

Date
19th April 2016

Human Geography
POPULATION & SETTLEMENT GEOGRAPHY

Syllabus

1. Growth and distribution of world population
2. Demographic attributes
3. Causes of and consequences of migration
4. Over-, Under- and Optimum Population
5. Population Theories
6. World Population problems and policies
7. Social well-being and quality of life
8. Population as social capital
9. Types and patterns of rural settlements
10. Environmental issues in rural settlements
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12. Urban morphology: Concepts of primate city and rank-size rule.
13. Functional classification of towns
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17. Problems and remedies of urbanisation
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1. Growth and Distribution of World Population

The beginning of culture is traced back from 10,000 years before present when the evolution of Homo sapiens got completed and paleolithic culture begun. It is therefore that the human population growth is also taken into account since 10000 years BP.

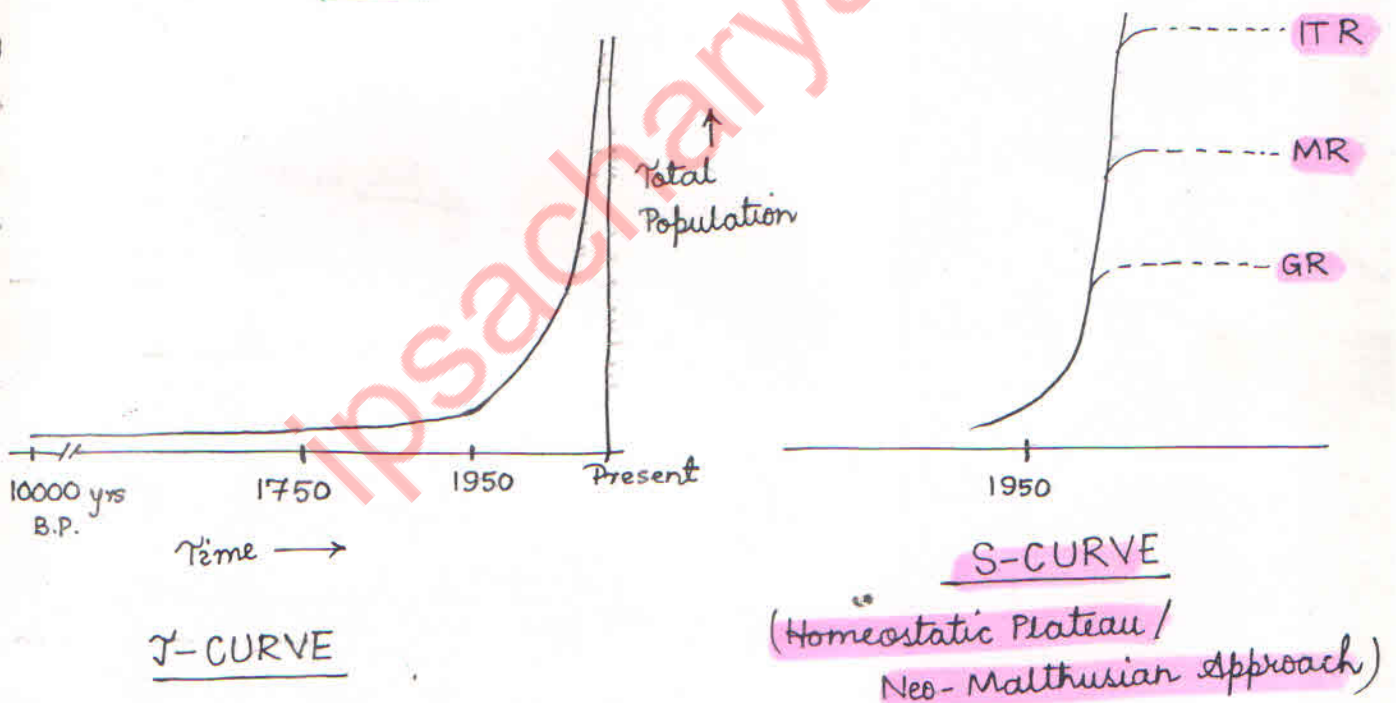
Understanding the demographic changes as well as the challenges and opportunities that they present for achieving sustainable development is important for designing and implementing the development agenda and policies.

The growth of global population can be analysed in distinct time periods :-

- (1) From 10000 years BP to 1750s
The global population remained at constant size level depicting Stage-I of the demographic transition.
- (2) From 1750s to 1950s
It depicted the second stage of demographic transition with minor increase in population.
- (3) 1950s onwards
Since 1950s, there has been an exponential increase in the global population, making the growth trend curve to be represented as J-CURVE.

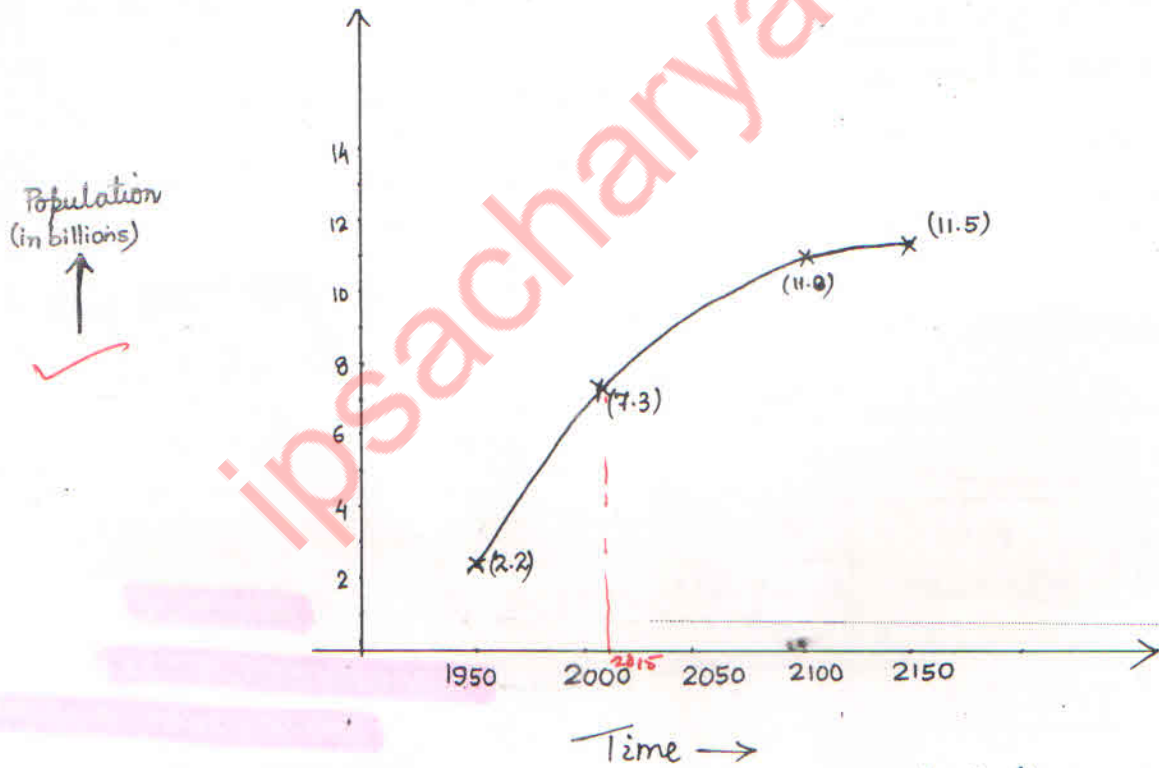
However, with technological developments and their effects on population growth, the temporal analysis is represented as S-CURVE. It denotes that every level of exponential population increase is both cause and effect of technological innovations. This is also recognised as homeostatic plateau or neo-Malthusian Approach with at least three well-demarcated S-CURVES since 1950s representing —

- Green revolution (GR) ✓
- Medical revolution (MR) ✓
- IT revolution (ITR) ✓



Global population as per Population Division of UN Secretariat as of mid-2015 has reached slightly over 7.3 billion and is still growing at the rate of 1.18% per year (236000 live births per day).

