

**STUDY MATERIAL**  
**GEOGRAPHY 2022 – 23**

**PART 1**  
**FUNDAMENTALS OF HUMAN GEOGRAPHY**

<b>Ch. No.</b>	<b>Chapters</b>	<b>Page No.</b>
1	Human Geography – Nature and Scope	1 - 3
2	The World Population – Distribution, Density, and Growth	4 - 9
4	Human Development	9 - 13
5	Primary Activities	13 - 21
6	Secondary Activities	21 - 26
7	Tertiary and Quaternary Activities	27 - 30
8	Transport and Communications	31 - 39
9	International Trade	40 - 43

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## CHAPTER 1

### HUMAN GEOGRAPHY-NATURE AND SCOPE

#### ➔ CONCERN OF GEOGRAPHY

The concern of geography is to understand the Earth as home of human beings and to study all those elements which have sustained with them.

#### ➔ DUALISM IN GEOGRAPHY

1. As a discipline, Geography should be a **Law making/ theorising/ nomothetic** or **Descriptive/ idiographic**
  2. The approach of study should be **Regional** or **Systematic**
  3. The content of Geography should be **Physical Geography** or **Human Geography**
- \* Dichotomy between physical and human is not a valid one because nature and human are inseparable elements and should be seen holistically.

#### ➔ DEFINITIONS OF HUMAN GEOGRAPHY

1. "Human geography is the synthetic study of relationship between human societies and earth's surface". **-Ratzel**  
\* **Synthesis** has been emphasised
2. "Human geography is the study of "the changing relationship between the unresting man and the unstable earth." **-Ellen C. Semple**  
\* **Dynamism** has been emphasised
3. "Conception resulting from a more synthetic knowledge of the physical laws governing our earth and of the relations between the living beings which inhabit it".  
**- Paul Vidal de la Blache**  
\* **Interrelationship** has been emphasised.

#### ➔ NATURE OF HUMAN GEOGRAPHY

Human Geography studies the interrelationship between the physical environment and socio cultural environment created by human beings through mutual interaction with each other.

#### ➔ HUMAN- NATURE INTERACTION

- \* Human beings interact with their physical environment with the help of technology.
- \* Technology indicates the level of cultural development of society.
- \* Human beings were able to develop technology after they developed better understanding of natural laws.

#### ➔ CONCEPTS OF ENVIRONMENTAL DETERMINISM, POSSIBILISM AND NEO DETERMINISM

##### 1. ENVIRONMENTAL DETERMINISM

- \* In the early stages, human were greatly adapted to the dictates of Nature because the level of technology was very low.
- \* There is direct dependence of human beings on nature for resources which sustained them.
- \* The physical environment for such societies became the " Mother Nature".
- \* This type of interaction between primitive human society and strong forces of nature was termed as Environmental determinism.

\* At that stage of very low technological development, human got naturalised who listened to Nature, was afraid of its fury and worshipped it.

## 2. POSSIBILISM

\* with the social and cultural development, humans develop better and more efficient technology.

\* They move from a state of necessity to a state of freedom.

\* Human creates possibilities with the resources obtained from the environment

\* Here man is capable to modify his environment by making use of numerous possibilities offered by nature.

\* Such a man- nature relationship is termed as Possibilism.

\* Nature provides opportunities and human being make use of these and slowly nature gets humanised

## 3. NEO DETERMINISM/STOP AND GO DETERMINISM

\* Developed by Griffith Taylor.

\* It is a middle path concept between environmental determinism and possibilism.

\* As per this concept, neither there is a situation of absolute necessity nor is there a condition of absolute freedom.

\* It means that possibilities can be created within the limits which do not harm the environment and there is no free run without accidents.

\* The Neo -Determinism attempts to bring a balance nullifying the “either” “or” dichotomy.

## → STAGES OF EVOLUTION OF HUMAN GEOGRAPHY

PERIOD	APPROACHES	FEATURES
Early colonial period	Exploration and description	An encyclopaedic description of the area
Later Colonial period	Regional analysis	Emphasised on elaborate description of all aspects of a region
1930s through the inter-War period	Areal differentiation	The focus was on identifying the uniqueness of any region and understanding how and why it was different from others.
Late 1950s to the late 1960s	Spatial organisation	Marked by the use of computers and sophisticated statistical tools. (Quantitative revolution)
1970s	Emergence of humanistic, radical and behavioural schools	Human geography was made more relevant to the socio- political reality
1990s	Post-modernism in geography	The importance of understanding each local context in its own right was emphasised.

## ➔ SCHOOLS OF THOUGHT DURING 1970s.

1. Welfare or Humanistic school of thought
2. Radical school of thought
3. Behavioural school of thought

### 1. Welfare school of thought

- \* This was mainly concerned with the different aspects of social well-being of the people
- \* These included aspects such as housing, health and education

### 2. Radical school of thought

- \* This thought employed Marxian theory to explain the basic cause of poverty, deprivation and social inequality.
- \* Contemporary social problems were related to the development of capitalism.

