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B.A. ECONOMICS

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Demography

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DEMOGRAPHY

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Text books	
1	Jhingan, M.L,B.K.Bhatt, J.N.Desan (2003) Demography, Vrinda Publications, New Delhi
2	Rajendra K.Sharma (2007), Demography and Population Problems, Atlantic Publishers and Distributors Pvt.Ltd.
3.	Jennifer Hickes Lundquist, Douglas L. Anderton and David Yaukey, "Demography: The Study of Human Population", Wavel and Press Inc, 2015
4.	Dudley L. Poston, Jr. and LeonF. Bouvier, "Population and Society: An Introduction to Demography", Cambridge University Press, 2015

UNIT-I

Introduction

1.1 Meaning and Concept of Demography

The word 'demography' comes from the Greek words, 'demos ' which means population, and graphy ' which means to describe or draw (Luczkovich). Though the term 'demography' had been casually used by many persons, it was first used in a rational or scientific way in 1855 by Guillard, and since then the term has been gaining currency.

The economists, geographers, social scientists and others have defined it in different ways suiting to their convenience and viewpoints. According to Frank Lorimer (1959): "In broad sense, demography includes both demographic analysis and population studies. Demography studies both qualitative and quantitative aspects of population."

Stenford (Quoted in Hansraj, 1986) views it as follows: "In its most formal sense, demography is a very technical and highly mathematical study of the vital statistics of human population (especially birth, death and migration) as well as of the characteristics of population structure (including age, sex and marital status) as they contribute to an understanding of population change." In the words of Irene Tanker: "With improved data, new techniques and measurement of the demographic transition that is occurring, demography has become science rather than literature" (Hansraj, 1986).

Demography is the statistical study of human population. It can be a very general science that can be applied to any kind of dynamic human population, that is, one: that changes over time or space (population dynamics). It encompasses the study of the size, structure and distribution of these populations, and spatial and /or temporal changes in them in response to birth, migration, aging and death. These definitions raise the status of demography from studies to a science of population.

In fact, the credit goes to John Graunt (1620-74) for starting demographic studies during modem times. He brought out his famous volume entitled, "Natural and Political Observations upon the Bills of Mortality" (1662) which made him the real founder of demographic studies. In this volume he analysed and discussed the number and causes of death of certain places and the need and necessity of such analysis, Demographic Concepts the births, migrations, family growth and similar other problems of some places in sonic details. He analysed the population which was capable of serving in the army, amongst others. He suggested that the population should be studied on the basis of sex, religion, age, occupation, status and state.

1.2 Nature and Scope of Demography

From the above concept of demography, it becomes amply clear that some have made its scope very wide, whereas others have made it considerably narrow Accordingly, there are broader, narrower and balanced views about its nature and scope.

i) Broader view: According to this view, the scope of demography is wide and it studies the causes of slow or rapid change in birth rate, death rate, population growth, sex ratio, health conditions, etc. According to holders of this view, in demography many economic problems such as those related to employment and income conditions of the masses; labour conditions and their living standard, information about production and consumption, saving habits of the population belonging to all sections of the society, rate of growth of population, working efficiency of the masses and the relationship of economic development, population change and overall quality of life, could be understood and analysed.

ii) Narrower view: As against the broader view, there is also a narrower view about the nature and scope of demography. This view, among others, is represented by Phillip and Otis (1959, p.2). According to them the scope of demography is not as wide as we have been made to believe by some thinkers It is argued by them that demography deals with all subjects; but does it mean that in the study of demography all subjects can be studied? Urbanization, for example, is one subject of study under demography. It includes transportation, communication, rehabilitation, banking, administrative system, electrification, entertainment, etc. All these subjects, however, cannot be included under demography and obviously cannot be studied with the help of this subject. Therefore, scope of demography will have to be defined and restricted. Any unnecessary widening will do more harm than good to it. If we are studying urbanization under demography we can and should cover the effects of births, death, migration, etc.; and if we go on covering everything under demography, then whole study will become just unmanageable.

iii) Balanced view: There is a third school of thought which claims to have presented balanced view of the nature and scope of demography. According to Warren, S. and Thompson (1 953), under demography, we can study death, birth and actual rates of growth of population, information about female population, their education,

health conditions, marital status, distribution of population and their classification according to their occupations, their socio-economic conditions, etc

Demographic studies can be placed broadly under four categories, namely,

a) Descriptive Demography, under which are studied census and registration statistics,

b) Analytical Demography, which deals with analysis of the data collected, and rates and ratios of population change,

c) Comparative demography, which covers study of different aspects of population and their determinants at two different places and at two different points of time, and

d) Historical Demography, under which time series, and study of rates and ratios of population change are studied.

1.3 Major Components of Population Growth

Following are some of the major components of population growth:

1.3.1 Natural Increase: Births and Deaths

Population growth is affected by the number of births and deaths in a population. The following indicators can help us analyze this component:

1. **Birth rate**

   This is the number of live births per 1,000 people in a population in a year. It shows how fertile a population is and varies across different regions.

2. **Death rate**

   This is the number of deaths per 1,000 people in a population in a year. It shows the overall health and mortality conditions in a society.

3. **Infant mortality rate**

   This is the number of infant deaths under one year of age per 1,000 live births in a year. It is an important indicator of the healthcare and well-being of a population.

4. **Life expectancy**

   This is the average number of years a person is expected to live. It shows the overall health and quality of life in a population.

1.3.2 Net Migration: Immigration and Emigration

Net migration is the difference between the number of people who immigrate to a region and the number of people who emigrate from it. The following components contribute to net migration:

i. **Immigration**

This is when people move to a country or region with the intention of settling there. It contributes to population growth by increasing the number of residents in a given area.

ii. **Emigration**

This is when people move from a country or region to live elsewhere. It leads to a decrease in the population of the area of origin.

iii. **Net migration rate**

This is the difference between the number of immigrants and emigrants per 1,000 people in a population in a year. It shows the overall impact of migration on population growth.

1.3.3 Fertility Rate: Childbearing Patterns

The fertility rate measures the average number of children born to women during their reproductive years. Two key factors associated with the fertility rate are:

a. **Total fertility rate (TFR)**

This is the average number of children a woman is expected to have in her lifetime. It provides insights into population replacement levels and future population growth.

b. **Replacement level fertility**

The fertility rate required for a population to replace itself without migration. It is typically estimated to be around 2.1 children per woman.

1.3.4 Mortality Rate: Patterns of Death

Mortality rate encompasses the occurrence of deaths within a population. It can be examined using the following indicators:

1. **Crude death rate (CDR)**

This is the number of deaths per 1,000 people in a population in a year. It provides an overall picture of mortality within a population.

2. **Age-specific death rate (ASDR)**

This is the number of deaths occurring in specific age groups per 1,000 people in a year. It helps identify variations in mortality patterns across different age groups.

1.3.5 Age Structure: Distribution of Age Groups

The age structure of a population plays a vital role in determining population growth and development. Key components include:

a) **Dependency ratio**

This measures the proportion of dependent individuals to the working-age population. It influences the social and economic dynamics of a society.

b) **Median age**

This represents the midpoint of a population's age distribution. It reflects the overall age composition and demographic profile.

1.4 Components of Population Growth in India: A Unique Landscape

India is one of the most populous countries in the world, with a population of over 1.3 billion people. The population of India is growing at a rate of about 1.2% per year. The major components of population growth in India are:

A. **Population pyramid:** A population pyramid shows the age and gender structure of a population. India's population pyramid is very young, which means that there are a lot of people of working age.

B. **Demographic dividend**: India's demographic dividend is the potential economic boost that can come from having a large working-age population. This boost can be realized if India can provide its working-age population with the education, skills, and jobs they need to be productive.

C. **Challenges and opportunities**: India faces both challenges and opportunities related to population growth. Challenges include ensuring access to quality healthcare, family planning services, and sustainable development practices. The opportunities include using the demographic dividend to boost economic growth and improve the lives of its people.