The world population is projected to increase by more than 1 billion within the next 15 years, reaching 8.5 billion in 2030, and to 9.7 billion in 2050. The global population stability is projected to occur by 2150, by which time the population will be around 11.5 billion.



While Africa has the highest rate of population growth, Asia is projected to be the second largest contributor to future global population. It is followed by N. America, L. America and the Caribbean, and Oceania. Europe is projected to have shrinking population.

Distribution :

Regulated by diverse natural and anthropogenic factors, the population is distributed in a highly diverse manner. While 75% of the global population is confined in less than 10% geographical area, nearly 30% of geographical area is absolutely uninhabited. In terms of total population, unequal distribution is justified with the fact that only 10 countries of the world account for more than 60% of ²⁰¹⁵ global population including :

- ① - China ✓
- ② - India ✓
- ③ - USA ✓
- ④ - Indonesia ✓
- ⑤ - Brazil ✓
- 6 - Pakistan
- 7 - Nigeria
- 8 - Bangladesh
- 9 - Russian Federation
- 10 - Mexico

Continent-wise, Asia tops the list with about 60% of global population (2015). The order goes as:

- 1 - Asia (60%)
- 2 - Africa (16%)

3- Europe (10%)

4- Latin America and the Caribbean (9%)

5- Northern America and Oceania (5%)

While Africa has the highest rate of population growth (2.55% annually in 2010-15), Asia is projected to be the second largest contributor to future global population, followed by Northern America, Latin America and the Caribbean, and Oceania. Europe is projected to experience shrinking population.

In terms of population density (i.e. number of person per square kilometres of area), Asia and Europe form dense clustered continents with 142 person/sq. km and 72 person/km² respectively compared to global density of 56 persons/km². They are followed by sparsely clustered :-

(i) Africa - 40 persons/km²

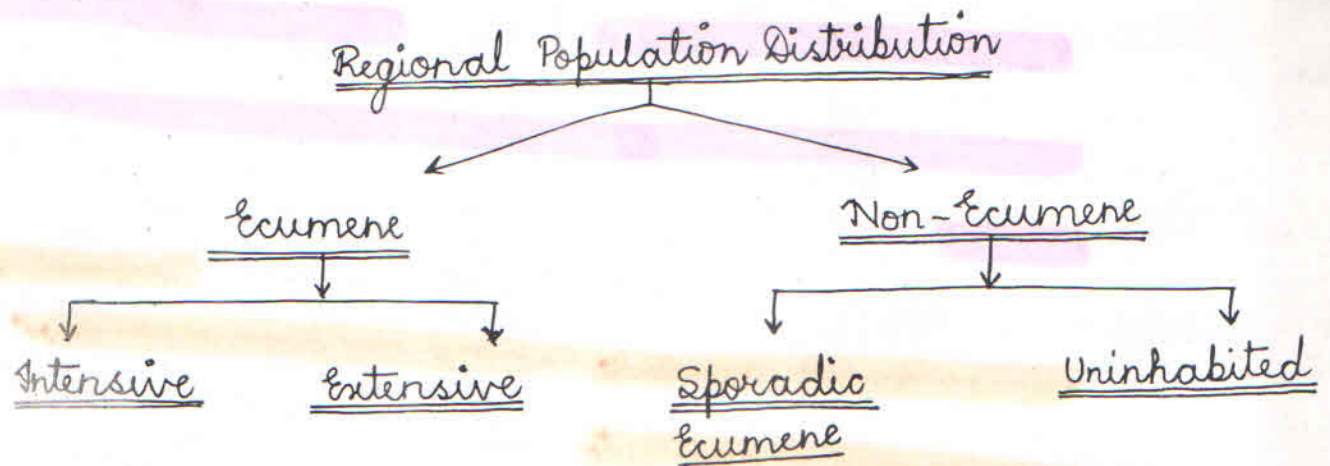
(ii) Latin America and the Caribbean - 32 person/km².

(iii) Northern America - 19 persons/km²

(iv) Oceania - 5 persons/km²

The median age of the global population i.e. the age at which half the population is older and half is younger is 29.6 years (2015). With respect to distribution by sex, males constitute 50.4% while female constitute 49.6% of the global population.

At the regional level, taking into consideration regional parameters, the habited world can be divided into ecumene and non-ecumene locations.



1. ECUMENE

The ecumene regions are identified to be areas with more than 100 persons/sq. km of population density.

It includes four regions of world :

- (i) East Asia
- (ii) South Asia
- (iii) Eastern Anglo-America
- (iv) Western Europe.

The first two representing dominant rural agrarian ^{and} setup form examples of extensive ecumene, include China, India, Pakistan and Bangladesh.

The last two regions along with Japan have industrial urban characteristics and form examples of intensive ecumene. The great lakes region in Anglo-America and northern European plains are

the excellent examples.

2. NON-ECUMENE

These regions have a population density of less than 10 persons/km² and include unfavourable locations as ERF, tropical deserts, tall mountains and polar deserts.

Equatorial
Rain Forest

It is within these regions that benefitting from variable set of favourable determiners, sporadic ecumene can be found.

(i) Fertile soils make Java Islands, Mekong delta (Vietnam) Mesopotamia and Tigris and Euphrates Plains ~~are~~ sporadically extensive.

(ii) Mineral, energy- or 'marine' ^{-link'} resources results in sporadic intensive ecumenes like:

(a) Kiruna - Iron ore (Sweden)

(b) Magadan - coal (Siberia)

(c) Manaus - gold (Brazil)

(d) Namib Desert - Uranium (Namibia)

(e) Persian Gulf Shoreline - crude oil

(f) Sakhaline - crude oil, natural gas

(g) Honolulu, Hawaiian Is., Singapore

(h) Port Said (Egypt), Port Suez (Egypt)

(i) Panama City and Colon (in Panama)

} Port of Call

(iii) Favourable habitat also develops sporadic intensive ecumenes. Eg. —

(a) All the megacities of African Savannah like Addis Ababa, Kampala, Nairobi are located at the elevation of >3000 m.

(b) Administrative capitals of Yemen — Sana'a, and of Bolivia — La Paz (also the beneficiary of highest navigable lake L. Titicaca)

The rest of the world with population density between 10-100 persons/km² is incorporated in moderate ecumene regions.

