000$$

As its name implies the CDR is not a sensitive measure (indicator) of health status of a population. It is affected by particularly the age structure of the population.

Crude Death Rate also varies between populations of the world. According to the "World Population Data Sheet of the population Reference Bureau the crude Death Rate during 2003 was.

- World = 9 deaths per 1000 population
- More developed countries =10 deaths per 1000 population
- Less Developed countries = 8 deaths per 1000 population
- Less Developed countries (Excluding China) = 9 deaths per 1000 population
- Africa =14 deaths per 1000 population
- Sub – Saharan Africa =16 deaths per 1000 population
- Eastern Africa = 17 deaths per 1000 population

- Ethiopia = 13 deaths per 1000 population
- Ethiopia 1994 = 15 deaths per 1000 population
- Ethiopia 1984 = 19 deaths per 1000 population

2.2.2. Age specific Death (Mortality) Rates

Death Rates can be calculated for specific age groups, in order to compare mortality at different ages. E.g. for infants (< one year of age), children 1-4 years of age, children under five years, etc.

$$\text{ASMR} = \frac{\text{Number of deaths in a specific age group}}{\text{Mid-year population of the same age group}} \times 1000$$

Infant Mortality Rate (IMR)

Infant Mortality Rate is the number of deaths of infants under one year of age (0-11 months of age) per 1000 live births in a given year.

Infant (children under one year of age) are at highest risk of death than any other age group.

$$\text{IMR} = \frac{\text{Number of death of children < 1 year of age in a year}}{\text{Total live births during that year}} \times 1000$$

The infant mortality rate is considered to be a sensitive indicator of the health status of a community, because it



Child Mortality Rate (CMR)

It is the number of deaths of children 1-4 years of age per 1000 children 1-4 years of age. It is a sensitive indicators of the health status of a community.

$$\text{CMR} = \frac{\text{Number of deaths of children 1-4 year of age in a year}}{\text{Total number of children 1-4 years of age}} \times 1000$$

Under Five Mortality Rate (<5MR)

It is the number of deaths of children under five years of age in a year (0-4 years of age) per 1000 children under five years of age (0-4 year). It is also a very good indicator of the health states of a community

It can also be calculated as the number of deaths of children under five years of age in a year per 1000 live births.

$$\text{<5MR} = \frac{\text{Number of deaths of children <5 yrs in a year}}{\text{Total number of children < 5 years of age}} \times 1000$$

OR

$$\text{< 5MR} = \frac{\text{Number of deaths of children <5years in a year}}{\text{Total live births in the same year}} \times 1000$$

- According to Health and Health Related Indicators (MOH), the under five mortality Rate of Ethiopia is estimated to be:
 - 140/1000 live births, currently
 - 161/1000 live births, (1994)

Neonatal Mortality Rate (NNMR)

Neonatal period is the first month of age of an infant. Neonatal mortality (death) is the death of infants under one month (<4 weeks). Per 1000 live births.

Neonatal Mortality Rate (NNMR) = $\frac{\text{Number of deaths of infants < 1 month in a year}}{\text{Total number of live births in the same year}} \times 1000$

Neonatal mortality rate reflects mortality due to:

- . Maternal factors during pregnancy
- . Birth injuries
- . Neonatal infection, etc.

It is an indicator of the level of prenatal and obstetric components of maternal and child health care (MCH).

Post-Neonatal Mortality Rate (PNNMR)

The post neonatal age is the period of time between one month up to one year.

Post – Neonatal mortality (death) is deaths of infants one month (four weeks) of age up to one year (1 – 11 months age of) per 1000 live births.

$$\text{PNNMR} = \frac{\text{Number of deaths of infants 1 month to 1 year of age in a year}}{\text{Total Number of live births during the same year}} \times 1000$$

The post-neonatal mortality rate reflects deaths due to factors related to;

- Environmental sanitation
- Infections (communicable diseases)
- Nutritional problems
- Child care etc.

It can be used as an indicator to evaluate Maternal and Child Health Care services and socio-economic development of a community or country.

2.2.3. Maternal Mortality (Death) Rate (MMR)

Maternal mortality rate is the number of maternal deaths related to pregnancy, child birth and post natal (puerperium) complications per 1000 live births (usually per 100,000 L.B).

$$\text{MMR} = \frac{\text{Number of deaths of women related to pregnancy child birth and puerperium in a year}}{\text{Total number of live births in the same year}} \times 100,000$$

It is a sensitive indicator of health status of a population. It reflects the socio- economic status of a community.

The Maternal Mortality Rate of Ethiopia is estimated to be more than 850 deaths per 100,000 live births annually. This is among the highest in the world.

2.2.4. Sex Specific Death Rates (SSDR)

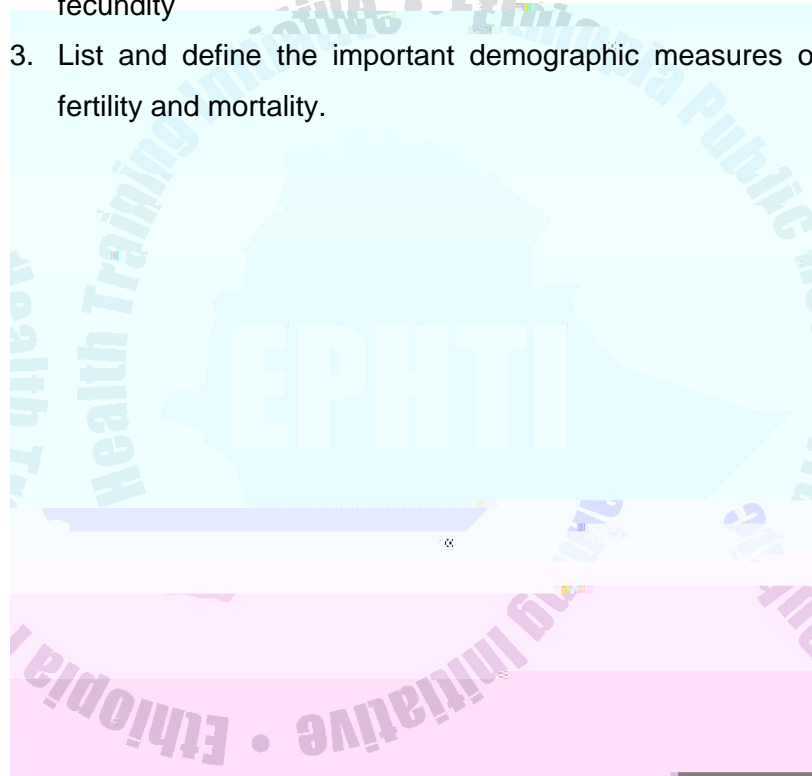
Sex Specific Death Rate is the number of deaths among a specific sex group (males or females) per 1000 population of the same sex group.

$$\text{Sex specific Death (Mortality) Rate for males} = \frac{\text{Number of deaths among males}}{\text{Total number of males}} \times 100$$

Sex specific mortality rate is used to determine which sex group is at higher risk of death than the other.

Study Questions

1. What are ratios, proportions and rates? Explain their differences.
2. Distinguish the difference between natality, fertility and fecundity
3. List and define the important demographic measures of fertility and mortality.



1. Crude Birth Rate
2. Crude Death Rate
3. General Fertility Rate
4. Infant Mortality Rate
5. Neonatal Morality Rate
6. Post Neonatal Rate
7. Sex Ratio at Birth
8. Under five morality Rate
9. Sex Specific Mortality Rate for Females
10. Sex specific Mortality Rate for Males
11. Maternal Mortality Rate
12. Total Fertility Rate
13. Gross Reproductive Rate

CHAPTER THREE

GROWTH OF POPUALTIIONS

Instructional Objectives

After completing this chapter the learner is able to:

Define demography

Identify the different sources of demographic data

Explain the differences between the major sources of data

List and state steps needed in conducting population census

If we assume that the number of individuals entering a population (immigration), equals the number of leaving (emigration), population growth is the result of the increase of births over deaths. This relationship is summarized by a formula known as the balancing equation. It is expressed as:

$$P_2 = P_1 + (B - D) + (I + E)$$

Where:-

P_2 = Size of population for the year under consideration

P_1 = Size of population in the preceding year

B = Number of births between the two dates

D = Number of deaths between the two date.

I = Number of immigrants in the time under consideration (between P₂ and P₁)

E = Number of emigrants in the time under consideration (between P₂ and P₁)

The differences between births and deaths in a population produces the **Natural Increase** (or Decrease) of a population. The rate of Natural Population increase is the rate at which a population is increasing (or decreasing) in a given year due to excess (or deficit) of births over deaths expressed as a percentage of the base population.

$$\text{RNI} = \frac{\text{Births} - \text{Deaths}}{\text{Total Population}} \times 100$$

OR

$$\frac{\text{Birth Rate} - \text{Death Rate}}{10}$$

Net Migration: is the difference between the numbers of persons entering a geographic area (Immigrants) and those leaving the area (emigrants).

Total Population Growth Rate

It is the rate at which a population is increasing (or decreasing) in a given year due to natural increase and net migration expressed as a percentage of the base population.



Geometric Progression:- A series of ordered numbers is said to be in geometric progression if the proportion of any two adjacent numbers is the same.

e.g. 3, 9, 27, 81; or 1, 2, 4, 8, etc.

Population size over a period of years is said to follow a geometrical pattern of growth, if the change within a particular year is proportional to the population size at the beginning of that year.

Arithmetic progression:- a series of figures is said to be in

project future population size because it assumes a constant growth rate over decades, where as growth rates do change over time. To calculate doubling time, divide the number 70 (actually 69.3 for better accuracy) by the population growth rate expressed in percent. For example a country with a population growth rate of one percent would double its population in about 70 years; at 2% in 35 years; at 3% in 23 years.

$$\text{Doubling Time} = \frac{70}{\text{Population Growth Rate}}$$

Malthus said that if the growth of population exceeds that of food, preventive checks such as continence (self resistance in refraining from sexual intercourse) and delayed marriage must be introduced; or Positive Checks, such as starvation or famine, disease and war will plague the society. He grouped these checks under the heading of "Misery and Vices".