1.5 Theories on Demography

1.5.1 Theory of Malthus

Malthus's theory of population (1798) mainly deals with the rate of growth of population and the effects of such growth on the community. The salient features of this theory are given below;

a) **Rapid Growth in Population**

Population increases at a fast rate. According to Malthus. it grows by geometrical progression and the population in majority of countries gets doubled in twenty-four years. Geometrical Progression in simple terms can be expressed as $\alpha\, r^n$ where n varies from 0 to infinity, and r and α dare constants for a series. for example, the series 1, 2, 4, IS. 16, 32 .... is a geometric progression series.

b) **Slow Growth in Food Supply**

The food supply in a country increases at a much slower rate in comparison to the growth in population. It increases in Arithmetical progression. Arithmetical progression means increase by addition, as in the series say 1, 2, 3.4, ... etc.

c) Over-Population

As a result of the difference between the rate of growth of population and die rate of growth of food supply, we find that in every country, sooner or later, food shortage occurs. The stage of such kind of shortage in food supply is known as a stage of over-population.

d) The Malthusian Cycle

At the stage of over-population grave problems arise. Shortage of food causes malnutrition, famine, disease and deadly epidemic condition. Hunger leads to invasions of war. This kind of situation was termed as the 'Positive Checks' by Malthus. Due to these positive checks, population is reduced and the balance with the production of food is restored. But such balance is a short-lived one. For the inherent urge to multiply soon results in increase of population again and again which overtakes the food-supply. This sequence of events is called the Malthusianism cycle.

e) Preventing Checks

The only way of escaping the unfortunate sequence of events of Malthusian cycle can be found in exercising the control over the growth of population. According to Malthus this can be achieved by two methods namely, late marriage and celibacy (i.e. to remain unmarried throughout the life). He called these measures to be the Preventing checks.

1.5.1.1 Criticism of Malthusian Theory:

The importance of Malthusian theory can be measured by the number of books/articles written favouring or criticizing him. There are three major aspects in his theory which are subjected to strong criticism. They are:

1) the assertion that food production cannot keep up with the population growth,

2) the belief that moral restraint was the only acceptable preventive check, and

3) the conclusion that poverty was an inevitable result of population growth.

Malthus's conclusion that population would double in a period of 25 years was based on the evidence of doubtful statistics. He placed undue emphasis on the limitation of the supply of land. David Glass criticized him as a poor prophet because his model did not consider the enormous impact of technological progress in offsetting the growth-inhibiting forces of rapid increase in population.

1.5.2 Theory of Demographic Transition

The theory of demographic transition is the most accepted. It recognises the result of economic and social development on population change over a time. It assumes that fertility and mortality both decline from lug11 level to low level and decline in mortality generally precedes decline in fertility. This ultimately results in high population growth during transition period.

Historical and statistical observations show that population does not always grow at a fast rate. The rate of growth of population varies from time to time in every country. If the rate of growth of population is graphically charted it looks like the S - shaped curve also known as "the Logistic curve". This shows that initially population increases very slowly, then I comparatively rapidly and finally become either stationary or declines, these phenomena may by explained as below:

Early Stage -In early stage of development of a country there are obstacles to the growth of population like lack of security, lack of food. unfavourable social customs, etc. Therefore, population grows slowly. This situation is found in tribal communities and primitive civilisations.

Intermediate Stage - With development, the obstacles are removed and population grows rapidly. For example, India is experiencing high rate of population growth since 1950. and in U.S.A in the 19th century rate of population growth was high. This stage has been termed as the stage of "Population Explosion". Population explosion creates an imbalance in the economic stability and a transition period is required to bring it back to normal: and hence, the theory is termed as the theory of demographic transition.

Final Stage -No sooner the community reaches an advanced stage of civilisation, the rate of growth becomes steady or declines. This situation can be found in developed nations such as U.K, France, and other West European Countries.

Finland is the best example to quote in this category. During 1785-1790 high birth rate and high death rate caused little or no increase of actual population with rate of increase 0.6 %: During 1825-1830 due to high birth rate and falling death rate, high growth rate of actual population (1.4 %) was observed. However, during 1910-1915 declining birth rate and relatively low death rate caused decrease in growth rate of population (1.2 %), and during 1370-1976 because of low death rate and low birth rate, very little growth rate of population (0.3 %I) was noticed.

According to Malthusian Theory, population always grows at a fast rate (in geometrical population). But according to demographic theory of transition population growth slows down

with the advancement in development of culture and civilisation. Thus tile Biological Theory holds out an optimistic view regarding the future of making.

1.5.3 Optimum Theory of Population

The optimum theory of population became popular in 1930's. It was worked out mainly by Edwin canon and Carr Saunders of the London School of Economics.

The optimum theory of population does not deal with food supply. It attempts to find a relationship between population and wealth production. The theory states that "At any given time (in a country) there is what may be called a point of maximum return when the amount of labour is such that both an increase and decrease in it would diminish proportionate return. If the population is not large enough to bring all industries up to this point, return will be less than they might be and the remedy is increase of population. if on the other hand, population is so great that the point has been passed. returns are again less then they might be and the remedy is decrease of population."

Optimum population theory received attention in 1920s and 1930s even though an element of the theory was found in the writings of earlier scholars as well. The basis of the theory of optimum population is the relationship between population and resources. The basic elements of the optimum population theory can be found in the writings of Sidgwick (1874). He observed that as a result of factors such as population size and growth, division of labour and the onset of diminishing returns, the productivity of labour tended to diminish as the proportion of labourers to land increased after a certain degree of density had been reached; that there is a point of maximum return per head, and this depended on the state of arts, the capital accumulated and technical progress.

In fact, optimum population is a point at which the population is neither too large nor too small, but is just enough to secure a maximum return per head under the given conditions of production (Lionel Robbins, 1927). Thus, the optimum population is determined by

     i)   the available natural resources;

     ii)   the skill, knowledge and habits of the population; and

     iii)   the capital and technological progress.

Given these factors there is one "right population", that is 'optimum'. The basic assumption limiting the theory is that, the particular population size is optimum, means other things are constant, which is not possible.

The concept of optimum population has been interpreted in several ways, to mean: the size of the population which results in the highest per capita income, the highest productivity as measured in different manners, or the highest level of other less well-defined economic

indicators such as economic welfare, level of living, real income and in some cases employment. Economic optimum being too restrictive, some writers tried to include the total well-being, health, longevity of a nation, ideal family size, etc, in the optimum population theory. However, the economic optimum was the main consideration in the optimum population theory, and gradually the idea of a population of optimum size for maximum production was accepted.

1.5.3.1 Criticism on Theory of Optimum Population:

Critics viewed optimum population theory as not a theory but the description of a desirable situation. Further, its assumption of other things remaining constant is impractical. In this dynamic world, things are constantly changing making any optimum obsolete in few years. An0tl-n: problem pointed out is, the "optimum" population for each sector will be different. For example, optimum population for total production, for employment, for health, for education, etc. will be different from one another. The merit of the theory, however, is that it is dynamic, it emphasized that whatever is considered over population today can be optimum or even under population if the technology improves the capacity of the country to maintain larger size of population.

Birth Rate, Death rate and Fertility

2.1 Census data

Census and population data is information recorded about the population of a country, state, city, or other well-defined geographical areas.

2.2 A life table:

A life table is constructed from age-sex-specific death rates. While life tables typically are regarded as being concerned with mortality, they should more properly be thought of as being concerned with survival; that is, with not dying rather than with dying. Viewed this way a life table becomes a tool for focusing on the health of a population, as indexed by the quantity of life its members enjoy. There are also, of course, issues of quality of life. In its basic form the life table does not directly address these issues, although quantity and quality are to a considerable degree correlated, and the life table approach can be extended to encompass issues of quality of survival.

Such tables are useful in analysing changes in the mortality experienced by a population through time.

2.2.1 The Single-Year-of-Age Life Table

Although excessively detailed for many demographic purposes, the single-year-of age life table is the more straightforward variant when it comes to understanding the mechanics of life table construction. It begins with a group of people (of a given sex) at birth and follows them through life, subtracting each year the number who die. the sorts of questions a single-year-of-age life table permits us to answer include:

1. What is the probability of surviving (or dying) between two nominated birthdays, from one single-year age group to some older single-year age group, or from a nominated birthday to an older single-year age group?

2. What is the average life expectancy of men, or women, at birth, or at any subsequent birthday? Life expectancy at birth is a fairly familiar concept given the frequency with which it is used to index general population health and improvements or deterioration therein, but one can also, using a life table, calculate the average remaining expectation of life given survival to any nominated birthday.