### 3. Behavioural school of thought

- \* It laid great emphasis on lived experience and also on the perception of space by social categories based on ethnicity, race and religion, etc

## ➔ FIELDS, SUB-FIELDS, AND SISTER DISCIPLINES OF HUMAN GEOGRAPHY

Table 1.2: Human Geography and Sister Disciplines of Social Sciences		
Fields of Human Geography	Sub-fields	Interface with Sister Disciplines of Social Sciences
Social Geography	—	Social Sciences – Sociology
	Behavioural Geography	Psychology
	Geography of Social Well-being	Welfare Economics
	Geography of Leisure	Sociology
	Cultural Geography	Anthropology
	Gender Geography	Sociology, Anthropology, Women's Studies
	Historical Geography	History
	Medical Geography	Epidemiology
Urban Geography	—	Urban Studies and Planning
Political Geography	—	Political Science
	Electoral Geography	Psephology
	Military Geography	Military Science
Population Geography	—	Demography
Settlement Geography	—	Urban/Rural Planning
Economic Geography	—	Economics
	Geography of Resources	Resource Economics
	Geography of Agriculture	Agricultural Sciences
	Geography of Industries	Industrial Economics
	Geography of Marketing	Business Studies, Economics, Commerce
	Geography of Tourism	Tourism and Travel Management
	Geography of International Trade	International Trade

X ===== X

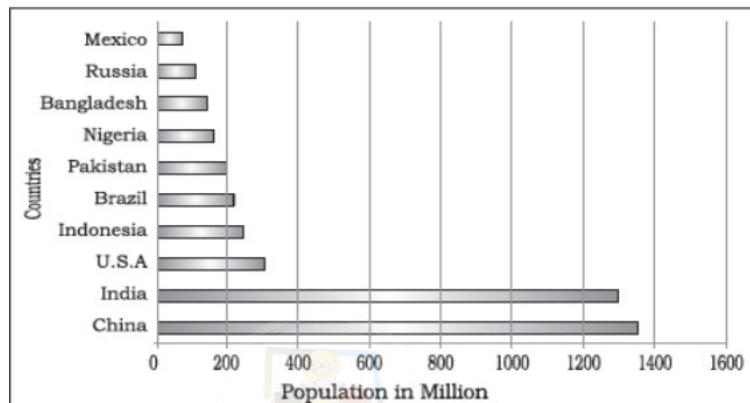
## **CHAPTER 2 - THE WORLD POPULATION – DISTRIBUTION, DENSITY AND GROWTH**

### **PATTERN OF POPULATION DISTRIBUTION IN THE WORLD**

- 90 % of the world population lives in about 10 % of land area
- The 10 most populous countries of the world contribute about 60 % of the world's population
- Of these 10 countries, 5 are located in Asia
- China is the largest populated country followed by India

### **THE 10 MOST POPULOUS COUNTRIES**

1. China
2. India
3. USA
4. Indonesia
5. Brazil
6. Pakistan
7. Nigeria
8. Bangladesh
9. Russia
10. Mexico



### **DENSITY OF POPULATION**

- Density of population is the ratio between the numbers of people to the size of land.
- It is usually measured in persons per sq km.
- Density of population =  $\frac{\text{Population}}{\text{Area}}$

### **DISTRIBUTION OF WORLD POPULATION DENSITY AREAS**

- The world is divided based on population density into three classes
- 1. High population density areas
- 2. Moderate population density areas
- 3. Low population density areas

#### **1. High population density areas**

The densely populated parts of the world with more than 200 persons per sq. km in areas. Eg:-

1. The North -Eastern part of U.S.A
2. North-Western part of Europe,
3. South, South-East and East Asia

#### **2. Moderate population density areas**

The area with 11 to 50 persons per sq. km in areas is classified as medium population density. Eg:-

1. Western China
2. Southern India in Asia,
3. Norway, Sweden in Europe

### **3. Low population density areas**

The sparsely populated regions of the world with less than 1 person per sq. km. Eg:-

1. Near the North and South Poles,
2. The hot and the cold deserts
3. High rainfall zones near the Equator

### **FACTORS INFLUENCING THE DISTRIBUTION OF POPULATION**

Factors influencing the distribution of population are classified as :-

#### **1. Geographical factors**

- a. Availability of water
- b. Landforms
- c. Climate
- d. Soils

#### **2. Economic factors**

- a. Minerals
- b. Urbanization
- c. Industrialisation

#### **3. Social and cultural factors**

- a. Religious factors
- b. Political factors

### **I. Geographical Factors**

#### **a. Availability of water**

It is the most important factor for life. So, people prefer to live in areas where fresh water is easily available

#### **b. Landforms**

People prefer living on flat plains and gentle slopes. Such areas are favourable for the production of crops and to build roads and industries.

#### **c. Climate**

An extreme climate such as very hot or cold deserts are uncomfortable for human habitation. Areas with a comfortable climate, where there is not much seasonal variation attract more people.

#### **d. Soils**

Fertile soils are important for agricultural and allied activities. The areas which have fertile loamy soils have more people living on them as these can support intensive agriculture.

### **II. Economic Factors**

#### **a. Minerals**

Areas with mineral deposits attract industries. Mining and industrial activities generate employment. So, skilled and semi-skilled workers move to these areas and make them densely populated.

Eg:- **Katanga Zambia copper belt in Africa**

#### **b. Urbanization**

Cities offer better employment opportunities, educational and medical facilities, better means of transport and communication. Good civic amenities and the attraction of city life draw people to the cities.

#### **c. Industrialisation**

Industrial belts provide job opportunities and attract large numbers of people.

Eg: **The Kobe-Osaka region in Japan**

### **III. Social and Cultural Factors**

#### **a. Religious factors**

Some places attract more people because they have religious or cultural significance.

Eg:- Mecca, Varanasi,, Amritsar

#### **b. Political factors**

People tend to move away from places where there is social and Political unrest

### **POPULATION GROWTH / POPULATION CHANGE**

- The population growth refers to the change in number of population of a place during a specific period of time.
- This change may be positive as well as negative
- It can be expressed either in terms of Absolute numbers or in terms of percentage

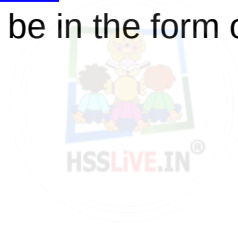
### **POPULATION GROWTH RATE**

- ◆ It is the ratio of population change between two period of time
- ◆ Population growth rate is expresses in percentage
- ◆ It is calculated in every 10 years interval

### **TYPES OF POPULATION GROWTH**

The population growth may be in the form of following types

1. Natural growth of population
2. Actual growth of population
3. Positive growth of population
4. Negative growth of population



#### **1. Natural growth of population**

This is the population increased by difference between births and deaths in a particular region between two points of time.