NOTES

① Basis of Distribution

- Poplⁿ Size
- Country-wise
- Continent wise
- Rate of poplⁿ
- Poplⁿ Density
- Median Age; Sex

• Distribution refers to the actual pattern of spacing of individuals.

$$\bullet \text{ Density} = \left(\frac{\text{Total Popl.}^n}{\text{Land Area}} \right)$$

② Physical Influences on Poplⁿ Distribution

1. Altitude
2. Latitude
3. Relief
4. Climate
5. Soil
6. Vegetation
7. Mineral and energy resources

③ Economic, social and political influences

1. Type and scale of economic activity in that area.
2. Political influences - communism, refugees etc.
3. Historical processes - duration of settlement

Factors of population distribution!

1. Latitude

In low latitudes, high plateau areas provide positive advantages and are often favoured for settlement. Conversely in high latitudes, areas of low ground are generally sought out by the scanty poplⁿ of such areas.

2. Relief

Steep gradients, exposure and rugged terrain all tend to deter settlement by restricting movement and the possibility of cultivation.

Certain valleys provide lines of penetration and favour communications and settlement, while cul-de-sac valleys (open at only one end) remain sparsely populated.

3. Climate

Extremes of heat, cold, humidity and aridity all deter settlement. However, climatic optima are very difficult to define because of human adaptability capacities.

4. Soil

Deltaic and alluvial soils frequently attract agricultural populations while podzols and laterites generally support only sparse population.

5. Vegetation

The contrasting population densities of the ranching lands of the New World and areas of Asian rice cultivation.

6. Minerals and Energy resources

- Western Europe is highly populated because of coalfields and their associated industrial conurbations.
- South African Rand, the Appalachian coalfields (USA), the Donetz Basin (Ukraine, coal mining area)
- The presence of minerals in northern Canada and interior Australia has attracted small settlements.

7. Type and scale of economic activity

Technological and economic advances are usually associated with changes in population density and distribution. eg.

- Northern American Prairies
- Industrial revolution in western Europe.

8. Political Influences

- In communist countries, population may be directed to areas of social or economic needs, while in the capitalist countries, inducements can be offered to encourage migration to new towns.
- Political instability and war. eg - Syrian Crisis

9. Historical Processes

The relatively recent settlement of Africa Australia is a basic reason for its low population density while the high density of India may be partly explained in terms of its long history.

Population Composition

Population composition is the description of a population according to certain characteristics especially those for which quantitative (or census) data are available.

It is regarded as the product of the processes of demographic change — fertility, mortality and migration — at a given time. It normally include reference to the spatial variations of age, sex, marital status, family size, occupation, nationality, language and religion. Broad distinctions are sometimes made between physical or innate characteristics such as age, sex and race, and social or acquired characteristics such as marital status and occupation.

Geographers are limited to certain aspects of population composition only notably :

- (i) Age and sex structure
- (ii) Ethnic and occupational structure.

(i) Age-Sex structure

The formal study of population composition began with the development of graphical device called age-sex pyramid in the beginning of the 19th century.

The pyramid incorporates three age-groups: young, mature and old in the vertical alignment with male and female population demarcated on horizontal alignment.

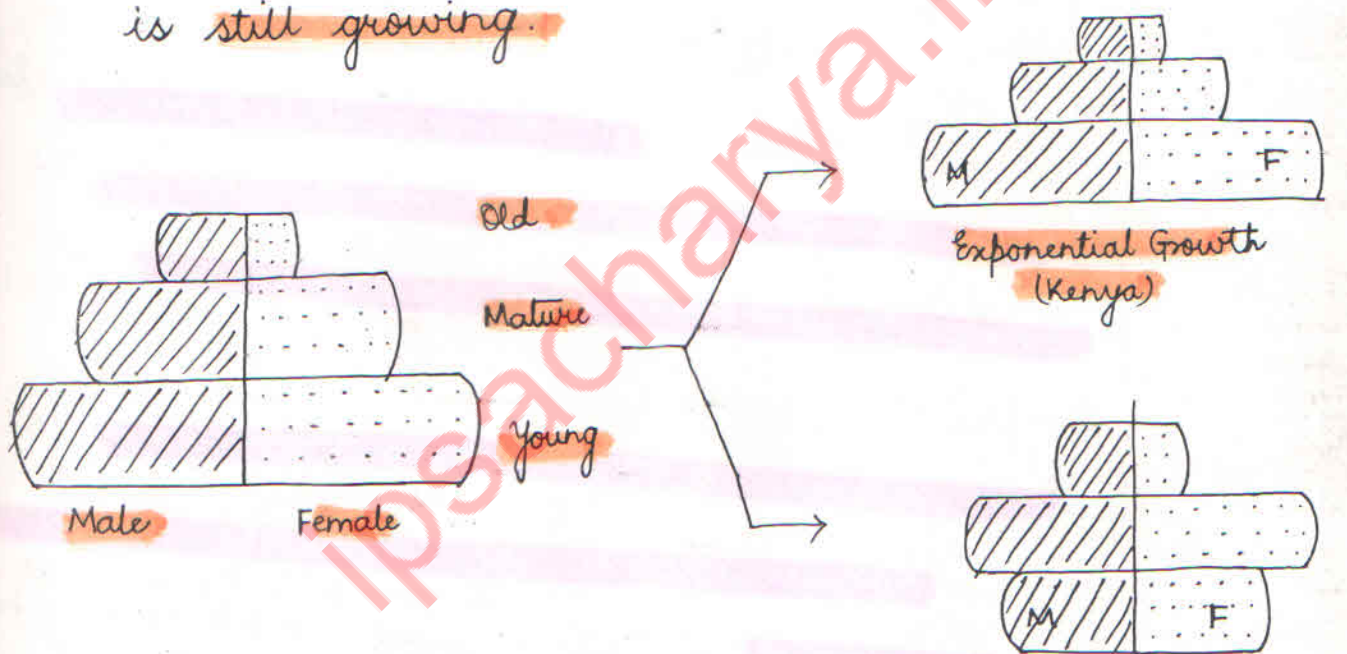
Since 1800, variable pattern of population profiles resulted in the development of variable shapes of age-sex pyramid. Today the pyramid has therefore been replaced by age-sex groupings called COHORTS. Examination of age-group statistics for different parts of the world shows that the proportion of adult population is the least variable whereas the proportions of children and old people mainly result in the regional differences. The cohorts on the map of the world are thus categorised as:

- (i) Developing world cohort
- (ii) Developed world cohort.

Developing world cohort : It is characterised by:

- (a) Broader profile denoting larger share of global popl.
- (b) Shorter height depicting lesser life-expectancy
- (c) Lesser female population in the old-age cohort compared to males.

The developing cohort can be categorised on the basis of population growth rate as exponential and stable. The exponential growth cohort, as of Kenya, is true pyramid with broad base and narrow apex depicting high fertility rates. In comparison, the stable growth cohort, as of India, has a swollen (broader) mid-age cohort depicting significant control in fertility rates, thus growth rate of population, though the population is still growing.



• Stable growth (India)

Developed world cohort : Its features include :

- (a) Narrower profile depicting lesser share of global popln
- (b) More height representing higher life-expectancy
- (c) Females outnumber males in old-age cohort, representing the fact that females are less prone to old-age diseases.

The developed cohort, however, too can be sub-divided into stable population cohort and declining population cohort. The former incorporates near balance of population in all age cohorts (eg. Austria) while the latter represents inverted pyramid with the largest population share in old age cohort (eg. Sweden).

As of mid-2015, male constitute 50.4% while female constitute 49.6% of the global population. The median age of the global population is 29.6 years. [UN's Population Division].