3. what would be the age structure of a stationary population experiencing constantly the mortality regime represented by the life table? A stationary population is one that experiences a constant annual number of births, a constant mortality regime (i.e., a constant set of age-specific death rates) that annually produces exactly the same number

of deaths as births, and is closed to migration. Such a population has a constant size, a zero growth rate and a constant age structure. We will return to stationary populations when addressing stable population theory. In the meantime, it is sufficient to note that what we call a life table population is a stationary population. We will return to the idea of a life table population shortly.

2.2.2 Obtaining Age-Sex-Specific Death Rates to Construct a Life Table

The age-sex-specific death rates from which we construct a single-year-of-age life table are given by: $_1m_x = (_1D_x/_1P_x)1000$

Where $1M_x$ denotes the death rate for males or females aged x last birthday (i.e., between exact ages x and x + 1); $_1D_x$ = male or female deaths at age x during the year for which the calculation is being performed (i.e., deaths between exact ages x and x + 1); $_1P_x$ = the mid-year male or female population aged x last birthday (i.e., the population aged between exact age x and exact age x +1).

A life table begins with an arbitrary number of individuals at birth (i.e., at exact age 0). This arbitrary number is known as the radix of the life table. In theory it could have any value one might care to give it, but for the sake of convenience a number which is some power of 10 is almost always used, and by far the most common radix to encounter is 100,000.

Having selected a radix (and if you don't choose 100,000 you are probably being awkward), a single-year-of-age life table is constructed by applying probabilities of dying between successive birthdays initially to the radix population, and thereafter to survivors from that population until the point is reached at which there are no longer any survivors.

Life tables consist of a series of columns of numbers, each column giving values of a particular life table function. These columns are related to one another by a series of equations and can be derived from one another.

Indeed, much of the information in a life table can be said to be redundant; different columns are equivalent, and merely say the same thing in different ways. While you will encounter different numbers of columns in life tables, there is a basic core of six life table functions that are found in most single-year-of-age life tables. They have a standard, internationally recognized notation, and you should familiarize yourself with that notation and with what the various life table functions measure. Some of these notations were introduced in passing when we addressed the general concept of 'attrition'

The six core life table functions are:

$_1q_x$ – the probability of dying between exact age x and exact age x + 1 (or if you like, the proportion of people who reach exact age x alive who die before reaching exact age x + 1).

l_x – the number of members of the initial radix population surviving at exact age x (the radix itself is denoted by l_0). l_x is the conventional notation.

$_1d_x$ – the number of members of the initial radix population who die between exact ages x and x + 1.

$_1L_x$ – the number of person-years lived between exact ages x and x + 1 by members of the initial radix population (or, if you like, by those of them who survive to exact age x).

T_x – the number of person-years lived at all ages above exact age x by members of the initial radix population (or, if you like, by those of them who survive to exact age x).

$e^o{}_x$ – the average number of years of life remaining beyond exact age x for each member of the initial radix population who survives to exact age x.

Other life table functions that you may encounter include:

$_1m_x$ – the life table death rate between exact ages x and x + 1. (Note that this life table death rate should be distinguished from $_1M_x$, which is the observed age specific death rate between exact ages x and x + 1. The two are not necessarily equal in some methods of life table construction, although methods described in this chapter assume equality. Be aware, however, of the conceptual difference between them. One ($_1m_x$) is a life table function; the other ($_1m_x$) is obtained not by manipulating other life table functions.

μ_x – the instantaneous force of mortality at exact age x.

$_1p_x$ – the probability of surviving between exact age x and exact age x + 1 (or if you like, the proportion of people who reach exact age x alive who survive to reach exact age x + 1).

$_1S_x$ – the survival ratio; the proportion of people who survive to the age group bounded by exact ages x and x C 1 from the immediately younger single-year age group, or from birth to the very youngest age group (that bounded by exact ages 0 and 1).

Demographic Rates

Two major categories of measures of relative occurrence used by demographers are rates and probabilities. The same two categories are sometimes referred to as m type rates and q-type rates. the 'm' and 'q' being standard life table notations.

2.3 Reproductive and Child Health (RCH)

RCH is an acronym for Reproductive and Child Health. It is a program that aims at combating and reducing the mortality rates of mothers, infants, and children and was launched in October 1997. During the first stage of the programme, there was a list of objectives which is aimed at achieving, which are as follows:

- To enhance the administration and supervision of the policy by adopting a participatory devising strategy thereby empowering organizations to maximum utilization of the project resource.
- To intensify the quality, coverage and the productiveness of the current Family wellness services.
- To eventually increase the range and coverage of the services pertaining to the Family welfare to ultimately provide a specified package of fundamental RCH assistance.
- Successively increase the range and content of existing wellness services concerning family welfare(FW) so as to incorporate more components
- Preference to be given to remote areas of cities or districts to cause an increase in the quality and improvement in the infrastructure of the FW services.

The outcomes of this stage of RCH where both positive and unsuccessful to an extent. The RCH is now at its second stage, RCH-II. Listed below are its aims:

- It aims at extending assistance and services to the complete sector of Family Welfare, even exceeding the scope of RCH.
- It has undertaken careful surveillance of the activities of the state and holds the state responsible for the overall of the programme through its involvement.
- To provide better services, it has adopted the decentralization policy
- It permits states to regulate and enhance various features of the schemes as per convenience.
- It regularly upgrades the supervising and evaluation processes at various levels – the central level, state level and the district level to assure enhanced program implementation.
- It provides funding based on the performance, by rewarding and appreciating good performers and encouraging weak performers through assistance.
- Promotes cooperativeness and convergence throughout the sector in order to utilize resources and infrastructural facilities to the maximum.
- Combines financial assistance received from external sources.

Apart from this scheme, there is an immediate need to conduct more such associated training programmes to deal with a number of key concerns which were limited to immunization alone ignoring other crucial aspects. Multiple procedures and techniques are being implemented to evaluate the needs before expansion. Also, there is a need to expand family planning services to be able to meet the target of an average of 2 children per family.

The concept of *reproduction*, or *reproductivity*, as conventionally used in demography,

has to do with the extent to which a cohort of women a *generation* of women – replaces, or reproduces, itself.

Reproduction rates can be calculated for males or for both sexes combined as well as for females, but because the female reproductive span is shorter and better defined, and because mothers' ages are more likely to be known than fathers' in the case of non-marital births, rates linking daughters to mothers are the norm.

2.4 Crude Birth Rate

The crude birth rate measured by the rate of births respectively among an of 1,000. The CBR is determined by taking the total number of births in a population and dividing both values by a number to obtain the rate per 1,000.

Calculated by,

Number of resident live births   x1000

 Number of total population

2.5 Crude Death Rate

The crude Death rate measured by the rate of death respectively among an of 1,000. The CDR is determined by taking the total number of deaths in a population and dividing both values by a number to obtain the rate per 1,000.

Calculated by,

Number of resident deaths   x 1000

 Number of total population

2.6 AGE-SPECIFIC BIRTH RATE

It is the number of resident live births to women in a specific age group for a specified geographic area (country, state, county, etc.), divided by the total population of women in the same age group for the same geographic area (for a specified time period, usually a calendar year). This figure is multiplied by 1000 to give a rate per 1000 population.

Number of Resident Live Births to Women in a Specific Age Group   X 1000

Number of Women in the Same Age Group

2.7 Age-Specific Death Rate

It is the total number of deaths to residents of a specified age or age group in a specified geographic area (country, state, county, etc.) divided by the population of the same age or age group in the same geographic area (for a specified time period, usually a calendar year) and multiplied by 100,000.

Total Deaths in Specified Age Group   X 100000

Total Population in the Same Specified Age Group

2.8 The Standardised birth rate

The standardised birth rate is often used to eliminate the effect on the birth rate of certain differences in structure of the population (most commonly the age and sex structure). When birth rate is expressed per age group, it is called the standardized birth rate, as opposed to the crude birth rate of the total population.

2.9 The standardised death rate

The **standardised death rate**, abbreviated as **SDR**, is the death rate of a population adjusted to a standard age distribution. It is calculated as a weighted average of the age-specific of a given population; the weights are the age distribution of that population.

2.10 General Fertility Rate

It is the number of resident live births for a specified geographic area (nation, state, county, etc.) during a specified period (usually a calendar year) divided by the female population age 15-44 years (usually estimated for a mid-year) for that area, and the resulting fraction multiplied by a 1,000.

(Number of resident live births / Number of females age 15-44 years) x 1,000

2.11 Total fertility rate (TFR)

It is defined as the sum of age specific fertility rates of women by single year of age from 15 to 44 years (or 15 to 49 years) and is expressed per woman. It is directly calculated as the sum of age-specific fertility rates (usually referring to women aged 15 to 49 years), or five times the sum if data are given in five-year age groups. The formula for TFR estimation is given below.