2. Population Growth Forms

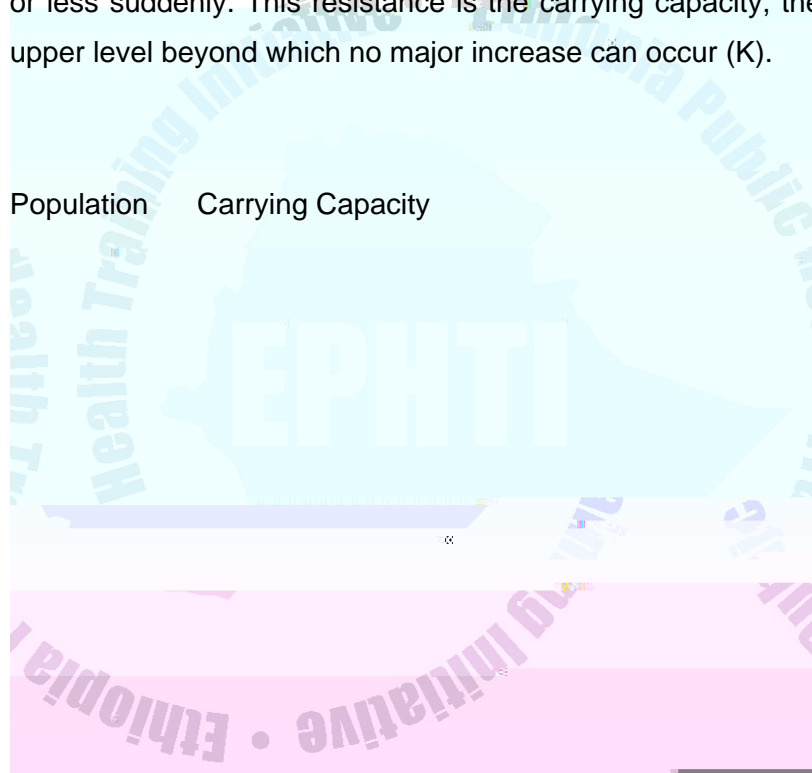
Populations have characteristic patterns of increase which are called **Population Growth Forms.**

There are two patterns of population growth forms.

A. Exponential Growth Form (J - Shaped Growth Curve)

In this growth form density increases rapidly in exponential or compound interest fashion, when there is no environmental restrictions; and then stops abruptly as environmental resistance or other limits of resources become effective more or less suddenly. This resistance is the carrying capacity, the upper level beyond which no major increase can occur (K).

Population Carrying Capacity



increases percentage wise (the negative acceleration phase), until a more or less equilibrium level is reached and maintained that is the carrying capacity, showing more or less an S – shaped curve.

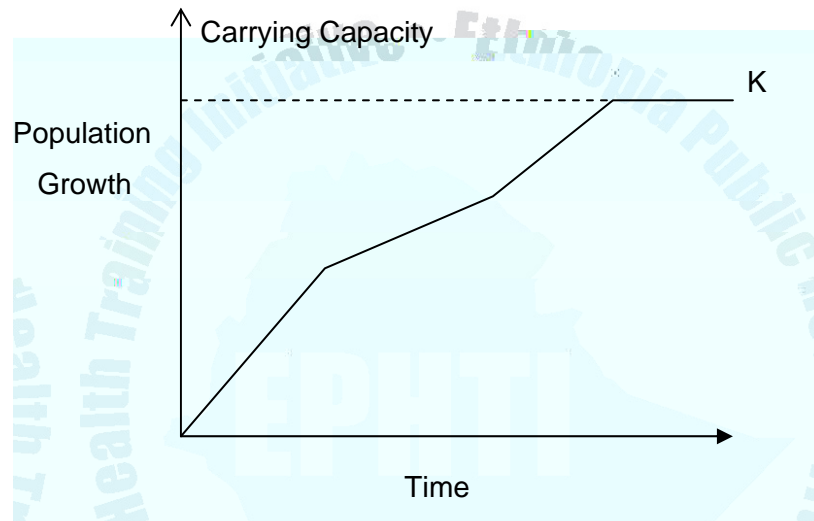


Fig. 3.2: Sigmoid Growth Curve (S- shaped)

3. Population Dynamics

Definition

Population dynamics is the study of the changes in population size and structure over time

Major Factors in Population Dynamics

Three major factors or variables determine the population of a defined area and its growth over time. There are:

- ◆ Births (Fertility)
- ◆ Deaths (Mortality)
- ◆ Migration
 - a) immigration (in migration)
 - b) emigration (out migration)

The balance among these three factors determines whether a population increases, remains stationary, or decreases in number. The relation between births and deaths is referred to as Natural Population Increase (Natural Population Growth). When the net effect of migration is added to natural increase, this is referred to as Total Increase (Total Growth).

4. Population structure (composition)

Aside from the total size, the most important demographic characteristic of a population is its population structure. Population structure refers to the composition of the population in terms of Age, sex, occupation, religion, educational status, geographical distribution, socio-economic status etc. The structure of a population is influenced or

affected by births, deaths and migration and their predisposing



deal about that population. One can easily see whether a population is young or old. By convention males are shown on the left and females on the right of the pyramid. Young persons at the bottom and the elderly at the top.

The ratio or percentage of the various age groups in a population determines the current reproductive status of the population and indicate what may be expected in the future.

The shape of the pyramid reflects the major influences on births and deaths, plus any change due to migration over three or four generations proceeding the date of the pyramid. The following four representations of population age – sex structure provide an overall example of what a pyramid for different levels of population growth would look like – rapid growth, slow growth, zero growth and negative growth (Fig 3.3).

a. A pyramid with a Broad Base

This indicates a high percentage of young population. Rapid population growth. The low survivorship and high natality of human population in many developing countries result in a pyramidal stable age - structure, in which most of the population is young.

b. A Bell shaped Polygon:-

This indicates a moderate proportion of young to old Population. Slow population growth.

c. A Rectangular Polygon:-

In a more developed countries high survivorship and



A rapidly expanding population will usually contain large proportion of young individuals. A declining population will contain a large proportion of old individuals and a small proportion of young individuals.



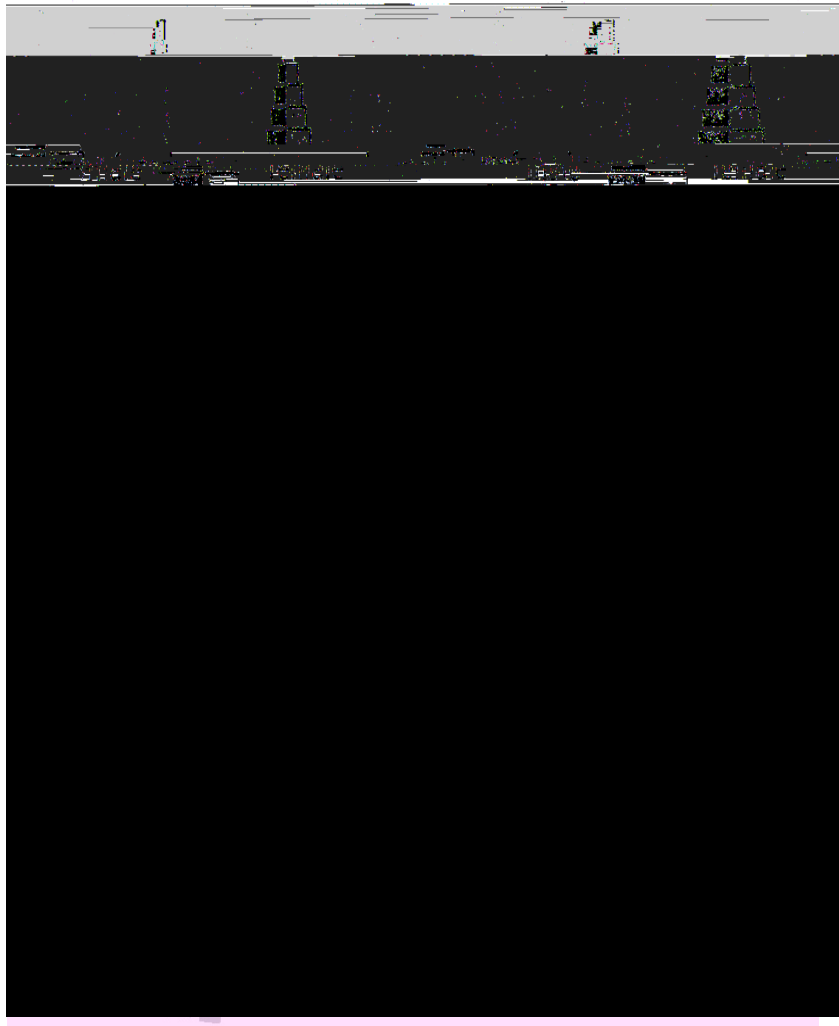


Fig. 3.3. Age- Sex Structure in Transition

7. Type of Populations

Populations may be categorized into four major groups depending on their state of expansion:

a. TYPE I - EXPANSIVE

This is characteristic of traditional poor countries indicated by:-

- i. High Fertility
- ii. High Mortality
- iii. High proportion of children (young age)
- iv. Moderate Growth Rate.

b. TYPE II - EXPANSIVE

Includes modern, less developed countries characterised by:-

- i. High Fertility
- ii. Declining Mortality
- iii. High Growth Rate
- iv. Very young population

c. TYPE III - STATIONARY

This includes contemporary developed countries characterised by:-

- i. Declining Fertility
- ii. Declining Mortality
- iii. Moderate Growth Rate
- iv. Aging population

d. TYPE IV - CONSTRICTIVE

These are future developed countries characterised by:-

- i. Low fertility
- ii. Low Mortality
- iii. Ceasing Growth Rate
- iv. Very old Population

8. Theory of Demographic Transition

Demographic transition is the historical shift of birth and death rates from high to low levels in a population; a term used to describe the major demographic trends of the past centuries (Fig 3.4)

The change in populations basically consists of a shift from an equilibrium condition of high birth and death rates, characteristic of agrarian societies to a newer equilibrium in which both birth and death rates are at much lower level.

The period of transition, at least in Western Europe, was initiated by a drop in death rates that was followed some years later by a fall in birth rates. The intermediate period was one of a rapid population growth (population explosion). The period of transition is described by four major stages.

STAGE ONE

Agrarian civilizations (primitive stage) are characterised by stable or slowly growing populations with crude birth rates greater than 45 per 1000 and crude death rates greater than 35 per 1000 births. Agricultural existence favours large families. However high birth rates are balanced by high death rates from diseases, famine, war etc resulting in very low population growth.

STAGE TWO

Advances in sanitation and improved availability and quality of food, water, and shelter lead to a fall in death rate and an

STAGE THREE: Characterized by falling growth Rates.

After a time, birth rates tend to fall, largely as a reflection of industrialisation and consequent urbanisation. With industrialization people tend to migrate from rural to urban areas. Urban living not only breaks the traditional patterns but also creates incentives for having small families. Living quarters are cramped, children being a financial liability rather than asset. There is a greater need for cash, since food and clothing can no longer be produced at home. For these reasons husbands and wives are impelled to seek work outside the home for wages. There is a greater geographic proximity to health care service and to the availability of information and service for disease and family planning. These various factors increase the likelihood that contraceptive practices will be adopted. In some places abortion has been included in the measures available for the control of fertility.