**Natural growth = Births – Deaths**

#### **2. Actual growth of population = Births – Deaths + In migration – out migration**

#### **3. Positive growth of population**

This happens when the birth rate is more than the death rate between two points of time or when people from other countries migrate permanently to a region

#### **4. Negative growth of population**

If the population decreases between two points of time it is known as negative growth of population.

It occurs when the birth rate falls below the death rate or people migrate to other countries

## COMPONENTS OF POPULATION CHANGE

There are three components of population change. They are

1. Births rate
2. Death rate
3. Migration.

### 1. Births rate

The crude birth rate (CBR) is expressed as number of live births in a year per thousand of population. It is calculated as:

$$CBR = Bi / P * 1000$$

CBR = crude birth rate ; Bi = Live births during the year ; P = Mid year population of the area

### 2. Death rate

Crude Death Rate (CDR) is expressed in terms of number of deaths in a particular year per thousand of population in a particular region. It is calculated as:

$$CDR = D / P * 1000$$

CDR = crude death rate ; D = Number of deaths ; P = Mid year population of the area

### 3. Migration.

\* Migration is the movement of people from one place to another at a Particular period of time

Place of Origin - The place they move from is called the Place of Origin

Place of Destination - The place they move to is called the Place of Destination.

\* Migration may be permanent, temporary or seasonal.

\* It may take place (streams of migration)

- ◆ from rural to rural
- ◆ from rural to urban
- ◆ from urban to urban
- ◆ from urban to rural

Immigration: Migrants who move into a new place are called Immigrants.

Emigration: Migrants who move out of a place are called Emigrants.

## CAUSES OF MIGRATION

\*There are two sets of factors that influence cause migration.

**The Push factors** make the place of origin seem less attractive for reasons like

unemployment, poor living conditions, political turmoil, unpleasant climate, natural disasters, epidemics and socio-economic backwardness.

**The Pull factors** make the place of destination seem more attractive than the place of origin for reasons like better job opportunities and living conditions, peace and stability, security of life and property and pleasant climate.

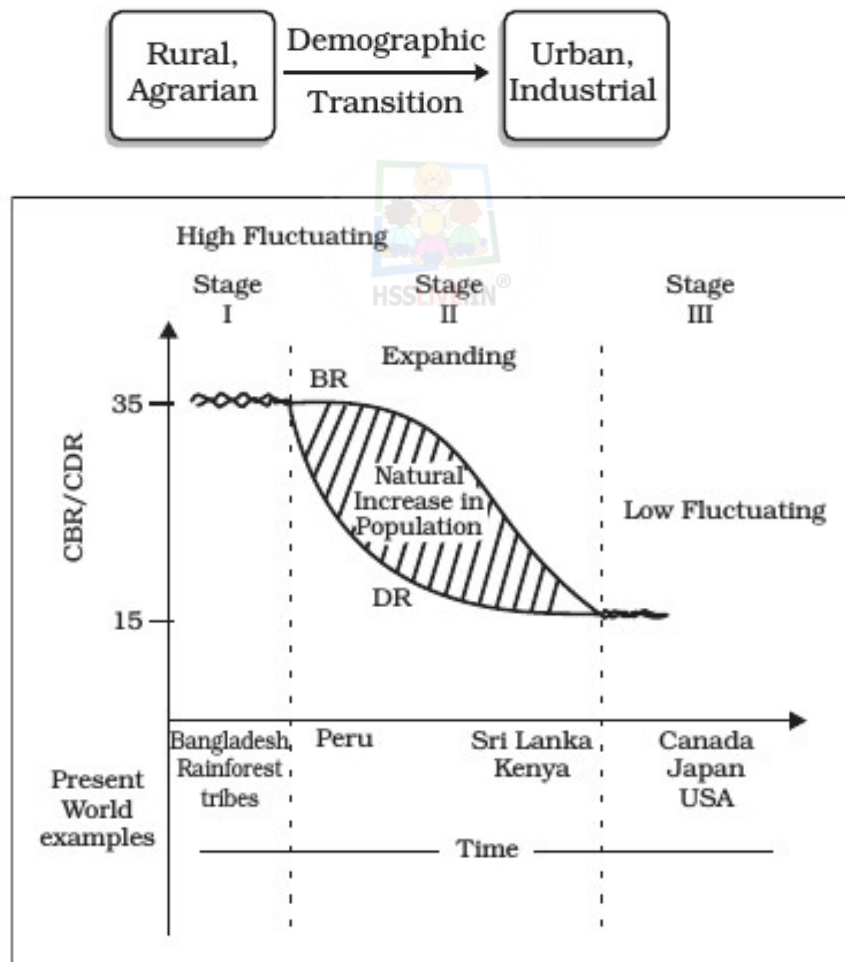


## HOW SCIENCE AND TECHNOLOGY HELPED POPULATION GROWTH?

- The steam engine replaced human and animal energy reduced work load
- Provision of mechanised energy of water and wind increased agricultural and industrial production.
- Inoculation against epidemics and other communicable diseases.
- Improvement in medical facilities and sanitation contributed to a rapid decline in death rates throughout the world.