(Sum of Age Specific Fertility Rate $\times$ Magnitude of Age Group) /1000.

2.12 Gross Reproduction Rate

The Gross Reproduction Rate (GRR) is related to female births. It is the number of girls that are expected to be born to 1000 females passing through their child bearing years. The equation of GRR is given below.

GRR= No. of Female Birth /Total Number of Brith

2.13 Net Reproduction Rate (NRR)

The average number of daughters that would be born to a woman (or a group of women) if she passed through her lifetime conforming to the age-specific fertility and mortality rates of a given year. This rate is similar to the gross reproduction rate, but takes into account that some women will die before completing their childbearing years. An NRR of one means that each

generation of mothers has exactly enough daughters to replace themselves in the population. The equation of NRR is given below.

NRR= No. of Female Expected to be Born to 1000 Newly Born Girls /1000

UNIT-III

Migration and Urbanisation

3.1 Migration: Concept and Meaning

Migration means movement of people from one place to another. Any place can gain population by births and by in-migration of people from outside the area of the place. Similarly, any place can lose population by deaths and by out-migration of people from the area of the place. Thus migration is an important factor, which affects the structure of the population. For example, if young adults of working age migrate, the population of the place receiving the migrants become younger and the number of workers in the population increase. Thus the Census of India notes that the migration process affects the place where migrants move in and the areas from which the migrants move out.

Migration to urban areas is not always bad. Urban areas have higher productivity than the rural areas. The income level is also higher in the urban areas than rural areas of India. Kundu and Sarangi (2007) inferred that migration is a "definite instrument of improving economic wellbeing and escaping poverty for the adult population in large, medium and small towns". Thus migration from rural to urban areas may actually reduce the poverty level of India. Scholars and economists have advocated that migration to cities will actually develop an economy and thus should be encouraged (Billsborrow, 1998; World Development Report, 2009). The World Development Report (2009) cites examples of densely populated city like Tokyo, highly mobile country like U.S.A. to put forth its view that migration of people is associated with growth. But the problem remains that too much migration creates problems for the governance of the city. It is particularly relevant for already dense cities of India. In this unit we shall learn about migration and urban problems in India.

There are several factors, which induce people to migrate. The reasons may be economic, social or political. When people migrate within the same country it is called internal migration. When migration involves crossing the boundaries of a given country, it is called international migration. I
Demographers generally refer to inward migration as immigration, and outward migration as emigration. It is obvious that migration is an important factor of change in the characteristics of population as distributed in geographical space.

3.2 Types of Migration

Migration is of different types. However, there is no consensus among the scholars about the typology of migration. These types can be ordinarily defined as cyclical or circulatory, forced, impelled, internal/external, early/primitive, seasonal or periodic. Trewartha has quoted

Peterson who had suggested five general classes of migration. They were: primitive, forced, impelled, free and mass.

3.2.1 Cyclic or Circulatory Migration

Movements of individuals that involve only a temporary change of residence are generally not considered as migration. This type of movement is known as nomadism or pastoral nomadism. If this movement of the people is along with their animal stock – sheep, goats and cattle between two fixed points it is called transhumance.

Migrations differ in terms of direction, distance, duration and purpose/motive behind the movement. Migration may be classified as free or voluntary as opposed to forced or impelled. Some migrations are due to push factors, while others are in response to pull factors. In extra-ordinary situations people are forced to migrate. For example, natural hazards, such as floods, drought, forest fires, avalanches in mountainous areas and earthquakes force people to run away from their homes to safer places to save their lives. In other cases, labour force moves out of the home villages to a neighbouring town or city. These are typical push factors. The assumption is that the local rural labour force is in excess of the demand. As a consequence, the eligible workers move out of the village. Ingrained in these examples is the role of the so-called pull factors. When the unemployed or partially employed village-folks, do not perceive any chance of improving their daily-wage incomes in the home villages, they move out to far-off cities, such as Mumbai, Delhi, Chennai or Kolkata. These cities act as magnets. We can define these movements as a response to pull factors. Many a time push and pull factors operate together.

3.2.2 Internal and External (International) Migration

Migration is also classified as internal and external. When people migrate within the country of their birth/residence/domicile, it is called internal migration. The word internal here means movement within the bounds of the home country. When people move from one country to another, it is called international migration.

3.2.3 Primitive or Early Migration

Distinction has often been made between Early/Primitive migration and forced/ impelled migration. Early migrations, particularly in the prehistoric and early historic times, were a sort of random movement and not a planned migration. People were moving out as a result of a kind of human wandering lust. But they were responsible for the peopling of the continents all over the world. These movements have also contributed to the process of inter-mixing of civilisations and cultures.

3.2.4 Forced or Impelled Migration

When individuals or groups decide to leave their home country in order to avoid devastation caused by drought, famine, epidemics, war, civil strife, or terrorising dictatorial regimes, it is called forced migration. A recent example of forced migration is the exodus of Afghans from Afghanistan to neighbouring Pakistan, Iran and India during the US-UK military operations including carpetbombing in Afghanistan. Similarly, people migrated in large numbers to avoid persecution by the Nazist regime in Germany under Hitler before the Second World War. A comparable example of the forced migration is of the Irish people who fled away from Ireland to avoid starvation and death caused by the famine conditions during 1856-85. These migrations are described as forced because there is no choice before the migrants but to run away. When a state/country forces a section of its population to move out of the country, as they are not desirable, we call it forced or impelled migration.

3.3 Migration Streams

While dealing with internal migration demographers and population scientists enerally recognise four streams. The criterion is the direction of movement of population from the places of origin to the places of destination. The migration within the bounds of the same country generates four main streams as given below:

3.3.1 Rural-Rural Migration Stream;

In villages where economy is based on agriculture, people migrate from one village to another either for harvesting or sowing the crops or both. This is rural to rural migration. The problem is that the native village does not have a scope for work on agricultural farms. In other words, the supply of labour is more than the demand. The assumption is that the native village is overcrowded and agriculturally less productive as compared to the village of destination. In this form of migration, the migrants are mostly males. Sometimes, women also migrate along with the male members of the family. In countries like India, young women are married to a person living at a certain distance from their parental village. The reason is that the marriages cannot be contracted within a radius of 4-5 miles (6-8 kms.) This no-marriage field is treated as the taboo zone.

3.3.2 Rural-Urban Migration Stream;

In the less developed countries, like India, Nepal and Bangladesh, rural to urban migration is a common phenomenon. In regions where the rural population densities are very high and the pace of urban-industrial development is fast, rural-urban stream is most common. These towns/cities attract the 'surplus labour' from nearby or far-off villages. In rural areas the burgeoning poverty, meagre employment opportunities, low and uncertain/irregular wages,

lack of education and health facilities are the main push factors. These conditions induce people to migrate to the urban places. In some cases, labour moves out of the village. They have no other alternative but to move out to the urban places in search of work, which can sustain them and their families. On the other hand, the pull of the urban places induces the rural population to migrate. This process is related to the expectations of the migrant labourers for better employment opportunities, regular and fixed wages and supposedly the better quality of life.

3.3.3 Urban-Urban Migration Stream;

Urban to urban migration is a common phenomenon both in the highly urbanised parts of the world as well as in the less developed countries. People move out from one urban place to the other. The motive is to find jobs to improve their economic status. It is a common feature that large cities attract people from small towns in their neighbourhood. This is especially true in the case of skilled workers. This practice is known as step-wise migration. The first step is to move out from a village to a small town; the second step is to move out from a small town to a large city. Urban to urban migration is due to multiple factors, economic as well as socio-cultural. It is the main channel of labour supply to the fast growing city.

3.3.4 Urban-Rural Migration Stream.

Urban to rural migration is a kind of reverse flow. This is so because large metropolises/mega cities in developed countries attain a high degree of urbanisation, which widens the scope for absorption of rural labour in the informal sector of economy. This also leads to the problems of housing due to over-congestion of cities and the resultant problems of environmental pollution and poor health. This often forces the migrants to return to their native villages. It may be noted that the rural areas in the developing countries are generally underdeveloped. They lack infrastructure facilities to accommodate the rural poor. The story of developed countries is entirely different. Their cities have a developed network of transportation which functions efficiently. The people travel daily between the place of residence and the place of work without much difficulty. In India many of the retired persons tend to settle in their native villages or small towns where they own property or acquire it later. It may be noted that the urban to rural stream is not very common. This generally happens when people run away from a metropolitan city, such as Kolkata or Mumbai, due to social insecurity or expulsion by hostile regimes.