The analysis of population composition helps in dealing with the various socio-economic problems of the present and for the future. For

examples :-

- (i) Reaping the benefits of demographic dividends
- (ii) Enhancing care or silver economy for the growing dependency ratio (ratio of ^{non-working age} people aged to ^{age} working _{age} people)
- (iii) Tackling gender inequality.

2. Demographic attributes

The UNFPA (United Nations Population Fund) identifies the demographic variables as functional and structural. The structural variables include:

- (i) Population Size
- (ii) Population Distribution
- (iii) Population composition

The functional variables include:

- (i) Fertility
- (ii) Mortality
- (iii) Migration

The structural variables are the result of the interactions of the functional variables and in turn determine the roles of the functional variables.

Fertility

The term fertility refers to the occurrence of live births among a defined population. In most parts of the world, fertility exceeds both mortality and migration, and is thus the main determinant of population growth. At the same time, it is more difficult to analyse and is subject to greater short-term fluctuations. It can be controlled and is determined by a wide range of social, economic, and political influences as well as physiological & psychological factors.

Indices employed to express fertility

- (1) Crude Birth Rate (CBR): It is the ratio between the number of births (usually in one year) and ^{total} mid-year population.

$$CBR = \left(\frac{\text{Total number of births in a year}}{\text{Mid-year population of that year}} \right) \times 1000$$

It's easy to calculate and involves data that are generally readily available. However, it is not highly accurate and is less useful for making comparisons.

- (2) Standardised Birth Rate (SBR)

It is the birth rate for a region calculated by considering its age composition to be the same as the country as a whole.

It is tedious to calculate but produces a rate which is directly comparable with that of other regions.

- (3) General Fertility Rate

It is the number of births per thousand women in the reproductive age-group.

- (4) Total Fertility Rate

It is the number of births given by a woman in her childbearing years.

World Pattern of Fertility

The CBR for the world stands at 19.6‰ whereas the TFR is 2.51 children per women. (UN Population Division for 2015). Countries can be roughly classified into three groups depending on their current levels of fertility:

(i) Low-fertility Countries

(a) $TFR < 2.1$

(b) Include all of Europe and Northern (Anglo) America, 20 countries of Asia, 17 in Latin America and the Caribbean, 3 in Oceania and 1 in Africa.

(c) The largest low fertility countries are:

- China
- USA
- Brazil
- Russia
- Japan
- Vietnam

(ii) Intermediate Fertility Countries

(a) Already experienced substantial fertility decline

(b) TFR between 2.1 and 5

(c) Examples: India

Indonesia

Pakistan

Bangladesh

Mexico

(iii) High-fertility countries

(a) Only limited fertility decline till date

(b) TFR = 5+

(c) 19 countries in Africa and 2 in Asia

(d) Examples:

- Nigeria
- Democratic Rep. of Congo
- Tanzania
- Uganda
- Afghanistan

In recent years (2010-15), fertility has declined in all major areas of the world except Europe, where TFR increased slightly from 1.55 to 1.6.

Factors Influencing Fertility Levels

Decisions concerned with family limitation are both consciously and subconsciously influenced by a wide range of moral, intellectual, financial and social motives. Main factors include:

1. Religion (eg. Muslims, Catholics)
2. Duration and level of education (Education level \propto $\frac{1}{\text{Size}}$)
3. Difference b/w the actual and desired standard of life (indirect x/p with family size)
4. Economic prosperity
5. Political influences

6. Social customs and taboos

- Marriage age
- Importance on a male heir (India)
- Polygamy

7. Population structure especially the age-composition. Areas with a high proportion of young adults may be expected to have high birth-rates. New towns, pioneer settlements and regions with high immigration have high birth rates. Similarly, urban areas often have higher birth rates than their rural neighbours.

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Mortality

It is used to describe the occurrence of deaths among a defined population. As a result of medical progress and improved health services, most nations have been characterised by declining mortality rates, during the present century and contributing to population explosion of modern times. The various indices employed to express mortality levels include:

- (1) CMR
- (2) SMR
- (3) IMR
- (4) Under-5 MR
- (5) Life expectancy at birth

Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.

The CMR for 2015 stands at 7.8% while the LE at birth is 70.5 years for the world. [UN Popl. Division].

World Pattern of Mortality

Significant gains in life expectancy have been achieved in recent years. Globally, it stands at

70.5 years in 2015. For men it is 68 years and for women it is 73 years.

All major areas shared in the LE gains over 2010-15, but the greatest increases were in Africa. LE in 2010-15 across major regions stood at:

- 1) Northern America - 79 years
- 2) Europe & Oceania - 77 "
- 3) L.Am. & Caribbean - 75 "
- 4) Asia - 72 "
- 5) Africa - 60 "

Under-5 mortality also fell across the world and is currently estimated at 50‰ in 2010-15. Absolute declines were particularly large in Sub-Saharan Africa (142 to 99‰) and in the least developed countries (125 to 86‰).

Factors

① High mortality rates results from poor:

- Poor diet standards
- Housing (eg. slums)
- Hygiene
- Medical care
- Social Security
- Occupation structure (hazardous work)
- Wars, epidemics (ebola eg.) etc.

② The low mortality rates are usually related to :-

- high living standards
- good medical services
- youthful population structure
- combination of these

Ravenstein

- * Main cause of migration is economic
 - * Adults (youth and single) migrate more than families.
 - * Big towns grow on immigration.
- ## Not all kinds of spatial mobility are included in migration. Eg. Nomadism, transhumance, tourism etc.

Migration

Migration is defined as a movement of population involving a change of permanent residence of substantial duration. It may be interpreted as a spontaneous effort to achieve a better balance between population and resources. It is generally classified into two categories :

- (1) Internal migration
- (2) International migration

##

E. G. Ravenstein

In the 1880s, E. G. Ravenstein made a detailed study of migration statistics and presented papers on 'The Laws of Migration' in which the following principles were proposed :

1. The great body of migrants only proceed a short distance and consequently, there takes a universal shifting or displacement of the population, producing 'currents of migration' in the direction of centres of commerce and industry where they are absorbed.
2. Migration occurs in a series of stages. The people immediately surrounding a town of rapid growth flock into it. The gaps thus left by the rural population are filled up by the migrants from more remote districts, until the attractive force of a

rapidly growing city makes its influence felt to the most remote corner. Migrants enumerated will grow less with the distance proportionately (distance decay).

- (3) The process of dispersion is inverse of that of absorption.
- (4) Each main stream of migration produces a compensating counter-current.
- (5) Migrants proceeding long distances generally go by preference.
- (6) Rural population is more migratory than urban.
- (7) Females are more migratory than males over short-distances.
- (8) The incidence of migration increases with increasing technological development.

These broad generalisations were found to be basically correct and were later refined.

G.K. Zipf

G.K. Zipf in his Inverse Distance Law stated that the volume of migration is inversely proportional to the distance travelled by the migrants, i.e.

$$N_{ij} \propto \frac{1}{D_{ij}}$$

where, N_{ij} = Number of migrants from town i to j
 D_{ij} = Distance b/w the two towns.