## DEMOGRAPHIC TRANSITION

- Demographic transition theory is used to describe and predict the future population of any area
- **The theory tells us that population of any region changes from high births and high deaths to low births and low deaths as society progresses from rural agrarian and illiterate to urban industrial and literate society**
- These changes occur in stages which are collectively known as the demographic cycle



**Fig. 2.3: Demographic Transition Theory**

### STAGES OF DEMOGRAPHIC TRANSITION THEORY

#### STAGE -1

- High fertility and high mortality

- People reproduce more to compensate for the deaths due to epidemics and variable food supply
- The population growth is slow
- Most of the people are engaged in agriculture
- **Life expectancy is low**
- People are mostly illiterate and have low levels of technology.

**STAGE -2**

- **Fertility remains high in the beginning** but it declines with time.
- Improvements in sanitation and health conditions lead to **decline in mortality**
- Population growth is high

**STAGE -3**

- **Both fertility and mortality decline considerably**
- The population is either stable or grows slowly
- The population becomes urbanised, literate and has high technical know-how
- Deliberately controls the family size.

**POPULATION CONTROL MEASURES**

1. Adoption of family planning programme
2. Improving women's health
3. Free availability of contraceptive for large family
4. Tax disincentive for large family
5. Mass awareness programme

**Thomas Malthus in his theory (1798) stated that the number of people would increase faster than the food supply.**

X ===== X

## **CHAPTER - 4**

### **HUMAN DEVELOPMENT**

**GROWTH AND DEVELOPMENT**

GROWTH	DEVELOPMENT
<ul style="list-style-type: none"> <li>● It refers to the changes occurring in a definite period of time</li> <li>● This change may be either positive or negative</li> <li>● An increase to the present condition is termed as positive growth</li> <li>● A decrease refers to negative growth</li> <li>● Growth is quantitative and value neutral</li> </ul>	<ul style="list-style-type: none"> <li>● It occurs when positive change takes place (it doesn't <b>always</b> lead to development)</li> <li>● Development is qualitative and value added</li> </ul>

**The CONCEPT of HUMAN DEVELOPMENT**

- ◆ The works of two South Asian Economists .i.e, **Dr. Mahbub Ul Huq** and **Amarthya Sen** are important in developing the concept Human Development.
- ◆ The concept of **Human Development** was introduced by **Dr. Mahbub Ul Huq**
- ◆ Dr Huq has described human development as development that enlarges people's choices and improves their lives.
- ◆ People are central to all development under this concept

- ◆ The **United Nations Development Programme** has used concept of human development of each countries to publish the **Human Development Index** annually since **1990**.
- ◆ The basic goal of development is to create conditions where people can live meaningful lives.
- ◆ The factors or key areas of Human development are access to resources, access to health, access to education.

### **The FOUR PILLARS of HUMAN DEVELOPMENT**

- Equity
- Sustainability
- Productivity
- Empowerment

#### **1. Equity**

- \* Equity refers to making equal access to opportunities available to everybody.
- \* The opportunities available to people must be equal irrespective of their gender, race, income and in the Indian case, caste.

#### **2. Sustainability**

- \* Sustainability means continuity in the availability of opportunities.
- \* To have sustainable human development, each generation must have the same opportunities.

#### **3. Productivity**

- \* Productivity here means human labour productivity or productivity in terms of human work.
- \* Such productivity must be constantly enriched by building capabilities in people.

#### **4. Empowerment**

- \* Empowerment means to have the power to make choices.
- \* Such power comes from increasing freedom and capability
- \* The empowerment of socially and economically disadvantaged groups is of special importance.

### **APPROACHES TO HUMAN DEVELOPMENT**

#### **1. Income approach**

#### **2. Welfare approach**

#### **3. Minimum or Basic needs approach**

#### **4. Capability approach**

##### **1. Income approach**

- \* This is one of the oldest approaches to human development
- \* Human development being linked to income
- \* Higher the level of income, the higher is the level of human development

##### **2. Welfare approach**

- \* Human beings as beneficiaries or targets of all development activities
- \* The approach argues for higher government expenditure on education, health, social secondary and amenities
- \* People are not participants in development but only passive recipients

**3. Minimum or Basic needs approach**

\* proposed by the International Labour Organisation (ILO)

\* **Six basic needs i.e.: health, education, food, water supply, sanitation, and housing were identified**

\*It emphasises on the provision of basic needs instead of human choices.

**4. Capability approach**

\* This approach is associated with **Prof. Amartya Sen**

\*Emphasise on building human capabilities in the **areas of health, education and access to resources to achieve human development**

**MEASURING HUMAN DEVELOPMENT**

- **The human development index** measures **attainments** in human development
- The **Human Development Index (HDI)** ranks the countries based on a score between **0 to 1**
- Score of **0.983** would be considered **very high** while **0.268** would mean a **very low level of human development**
- There are **three indicators to measures Human Development**
  - 1. Access to health**
  - 2. Access to Knowledge**
  - 3. Access to resources.**

1. Access to health – It is measured in terms of **life expectancy at birth**

2. Access to knowledge - The **adult literacy rate** and the **gross enrolment ratio** represent access to knowledge.

(The **adult literacy rate**-The number of adults who are able to read and write),

(The **gross enrolment ratio**-the number of children enrolled in schools)

3. Access to resources - Access to resources is measured in terms of purchasing power (in U.S. dollars).

- The human development index is a sum total of the weights assigned to all these three dimensions.