3.4 Effects of Migration

Migration is not a simple phenomenon. It brings about changes in the population composition in the home villages as well as in the regions of destination. It is generally known that migration of population has backward as well as forward linkages. In fact, it is a strong

catalytic agent. It helps the migrants and their families to achieve a certain level of self-sufficiency and a better quality of life in the regions/countries of destination. In fact, depending on the volume of migration the composition of population changes both at home and abroad. More importantly, the demographic scene changes drastically leading to the synthesis of culture, language, quality of life, and the influx of knowledge. The immigrants adapt themselves to the conditions prevailing in the countries of destination. Migration brings about a cultural change and its ramifications are too many. Even the place names are carried to the regions of destination.

It has been suggested that the regions of destination generally benefit, while the regions of origin suffer. When the educationally qualified personnel move out their migration is often referred to as 'brain drain'. This kind of migration is likely to play a major role in terms of economic development of the countries of destination. However, the regions of origin also benefit from the remittances of money by the migrants.

3.5 Migration Trends

3.5.1 International Migration

The term international migration refers to the change of usual residence between one nation and the other. The overwhelming majority of such movers across the frontiers do not necessarily mean that they have decided to change their usual residence. Both international and internal migration involves a change of usual residence. Another interesting feature is that the recorded volume of international migration is much less than the undocumented/ unauthorised migration. This is because people cross the international boundaries in a clandestine way. Whatever the case may be, the net international immigration has always been an important component of the population change in the country of entry. It may be noted that as a result of emigration significant change in population composition is registered in the countries of departure. A policy statement of the United Nations suggests that international movements within an intended stay of more than one year be classified as international migration. Unfortunately, there is no uniformity among the nations on the definition of international migration. Many governments, including the government of the United States of America, collect data on immigration but not on emigration.

3.5.2 Trends of Migration with in India

Trends of migration in India can be classified into two categories: intrastate migrations and interstate migrations. A few examples may be cited to show that the terminology used here may be confusing. When a family migrates from the Agra district of Uttar Pradesh to the neighbouring district of Bharatpur in Rajasthan, one has to describe it as interstate migration,

even though distance covered is short. On the other hand, if a family or a single individual moves from Srikakulam district of Andhra Pradesh to Adilabad or Guntur in the same state, migration will be described as intrastate, although a long distance has been covered. It may, therefore, be concluded that distance is not a definitive criterion.

3.5.2.1 Intrastate Migration

Studies show that migrants in India do not generally cover long distances. They generally move within the state of their birth/origin. This type of migration is called intrastate. Estimates on the basis of census records show that people mostly move from one village to the other in the same state. There are about 200 million people who are normally on the move within the state

Among the migrants, around 50 million consist of males. They move mainly in the rural to rural stream. This stream accounts for about one-sixth of the urban to urban category. About one-fourth is in the rural to urban and 8 per cent in the urban to rural stream.

3.5.2.2 Interstate Migration

Census data on migration show that interstate movement is much less in India as compared to the intrastate migration. In all about 27 million migrants cross the state boundaries. Of these, a little less than one-third belong to the rural to rural stream; another one-third belong to the urban to urban stream and another one-third move from the rural to urban areas. Those who move from urban to rural areas account for 7 per cent of all migrants. Data also show that in the category of interstate migrants, some 15 million women are also included. About two-fifths of them move within the rural areas; about one-third are in the urban circuit, i.e., they move from one urban centre to the other; about one-fourth of this category move from urban places to villages.

3.6 Urbanisation:

Urbanisation is a process by which societies become more urban. It refers to a population shift from rural to urban areas. Thus, it is a case in which the rate of growth of urban population is more than the rate of growth of rural population. Two simple measures to gauge the degree of urbanisation are the following.

Percentage of Population in Urban areas

(PU): PU = (size of urban population/ size of total population) × 100. Higher the value of PU, higher is the degree of urbanisation.

ii) Ratio of Urban-Rural Population (UR): UR = size of urban population/ size of rural population) × 100. Higher the value of the ratio UR, higher is the degree of urbanisation.

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UNIT IV

Population Trends

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Population: The direction of change in the total number of persons inhabiting a country, city, district or area.

4.1 Population Trends:

4.1.1 Population Size, Growth, and Structure

India, with a current population of 967 million, will most likely surpass China in population size by about the middle of the next century. India's population is currently growing at a rate (1.7 percent annually) about 70 percent higher than that of China and will continue growing faster than China for many years in the future.

Currently, India has a young population which will grow somewhat older largely as a result of the fertility decline which is already underway. Between now and 2020, both the working age population and the number of women in childbearing ages will grow more rapidly and will become larger proportions of the total population than now.

4.1.2 Mortality and HIV/AIDS

India, like other developing countries, has achieved substantial improvements in mortality. Since independence (1947), life expectancy has roughly doubled from about 32-33 years to 62 years in 1997. The infant mortality rate (IMR) has been reduced from 200-225 infant deaths per 1,000 births to 66. India has a lower IMR than its immediate neighbours—Pakistan and Bangladesh—but a much higher rate than China, Sri Lanka, and various other South East Asian countries.

4.1.3 Fertility

Fertility in India has declined substantially, from a total fertility rate (TFR) of 5.7 children per woman in the mid-1960's to 3.3 children in 1997. Since the mid-1960's, India has covered two-thirds of the distance to the replacement fertility of just over two births per woman. Fertility varies widely among States; it is significantly below the national average in the southern and western States and higher in the others. With a TFR of 5.2 in 1993, Uttar Pradesh clearly stands out as having especially high fertility, nearly 50 percent above the national level.

4.1.4 Contraceptive Prevalence

The national family planning program, which was established in 1952, has played an important role in India's fertility decline. When the program began, there was little awareness or use of modern birth control methods. Four decades later, the 1992-93 National Family Health Survey (NFHS) found nearly universal knowledge of family planning, with 96 percent

of married women ages 13 to 49 years having heard of at least one modern method, and almost 41 percent, or almost 70 million women, using contraception.

Eighty-nine percent of married women who practiced family planning in India relied upon modern contraceptive methods. Female sterilization, the method which is strongly promoted by India's family planning program, was by far the most widely used method. Nearly 67 percent of married women who were using contraception, or 47 million women, had been sterilized compared with an average of only 30 percent for the entire world. Spacing methods, primarily available through the private sector, were used by a small proportion of users.

4.1.5 Literacy

Literacy and education, especially of females, affect fertility through greater access and practice of contraception and desire for smaller family size. Literacy in India has improved steadily. The adult literacy rate (ages 15 and over) has risen from 34 percent in 1971 to 52 percent in 1995. Although female literacy in India has improved at a faster rate than that of men, in 1995 women continued to have a much lower rate (38 percent) than men (66 percent) (UNESCO, 1995). Efforts continue to improve schooling and literacy, especially for girls and women. Many States have begun "total literacy campaigns" to eliminate illiteracy among the disadvantaged population ages 15 to 34.

4.2 Demographic Characteristics of Today's Developing Countries

In today's developing countries we find the following features regarding their population growth:

i)   High population growth rates, and

ii)   ii) Inadequate opportunities for the absorption of manpower. The high population growth rates are due to high birth rate and fast declining death rates due to better sanitation and health facilities. However, the capacities to absorb increasing manpower are much weaker.

Furthermore, the process of economic development tends to be more capital intensive under modern technological conditions, and hence, has less potential of employment generation in the short run. Since the total size of the population is already large, there is an urgency for speedy achievement of demographic transition from high birth rate to low birth rate resulting in lower population growth.

4.3 World Population Scenario

World population is unevenly spread all over the globe. Some places have a low concentration of population, like deserts, dense forests, and mountainous areas, whereas many areas are heavily like coastal and deltaic plains, moderate climates, fertile areas, industrialized

areas, and urban centres. This spread of population is known as the distribution of population. If we look at the factors responsible for the distribution of population, then all the factors may be broadly grouped under two categories:

(i) geographical factors - latitude, altitude, relief, climate, mineral and energy resources, and

(ii) (ii) socioeconomic factors, like industrialization, urbanization, type of economy, political scenario and public policies. Density is one way of expressing distribution. Density of population is expressed as the number of persons per sq. km. This is popularly known as arithmetic density.