This stage is a situation in which birth rates and death rates are again essentially in balance, but at a lower level as compared with those of the primitive first stage, when both crude birth rate and crude death rate are in the vicinity of less than 20 per 1000 and 10 per thousand respectively.

STAGE FOUR

This stage is reached in highly developed societies when both birth and death rates are low and population growth rates are zero or even negative.

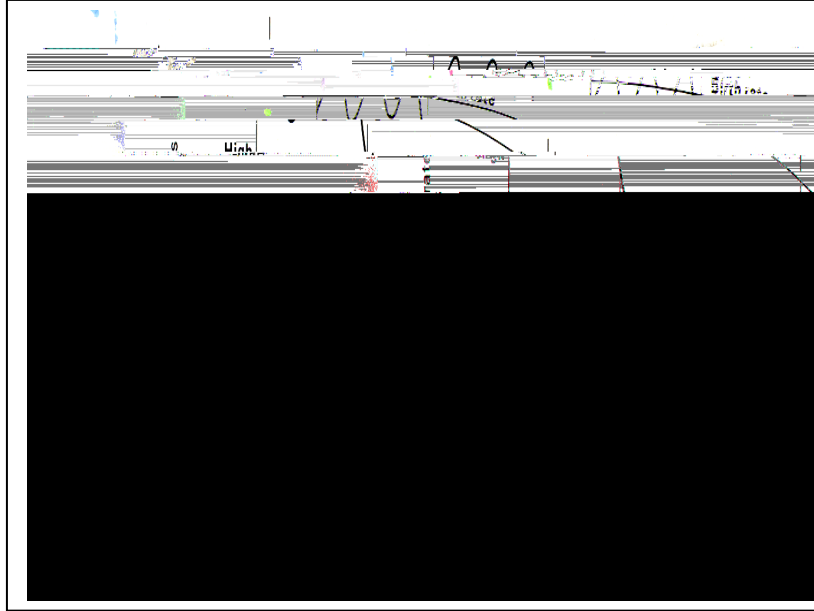


Fig: 3.4: The Demographic Transition Model

Study Questions

1. Define the following demographic terms Natural population increase, Progression, Population doubling time, Population Dynamics.
2. Discuss the hypothesis of Thomas Malthus on Population Growth.
3. Explain the differences between the Exponential Growth Form and the sigmoid Growth Form of populations.
4. What is the demographic transition and why was population growth so slow during the first stages of the transition.
5. How can the Age-sex structure of a population determine the needs of that population?
6. What does it mean to have a “young” or “old” population?
7. A population structure of District “A” is indicated in table 3.1. Draw a population pyramid of District “A” based on the table and identify what type of pyramid it is.
8. Figure 3.5. Shows population growth through Natural Increase, 1775–2000.
 - a. What were the levels of birth and death rates in less developed countries and in more developed countries in 1775?

- b. Describe how the birth and death rates in the less developed and more developed countries changed from 1775 to 1995?



Table 3.1. Population structure of Town “A” by Age and Sex,



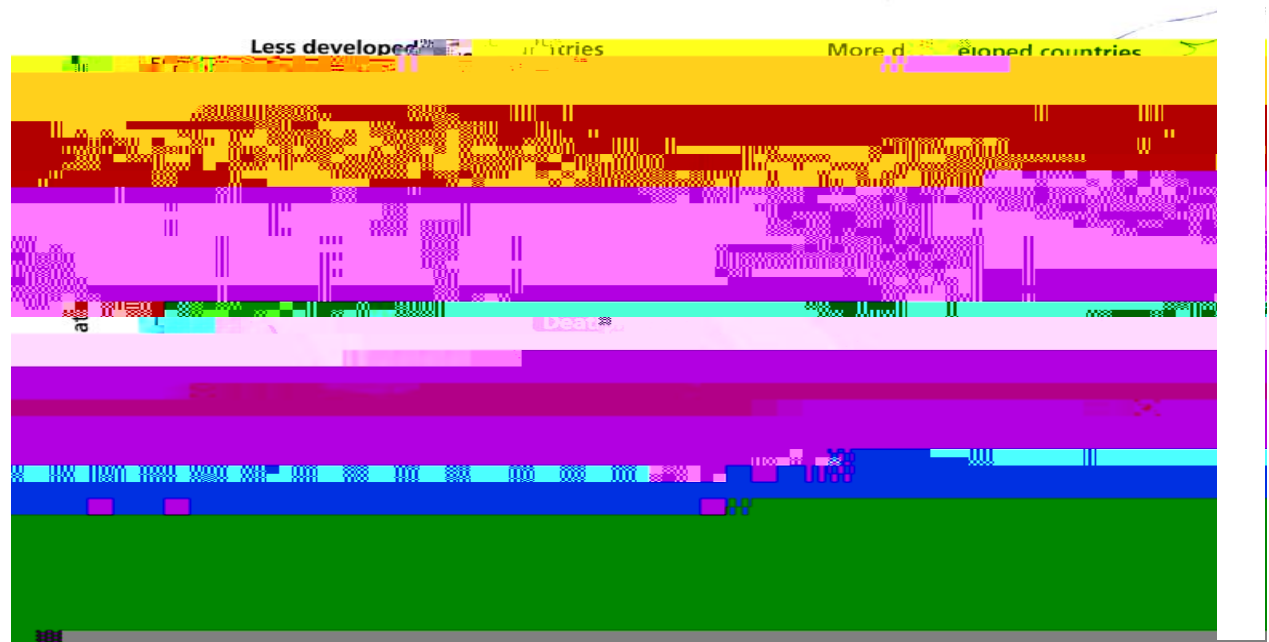


Fig: 3.5. Population Growth Through Natural Increase 1775 – 2000

CHAPTER FOUR

WORLD POPULATION GROWTH, CURRENT TRENDS, PATTERNS AND INTERPRETATIONS

Instructional Objectives

After completing this chapter the learner is able to:

Anthropologists believe, that human species dates back at least 3 million years. For most of our history these distant ancestors lived a precarious existence as hunters and gatherers. This way of life kept their total numbers small, probably less than 10 million. However, as agriculture was

introduced, communities evolved that could support more people.

World population expanded to about 300 million by A.D. 1 and continued to grow at a moderate rate. But after the start of the Industrial Revolution in the 18th century, living standards rose and widespread famines and epidemics diminished in some regions. Population growth accelerated. The population climbed to about 760 million in 1750, reached 1 billion around 1800, and 6 billion by the end of the twentieth century (Fig. 4.1. and 4.2).

World population accelerated after world war II, when the population of less developed countries began to increase dramatically. After million of years of extremely slow growth, the human population indeed grew explosively, doubling again and again; a billion people were added between 1960 and 1975; another billion were added between 1975 and 1987. Throughout the 20th century each additional billion has been obtained in a shorter period of time.

July 11, 1987 was designated as the day on which world population reached 5000 million- 'a day to celebrate', 'a day to contemplate'. October 12 , 1999 was also celebrated in which the population reached 6000 million.

It is estimated that population numbers had grown to 1000 million around 1800, and by 1900 the total was 1,700 million. By the end of the 1st half of the 20th century the figure was 2500 mill, and less than 40 years later had reached 5000 million, a huge figure in the context of the history of the world population growth.

By 2000 the number has grown to 6,100 million. Human population entered the 20th century with 1.6 billion people and left the century with 6.1 billion people.

The history of the world population growth can be divided into 2 periods. For most of the time that human beings have inhabited the planet, population has grown very slowly indeed. The pace of growth began to increase from around the beginning of the 18th century, accelerating to the very rapid rates characteristic of the 2nd half of the 20th century. During

population away from the developed regions of the world towards the developing world.

During the last two centuries most of the world's people lived in Asia, while relatively few lived in Latin America, North



20% and Europe's share will drop below Latin America's-less than 10%.

The more developed countries in Europe and North America, as well as Japan, Australia, and New Zealand, are growing by less than one percent annually. Population growth rates are negative in many European countries, including Russia (-0.6%), Estonia (-0.5%), Hungary (-0.4%), and Ukraine (-0.4%). If the growth rates of these countries continue to fall below zero, population size would slowly decline.

The largest absolute growth in the world was taking place in South Asia. Up to the year 2000, South Asia was expected to add about 33 million people a year to world population, and then about 30 million a year to 2025. Its share of world