S. Stouffer

In 1940, S. Stouffer proposed his "Theory of Intervening Opportunities". He stated that the number of persons going a given distance (N_{ij}) is directly proportional to the number of opportunities at that distance (O_j) and inversely proportional to the number of intervening opportunities i.e.

$$N_{ij} \propto \frac{O_j}{O_{ij}}$$

Gravity models to migration analysis:

Considering every other factors to be the same, the volume of migration ^(N_{ij}) between two towns (i and j) is directly proportional to the product of the populations of the two towns and inversely proportional to the an exponent of the distance between them i.e.

$$N_{ij} \propto \frac{P_i \times P_j}{D_{ij}^a}$$

To incorporate the different levels of attractions by the two towns, attraction factors α_i and α_j can be taken into account, making the equation:

$$N_{ij} \propto \left(\frac{\alpha_i P_i \times \alpha_j P_j}{D_{ij}^a} \right)$$

'John Steward' gave the value $a=2$ to propound his theory.

Push-Pull Theory

Inequalities of one type or another are preconditions of migration, underlining the push-pull theory.

• Push factors are those influences which are thought to initiate migration flows. They are the adverse conditions which cause population to seek a living elsewhere and generally include:

- Poverty
- Famine
- Low wages
- Unemployment
- Wars, calamities, epidemics
- Natural disasters

• Pull factors are the attractions, real or imagined, of destination areas and include:

- High wages
- Cheap land
- Attractive living conditions
- Opportunities for economic advancement.

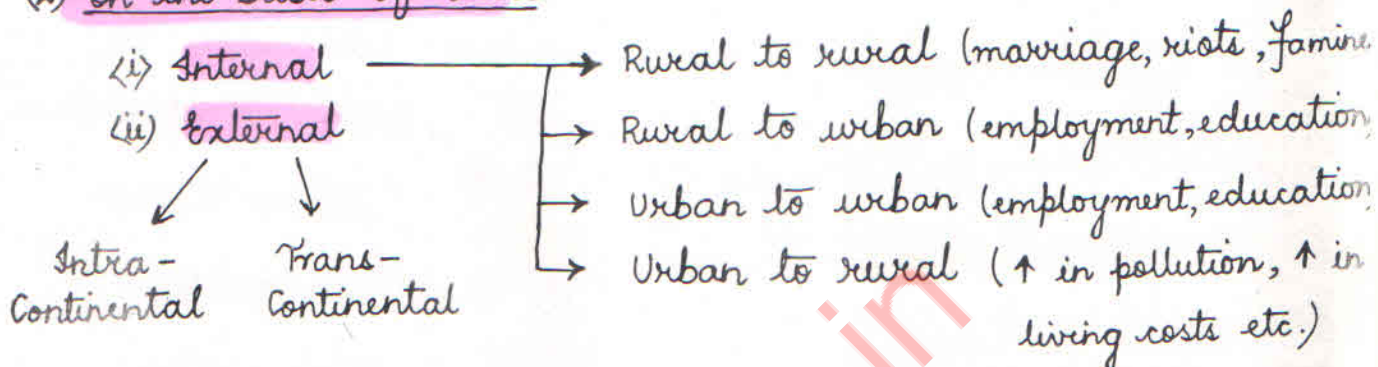
A combination of 'push-pull' factors and the personal decisions effect migration.

Types of Migration

(1) On the basis of time

- <i> Short-term vs long-term
- <ii> Permanent vs temporary
- <iii> Periodic vs Seasonal
- <iv> Daily migration

(2) On the basis of area



(3) On the basis of focus

- (a) person centric
- (b) family centric
- (c) community centric (eg. Syrian refugee, Jews etc.)

(4) On the basis of choice

- (a) Voluntary
- (b) Coercive

Causes of Migration:

- (i) Economic causes - e.g. Migration from Bihar, UP to Punjab, Haryana as agri' blown.
- (ii) Over-population - e.g. - Bangladesh
- (iii) Social and religious causes. Eg. Jews (Germany)
- (iv) Political causes - eg. Syria, Iraq, 2nd WW
- (v) Demographic causes - adult mainly migrate (mainly male)
- (vi) Government policies - Australia inviting students from other countries for promoting their educational institutions

An intermix of these causes results in development of push and pull forces along with the personal decision to migrate.

Theories on Migration

- ✓ 1. EG Ravenstein's Laws of Migration
- ✓ 2. G.K. Zipf's Inverse Distance Law
- ✓ 3. S. Stauffer's Theory of Intervening Opportunities
- ✓ 4. Gravity Model & John Steward
5. Everett Lee's Model on Migration
5. Zelinsky's Mobility Transition Model

Everett Lee's "A Theory of Migration (1966)"

Everett Lee conceptualised the factors associated with the decision to migrate and the processes of migration into the following four categories:

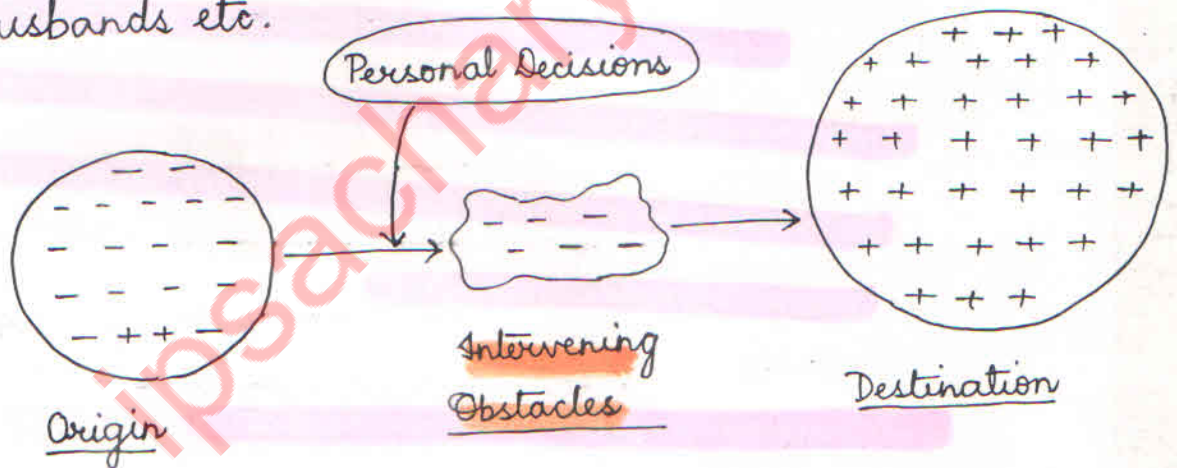
- 1) Factors ^{operational} at place of origin
- 2) Factors ^{operational} at destination
- 3) Factors operating as intervening obstacles
- 4) Personal factors

Lee outlines that for migratory decision to be taken by a person to undertake migration, the factors operating in the place of destination should be strong enough to suppress the place-belongingness acting in the place of origin. ^{The place of destination} should satisfy the individual's requirements.

he/she
and should overcome intwering obstacles (like distance
and transportation).

Lee is therefore of the opinion that the decision to
migrate is never completely rational and thus, it is
also always possible to come across exceptions to any
type of migration.

Since not all migrants migrate as a result of their own
decisions e.g. migration due to wars, famine etc., this
model is not applicable to migration caused by push
factors and to sequential migration where children
have to go along with their parents, wives along with
husbands etc.



⊕ = Positives

⊖ = Negatives

Fig. - Everett's Theory of Migration

Zelinsky's Mobility Transition Model

In 1971, American geographer Wilbur Zelinsky developed his Migration (or Mobility) Transition Model by integrating migration with the stages of demographic transition.