4.4 Distribution and Density of Population

Population distribution can be analyzed by different criteria. In terms of continents, asia has the largest share of population (about 60 per cent) followed by Africa, Latin America and Europe. According to the Population Reference Bureau, World Population Data Sheet, even by 2050, Asia will still have the largest share of population, but it would decline from about 60 per cent to 57 per cent.

4.5 Growth of population

The growth of a place is determined by fertility, mortality, and migration. Population growth may be expressed in various ways. Natural growth is the simplest expression which is the difference between birth rate and death rate, whereas actual growth takes migration in to consideration. As of May 3 1,2009, the Earth's population is estimated, by the United States Census Bureau, to be 6,792,467,727. The world's population has been growing continuously since the end of the Black Death around 1400. There were also short term falls at other times due to plague, for example in the mid-1 7th century. The fastest rates of world population growth (above 1.8 per cent) were seen briefly during the 1950s, and then for a longer period during the 1960s and 1970s. According to population projections, world population will continue to grow until around 2050. The 2008 rate of growth has almost halved since its peak of 2.2 per cent per year, which was reached in 1963. World births have levelled off at about 137-million per year, since their peak at 163 million in the late 1990s, and are expected to remain constant. However, deaths are only around 56 million per year, and are expected to increase to 90 million by the year 2050. Since births outnumber deaths, the world's population is expected to reach about 9 billion by the year 2040. The alarming fact is that we have been adding one billion populations in 12 years' interval.

If we look at growth patterns in terms developed and developing countries, till 1950, the growth rate in the developed world was high in comparison with developing countries. This

was due to the decline in mortality, and the widening gap between birth rate and death rate. The decline in mortality was due to various factors like increase in literacy, advancement in medical sciences and health facilities, etc. But in developing countries, the growth rate was low because both birth rates and death rates were very high, and that helps in reducing growth rate. After 1950, the growth rate in the developed world was very low in comparison with developing countries. This was because of the remarkable decline in birth rates and death rates in developed countries, whereas in the developing world, particularly in the countries with a larger population base, like China and India, there was a sharp decline in the death rate, but the birth rate remained high. Overall, worldwide, the population growth rate has witnessed a downward trend during the last 30 to 40 years.

4.6 Age-Sex Compositions and its Implications on Development

Age-sex compositions are traditionally depicted through a diagram popularly known as population pyramid. A population pyramid, also called an age-sex pyramid, is a graphical illustration that shows the distribution of various age groups in a population (typically that of a country or region of the world), which normally forms a pyramid. 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 one showing females in a particular population in five-year age groups. Males are conventionally shown on the left and females on the right, and they may be measured by raw number, or as a percentage of the total population. The age-sex structure reflects the demographic and socioeconomic history ofg population over a period of time and, even their prospects for the future. It is the result of various factors such as fertility, mortality, and migration. Four main types of age-sex pyramids have been identified: (i) Progressive (ii) Regressive (iii) Stationary, and (iv) Intermediate.

a) A progressive age structure is one in which both birth and death rates are high. Children account for only 45-55 per cent of the total population and the aged for only 5- 10 per cent. Such a structure is common in developing countries where social, cultural, and perhaps religious and economic conditions lead to high fertility, and poor living conditions, bad diets and little medical aid lead to high levels of mortality.

b) A regressive age structure is one in which birth and death rates are low and declining. Children account for about 30 per cent of the total population and the aged for above 15 per cent. This pattern is common in developed countries (especially those in Western Europe), where high living standards, education and social awareness are accompanied by good food and medicine.

c) A stationary age structure is one in which birth and death rates are both low and children account for about 35-40 per cent of the total population and the aged for about 10 per cent. This pattern may remain the same for many years.

d) An intermediate age structure may vary in character and is most common in countries that are passing through stages of development. Such countries may once have had progressive structures and may, in future, have regressive structures.

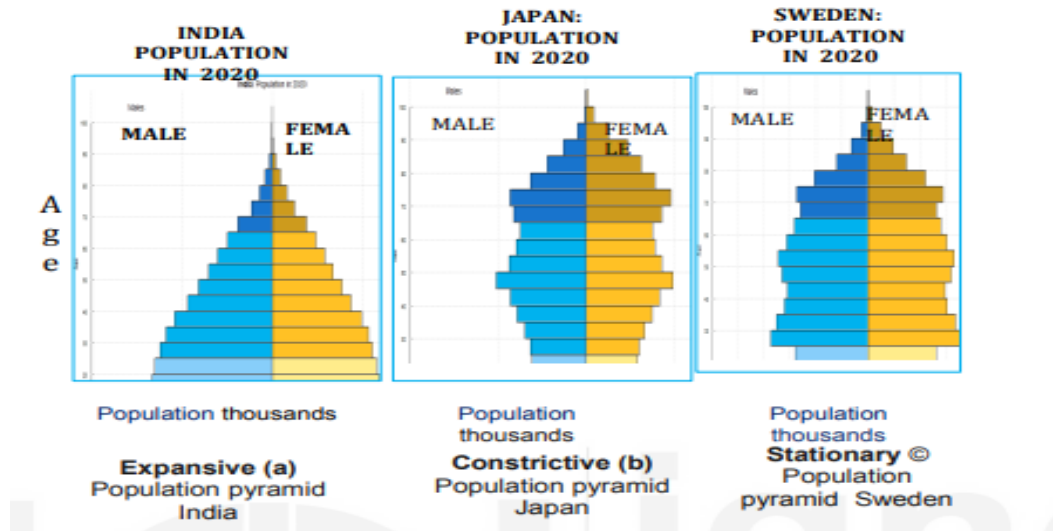**4.7 Population Age Structure and Population Pyramids Population structure:**

Population structure is usually shown using a population pyramid. A population pyramid can be drawn up for any area, from a whole continent or country to an individual town, city or village. A population pyramid, or age structure graph, is a simple graph that conveys the complex social narrative of a population through its shape. The overall shape of the pyramid tells us about the present balances between the different age groups and between males and females. Population can be categorized into three types: expansive (young and growing), constrictive (elderly and shrinking), and stationary (little or no population growth).

The three basic shapes of population pyramids are described as follows:

Expansive: Expansive population pyramids are used to describe populations that are young and growing. They are often characterized by their typical 'pyramid' shape, which has a broad base and narrow top, representative of developing countries like India and Indonesia. These types of populations are typically.

Constrictive: A constrictive pyramid has fewer people in the younger age categories, whereas more people are elderly. Constrictive pyramids typically have an inverted shape with the graph tapering in at the bottom. Constrictive pyramids have smaller percentages of people in the younger age groups; for example, the population pyramid of Japan.

Stationary: Stationary, or near stationary, population pyramids are used to describe populations that are not growing. For example, Sweden show stationary age categories because of relatively low, constant birth rates, and a high quality of life.

INDIA POPULATION IN 2020	JAPAN: POPULATION IN 2020	SWEDEN: POPULATION IN 2020
MALE FEMALE	MALE FEMALE	MALE FEMALE
Population thousands	Population thousands	Population thousands
Expansive (a) Population pyramid India	**Constrictive (b)** Population pyramid Japan	**Stationary ©** Population pyramid Sweden

Population Pyramid or age-sex pyramids are an elegant and useful way of graphically presenting the age-sex distribution of population. A pyramid comprises of two ordinary histograms placed on their sides. The rules of drawing pyramids are generally the same as those for plotting histograms, but there are certain conventions and special features. These are:

First, pyramids are always drawn showing the male population on the left hand side and the female population on the right hand side. The young are always at the bottom and the old at the top. It is conventional to use single year or 5-year age groups; though other groupings are also possible.

Second, the last open ended age-group is normally omitted, but in some cases it is shown.

Third, the vertical scale shows the age groups and the horizontal scale shows the percentage of population or absolute number of population of each group. In case of percentages, the percentages are to be calculated using the total population of both sexes combined as the base.

Fourth, the horizontal scale must be uniform for both the sides of the pyramid. The vertical scale must also be uniform for both the sides while drawing the histograms.