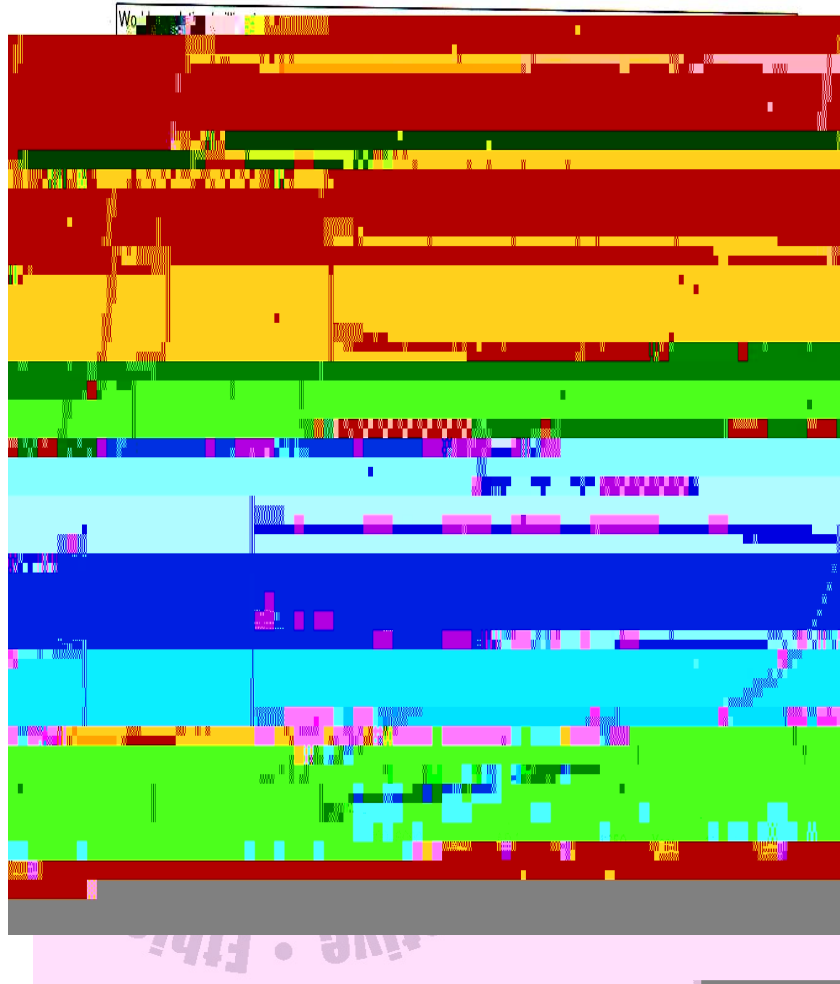


Fig. 4.1.: World Population Growth

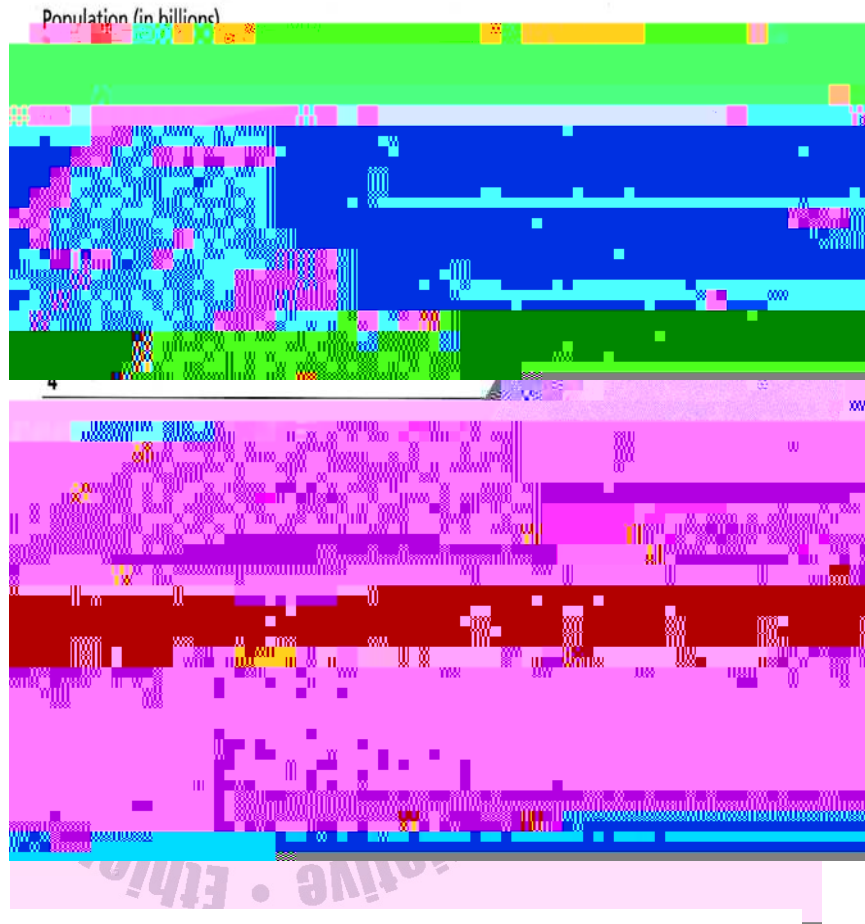


Fig. 4.2 World Population Growth, 1750 - 2150

**Table 4.1: Distribution Of World Population By Regions
(%) 1950, 1990 2025**

	1950	1990	2025
Africa	8.8	12.1	18.8
Latin America	6.6	8.5	8.9
Asia	54.7	58.8	57.8
China	22.1	21.5	17.8
India	14.2	16.1	17.0
Other Asia	18.4	21.2	23.0
North America	6.6	5.2	3.9
Europe	15.6	9.4	6.1
Oceania	0.5	0.5	0.5

But world population distribution and growth rates are very different from the distribution of world wealth (Table 4.2 and 4.3.) The per capita income of the poorest nations rose by only 1 % a year between 1960 and 1981 and at the 1985 data the per capita income of the richest country (United Arab Emrates) is 174 times that of the poorest country (Ethiopia). Overall the economies of the developing world grew by 1.9 % per annum between 1980 and 1982 while their populations grew by 2.0 % per annum.

**Table 4.2. World Population Numbers, Vital Rates & GNP
In 1992.**

Population

t

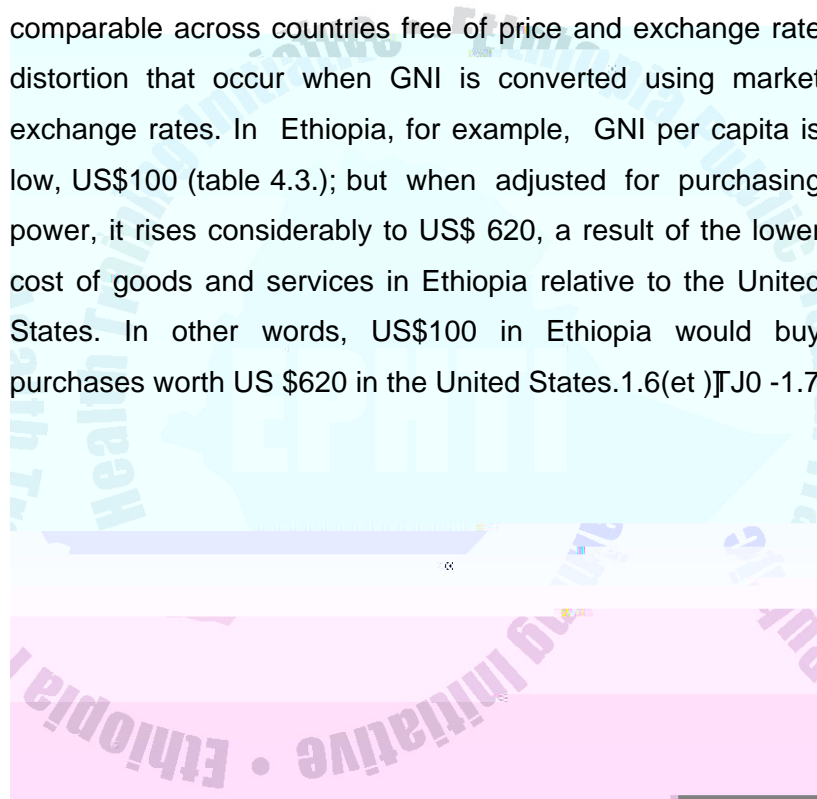


Table 4.3 Comparison of Gross National Income and Gross National Income in PPP, (1999)

Country	Gross National Income per Capital (US\$)	Gross National Income in Purchasing Power Parity Per Capita (US\$)
Brazil	4,350	6,840
China	780	3,550
Ethiopia	100	620
India	440	2,230
Indonesia	600	2,660

conversion factor. International dollars indicate the amount of goods or services one could buy in the USA with a given amount of money.

GNI PPP provides an indicator of the welfare of people that is comparable across countries free of price and exchange rate distortion that occur when GNI is converted using market exchange rates. In Ethiopia, for example, GNI per capita is low, US\$100 (table 4.3.); but when adjusted for purchasing power, it rises considerably to US\$ 620, a result of the lower cost of goods and services in Ethiopia relative to the United States. In other words, US\$100 in Ethiopia would buy purchases worth US \$620 in the United States.



from 10th most populous country with over 109 million people to sixth most populous country with over 281 million people. Kenya, in 1992 was the world's fastest growing country with an annual growth rate of about 4 % (Doubling time about 18 years), had a population of under 6 million in 1950. This had grown to 26.2 million by 1992 and 29.8 million in 2001. The population growth rate of Kenya (2001) was 2%, and if this trend continues Kenya will have a population of about 60 million by 2035.

Table 4.4: The 25 Most Populous Countries Ranked By Size, Medium Variant, 1990 and 2025.

1990		2025	
Country	Population (Millions)	Country	Population (Millions)
China	1139	China	1513
India	853	India	1442
USSR	289	Former USSR	352
USA	249	USA	300
Indonesia	184	Indonesia	286
Brazil	150	Nigeria	281
Japan	123	Pakistan	267
Pakistan	123	Brazil	246

h



2. Trends of Fertility

There has never been as a wide variation in child bearing



2.1. Ranges in Birth Rates

The wide range of birth rates within the world and the contrasts that exist within the developing world (20 in Cuba and Singapore; 50 in sub-Saharan Africa) and between the developing world (average birth rate of 33) and the developed world (average rate of 16) is testimony to the variety of factors that impinge on birth rates.

Fertility levels have traditionally been seen as closely related to development, (as assumed in the demographic transition model), but today in the developing world the relationship between fertility and development is less close than it was even 20-30 years ago. In some African countries for example, rising fertility has been observed recently and is related to a variety of factors including changes of breast feeding and the reduction in traditional sexual abstinence after childbearing.

2.2. Low Fertility in Developed Countries

In nearly all of Europe and some parts of East Asia and other regions, couples have fewer than two children too few to replace themselves when they die. If sustained overtime, such low fertility leads to population aging and population decline. Both of these phenomena have profound economic, social and political consequences.

In Europe, for example, where women have on average only 1.4 births, governments are concerned about too few workers in future years to support the aging number of retirees in the population. An aging population strains a nation's social security system and pension plans, and puts pressure on health budgets, because of higher health care costs for the elderly. Some governments are also concerned about whether a lack of working – age people will mean a greater need for immigrants, and whether population decline signals a weakening of political and economic power.

2.3. Fertility Decline in the Developing World.

In the developing world, fertility has also fallen nearly everywhere, but the pace of decline has varied greatly from one country to another. Even where fertility declines, populations continue to grow because large numbers of young people (from previous decades of high fertility) move into their reproductive years. This bulge of young people insures decades of continued population increase.

A variety of factors affect fertility including demographic factors such as age structure, age and type of marriage (polygamous or monogamous), infant and child mortality rates and socio-economic factors such as education, women's status and employment, rural or urban residence, social

development, health factors, breast feeding, contraceptive use and abortion prevalence.

Fertility decline in both the developed and the developing world has been the subject of much debate. Great emphasis has been put on economic explanations so that as in the theory of demographic transition, economic development or modernisation has been seen as the essential precursor of fertility decline. Modernisation has been described as “the best contraceptive” It has been argued that with economic development parental demand for children is reduced as child bearing costs increase and their contribution to the family economy decline.

But there is also argument that the decline of fertility is seen as a much more complex process involving sociological and cultural rather than economic factors, in which fertility decline may itself be a precursor to economic development. The communication of new ideas seems to be of key importance in the decline of fertility, and education seems to play an important role in this.