**HOW TO CALCULATE HDI FOR A COUNTRY “X” (EG.)**

Score obtained for – 1. Health indicator – 0.532

2. Education indicator – 0.583

3. Resource indicator – 0.645

$$0.532 + 0.583 + 0.645/3 = 1.76/3$$

Therefore HDI of “X” is = **0.586**

**INTERNATIONAL COMPARISON OF HUMAN DEVELOPMENT**

Countries can be classified into **four groups** on the basis of the **human development scores** earned by them

<b>Level of Human Development</b>	<b>Score in Development Index</b>	<b>Number of Countries</b>
Very High	above 0.800	59
High	between 0.701 up to 0.799	53
Medium	between 0.550 up to 0.700	39
Low	below 0.549	38

Source: Human Development Report, 2018

### Very High level of Human Development

- Countries with very high human development index are those which **have a score of over 0.800**
- This group includes **59** countries
- Top ranking countries are **Norway**, Switzerland, Australia, Ireland, Germany, etc.

### High level of Human Development

- High level of human development group has **53** countries
- HDI score lies between **0.701 to 0.799**
- **Causes for high HD**
  - \* Providing education and healthcare is an important priority of Government
  - \* Lots of investments in social sector
  - \* High investments in people and good governance
- These countries are located in Europe and represent the industrialised western world
- These countries were formal imperial powers

### Medium level of Human Development

- There are **39** countries in the medium level of human development
- HDI score lies between **0.550 to 0.700**
- Most of these are countries which have **emerged after the Second World War**
- Some countries of this group **were former colonies** while many others have **emerged after the break up of the former Soviet Union in 1990.**
- Most of the countries of this group have a higher social diversity
- **Causes for improving HDI score**
  - \* Implementing people oriented policies
  - \* Reducing social discrimination

### Low level of Human Development

- This group includes **38** countries
- The HDI score lies below 0.549

### ■ **Causes for low HDI score**

- \* Political turmoil
- \* Social instability in the form of civil war
- \* Famine
- \* High incidents of diseases
- \* Tend to spend more on defence rather than social sectors

- ### ■ **Remedy** - urgent need to address the human development requirements of this group through well thought out policies
- it is important to look at the pattern of government expenditure on the social sector

### **HUMAN POVERTY INDEX**

- It is a non-income measure
- HPI shows the shortfall in human development in any region
- **Measuring Indicators are -**
  1. The probability of not surviving till the age of 40
  2. The adult illiteracy rate
  3. The number of people who do not have access to clean water
  4. The number of small children who are underweight

The **Human Development index** and the **Human Poverty index** are two important **indices to measure human development used by the UNDP.**

### **GROSS NATIONAL HAPPINESS(GNH)**

- ✓ **Bhutan** uses GNH as the **measure of country's progress.**
- ✓ This idea simply says material progress cannot come at the cost of happiness.
- ✓ GNH encourages us to think of the spiritual, non-material and qualitative aspects of development.

X ===== X

## **CHAPTER 5**

### **PRIMARY ACTIVITIES**

- Human activities which generate income are known as economic activities
- Economic activities are broadly grouped into:-
  - \* Primary
  - \* Secondary
  - \* Tertiary
  - \* Quaternary and Quinary activities

#### **Primary Activities**

- Directly dependent on environment
- Refers to utilisation of earth's resources such as land, water, vegetation, building materials and minerals
- Primary Activities include hunting and gathering, pastoral activities, fishing, forestry, agriculture, and mining and quarrying
- People engaged in primary activities are called red collar workers due to the

outdoor nature of their work

- **MAJOR PRIMARY ACTIVITIES**
- **Hunting and Gathering**
- **Pastoralism**
- **Agriculture**
- **Mining**

## **I- HUNTING AND GATHERING**

- ◆ It involves primitive societies, who extract both plants and animals to satisfy their needs for food, shelter and clothing
- ◆ Gathering and hunting are the oldest economic activity known
- ◆ Gathering is practised in regions with harsh climatic condition

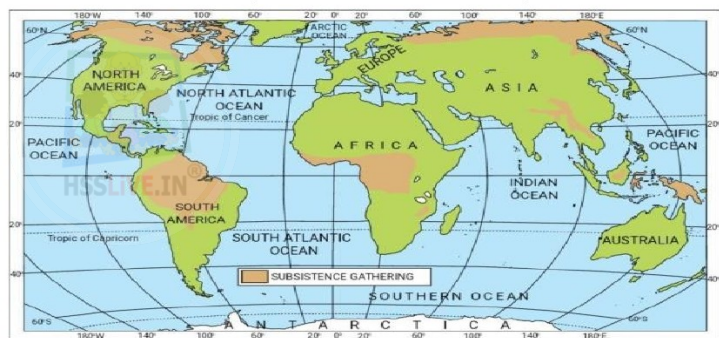
### **Characteristics**

- Practiced by People located in very cold and extremely hot climate
- This type of activity requires a Small amount of capital investment
- Operates at very low level of technology
- The yield per person is very low and little or no surplus is produced

### **Regions of Hunting and Gathering**

- > High latitude zones - Northern Canada, northern Eurasia and southern Chile
- > Low latitude zones - Amazon Basin, tropical Africa, Northern fringe of Australia and the interior parts of South east Asia

**Regions of Hunting and Gathering**



- *Gathering has little chance of becoming important at the global level. Why?*

- 1) Products of gathering activity cannot compete in the world market
- 2) Use of Synthetic products because of better quality and at lower prices

## **II - PASTORALISM**

- Domestication of animals
- People living in different climatic conditions select and domesticate animals found in those regions
- Depending on the geographical factors, and technological development, animal rearing today is practised either at the subsistence or at the commercial level

### **Types of Pastoralism**

- a) Nomadic Herding or Pastoral nomadism
- b) Commercial Livestock Rearing

#### **a) Nomadic Herding or Pastoral nomadism**

- Primitive subsistence activity
- Herders depend on animals for food, clothing, shelter, tools and transport
- They move from one place to another along with their livestock, depending on



the amount and quality of pastures and water

- Each nomadic community occupies a well-defined territory
- In each climatic regions, the domestication of animals are taken as they found there