Population policy in India

5.1 National Population Policies: Concept and Evolution

Rapid population growth was identified as matter of concern even before India became independent. The National Planning Committee set up by the Indian National Congress in 1935, under the Chairmanship of Pt. Jawahar Lal Nehru, had strongly supported propagation of the knowledge and practice of family planning. The Bhore Committee, constituted in 1946 voiced concern when it observed that the public health system, as it existed in the country, would not be able to meet the demands posed by growing population, and advocated a need for limiting the family size.

After independence, the Planning Commission, Government of India, highlighted the urgency of the problem of family planning and population control. This constituted a vital component of the First Five Year Plan. In 1952, India launched the National Family Planning Programme. The overall emphasis was on family planning for lowering the birth rate in order to 'stabilize the population at a level consistent with the requirements of national economy'.

Observance of the small family norm by all, thus, became the goal to be achieved through family planning. In the beginning, modern contraceptive methods of family planning methods were not inducted. Various efforts were made to make people aware about the benefits of small family size through activities focused on maternal and child health care. Adoption of natural methods of contraception for limiting the family size was favoured.

This programme achieved limited success. The majority of the family planning clinics established were located either in urban areas or in large villages, leaving a sizeable population uncovered. Taking into account the shortcomings associated with this, the clinic based approach was replaced in 1963 by the extension approach. In the new approach, the Auxiliary Nurse Midwife (ANM) was to visit the houses of married couples in order to provide family planning services at their doorsteps. New methods of contraceptives were introduced.

The year 1966-67 marked a paradigm shift in the Family Planning Programme when method-specific family planning targets were fixed and allocated. A number of officials from the health department, along with other departments, were assigned family planning targets to be achieved on an annual basis with the prime goal of lowering the birth rate. However, this led to certain distortions. The programme was plagued with fake reporting of the family planning achievements by different officials in order to escape penalties associated with non-compliance of fixed targets. The 1971 Census revealed that the demographic goals, set up in 1962, had not been achieved.

The experience of two years, 1975-77, during the period termed, The Emergency, were monumental in the context of shaping of India's population policy. In 1976, the first statement towards National Population Policy spread its net beyond family planning measures, which included measures like raising the marriageable age limit, promoting female literacy, providing employment opportunities to women, and reducing high infant mortality rate. The opening paragraphs of the National Population Policy statement argued that

    i)   Reducing the rate of population increase "will be treated as a top national priority and commitment"

    ii)   To wait for education and economic development to bring about a drop in fertility is not a practical solution

    iii)   Population control must play a crucial role in the movement towards independence and social transformation.

In actual fact, the Policy Statement on the Family Welfare Programme came in 1977. It encouraged state governments to pass legislations to enhance community participation for promoting small family size norms. Such statements, tabled in parliament were neither discussed nor adopted. There were political implications of reduction of birth rate at the state level. Since political representation in Parliament was determined by a State's population size, a fear was expressed that its slower population growth rate would result in a loss of relative influence through a drop in the number of seats in the national parliament. To safeguard against this possibility, representation in parliament, as also in state legislatures was frozen up to the year 2001, retaining the population enumerated at the 1971 Census as the base.

Motivation, which had been a part of the family planning programme, was supplemented by coercion and with the use of incentives, and later with harsher measures. In 1975, earnest efforts were made for the promotion of male-centred vasectomy to slow the rate of population growth. A coercive campaign was adopted to sterilize couples who already had three or more children. The programme got a severe setback due to the overemphasis on vasectomies. The programme suffered due to the ill effects of a coercive strategy. The number of vasectomy acceptors sharply declined after 1976- 77, making it more or less a female oriented programme.

In 1977-78, the Government of India took measures to shift away from coercive actions, and the programme was to be implemented as an integral part of family welfare, based on mass education and motivation. The name of the programme was changed from National Family Planning Programme to National Family Welfare Programme.

In another damage control exercise, the National Health Policy-1983 stressed the need for adhering to small family norms through voluntary efforts. For attaining the goal of population stabilization, the goal to achieve the replacement level by 2000 was targeted. This has guided the Family Planning Programme since then.

In the year 1992 population policy initiatives were adopted. The 73rd and 74th Constitutional Amendments were introduced enabling the Panchayati Raj Institutions (PRIs) and urban local bodies (ULBs), among others, to carry out the task of primary health care and primary education. The provision of basic amenities including the drinking water and roads, became the responsibility of PRIs and ULBs. The focus of the programme shifted from population control to community outreach services.

In 1994, the Swaminathan Committee was assigned the task of framing the new population policy. The draft National Population Policy incorporated a number of suggestions made at the International Conference on Population and Development (ICPD) held in Cario in 1994. Unlike the earlier population policy statements of 1976 and 1977, the draft of the National Population Policy was widely circulated among the members of Parliament and others. This was discussed by the cabinet, followed by discussion in Parliament. Most notably, method specific contraceptive targets were abolished in 1996 and were replaced by the Target-Free Approach, later renamed as Community Needs Assessment Approach (CNAA). The agenda shifted from population control to reproductive and child health (RCH) in 1997. In particular, women's empowerment gained momentum.

The draft national population policy was approved by the Cabinet with the direction that this be placed before Parliament. Several suggestions were made during the deliberations. On that basis, a fresh draft was submitted to the Cabinet. Finally, in 2000 the National Population Policy was announced.

5.2 NATIONAL POPULATION POLICY – 2000

The goals, objectives and strategies of the National Population Policy (2000) centre on family planning and maternal and child health. It envisages development of one stop integrated and coordinated service delivery at the village level on these two parameters. This involves partnership of the government with non-government voluntary organizations. The NPP 2000 has laid down objectives at three times frames: immediate, medium term, and long term.

The **immediate term objective** is to cater to the unmet need for contraception, health infrastructure, and health personnel, and to integrate service delivery for basic reproductive and child health care.

The **medium term objective** is to effectively implement inter sectoral strategies to bring down the total fertility rate (TFR) to a replacement level by 2010.

The **long term objective** is to achieve a stable population by 2045, at a level consistent with the requirements of sustainable economic growth, social development and eco-conservation.

5.2.1 National Socio-Demographic Targets to be achieved by 2010: Fourteen such targets, as follows, were set to be achieved.

i) Fulfil the unmet need for basic reproductive and child health services, supplies and infrastructure.

ii) Make school education free and compulsory for children up to 14 years, and reduce the dropout rate for both boys and girls at primary and secondary school levels to below 20 per cent.

iii) Bring infant mortality rate below 30 per 1000 live births.

iv) Bring maternal mortality ratio to below 100 per 100,000 live births.

v) Achieve 100 per cent immunization of children against all vaccine preventable diseases.

vi) Encourage the increase in age-at—marriage of girls, not earlier than age 18, and, preferably, after 20 years of age.

vii) Increase institutional deliveries to 80 per cent and deliveries by trained persons to 100 per cent.

viii) Achieve universal access to information/counselling, and services for fertility regulation and contraception with a wide basket of choices.

ix) Increase registration of births, deaths, marriage and pregnancy to 100 per cent.

x) Enhance the IEC coverage for RTIs/STIs/AIDS to wider population.

xi) Prevent and control communicable diseases.

xii) Integrate allopathic medicine with Indian Systems of Medicine (ISM) for better provision of reproductive and child health services, and for reaching out to households.

xiii) Encourage strongly the small family norm to achieve the replacement level of TFR.

xiv) Coordinate the implementation of related social sector programs to make family welfare programme people-centric.

5.2.2 Strategies for NPP-2000: the strategy for NPP includes the following 12 measures.

i) Decentralization of the Plan and Programme Implementation

ii) Convergence of service delivery points in villages

iii) Empowering women for mitigating health and nutrition problems

iv) Strengthening child health and survival care

v) Fulfilling the unmet need for family welfare

vi) Meeting the needs of the vulnerable and underserved population groups constituting urban slums, tribal communities, hill area populations, displaced and migrant populations, adolescents and men in planned parenthood

vii) Providing encouragement and incentives to diverse health care providers

viii) Collaborating with the Commitments from NGOs and private sector

ix) Channelling Indian Systems of Medicine and Homeopathy

x) Strengthening contraceptive technology and research on RCH

xi) Providing for older population

xii) Improving information, education, and communication technology for health care services.