In 2004, total fertility in Asia and Latin America stands at 2.6 births per woman, about one half of levels seen in 1970. Fertility has also declined in Africa, but it remains well above the average for any other region. Regional average mask differences among individual countries; however, in some

countries, fertility rates have dropped to levels matching to those found in developed countries, while in others there has been little or no recent change in fertility at all.

China represents the first extreme, as women have only 1.7 children on average. Fertility is also near or below 2 in Brazil, Costa Rica, South Korea, Thailand and Kazakhstan. The youth populations in these countries ensure continued population growth, but they will age over time and total population size will stabilize or decline if low fertility continues.

At the other extreme are countries where fertility remains extremely high by world standards – 6 children per woman or higher. More of these countries are in the Middle East (Yemen) or in extremely poor regions of sub-saharan Africa (Mali and Uganda).

2.4. Marital fertility Decline

Fertility is declining in the developing world although there is still a wide spread of birth -rates. The immediate reasons for the decline include increased age at marriage, more contraception and more induced abortion. On the other hand, changes in the age structure of the population of developing countries as more adults survive, have tended to retard declines in the crude birth rate.

of conception lowering infant mortality rate, although it increases population growth rates initially, appears to lower fertility through increased contraceptive use. But the relationship may be indirect, since increased female education is also associated with lower infant mortality and increased contraceptive use. Increased birth intervals which follow the adoption of contraception help to lower infant mortality further, since longer birth intervals are associated with increased child survival rates.

2.7. Contraception

Contraception is used by majority of couples in the developed world and increasing proportions in the developing world. The diffusion of modern efficient contraception in the developing world has reached the stage where over three-quarter of women are aware of it, half are in favour of it and about one quarter are now using it. Substantial proportions of women using contraception are rural, uneducated and poor. World fertility surveys (W.FS) show higher use of contraception in Latin America, Caribbean and the Far- East and low use rates in Africa. Among the factors that appear to contribute to the efficient use of contraception are **urbanisation** and **education**. **Occupational variations** are also evident: the wives of professional and clerical workers use contraception more than do the wives of men in agriculture.

2.8. Family Size Preference

Data from surveys suggest that fertility would decline if women carried out their family size preferences, although population growth rates will still remain high.

2.9. Education

Education has a much stronger link with contraceptive use than do the purely economic characteristics of couples, and in the majority of countries the length of formal schooling of the wife is much more important than that of the husband in determining reproductive behaviour. Education for girls has the effect of raising marriage age: the completion of primary education shifts age of marriage above 16 and secondary education increases it still further

3. Trends In Mortality

the differential was 24.7 years, with life expectancy of 41.1 years in the developing world and 65.8 in the developed world.

Africa is the continent with the highest level of mortality with average life expectancy of 52 years in 2000 compared with an estimated 37.7 years in 1950 -55. South Asia also has high mortality rates with a life expectancy of 56.8 years in 1985-90 compared with 39.9 years in 1950- 55. In East Asia on the other hand, progress in reducing mortality over the last 30 year has been rapid with an increase in life expectancy from 42.7 years in 1950-55 to 70.4 years in 1985- 90. Life expectancies are now approaching 80 years in some countries of the region: in Japan male life expectancy is 76 and female 82, a combined life expectancy of 79 years, which is higher than either the United Kingdom (76) or Sweden (77.5). Latin America has seen a smaller rate of improvement than in East Asia, so that life expectancy has increased only by 14.8 years, from 51.9 years in 1950-55 to 66.7 years in 1985-90. At the other extreme, in the countries of the developed world, life expectancy is everywhere over 70 years; in Europe the figure for 1985-90 was 74.4 years compared with 65.8 years in 1950- 55 (Table 4.5).

Table 4.5: Crude Death Rates And Life Expectancy In World and Regions



living standards including improved food supplies, have all made their contribution.

3.2. Mortality Differentials

Just as there are differences among the countries of the developing world in mortality levels so within countries there are significant differences in mortality among different groups in the population. The universal differentials are those of age and sex which are found in the developed and developing world although in varying ways. But there are also significant differences in the mortality of groups by urban or rural residence, income level, education and literacy levels, and occupation. These variables are closely associated with standard of living and will also reflect factors such as knowledge of hygiene, nutritional needs and accessibility of medical facilities. Similarly, mortality differences among social classes continue to persist in the developed world reflecting differences in occupation, housing, income, and education: in England and Wales, for example, there are significant differences in the mortality rates among social classes.

Urban- rural differentials exist in most developing countries, with urban areas experiencing lower mortality than rural areas: but within urban areas lower income groups have higher mortality than the average for rural areas. It is in urban areas

that public health measures and environmental control are more easily organised, and are more accessible to the people,



increasing to 84 if China is excluded. National rates ranged from 4.6 / 1000 in Japan to 172/1000 in Afghanistan. The lowest world regional rates in 1990 were for North America (9) and Europe (11).

The highest regional rates were for Africa (99) (110 for Ethiopia), and south Asia (95). Overall, infant mortality in most of the less developed world is hovering just below the 100 mark and is proving difficult to reduce further. In 1980 the United Nations set objectives for the 3rd UN Development Decade one of which was an infant mortality level of 50 by the year 2000. But 69 countries - 47 in Africa, 3 in Latin America, 18 in South Asia and 1 in Oceania - this objective was unlikely to be met.

- **Infant Mortality Differentials**

Birth interval; children born less than two years apart are much more likely to die, while an interval of more than 4 years makes death much less likely.

The child's sex. In general, males have higher mortality at all ages than females.

Breast feeding. Breast fed children have more chance of survival. Alternative feeding (bottle feeding) has higher risk of death.

3.4. Female Education

In many studies conducted, mothers with no education had

world to- day are rural dwelres moving to the towns and cities either of their own or another country.

Most people move for economic reasons, but some migrate to escape political or religious persecution or simply to fulfil a personal dream. Some people divide the reasons for migration into



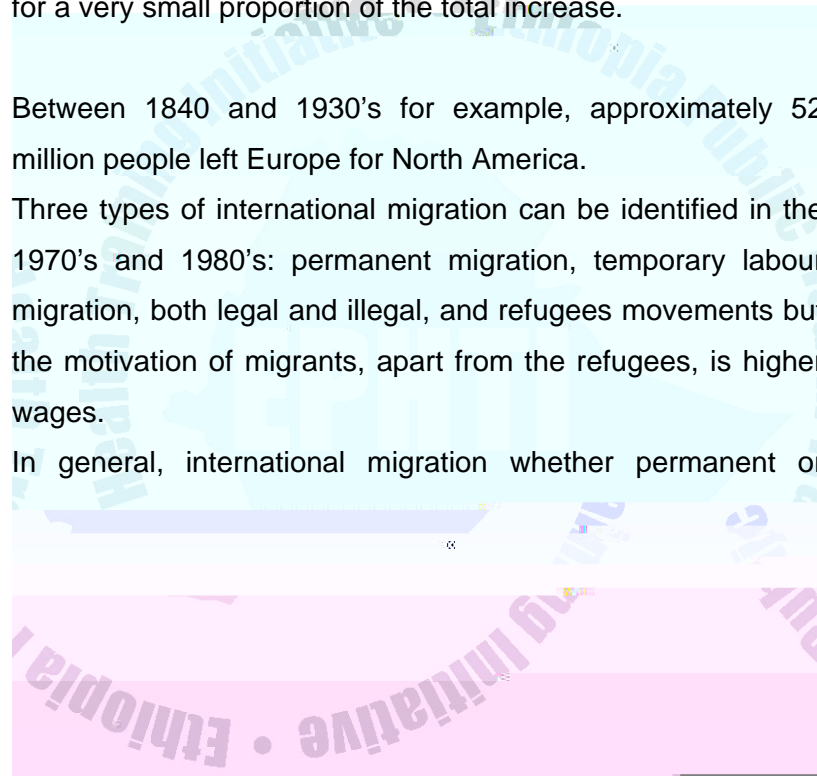
12 most important sending countries in terms of absolute numbers for the period 1980-85.

Compared with migration rates in the nineteenth and early twentieth century, present-day rates are small and account for a very small proportion of the total increase.

Between 1840 and 1930's for example, approximately 52 million people left Europe for North America.

Three types of international migration can be identified in the 1970's and 1980's: permanent migration, temporary labour migration, both legal and illegal, and refugees movements but the motivation of migrants, apart from the refugees, is higher wages.

In general, international migration whether permanent or temporary is motivated by higher wages.



A new area of labour migration emerged in the 1970's as the resource- rich states of the Middle East encouraged migrant workers first from neighbouring Arab States and then from Asia . At first the movements were relatively unrestricted. But as the receiving countries have become aware of the problems of temporary migrants staying permanently together with the problems of an excessively large foreign community, so there is now much more emphasis on the rotation of workers. Once a contract has ended they must return home. As the largest importer of foreign workers, Saudi Arabia is also trying to reduce its dependence on foreign workers. Like wise Kuwait had large numbers of foreign workers (29% of the total population), and again there is pressure to reduce dependence on foreign workers. In the United Arab Emirates, foreign workers constitute nearly 90% of the active population. Overall, it has been estimated that there were 3 million migrant workers together with one million dependants in the countries of Middle East.

4.2. Internal Migration

Internal migration is the means by which the majority of people maximise opportunities, whether economic, social or environmental. Most movement is from areas of decline to areas of growth. Nineteenth century Europe experienced large

scale rural to urban migration resulting in the highly urbanised populations of the developed world today.

The majority of internal migration in the developing world is of rural dwellers moving to towns which as a result are growing rapidly. Urban growth rates are roughly double the national population growth rates in the developing world.

Migration to cities is a manifestation of more fundamental structural change in national economies which are undergoing a transformation from being agrarian to industrial based. People are moving from the countryside to the towns for higher income and better jobs. In many parts of Africa, seasonal labour migration is common, with men working in cities or in mines and sending the money home to their wives and children in the rural areas, as well as within and between urban areas in response to changing economic conditions.

Study Questions

1. According to the projection shown on “World Population Growth: 1750-2150” (Fig. 4.2), about what percent of growth is projected to occur in less developed countries after 2100?
2. Based on Fig. 4.2, during what “age” of human history did the worlds’ population begin to grow rapidly?
3. Discuss the reason for the increasing world population growth since the 18th century.
4. What is migration? And why do people move?
5. What are some of the ways that education can play a role in determining family size?
6. What determines the number of children a woman will have.

CHAPTER FIVE

WOMEN AND DEVELOPMENT

Instructional Objectives

After completing this chapter the learner is able to:

- Discuss the role of women in development.
- Define gender – based violence
- Explain how gender differences affect women's health and well – being
- Discuss the status of women in Ethiopia

1. Introduction

Whether and when the world's population stabilizes will depend in large measures on changes in the status of women around the world. There is a growing body of scientific evidence supporting the view that improvement in women's status is good development policy and may well be the key to lower birth rates.