Identifying the influence of population growth, cultural-economic advancements and the type of society on migratory decisions, he proposed the 5-stage model of migration:

(1) Stage 1: Pre-modern Traditional Society

Before urbanisation, when the natural increase is very low, majority of migration is within the rural areas. People do not move around much and if they do, it is usually from village to village, in order to sell farm products.

(2) Stage 2: Early Transitional Society

During this stage, there is a greater natural increase as the community experiences the process of modernisation. Both regional ^{or intra-national} as well as international migration increases. Industrialisation provides work in urban areas and consequently rural-urban migration dominates.

(3) Stage 3: Late transitional Society

With advancement of culture and modernisation, immigration norms become more rigid and consequently international migration declines. Regional development minimises both real and perceptual difference between regions at 'rural' and 'urban' scales. Consequently, rural-urban migration declines and urban to urban (both inter- and intra-) ^{migration} becomes more common.

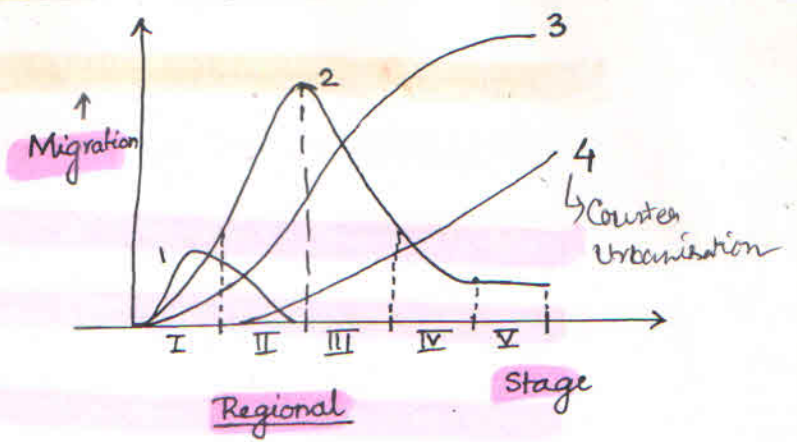
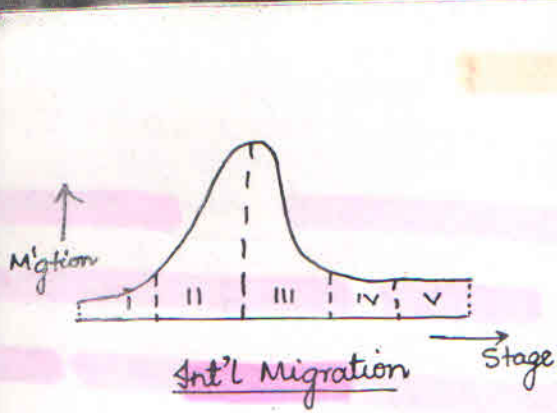
(4) Stage 4: Advanced Society

Rural to urban migration takes place but at a declining rate. The differences between the functional capacities of different urban places results in continuing inter-urban migration. Thus, the town dwellers get attracted to city and city dwellers to megacity. Opportunities for recreation, quiet living post-retirement and for small businesses result in beginning of counter-urbanisation.

(5) Stage 5: Future Super-advanced Society

Almost all migration will be inter-urban or intra-urban.

- Zelinsky —
- Pre Modern Tradition society
 - Early transitional Society
 - Late transitional Society
 - Advance Society
 - Future advance Society



- ① - Rural to rural
- ② - Rural to urban
- ③ - Urban to urban
- ④ - Urban to rural

Counter urbanisation

Criticism

Zelinsky's model of mobility transition acknowledges ^{the role of} only the economic and demographic factors in migration. It fails to take into account the push and pull factors operating at the time of making migratory decisions like love, family, security, safety, climate etc.

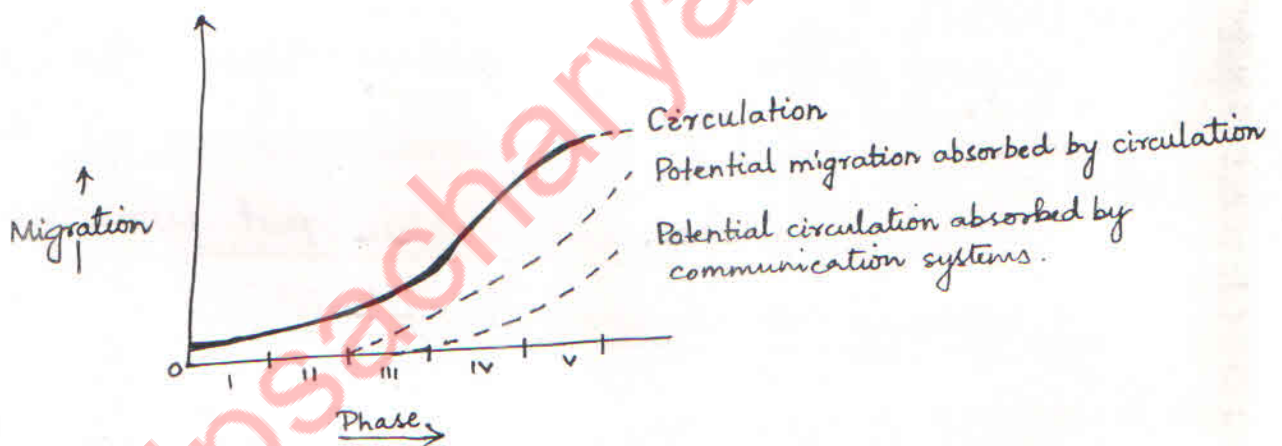
Relevance in today's world

1. With many countries being afflicted by political and economic instability, there are many refugees. Stage 2 - rural to city migration - applies to this situation.
2. In many developed countries, e.g. Netherlands, people are finding rural areas more attractive because of the pollution-free, quiet living. (Counter-urbanisation)

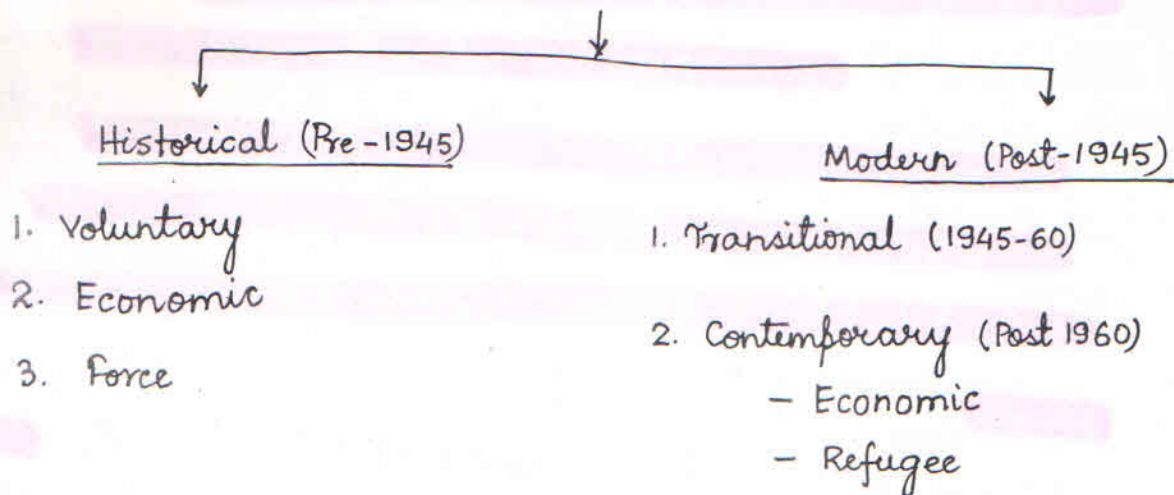
* Potential Migration Absorbed by Circulation

According to Zelinsky, it is a phenomena wherein migration declines because technical advancements in transportation allows people to circulate among places instead of having to move more definitely to them.

