

3.3 POPULATION STRUCTURE

- The *structure of a population* is the distribution of males and females within different age groups. Sex and age structures are basic characteristics and biological attributes of a population. Data on **population age-sex structure** is ideally collected through census.
- A **population pyramid**, also called **age structure diagram**, is a graphical illustration. It typically consists of two back-to-back bar graphs, with the population plotted on the x-axis and age on the y-axis, one showing the number of males and the other showing females in a particular population of five-year age groups (also called **cohorts**). Males are conventionally shown on the left and females on the right. Population is divided into age groups of five-year intervals (0-4, 5-9, 10-14, etc.) for each sex.
- The population of a given country can be further grouped into three categories (segments) of the population consisting of young dependents (0-14), elderly dependents (65+) and the working age groups that are economically active (15-65 years of age).
- The proportion of the three age groups varies from region to region and among countries. Most developing countries have a large proportion of their population in the young age group. But in developed countries, people in the adult and old age group account for the largest proportions of the population. As a result, the shape of the population pyramids of the two groups of countries is not the same.
- Observing different characteristics of a population pyramid can tell you a lot about the population it presents.
 - I. **Width of the base of the pyramid:** *A wide base indicates a high birth rate, and a narrow base indicates a low birth rate. The former is typical of populations of developing countries.*
 - II. **Symmetry:** *statistically speaking, pyramids are relatively Symmetrical. Any asymmetry indicates a size difference between males and females.*
 - III. **Shape of sides:** *concave sides indicate a high death rate, and convex sides indicate a low death rate. The population pyramid of Ethiopia exhibits concave*

sides, indicating a high death rate.

Sex Structure or Composition

This statistic is typically defined in terms of what is called ***sex-ratio (SR)***, which is a numerical measurement. It is the number of males per 100 females, or otherwise- for example, the number of females per 100 males. Sex ratio is expressed in percentage or ratio form.

$$SR = P_m / p_f \times 100 \text{ (masculinity ratio)}$$

$$SR = p_f / p_m \times 100 \text{ (femininity ratio)}$$

Example: Say total students of a given school was 5000. Out of this 3000 were females. What was sex-ratio of student population?

Solution: $SR = p_m / p_f \times 100 = 2000 / 3000 \times 100 = 66.7 / 100$

Dependency Ratio

The working age of people varies. People under 15 and over 65 are considered dependent upon the working population. The age dependency ratio (ADR) of a population indicates how many people are dependent upon every 100 workers.

$$ADR = \frac{\text{Young} + \text{Elderly}}{\text{Adults}} \times 100$$

Adults

3.4 SPATIAL DISTRIBUTION OF WORLD POPULATION

The most important characteristic feature of current world- population distribution is its extreme unevenness. It was estimated, some years ago, that one- half of the world's people was contained within about 5% of the earth's land area while, in contrast, about 57% of the land area contained less than 5% of the population.

3.4.1 Factors of Population Distribution

The extreme current unevenness in population distribution is due to these factors:

- ✓ *Ecological (physical) factors*
- ✓ *Socio-economic factors*
- ✓ *Political factors*
- ✓ *Demographic factors*

Overview of the major densely and sparsely populated areas of the world

Areas of very high population concentration

- ✓ Asiatic population belt (supports more than 60% of world population).
 - East Asia-China, Japan and Korean Peninsula (supports 25% of world population).
 - South Asia - India, Pakistan, Bangladesh, Myanmar (Burma) and Sri Lanka (supports) accounts for about 25% of world population.
- ✓ Europe (more than 10% of world population).
- ✓ American cluster: Northeastern part of the USA and Canada (supports about 5% of world population).

Sparsely populated areas

- ✓ Tundra (part of N. America and Eurasia).
- ✓ Hot and dry lands (tropical deserts).
- ✓ Hot and humid regions: Amazon, Congo and Indonesia basins, very high humidity, rainfall and temperature.
- ✓ High relief areas.
- ✓ High mountains with rugged topography, Cold temperature.
- ✓ Areas with poor soil.

3.4.2 Population Density

- ✓ Population density, also termed as the spread of population over space, is measurable in various ways. For example, we can *relate numbers of inhabitants to area of lands inhabited*.

a. Crude density or Arithmetic density

b. Agricultural density or Rural density

Crude density or Arithmetic Density:

- ✓ is a measure of the number of inhabitants per unit area. This type of measurement is also known as *human-land ratio*.

$$\text{Crude density} = \frac{\text{Total population of an area}}{\text{Total area, in sq.km}}$$

Agricultural density or Rural density:

- ✓ It is the ratio of agricultural (rural) population to cultivated land. Agricultural density considers only agricultural population, the segment of an area's population whose livelihood depends on agricultural activities.
- ✓ Agricultural population density is a more meaningful measure than crude population density for developing countries where agriculture is the dominant economic activity. It also gives a better indication of population pressure on natural resources.