Based on national reports the UN received from 150 countries for the 1994 International Conference on Population and Development (ICPD), certain characteristics of the status of

women are common to all regions of the world: lower status and salary levels than men in the formal work force; large proportions of women in the informal sector of the economy; a rising number of female headed households; lack of enforcement of legislation protecting women's rights; and under – representation of women in politics and decision making positions. Women are poorly represented in national governments around the world.

Cultures throughout the world have historically given men and boys preferential treatment in a broad range of life matters; education, food, health care, employment opportunities, and decision-making authority. While the disparities are usually much greater in developing countries, there are barriers to break down in all countries.

The International Conference on Population and Development (ICPD) held in Cairo, Egypt in 1994 document notes that “in all parts of the world, women are facing threats to their lives, health and well – being as a result of being overburdened with work and of their lack of power and influence”.

Women often juggle multiple roles, balancing their time between household responsibilities and economic activity. Women are the primary custodians of the health and well

being of the family. Increasingly, they contribute to family income without a corresponding decrease in domestic chores.

As more households are headed by women (up to one – third in some countries), elevating women’s status becomes an even more urgent national concern. Women – headed households tend to be poorer than those headed by men, and many women have all the household responsibilities without the power or resources necessary to meet them.

2. Understanding Gender

Gender refers to the different roles that men and women play in a society, and the relative power they wield. Gender roles vary from one country to another, but almost everywhere, women face disadvantages relative to men in social, economic and political spheres of life. Where men are viewed as the principal decision makers, women often hold a subordinate position in negotiations about limiting family size, contraceptive use, managing family resources, protecting family health, or seeking jobs.

Before or at birth, parents who prefer boys may put



willing to resist the demands of their husbands or families.

3. Violence Against Women

Around the world at least one woman in every three has been beaten, coerced into sex, or otherwise abused in her life time. Most often the abuser is a member of her own family. Increasingly, gender – based violence is recognized as a major public health concern and a violation of human rights.

The effect of violence can be devastating to a woman's reproductive health as well as to other aspects of her physical and mental well – being. In addition to causing injury, violence increases women's long – term risk of a number of other health problems, including chronic pain, physical disability, drug and alcohol abuse, and depression. Women with a history of physical or sexual abuse are also at increased risk for unintended pregnancy, sexually transmitted infections, and adverse pregnancy outcomes. Yet victims of violence who seek care from health professionals often have needs that providers do not recognize, do not ask about, and do not know how to address.

4. Gender - Based Violence

Violence against women and girls includes physical, sexual, psychological, and economic abuse. It is often known as “gender – based” violence because it evolves in part from women’s subordinate status in society. Gender – based violence includes spousal battering sexual abuse of female children, dowry related violence, rape including marital rape, traditional practices harmful to women, such as female genital mutilation (FGM). They also include non – spousal violence, sexual harassment and intimidation at work and in school, trafficking in women, forced prostitution, and violence perpetrated or condoned by the state, such as rape in war. Many cultures have beliefs, norms, and social institutions that legitimize and therefore perpetuate violence against women.

5. Empowering Women

5.1. Education

Education is the primary avenue for elevating women’s status. Two – thirds of the world’s illiterate adults are women; and 70 percent of the children not enrolled in primary school are girls. There is abundant evidence that more educated women tend to marry later; thus they delay child bearing and have fewer children over the course of their lives. In many countries,

women with secondary education have about half as many children as those with no education.

As women gain more autonomy over their lives as a result of education, this gives them wider employment opportunities and may make them want to delay marriage. Education means they are more able to make decisions over the number of children they wish to have. As they gain control over their reproductive lives so they can gain control over the rest of their lives. Their greater autonomy in turn increases the livelihood that their children will survive and in turn be educated.

5.2. Employment Opportunities

Education also expands women's employment possibilities and their ability to secure their own economic resources. Women are less likely than men to hold a paying job in part, because women are not treated as equals to men in the work place. Women are paid less than men throughout the world, although the gap is somewhat smaller in developed countries. In many developing countries, women hold less than 25 percent of formal sector jobs. Instead, women work in the informal economy – in subsistence agriculture, in the markets, or in cottage industries – where their contribution often is not counted in official statistics.

5.3. Legislating Equality

Governments have to enact legislation to provide equal opportunities for women and men and to protect women from discrimination. However, legislation to improve women's status is often not enough to change behaviour. Cultural and religious barriers to women's advancement are deeply rooted. In many societies, laws to protect women's rights were designed merely to placate vocal minorities, and the mechanisms for enforcing them are weak or nonexistent. The elimination of exploitation, abuse, and violence against women and of other forms of gender-based discrimination is considered essential to increasing women's participation in national development agendas and much has to be done beyond enacting legislation.

5.4. Emphasizing the Girl Child

Discrimination can begin even before girls are born. Sex-selective abortions have been reported in some countries of the world, such as China and India, where sons have a higher economic and social value than daughters. The preference for boys encourages families to invest more in their sons than their daughters, further, perpetuating gender disparities. When boys receive preferential treatment within the family and

awareness of the value of girls and investing early in girls' lives – with more education, better health care, and sufficient nutrition—are the first steps towards advancing women's status. The Cairo document of the ICPD notes that “Since in all societies, discrimination on the basis of sex often starts at the earliest stage of life, greater equality for the girl child is a necessary first step in ensuring that women realize their full potential and become equal partners in development.

5.5. Male Responsibility

Programs designed to elevate women's status are unlikely to succeed if they do not have the backing of men. Men have a decisive role in eliminating gender disparities because they hold the power to influence societal thinking in most parts of the world. Government policies and programs have to pay special attention to the role men can play in easing women's domestic burdens; encouraging men to take active part in all aspects of family life: attending to children's health, nutrition, and education; practicing family planning; providing economic support; caring for their own as well as their partners' – reproductive and sexual health.

5.6. Program of Action of the ICPD

In addition to providing educational and employment opportunities, the program of Action of the Cairo International Conference on Population and Development (1994) calls on governments and private sector entities (as appropriate) to take the following steps to end discrimination against women:

Ensure that women can own property equally with men, obtain credit and negotiate contracts in their own names, and exercise their rights of inheritance;

Eliminate gender discrimination in hiring, training, and wages

Eliminate exploitation, abuse, and violence against women, and

Enact laws and implement programs enabling both sexes to organize their work around their family responsibilities.

A common theme that runs through any discussion of population policy is the role of women in population policy and the relationship of women to population growth. Women bear children and take the bulk of the responsibility for their rearing. They are the primary health care workers and educator's. Any successful development policy must pay attention to the need to improve the status of women.

Active policy to raise the status of women is prerequisite for both a successful population policy and indeed development in general. Unfortunately it is easier to change legislation than traditional attitudes and customs. In all societies there are cultural institutions, beliefs, and practices that undermine women's autonomy and contribute to gender-based violence. The need to end discrimination against women is now widely recognised, and the improvement in the status of women is seen as a goal in itself independent of any population concerns.

6. The Status Of Women In Ethiopia

In Ethiopia gender bias is manifested in the following conditions.

6.1 Working Conditions

a. In the rural Areas

More than 85 % of Ethiopians live in the rural areas. Because of the rudimentariness of the methods of production used in the rural areas, nearly most of women's labour is wasted on such arduous activities as farming and animal husbandry activities in which traditional technique of production is applied. Even though, the division of labour differs from place to place, depending on the climatic conditions, women participate in all types of agricultural work, including weeding,

raking, harvesting and preparing trashing field and grain bins. Women in nomadic societies are entrusted with the responsibility of erecting mobile huts, dismantling them and carrying the parts to the next place of stay, in addition to cattle raising and herding. With respect to house work, rural women have to grind grain, fetch water, gather fire wood, prepare cow dung, prepare food and raise children they work for about 13 - 17 hours/ day.

Although rural women's share of the division of labour is very tiresome and much time consuming, it is derogatively referred to a "women's work" and is not valued. Rural women have also been barred from access to productive assets, such as ownership and control of property, since their contribution continued to be undervalued.

b. In the Urban Areas

Majority of the low-wage-earners in the urban areas are women. In the factories for instance, women make up 30% of labour force, whereas their share of total salaries paid is only 21%. Although a very small number of women hold high-position jobs that require college training and technological know-how, most Ethiopian women are engaged in all types of odd jobs. These include low-income jobs, such as selling '*injera*' and '*tella*'.

prostitution and brothel or bar management. Working as



The number of business women, is relatively low. Actually, most women are engaged in the service sector as bar, groceries and restaurants owners, because they lack the appropriate skills and capital. All these facts have resulted in a poor situation.

d. The Informal Sector

A very large of women, especially young women, non literate female headed households, or widowers, eke out a living engaged in such activities of the informal sector as gathering and selling fire wood, hawking cheap goods and services, selling 'tella' and working as maid servants or prostitutes. Even though these activities, falling under the informal sector are undocumented, they bear witness to the miserable conditions Ethiopian women live in.

6.2. Social Services

a. Social Issues

Rural young women who come to cities and become prostitutes or drug addicts often end up becoming juvenile delinquents. The rest take low - paying Jobs that require little or no skill. On top of that some of them are raped and give birth to children. They have to raise on their own. Furthermore, women more than men bear the brunt of civil wars, drought,

displacements, health problems, disruptions of normal life as a result of natural and man made disasters.

b. Health

The most striking thing about the overall health condition of Ethiopian women is that, it is pathetic. Between 19 to 60 % of women suffer from inadequate nutrition. About 5 % of pregnant women have access to the services of trained mid wives, the rest have to settle for traditional mid wives, and death of women related to pregnancies and child birth is more than 50 times of the developed countries. Ethiopian women feel the burden of fertility (TFR. 7.3 children/ woman 1984) one of the highest in the world. About 98 % of mothers and potential mothers had no access to family planning.

Therefore, most women lack the knowledge about the spacing of children, the problems of premature pregnancy as well as post - prime age pregnancy.

c. Harmful customs and practices

Though the figure varies from one culture to another as well as between ethnic groups and regions, at least 50% of Ethiopians who are affected by harmful customs and practices are women. If a woman exhibits intelligence, she is taken for a “crafty person”, if she dares to express her views, she is

labelled “ long tongued,” If she happens to be gusty and vigorous, dubbed “ masculine”, if she is not hard-working she is considered to be not only lazy but lacking cooking and house - keeping skills as well. Women as a whole, are viewed as a personification of weakness and as treacherous beings who do their duties if and when they are whipped or beaten. Young girls who live in rural areas are usually forced to marry before they reach puberty time either pre-arranged by their parents or forced upon them through kidnapping. Women are victims of circumcision and other harmful practices that come with pregnancy and child births.

d. Education

Even though the education policy of Ethiopia does not make explicit discrimination between sexes, it promotes male supremacy indirectly. Traditional education in Ethiopia advocates the categorisation of subjects into “those that may be given to male boys and girls” and “Those that are taught exclusively to boys”. Both the explicit and implicit ways of promoting male supremacy are recurring themes in many writings, speeches, paintings, fables and proverbs. One could, therefore rightly say that our country’s curriculum is still discriminatory toward girls and women.