Eg:- tropical Africa – cattle

Sahara and Asiatic deserts – sheep, goat, camel

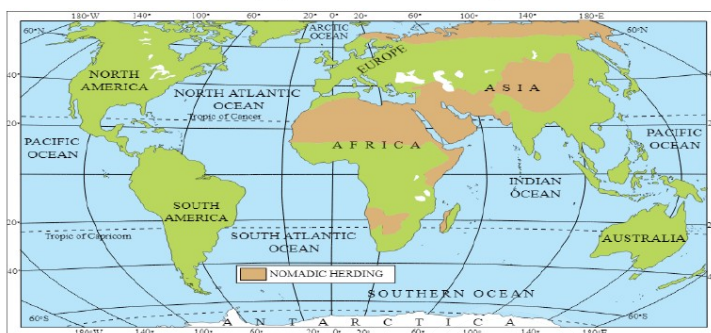
Tibet & Andes – yak and ilamas

Arctic and Sub Arctic - reindeer

### **Regions of Pastoral Nomadism (3)**

- a) from the Atlantic shores of North Africa, Arabian peninsula, Mongolia and Central China
- b) over the tundra region of Eurasia
- c) South-west Africa and on the island of Madagascar in Sn hemisphere

**Regions of Nomadic Herding**



- *The number of pastoral nomads has been decreasing and the areas operated by them shrinking. Why?*

- 1) Imposition of political boundaries
- 2) New settlement plans by different countries

### **TRANSHUMANCE**

x The process of migration from plain areas to pastures on mountains during summers and again from mountain pastures to plain areas during winters

x Movement in search of pastures is undertaken either over vast horizontal distances or vertically from one elevation to another in the mountainous regions

x Eg- Gujjars, Bakarwals, Gaddis and Bhotiyas in Himalayas

### **b) Commercial Livestock Rearing**

→ More organised and capital intensive

→ Associated with western cultures and is practised on permanent ranches

→ These ranches cover large areas and are divided into a number of parcels, which are fenced to regulate the grazing

→ When the grass of one parcel is grazed, animals are moved to another parcel

→ The number of animals in a pasture is kept according to the carrying capacity of the pasture

→ This is a specialised activity in which only one type of animal is reared

→ Important animals include sheep, cattle, goats and horses

→ Products such as meat, wool, hides and skin are processed and

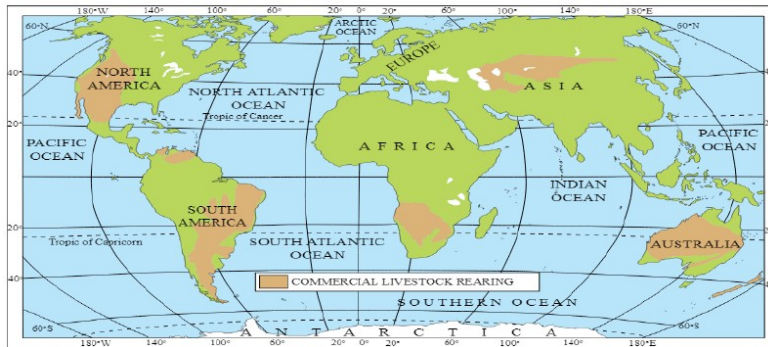


- ➔ packed scientifically and exported
- ➔ Emphasis is on breeding, genetic improvement, disease control

### **Regions of Commercial livestock rearing**

New Zealand, Australia, Argentina, Uruguay and United States of America

**Areas of Commercial livestock rearing**



### **III – AGRICULTURE**

i) **Based on methods of farming**, the following are the main agricultural systems :-

- a) Subsistence Agriculture
- b) Plantation Agriculture
- c) Extensive Commercial Grain Cultivation
- d) Mixed Farming
- e) Dairy Farming
- f) Mediterranean Agriculture
- g) Market Gardening and Horticulture

#### **a) Subsistence Agriculture**

Subsistence agriculture is one in which the farming areas consumes all of the products locally grown

It grouped in two categories

- i) **Primitive Subsistence Agriculture**
- ii) **Intensive Subsistence Agriculture**

#### **i) Primitive Subsistence Agriculture / shifting agriculture / slash and burn agriculture**

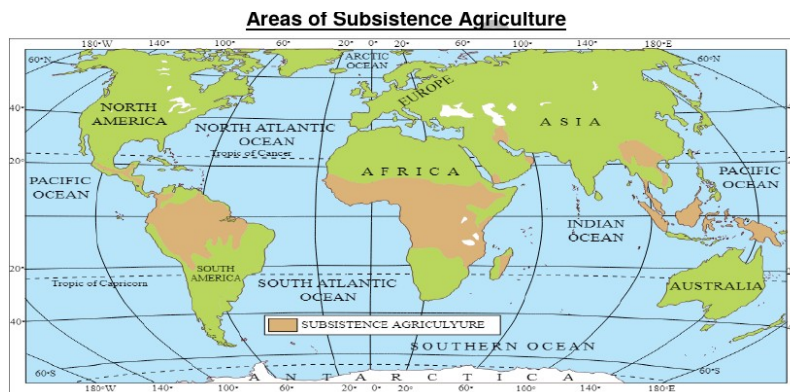
- ✓ Widely practised by many tribes in the tropics in Africa, south and central America and south east Asia
- ✓ The vegetation is cleared by fire, and the ashes add to the fertility of the soil
- ✓ The cultivated patches are very small and cultivation is done with very primitive tools such as sticks and hoes
- ✓ After the soil loses its fertility(3-5 years), the farmer shifts to another parts