At even higher levels of development, circulation itself reduces because of technological development in communications systems that allow people to communicate easily over great distances without moving.



INTERNATIONAL MIGRATION



A. HISTORICAL MIGRATION

Outlined for period of pre-1945, historical migration commonly incorporate mass movement of population across international boundary due to variable causes leading to variable consequences. These voluntary, economic and forced migratory movements have resulted in strong ^{cultural,} demographic and economic also consequences and characteristics.

(i) Voluntary Migration

It involved movement of European settlers, settling new worlds. It has resulted in caucasoid race, christianity and Indo-European linguistic family languages to dominate the world map. Moreover, the migrating population and simultaneous technology transfer resulted in cascading economic development in Anglo-America and Oceania.

(ii) Economic Migration

In this category, migration of industrial and agriculture labour are distinguished. Industrial revolution in Western European countries acted as the pull factor causing labour migration from southern and eastern Europe and Northern African countries. It is this movement that represent to be the elementary cause of cosmopolitan culture in Western Europe.

In case of agricultural labour, it was tropical and equatorial islands that provided plantation agriculture opportunities to the European colonial settlers and acted as destination. These islands also attracted agricultural work force from neighbouring mainland. Eg.

- Trinidad and Tobago, Cuba for cane plantation
- Pemba Is., Mafia Is. and Zanzibar Is. for spices (clove) plantation
- Sri Lanka (Tea), Malaysia (Rubber), Fiji (Mahogany)

These migrations have resulted in the distinct ethnic and cultural mix of these far off islands.

(iii) Forced Migration

Relating to slave trade, it was one of the most inhuman mass migrations. It resulted in the development of racial discrimination globally, particularly in the caucasoid regions.

Negroid population largely from Upper Guinea (West Africa), sold and purchased as commodities, were forced to migrate prominently in Anglo-America. They were subjected to oppressive working and living conditions. They cleared the forests, levelled the land and thus facilitated the development of conditions required for basic infrastructure growth. The sizeable black population is thus attributed to this migration.

B. MODERN MIGRATION

1945 marked the end of the second world war and the beginning of decolonisation. A number of nation states emerged on the map of the world post 1945 paving way to modern, long-distance and often individualistic migratory movements. Chronologically, it is subclassified as transitional and contemporary phases.

(i) Transitional Phase (1945-60)

During this phase decolonisation and emergence of new states resulted in mass migration involving retreat of colonial settlers and transfer of population across newly emerged boundaries between nation states. It resulted in the fragile geo-political relations in South Asia and South-East Asia. The disputes regarding territory and boundary forms the primary cause of such geo-political sensitivity. Eg. India-Pakistan, India-China, etc.

(ii) Contemporary Phase (Post-1960)

During this phase, migration is primarily on account of economic factors with the developing world being source areas and the developed world being the destination. Being individualistic, these movements do not involve major cultural and economic imprint. During 1980s, economic commercial mobilisation of crude oil made West Asia as an important destination. It resulted in opening up of fundamentalist closed Islamic cultural identity of West Asia.

It multiplied the region's geo-political importance, which has been the prime cause of political uncertainty, sectarian violence and the associated crisis. Its because of these circumstances that the refugee crisis is taking place, causing illegal migration. SAHEL food scarcity tribal conflict in Savannah countries, South Sudan.

CURRENT STATS (2015) [UN'S Int'l Migration Report]

- ① The number of international migrants worldwide has continued to grow rapidly over the past 15 years reaching 244 million in 2015.
- ② Women comprise slightly less than half of all international migrants.
- ③ The median age of intl migrants worldwide is 39 years in 2015.
- ④ Most migrants worldwide originate from middle-income countries (157 mn in 2015).
- ⑤ In 2015, 67% of migrants were living in just 20 countries.

Results of Migration [Rupa Made Simple]

① Demographic changes

Internal - Distribution

Int'l - Total size and distribution

Selectivity of migration - Composition

② Economic Consequences

Gain/Loss of workforce

Population Ageing

Resource Development

Living standards

Remittances

③ Social Consequences

Race

Language

Religion

Stims and associated problems

Exchange of ideas

Diffusion of knowledge.

INDIAN INTRA-NATIONAL MIGRATION

In India, the data on migration is derived from the Census data tables. Till 1961^{Census}, it was collected in reference to birth place whereas the 1971 census added migration by last place of residence. It is since 1981 census that causes of migratory decisions have been integrated in the collection of migratory data. To take into account minor migratory movements which are overlooked by the decennial census, data collected by NSSO is also integrated.

The main migration features include:

- (1) Approximately 25% of the country's population form 'migrates'
- (2) Rural population is more migratory than the urban counterpart.
- (3) The main cause of migration is economic.

The intra-national migration trend for the census decade 2001-11 can be analysed as:

- (i) Rural-to-rural
- (ii) Rural-to-urban
- (iii) Urban-to-rural
- (iv) Urban-to-urban

(i) Rural-rural migration

It is the dominant migratory movement in the country as per the last census. The R-R migratory volume is larger in the intra-regional perspective than the inter-regional. The fundamental cause of this migratory trend is both perceptual and real disparity in agricultural development in the country.

The intra-regional migration is mostly can be seen from interior of Awadh-Rohilkhand plateau to the deltaic plains, and from Mauisthali to the Banas Valley.

Distinguished from it, UP and Bihar as prominent source regions with Punjab, Haryana, Assam as prominent destination for the agricultural labourers represent inter-regional migration.

(MAP)

(ii) Rural-Urban

Rural-urban migration has been the most dominating trend since independence. It is largely due to the push factor operational in rural area. However, the positive outcomes of rural development programs have contained the migration to a little extent. The source areas are primarily the population surplus states - UP, Bihar, MP, whereas the destination mainly include the megacities.

Exponential increase in population and number of megacity in the country is primarily attributed to rural-urban migration.

In UP and Kerala, intra-regional R-U migration is prominent whereas Maharashtra, NCT, Chandigarh are the important inter-regional destinations.

(iii) Urban-Urban

It results mainly because of functional capacity differences among the various categories of urban areas. Together with rural-urban migration, it has resulted into extension of megacities into urban agglomerations.

(iv) Urban - Rural

This migratory movement is minimal, largely involving old age population migrating largely after the completion of their professional commitments. It is technically called as the counter-current of migration.

Thus, the overall migratory trend evolved in India has the following features :=

- (1) Population surplus states like UP, Bihar with substantive high fertility levels form prominent source areas.
- (2) NCT and Maharashtra with substantive economic capacity combined with geographic and cultural proximity to source-areas form prominent destination areas.
- (3) Most of the peninsular states represent example of stable areas in terms of their considerable distance from source regions.
- (4) Unfavourable remote locations as Northern Mountains, great Indian desert, Rann of Kutch form examples of isolated areas.