Fifty percent of the Ethiopian population comprises of women. But they make up only 23 % of the student population. Percentage of female students of the different levels of Education in 1984.

<u>Level of Education</u>	<u>Female %</u>
Elementary school	30
Junior High school	41
High school	30
Junior College	14.5
Four - Year college (Degree providing college)	8.2
Graduate school	6.4

The number of female students decreases as the level of education rises. The number of female students that fail examinations and drop out of school, too, is great.

e. Law

The laws of the land, like many other things, are prejudicial to women. As such, that reflect and reinforce societies backward attitude toward women, no less than certain cultures and religions do. Consequently, they are obstacles to women's attempts at having their right, to enjoying the fruits of their



Study Questions

1. What does gender mean?
2. Explain the significance of women on development.
3. List the acts of gender – based violence and discuss their effects.
4. What does women empowerment mean? Explain how women can be empowered.
5. Describe the status of women in Ethiopia
6. Identify and explain the most important barriers to women empowerment.

CHAPTER SIX

IMPACT OF RAPID POPULATION GROWTH ON SOCIO ECONOMIC DEVELOPMENT

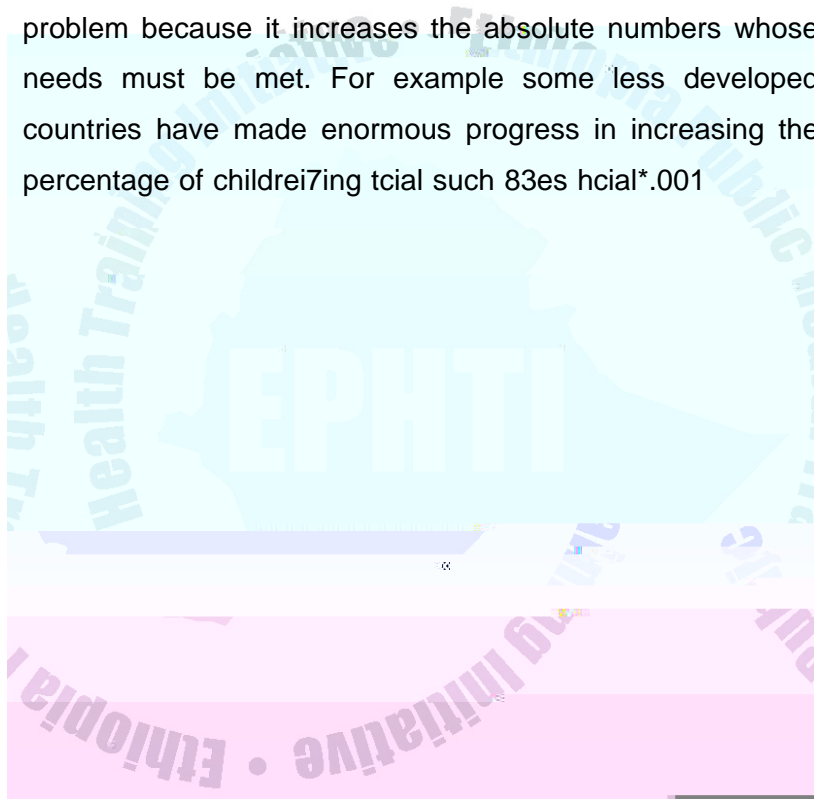
Instructional Objectives

After completing this chapter the learner is able to:

1. Social Implications Of Population Growth

Rapid population growth in less developed countries is linked to many problems, including poverty, hunger, high infant mortality and inadequate social services and infrastructure (transportation, communication etc.) Rapid population growth may intensify the hunger problem in the most rapidly growing countries. Population growth can reduce or eliminate

food production gains resulting from modernization of farming. Population pressures may also encourage practices such as over irrigation and overuse of crop lands, which undermine the capacity to feed larger numbers. In some cases population growth is quite directly related to a social problem because it increases the absolute numbers whose needs must be met. For example some less developed countries have made enormous progress in increasing the percentage of children living social such as 83es hcial*.001



growing population is the mere presence of so many people sharing a limited number of resources strains the



3. Health And Development

Development is movement of the whole system up ward. Improving health conditions used to be low priority of most least developed countries (LDC) governments. It was regarded as something the governments would like to do if possible, but not at the expense of more directly productive expenditure categories. Development specialists generally took similar view as far as known. No previous economic development textbook includes a chapter on health and nutrition.

Recently, however, more attention has been devoted to relationship between health and development.

programs can do the job by itself, even in the absence of significant over all development. Opponents of this view reply that health status is generally relocated to income level, and specific health measures often fail to have much effect when the surrounding socio- economic and physical environments are unfavorable to health.

3.1 Effects of Health on Development

Better health is an important goal in its own right.

Health increases the range of human potentialities of all kinds and is rightly regarded as **a basic human need.**

Health is valued for its own sake. Everyone can benefit from better health in the present, and improved health for the young will lead to healthier population in the future.

Like education, health services increase the quality of human resources both now and in the future. Better worker health can provide immediate benefits by increasing the worker's strength and ability to concentrate while on the job.

Better child health and nutrition promote future productively by helping children develop in-to stronger, healthier adults. In

Even today schistosomiasis makes it unsafe for people to enter lakes and streams in sections in Africa, while trypanosomiasis (African sleeping sickness) restricts the range of livestock industry.

Some of the causes of sickness and premature death in the LDCs that deserve more careful examination are environmental health problems, malnutrition and lack of medical care of adequate quantity, quality and type.

The principal problem of environmental sanitation in LDCs is the contamination of the water supply, and sometimes also of food and soil, with human waste. This occurs in villages and cities alike. Although most urban residents have access to piped drinking water, the public water supply is often rendered unsafe by contamination in the distribution process as the result of a faulty or non-existent sewage system.

Few rural residents enjoy either piped water or decent sanitation.

Many of the infectious diseases, parasitic and respiratory diseases that cause so much sickness and death in poor countries are waterborne. Typhoid, dysentery, and cholera are leading examples.

A second type of environmental sanitation problem arises from housing with insufficient space; ventilation and access to sunlight, (more common in urban areas) promote the spread of air-borne diseases such as tuberculosis.

Historically, improvements in sanitation seem to be closely associated with reduction in disease, becoming effective long before successive treatment have been discovered.

Medical Services

Most LDCs have too few health services, too poorly

countries. Medical training in many of the poorest countries may not benefit society, because doctors are highly mobile and once trained, many emigrate to seek higher income elsewhere. In many cases increasing the supply of nurses and other health auxiliaries may be a better way to improve services.

3.2. Measures (Indicators) Of Development

Ever since economists have tackled the development problems of the less developed countries, the principal yardsticks for measurement of economic development have been GNP, its components, and their growth. Despite the many problems with national accounting in developing

income per head, but also its distribution and the degree of steadiness or fluctuation over time.



the alleviation of poverty, and GNP per head remains an important figure. What is required are some indicators of the composition and beneficiaries of GNP which would supplement the GNP data, not replace them. The **basic needs approach**, therefore, can be the instrument for giving the necessary focus to work on social indicators.

Widely used Development Indicators include:

- GNP PER CAPITA (GROSS NATIONAL PRODUCT PER CAPITA).
- GROWTH RATE OF GNP.
- GNP is the market value of all the production in the economy during one year.

Approaches To Measure GNP

- Output Approach
- Income Approach
- Expenditure Approach

All three approaches measure flow of goods and services produced and consumed in the country from different perspectives.

- All expenditures must be income to someone else in the society. Purchase and sale of goods.

- Output produced is the source of income and expenditure.
- So, all three approaches should provide identical values.

How Good Is GNP /Capita As A Measure Of Development?

- Positive relationship between income and life expectancy
- Positive relationship between income and health/nutritional status
- Positive relationship between income and education
- Positive relationship between income and environment (Quality of housing, water supply etc).

In general, the relationship between income and other variables indicating socio-economic development is positive.

However, there are some exceptions.

- Oil- rich middle-eastern countries. Their GNPs/ capita are high but the social indicators are low.
- Sri-Lanka and China.

Their GNP/ capita are relatively low but the social indicators are high.

-Primary school enrolment (as % of population aged 5-14).

Food -Calorie supply per head or calorie supply as a percent of requirements

Water supply -Infant mortality (per thousand live births).

-Percent of population with access to potable water.

Sanitation -Infant mortality (Per thousand live births).

-Percent of population with access to sanitation facilities.

* Infant mortality is assumed to be a good indicator of the availability of sanitation and clear water facilities, because of the susceptibility of infants to water-borne diseases, and data on infant mortality are readily available than data on access to clean water.

3.4. Health Indicators and GNP

It is observed that mortality is negatively related to GNP per capita.

Crude Death Rate:- Also, falls although less than one would expect, because of the younger population structure in the poorer countries.

Life Expectancy- Another way to look at the relationship between development and mortality in terms of life expectancy (Average number of years members of a given population are expected to live). Children born in 1980 in the poorest countries could expect to live only 53 years on average, while children born in the same period in the richest countries were likely to live 75 years on average. This difference provides one measure of the effect of economic development of health.

Reports also revealed that death rates fall as countries develop, and consequently life expectancy rises.

Table 6.1.: Life-expectancy at Birth by Income Group, 1983.