#### **Different Names of Shifting Cultivation**

**Jhuming**:- North Eastern states of India

**Milpa**:- Central America and Mexico

**Ladang**:- Indonesia and Malaysia



## ii) Intensive Subsistence Agriculture

\* Largely found in densely populated regions of monsoon Asia

### Asia

\* There are two types of intensive subsistence agriculture

a) Intensive subsistence agriculture dominated by wet paddy cultivation

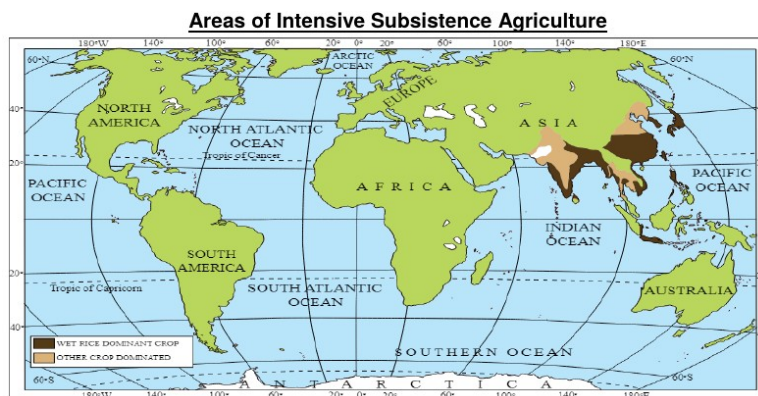
b) Intensive subsistence agriculture dominated by crops other than paddy

a) Intensive subsistence agriculture dominated by wet paddy cultivation

- ◆ Major crop is rice
- ◆ Land holdings are very small due to the high density of population
- ◆ Farmers work with the help of family labour leading to intensive use of land
- ◆ Use of machinery is limited
- ◆ Agricultural operations are done by manual labour
- ◆ Yield per unit area is high but productivity is low

b) Intensive subsistence agriculture dominated by crops other than paddy

- Due to the difference in relief, climate, soil and other geographical factors, some parts of Asia are not suited for paddy cultivation
- Wheat, soyabean, barley and sorghum are the major crops
- Regions - northern China, Manchuria, North Korea and North Japan



## b) Plantation Agriculture

- ✓ Introduced by the Europeans in colonies situated in the tropics
- ✓ Crops - tea, coffee, cocoa, rubber, cotton, oil palm, sugarcane, bananas and pineapples
- ✓ Major characteristics:-
  - \* Large estates or plantations
  - \* Large capital investment
  - \* Managerial and technical support

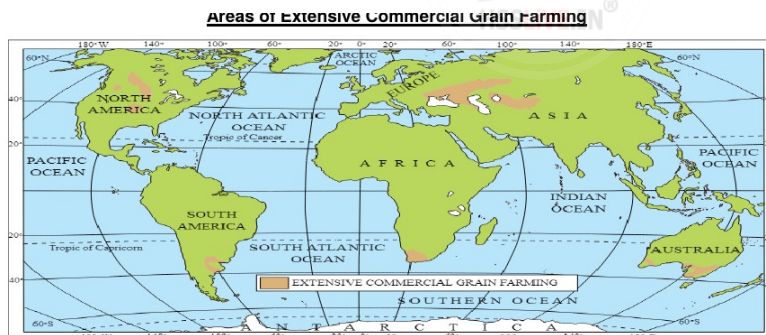
- \*Scientific methods of cultivation
- \* Single crop specialisation
- \* Cheap labour
- \* Good system of transportation

✓ **Major regions and crops;**

- 1) In W. Africa – Cocoa, coffee, by French
  - 2) India, Sri Lanka – tea by British
  - 3) Malaysia -rubber by British
  - 4) W. Indies – sugarcane , banana by British
  - 5) Philippines – coconut, sugar cane by Spanish
- ✓ **Fazendas - large coffee plantations in Brazil**

**c) Extensive Commercial Grain Cultivation**

- ✓ Practised in the interior parts of semi-arid lands of the mid latitudes
- ✓ Wheat is the principal crop
- ✓ Other Crops: Corn, barley, oats and rye
- ✓ The size of the farm is very large
- ✓ The entire operations of cultivation from ploughing to harvesting are mechanised
- ✓ Low yield per acre but high productivity
- ✓ **Areas of Commercial Grain Farming :-**
  - Eurasian steppes
  - Canadian and American Prairies
  - Pampas of Argentina
  - Velds of South Africa
  - Australian Downs
  - Canterbury Plains of New Zealand



**d) Mixed Farming**

- ◆ Equal emphasis is laid on crop cultivation and animal husbandry
- ◆ Found in the highly developed parts of the world
- ◆ farms are moderate in size
- ◆ Major crops: wheat, barley, oats, rye, maize, fodder and root crops
- ◆ Fodder crops are an important component of mixed farming
- ◆ Crop rotation and inter cropping play an important role in maintaining soil fertility
- ◆ Animals like cattle, sheep, pigs and poultry provide the main income

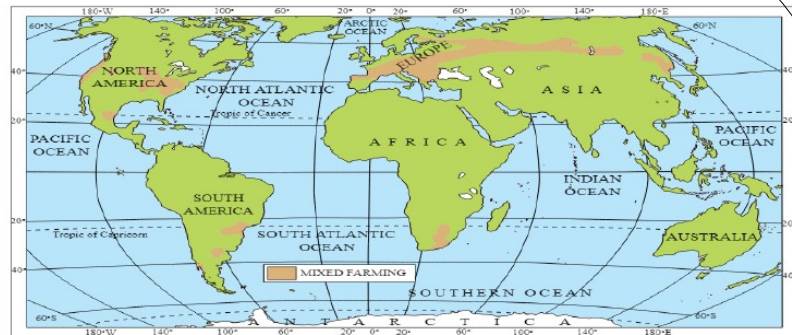
**Characteristics**

- > High capital expenditure on farm machinery and building,
- > Extensive use of chemical fertilisers