(5) One of the prominent destinations for intra-national migration since independence — W.B. — is failing to keep pace with required economic momentum and is consistently declining in its attractiveness which is simultaneous to increase in agricultural attractiveness of Assam.

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POPULATION PROBLEMS AND POLICIES

The ability of a country to absorb an increase in population depends upon a number of factors including its size, endowment of resources, social structure and especially the stage reached in its economic development. This carrying capacity is also dependent on the technological capacities to mobilise the resources. Further, it is also important to meet the different needs, traditions and aspirations of the different sections of the society and cultural groups.

Taking all these dynamic components into consideration, global population problems and related policies are classified into two categories :=

- (i) Over-population with anti-natalism.
- (ii) Under-population with pro-natalism.

OVER-POPULATION

Overpopulation exists where there is an excess of population over utilised or potential resources. It occurs when resource development fails to keep pace with population growth and is usually distinguished by:

- (i) Low per capita incomes
- (ii) Low and declining living standards
- (iii) High levels of unemployment

(iv) Pronounced outward migration

(v) High population density

(vi) In extreme cases, - hunger, famine, malnutrition.

Though overpopulation is global in nature, almost all the developing countries are suffering from it. It strikes the hardest at those occupying the lowest levels in society.

POLICY:

To tackle this challenge, the policy of anti-natalism, oriented towards controlling the birth rates, is generally followed, though in different forms:

- (i) Knowledge, application and practice anti-natalism
- (ii) Indian anti-natalism
- (iii) Chinese anti-natalism

1. KAP Anti-Natalism

It was the ambitious beginning attempted by UN in the beginning of 1950s involving developed countries. It was oriented to apply the knowledge of family planning possessed by the developed world to the developing world, which were projected with exponential increase of population in the likely future.

The program, however, failed because of the following reasons:

- (i) It was highly academic in nature
- (ii) There were no specified targets
- (iii) Prevailing distrust among the newly independent countries for the extended support by the "ex-colonial countries".

2. Indian Anti-Natalism

The second most populous country of the world, India, marked the beginning of explicit national population policy oriented towards controlling birth way back in 1952. It was modified from time to time to meet the contemporary and futuristic population goals.

The demarcated phases include :

1. Voluntary Phase (1952-72)
2. Family Welfare Phase
3. Contemporary Phase.

1. Voluntary Phase

Prevalent between 1952 and 1972, this phase of anti-natalism is considered as voluntary because the recipient was given absolute choice whether or not to opt for birth control measures. Individuals were informed about the benefits of small family and the possible ways of controlling the family size. Health services networks were developed to ensure that the fundamental infrastructure required for the success of the population policy was present.

However, it proved to be a failure. India's population exploded during the 1970s with the highest decadal growth rate of ~24% in 1971 census.

2. Family Welfare Phase

With 1971 census data-tables released, India's anti-natalism entered second phase involving

family welfare. It was based on the realisation that if parents are assured of healthy survival of their kids, they will ^{voluntarily} adapt to small family norms. As a result, pre- and post-natal health services were strongly enlarged and there was the beginning of countrywide immunisation programs. Family planning was thus made family welfare and it yielded marked success in the 1981 census. This watershed census made India enter the third stage of demographic transition with decline in birth/fertility rate.

However, the prevailing regional disparity led to an absolute divide between the peninsular and extra-peninsular regions. Most of the peninsular states readily responded to the family welfare anti-natalism but the then "BIMARU" states mainly including the Hindi-heartland failed to generate the desired transition to low fertility. It was mainly because of:

- (i) Poor societal status of females
- (ii) Lack of education.
- (iii) Widespread misconceptions
- (iv) Strong desire for male child.

3. Contemporary Phase

In the year 2000, India entered a new phase of with a population policy introducing enhanced focus on the education and empowerment of women and girls. The earlier approach of voluntary adoption of family welfare ^{measures} also continued.

The contemporary phase has been successful so far as evident from the 2001-11 census. The Empowered Action Group (EAG) states have started registering decline in their erstwhile high fertility rates.

The incentives and appeasements like medical insurance to the couples below poverty line with two children, and recognition and provision of awards for PRIs in mobilising small family norms - have also contributed in the success of this phase of anti-natalism.

Indian anti-natalism in all its dimensions, ^{though} has been slow but steady and successful.

3. Chinese Anti-Natalism

Chinese anti-natalism beginning in 1982 forms the youngest example. Immediately after independence, China followed the Maoist pro-natalism policy to become the most populous country of the world. Realising the pressure on the carrying capacity of the economy, attempts were made in the 1970s to limit families to two children using the slogan "Later, longer, fewer".

In 1979, China amended its constitution making "One Child per Family" a compulsion to be followed. In just 20 years of its implementation, China attained zero population growth in 2000.

The reasons for such cascading success include: =

- (i) Complete termination of individuals' independence in deciding the time and size of the family
- (ii) Efficient network of PHCs
- (iii) Proper monitoring
- (iv) Incentives like cash bonuses, improved housing etc.
- (v) Series of economic sanctions for individuals and families violating the norm.

The success of Chinese anti-natalism also generated wide range of criticisms:=

- (i) Future ageing population
- (ii) Shortage of economically active workforce
- (iii) Ethnic minorities like Tibetans always discarded the rigid clauses
- (iv) Poorest sex-ratio among the populous countries of the world.

In year 2000, therefore, China slightly moulded its policy by permitting ethnic minorities to have two children per family reviving the growth rate to 5% per decade, as per 2010-11 UN population table. Further in October, 2015, China ended its 'One child' policy allowing all married couples to have two children.

NOTE: In India, the decadal population growth rate is 17% per decade.

UNDER POPULATION

Underpopulation refers to a situation when a population is too small to fully utilise the available resources or where resources could support a larger population with no reduction in living standards. Traditionally, examples of underpopulation are found in certain regions of low technical development such as areas of pastoral nomadism and shifting agriculture. Regions of harsh climate like northern Canada, parts of Australia and New Zealand are also underpopulated.

In the present world, underpopulation as a problem has been occurring or is projected to occur in European countries, most of which ^{have completed or} are on the verge of completion of demographic cycle. These countries have been suffering from the threat of depopulation since maximum of their population is in the old-age cohort with below replacement levels fertility rates. Nine out of ten individuals is going to be pensioners by 2016-17 causing tremendous scarcity of workforce.

Based on the projections of the threat of depopulation European countries marked the beginning of pro-natalism way back in 1960. Pro-natalism is the population policy that encourages higher fertility levels.

In the 1960s, many of these countries made abortions illegal taking away individuals' independence of family planning. Consequently, it failed. In the second phase of European pro-natalism, that began since mid-1970s, birth control was made voluntary and incentives were offered to have bigger families. Eg. - The French Population policy included numerous appeasements to have more children like:

- Neighbourhood facility for infants and young kids was made part of town planning
- Parents of infants and young kids were provided with flexible working hours, extensive maternity and paternity leaves with full salaries, and provisions of increasing number of leaves with successive births.

even with these efforts, pro-natalism has proved to be a failed population policy making even a country like Germany to ease the visa norms so as to attract quality workforce from around the world.

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