Income Group	Life-Expectancy
< \$ 300	53
\$ 300-500	64
\$ 500-1000	55
\$ 1000-2000	64
\$ 2000-5000	68
\$>5000	75

Links Between Health and Income

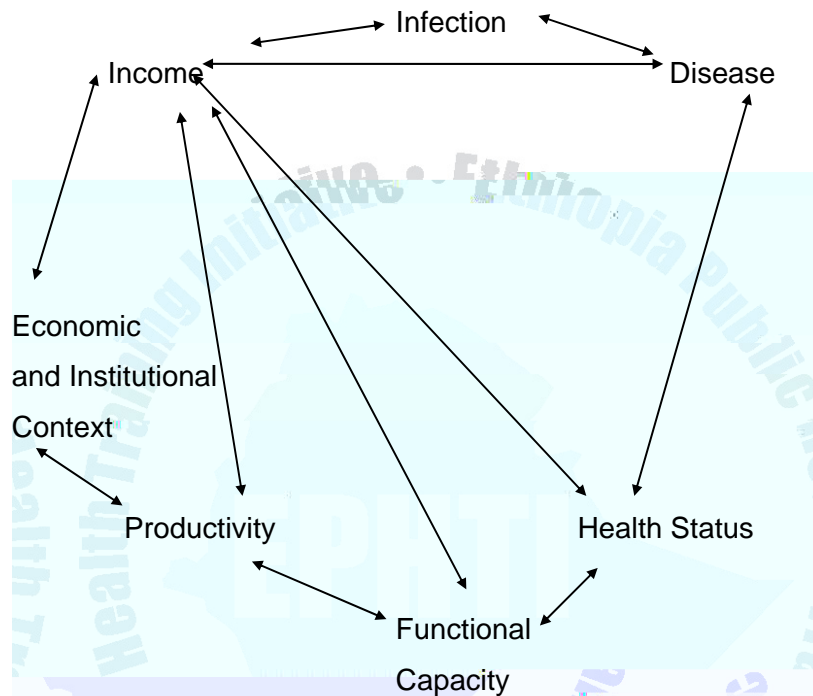


Fig. 6.1: Links Between Health and Income.

Investing In People

There is overwhelming evidence that human capital is one of the keys to reducing poverty. Moreover, improvements in health, education and nutrition reinforce each other. But the poor generally lack access to basic services. There is too little investment in their human capital, and this increases the probability that they and their children will remain poor. To

break this vicious circle, governments must make reaching the poor priority in its own right.

Providing Access To The Poor

Providing the poor with access to social services requires a clear commitment. This must be reflected in the infrastructure and organization of the social sectors and in the way they are financed. Much can be learned from decades of experience in



Health: - The government is usually the dominant provider of health care, but in many countries the private sector also provides some (mostly curative) services. Although different countries have different needs several broad principles hold.

First: - The state should take responsibility for health intervention that have a public- good character (example, clean air, and traffic) or that generate benefits to the community in addition to private benefits (example, immunization against communicable diseases).

Second: - in curative care the main role of the state as a provider of services should be to supply basic services in those regions that the private sector is unlikely to serve.

Third: If a private delivery system is in place, the state should make sure that, the poor have access to basic care. In many countries, in other words, the government should continue to

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Study Questions

1. What does development mean?
2. How does rapid population growth affect the overall development of a country?
3. Describe the effect of population growth on Environment.
4. Explain the relationship between health and the overall development of a country.
5. Name the widely used indicators of economic development and explain their limitations.
6. Discuss the differences between health and social indicators; and GNP or GNP percapita.

CHAPTER SEVEN

POPULATION POLICIES

Instructional Objectives

After completing this chapter the learner is able to:

Define Population Policy

Explain why governments need to formulate population policies.

Discuss the rationale, goals and objectives of the population policy of Ethiopia formulated in 1994.

Definition:

Population policy is explicit or implicit measures instituted by a government to influence population size, growth, distribution or composition. They are government actions (laws, regulations, programs), that try to influence the three agents of population change (births, deaths and migration), as a way to promote social and economic development. The stated intent of these policies often, is to improve the quality of life, consistent with the available resource in a country.

The Population Policy Of Ethiopia

Ethiopia has formulated its population policy for the first time in 1993. The adverse climatic conditions and the decline productivity in all sectors of the economy, combined with the political situation that had existed in the past two decades reduced the population of Ethiopia in a side of absolute poverty. The economy grew at a rate lower than the population growth.

1. Background:

1.1. Population Growth

The total population in 1900 was estimated at 11.8 million. It took only 28 years for the population in 1960 to double to 47.3 million in 1988. The population growth rate was estimated at 0.3% per year at the beginning of this century. It grew at an average annual rate of 2.5% between 1965 and 1980, at 2.9% between 1980 and 1989, and up to 3.2% during the 1990's.

1.2. Population Distribution

a. Age Structure

The population of Ethiopia is very young with a mean age of about 17 years and the population under the age of 15 was 48% in 1984.

Two consequences of a young population age structure are:

- a. There is a high potential for a rapid population growth; due to addition of a large population of women in their reproductive years.
- b. A high proportion of the total population, 48%, are children under 15 years of age which are outside the labour force (dependent). When combined with the 4.0% of the total population (60 years and older), it means a high age dependency burden. The age dependency burden is likely to continue to be heavy, if no significant and immediate measures begin to take place. In 1993, for example every 100 active persons in the labour force carried 116 inactive (dependent) ones.

1.3. Spatial Distribution

The spatial distribution of the population of Ethiopia describes the degree and quality of access of a population to land and other resources. The man/land ratio has been increasing over the last several decades due to:-

- a. the rapid rate of population growth
- b. the secular decline in environmental quality.

The geographic distribution is uneven. The average population density is estimated at 47 persons per square kilometre, ranging from 120 persons per. km. in Shewa to 14.5 persons per sq. km. in Bale.

1.4. Distribution By Residence

In 1984 the urban population constituted about 11% of the total population as compared to the estimates of 1993 about 14.6%, indicating rapid increase of urban population. There are regional variations in the level of urbanisation. In 1993, the variation ranged between 7.7% in Gamo Gofa and 28.2% in Shewa. The rate of growth of urban population (5.4%) is higher than the rate of growth of the total population (3.2%).

1.5. Population and Environment

In Ethiopia, it has been shown that as the number of people increased, the population carrying capacity of the environment decreased for the last two decades. A high population growth rate induces increased demand for resources and the rate at which these resources are exploited. Technology has not kept pace with the growing demands for greater productivity. In order to meet immediate needs, environmentally harmful and economically counter-productive methods of exploiting land and associated resources (forests, animal resources) are resorted.

As a result, climatic conditions are becoming worse and soil quality is declining at an alarming rate.

The land area which had been covered by forests has gone down from about 40% at the beginning of the century to about 3% at present time. The annual rate of deforestation is estimated at 88,000 hectares per year, while the replacement by forestation is about 6000 hectares per year. The soil has been eroded due to lack of coherent and sustained conservation efforts and law awareness of the people of conservation issues.

1.6. Population and Agriculture

Crop producing areas have become less and less productive due to lack of proper agricultural policy designed to stimulate dynamism in the sector; limited accessibility of modern factor inputs to small farmers (like providing suitable farm implements, fertilisers, pest control systems, methods of harvesting and storage, etc.). Agricultural extension service have been weak and, largely ineffective. But more importantly the declining productivity is due to increasing man/land ratio as a result of rapid population growth and the recurrent drought.

1.7. Population and Education

A large proportion of the school age population still remains outside the school system, in spite of significant increase of student enrolment during the last several decades. The quality of education is also poor.



is very low, ranging from 9% to 19% for the different antigens in children less than one year of age. The coverage for women in child bearing age is only 7% (TT-2+). Continued shortage of basic drugs has stunted the development of a coherent community based approach to health care. Only 10% of children under 5 years of age attend modern health services.

Fertility And Maternal And Child Health

High fertility is usually associated with high maternal, infant and child mortality rates. Foetal deaths, low birth weight and other related problems are also associated with unregulated fertility. Short birth intervals, pregnancies under the age of 20 and above 35 are some of the causes for high maternal mortalities, infant and child mortalities aggravated by high prevalence of infectious and communicable diseases and malnutrition. The limited budget allocated to the health section is not adequate to alleviate these problems and even aggravated by poor resource utilisation capacity. Significant reduction in the rate of the growth of the population will decrease the future burden of rapidly increasing demand of resources.

1.9. Population and Housing

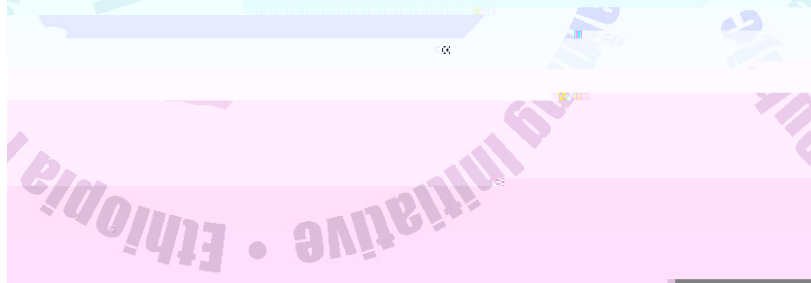
The quality of housing in Ethiopia is very low:

- a. 70.2% of dwelling units in the country have one room only



The Situation Of Women

The level of fertility in any society is associated with the economic, social and political status of women. The roles of women are restricted to household management and matrimonial duties and are expected to replenish the race by bearing a large number of children. Women are economically dependent on men and the decision to have or not to have children rests, primarily in the husband and his relatives. High fertility is induced by the desire to more children in order to composite the high infant and child mortality, assuming that not all children born survive. Since education resources are scarce, parents often decide to use the limited resources available to them in sending male children to school in reference to females. This is reflected by the low participation in form education and the high illiteracy rate among females (80.4%) as





adverse social and economic conditions to be self supporting and to make family planning sources accessible to them.

2. Rational for The National Population Policy

In Ethiopia demographic factors such as rapid population growth, young age structure and the uneven spatial distribution of the population aggravated by a continuing high fertility manifest the severe state of underdevelopment that characterises the present Ethiopian society. Underdevelopment manifests itself, among others, in the following ways.

1. Low productivity in almost all sectors of the economy resulting in high rates of unemployment and underemployment.
2. Low accessibility to education, health services and

3. Objectives of the National Population Policy

The National Population Policy of Ethiopia has for its major goal the harmonisation of the rate of population growth and the capacity of the country for the development and rational utilisation of natural resources, there by creating conditions conducive to the improvement of the level of welfare of the population.

The task of harmonising the rate of population growth with the rate of economic and social development requires the involvement and collaboration of a number of governmental and non- governmental agencies. The general objectives specified in the policy can not be handled without reference to the need for a well defined division of labour among these agencies.

1.10. General Objectives of the national population Policy

Closing the gap between high population growth and low economic productivity through planned reduction of population growth and increasing economic returns.

Expending economic and social development processes through holistic integrated development programs designed to expedite the structural differentiation of the economy and employment.

Reducing the rate of rural to urban migration.

Maintaining/ improving the carrying capacity of the environment by taking appropriate environmental protection/ conservation measures.

Raising the economic and social status of women by freeing them from the restrictions and drudgeries of traditional life and making it possible for them to participate productively in the larger community.

Significantly improving the social and economic status of vulnerable groups (women, youth, children and elderly).

Study Questions



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