5.2.3 New Structures to be established under NPP-2000: four new structures, as follow, were established under the policy. i) National Commission on Population ii) State/UT Commissions on Population iii) Coordination Cell in the Planning Commission iv) Technology Mission in the Department of Family Welfare

i. National Commission on Population: as recommended by NPP-2000, the National Commission on Population was constituted on 11th May 2000, the day when India reached one billion population marks. It has the Prime Minister of India as its Chairman, Deputy Chairman Planning Commission as Vice Chairman, Chief Ministers of all states, Ministers of the concerned Central Ministries, Secretaries of the concerned Departments, eminent demographers and representatives of the civil society as members. The mandate of the Commission was to guide the implementation of the National Population Policy in achieving the goals, to hasten population stabilization by promoting synergy between health, educational environmental and developmental programmes, to promote inter sectoral coordination in planning and implementation of the programmes at the Centre and States, and to facilitate the development of a vigorous people's movement in support of this national effort.

ii. State/UT Commissions on Population: State Population Commissions have also been commissioned in as many as 21 States/ UTs. The initiation of the process of policy formulation undertaken at the state level is expected to achieve the goals setup in NPP – 2000 (MOHFW, 2008-2009)

iii. Coordination Cell in the Planning Commission: in place of a coordination cell policy convergence has been set up.

iv) Technology Mission in the Department of Family Welfare: in place of a Technology Mission in the Department of Family Welfare, an Empowered Action Group (EAG) has been created

5.2.4. Legislation

For pursuing the agenda for population stabilization of NPP-2000, the 42nd Constitutional Amendment has frozen the number of seats in Lok Sabha and Rajya Sabha till 2026, with the 1971 Census as the base.

5.2.5 Adoption of Small Family Norm Promotion Measures:

Twenty such measures are summarized below. NPP-2000 does not include disincentives. Rather, it has measures for promotion and motivation for achieving the small family norm. In the past, the incentives were linked with sterilizations. In the policy, these incentives are liked to poverty, delayed marriage, delivery care, birth registration, birth of a girl child, and immunization.

• Incentives to Panchayats and Zila Parishads for achieving small family norms, especially by reducing infant mortality.

• Couples below the poverty line undergoing sterilization after two children to be given health insurance

• Improving the status of women by giving some incentives at the birth of girl child Contraceptive choice to be widened and made more accessible

• Safe abortion facilities to be expanded and strengthened

• Strict enforcement of legal reforms, including Child Marriage Restraint Act, 1976 and Pre-Natal Diagnostic Techniques Act, 1994.

NPP recognized that there is a large need to augment and strengthen health care services as well as to cater to the unmet needs for contraception. Though the NPP-2000 mentioned sustainable development, quality of life, education, equity, gender issues, and raising the age at marriage, the emphasis remained primarily on the family planning programme. As such, the specific goal of achieving replacement level fertility by the year 2010 appears quite unrealistic.

5.3 STATE POPULATION POLICIES

In the spirit of NPP-2000, 17 States/ UTs including Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Madhya Pradesh, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttaranchal, Mizoram, Tripura, Andaman & Nicobar Islands, Chandigarh, Dadar and Nagar

Haveli, Daman and Diu, and Lakshadweep, have formulated their own State Specific Population Polices, defining the strategies and programmes to be followed to attain the goals set that have been outlined.

5.4 Demographic Dividend

The recent rapid fertility decline in some parts of the world has opened up a new window of opportunity for achieving faster growth rate in economic and human development. With steady decline in fertility, there will be fewer and fewer children in the age group 0-14. The past high fertility ensures the growth of the present workforce and the present low fertility implies smaller size of dependent child population in future. This feature of population trend is called 'demographic window or dividend'. More specifically, the dividends that accrue are:

a) higher labour supply for larger economic activities;

b) fewer children with better health for women's health, education and opportunity to join work force

c) larger size of working age adults with larger earnings and larger savings i.e. improved capital supply for economic activities;

d) less investment will be required on children at both micro and macro level as less number of children will be there to look after in the country;

e) better human development due to larger earnings, more investment in higher education and better health for women and children (China improved its ranking in HDI by resorting to one-child family planning norm); and

f) because of fertility decline and increase in the population of working age people, the dependency ratio will decline. Low dependency ratio is helpful in economic development.

Typically, this window of opportunity, or the availability of the demographic dividend, lasts for 30 to 40 years, depending upon the country. India reached the point of demographic window in 2011. The proportion of those aged less than 15 years is still above 30 percent and the proportion of those aged 65 and above is below 15 percent. The share of the working age population is rising (almost 60.3 percent in 2011) in India. On the other hand, Work Participation Rate (WPR) is low at 39.8 percent in 2011. Urgent steps are, therefore, required to:

(i) generate employment opportunities on a scale sufficient to eradicate unemployment and underemployment; and

(ii) prioritise skill development among the youths to utilise new avenues of self-employment; and

(iii)   extend the reach of the modern educational and training system so as to enable larger sections of the population to benefit and thereby participate in the development process. Only then can India reap the benefits of 'demographic dividend'.

5.5 National youth policy

The National Youth Policy (NYP-2014) aims at providing an overview of the state of the youth aged 15-29 years in India. It highlights key issues and challenges faced by the youth and elaborates on how all stakeholders can support the youth to ensure that they contribute positively to the development of the society, now and in the future.

5.5.1 Vision of NYP

provides a holistic Vision for the youth of India which is: "To empower youth of the country to achieve their full potential, and through them enable India to find its rightful place in the community of nations".

5.5.2 Objectives of NYP

Achieving this Vision requires the Government and all stakeholders to work towards five clearly defined objectives which are as follows:

a. **Create a productive workforce that can make a sustainable contribution to India's economic development**

In order to create a productive youth workforce, it is essential that the youth of the country have access to the right set of tools and opportunities to make a sustainable contribution. The youth must have equitable access to high quality education and be able to develop the necessary skills that are required by the labour market to ensure that they are gainfully employed. Given that a large proportion of the workforce is self-employed, entrepreneurship must be encouraged amongst the youth and they must be supported through the process of idea generation, incubation and financing.

b. **Develop a strong and healthy generation equipped to take on future challenges**

In order to create a generation of young Indians equipped to take on future challenges and achieve their full potential, it is necessary that the youth are in good health and make healthy and balanced lifestyle choices. Youth specific health issues must be addressed through targeted programmes. Balanced nutrition and healthy lifestyle information must be provided to the youth. Youth must also be encouraged to engage in sports and recreation in order to ensure their physical well-being.

c. **Instil social values and promote community service to strengthen nationalism in the country**

It is important to build national pride and ownership in the youth through a programme of education on social values including respect for diversity and the importance of harmony. Youth must be encouraged to participate in community service and development activities, especially in the most backward regions. The youth of India must have a strong sense of moral responsibility towards their fellow citizens, especially those that are less fortunate than themselves. Youth of the country must be encouraged to fulfil their duties as citizens and thus create an environment in which all citizens enjoy the rights guaranteed in our Constitution.

d. **Facilitate participation and civic engagement at all levels of governance**

Governance requires an active citizenry, and given that the youth in the age group of 15-29 years comprise 27.5% of the population, it is essential to create mechanisms for youth participation in politics and governance. Youth are the future of the nation and must be encouraged to participate in politics at local and national levels. They must be provided the necessary training and tools to become effective policy makers and to be able to execute government's schemes and programmes

e. **Support youth at risk and create equitable opportunity for all disadvantaged and marginalised youth**

A few segments of the youth population require special attention. These include economically backward youth, women, youth with disabilities, youth living in conflict affected regions including left wing extremism, and youth at risk due to substance abuse, human trafficking or hazardous working conditions. It is essential that government policies are inclusive and provide equitable opportunities to all. It is also important to ensure these youths do not suffer from stigma or discrimination, and have equitable access to justice to ensure a dignified life to all segments amongst the youth.

Priority Areas Achieving each of these five objectives requires action in a set of key priority areas. The following table lists the 11 key priority areas where action is required to meet the five stated objectives:

OBJECTIVES	PRIORITY AREAS
1. Create a productive workforce that can make a sustainable contribution to India's economic development	1. Education
	2. Employment and Skill development
	3. Entrepreneurship
2. Develop a strong and healthy generation equipped to take on future challenges	4. Health and healthy lifestyle
	5. Sports
3. Instil social values and promote community service to build national ownership	6. Promotion of social values
	7. Community engagement
4. Facilitate participation and civic engagement at levels of governance	8. Participation in politics and governance
	9. Youth engagement
5. Support youth at risk and create equitable opportunity for all disadvantaged and marginalised youth	10. Inclusion
	11. Social justice

Source: Ministry of Youth Affairs and sports, National Youth Policy 2014.