3.4.3 Human Migration

Definition and Types of Migration

- ✓ Migration begins in an *area of origin* and is completed at an *area of destination* and might involve a stay of a substantial period one year or more. In order to avoid ambiguity, the term ***permanent migration*** is used for situations in which the mover has no intention of returning to the place of origin. When migrants cross an international frontier, they are referred to as either ***emigrants***, if they are leaving a country or ***immigrants***, if they are entering.
- ✓ Migrants who move within a country are referred to as ***out-migrants*** or ***in-migrants*** depending on whether they are leaving or entering a region.
- ✓ When migrants cross an international boundary, the movement is called ***international migration***. However, if the movement is within a national territory, it is referred to as ***internal migration***.
- ✓ A movement in which a migrant arrives at the last destination after a series of short-term moves to other locations is referred to as ***step migration***.
- ✓ When people move out with the intention of returning back to their place of origin after a few months or a season or more, this movement is called ***seasonal migration***.
- ✓ Migration can take the form of ***refugee*** migration, when people move for political reasons, war, ethnic conflicts and discrimination or religious persecution; or
- ✓ ***evacuee*** migration, if movement is caused by natural calamities like earthquake, volcanic eruption, flooding, drought, etc.; or
- ✓ ***resettlement*** migration, when people are displaced by war, natural calamity, etc.

and are moved by government to a new location.

Causes of Human Migration

- ✓ Many factors affect migration. These include *economic, social* and *ecological considerations*, which, in turn, are affected by *individual perceptions* and *behaviour*.
- ✓ These factors act in such a way as to '*push*' or '*pull*' migrants. **Pull factors** are those which attract the migrant to a particular destination. For example, good social and welfare services, a pleasant environment and political stability are typical pull forces. **Push factors**, on the other hand, are forces which work in the migrant's home area. They impose pressures which persuade or compel a person to move away. For example, push factors include the impacts of natural disasters (drought, flood, and famine), low wages, poor employment and political instability.
- ***Economic factors:*** are often regarded as the main motivation for migration, acting as pull or push factors. The principal economic force is the search for employment, accompanied by the exploitation of natural resources, such as minerals, and the availability of good communication networks.
- ***Social factors:*** that influence migration, negatively and positively, include social oppression, political control and the availability of housing, health care and training.
- ***Ecological factors:*** Environmental crises such as droughts, desertification and industrial accidents can have profound impacts on human migration. Environmental or ecological refugees have become the single largest class of displaced people in the world.

Pull factors

- Good welfare services
- High wages
- Political stability
- Favorable climate
- Improved housing

- Employment opportunities
- High living standard

Push factors

- High wages
- Political instability
- Harsh climate
- Housing shortage
- Natural disaster
- Poor employment

3.4.4 Urbanization

- The term urban is something (for example a settlement) relating to, belonging to, characteristic of, constituting, or forming part of a town or city. It is the opposite of *rural*. **Urbanism** on the other hand refers to a city or town characteristic, the typical condition of a city or town, or a way of life characteristic of a city or town.
- **Urbanization**, in conventional terms, refers to the process through which society is transformed from being predominantly rural, in economy, culture and life style, to being predominantly urban. *Typically, urbanization is commonly defined as the process by which large numbers of people become permanently concentrated in relatively small areas, forming cities or towns.*
- In Ethiopia, a settlement is designated as *urban* if the number of inhabitants equals or exceeds 2000, and if most of them are engaged in non-agricultural activities. Another defining characteristic is that the area is an officially municipality.

The course of human history has been marked by accelerating urbanization. In 1800, less than 3% of the world's population lived in cities. During the post industrial revolution, sometimes defined as 1900, about 20% lived in cities. By 1950, 30% lived in cities. By the end of 1999, 47% lived in cities. Currently (2010) the percent of the world's population in cities equals or exceeds that in rural areas.

Factors that affect Urbanization

One can attribute the growth and development of urbanization to several factors, including:

- ✓ *High rate of natural increase of population*
- ✓ *Significant of rural to urban migration*
- ✓ ***Industrialization:** In the 19thC, industrialization led to a huge demand for labor in mining and manufacturing centers, in what are now referred to as developed countries.*