### Regions

- 1. North-western Europe
- 2. Eastern North America
- 3. Parts of Eurasia
- 4. Temperate latitudes of Southern continents

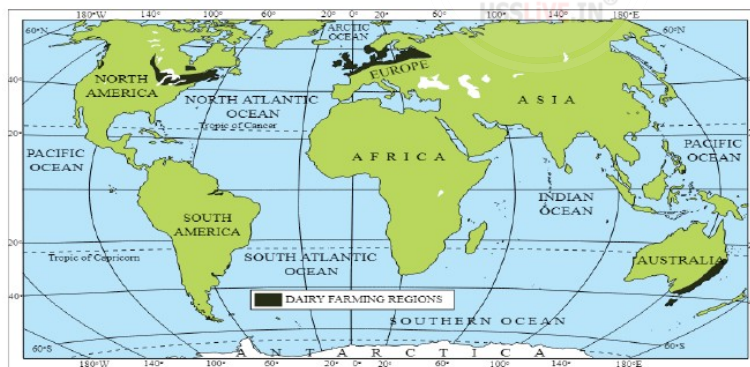
### Areas of Mixed Farming



### e) Dairy Farming

- Most advanced and efficient type of rearing of milch animals
- It is highly capital intensive
- Animal sheds, storage facilities for fodder, feeding and milching machines add to the cost of dairy farming
- Special emphasis is laid on cattle breeding, health care and veterinary services
- It is practised mainly near urban and industrial centres
- Need the facilities of good transportation network, refrigeration, pasteurization and other preservation processes
- **Major regions**
  - 1. North Western Europe (Largest)
  - 2. Canada (2nd)
  - 3. South Eastern Australia, New Zealand and Tasmania

### Areas of Dairy Farming



### f) Mediterranean Agriculture

- Highly specialised in commercial agriculture
- Practised mainly on :-
  1. Either side of the Mediterranean Sea in Europe,
  2. North Africa
  3. Southern California
  4. central Chile
  5. South western parts of South Africa
  6. South western parts of Australia
- This region is an important supplier of citrus fruits

### Viticulture or Grape cultivation

- ◆ Best quality wines in the world with distinctive flavours are produced



from high quality grapes of this region

- ◆ Low quality grapes are used for raisins, and currants
- ◆ This region also produces olives and figs

### **g) Market Gardening and Horticulture**

- Specialise in the cultivation of high value crops such as vegetables, fruits and flowers, for the urban markets
- Farms are small
- Located where there are good transportation links with the urban centre where high income group of consumers is located
- It is both labour and capital intensive
- Emphasis on the use of irrigation, HYV seeds, fertilisers, insecticides, greenhouses and artificial heating in colder regions
- **Mainly practiced in** Mediterranean region, North West Europe, and South East America
- Eg :- The Netherlands specialises in growing flowers and horticultural crops especially tulips, which are flown to all major cities of Europe.

### **Truck Farming**

- x The regions where farmers specialise in vegetables only are called Truck Farming
- x The distance of truck farms from the market is governed by the distance that a truck can cover overnight

### **Factory Farming**

- ✓ Mainly on industrial regions of Western Europe and North America
- ✓ Livestock, particularly poultry and cattle rearing, is done in stalls and pens fed on manufactured feed stuff and carefully
- ✓ Carefully supervised against diseases
- ✓ Need heavy capital investments for building, machinery and other operations
- ✓ Veterinary services, heating and lightning is provided
- ✓ Breed selection and scientific breeding is important feature

**ii) According to the farming organisations,** the following types of farming are categorised ;

#### **a) Co- Operative farming**

- A group of farmers form a co-operative society
- Pooling in their resources voluntarily for more efficient and profitable farming
- Individual farms remain intact and farming is a matter of cooperative initiative
- Co-operative societies help farmers, to procure all important inputs of farming, sell the products at the most favourable terms and help in processing of quality products at cheaper rates.
- Practiced in Denmark, Netherlands, Belgium, Sweden & Italy
- In Denmark, the movement has been so successful

#### **b) Collective Farming**

- Based on social ownership of the means of production and collective labour
- Introduced in Former Soviet Union
- Other name - **Kolkhoz** in Soviet Union
- Farmers pool their resources like land, livestock and labour
- A small land is allowed to retain of their own to grow their own crops.

- This type of farming adopted by the Socialist countries

#### **IV. MINING**

\* **Mining** is the extraction of minerals either from the interior or from the surface of the earth

##### **Factors Affecting Mining Activity**

- 1. Physical Factors** – Size, Grade, Mode of occurrence of the deposits
- 2. Economic Factors** – Demand for the mineral, Technology available and used, Capital to develop infrastructure, Labour and transport costs

##### **Methods of Mining**

\* Depending on the mode of occurrence and the nature of the ore, mining is classified into two

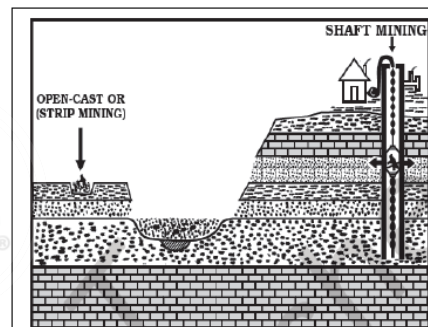
- 1. Surface / opencast mining**
- 2. Underground / shaft mining**

##### **Surface / opencast mining**

- ➔ Easiest and the cheapest way of mining minerals occur close to the surface
- ➔ Safety precautions and equipment is relatively low
- ➔ Output is both large and rapid

##### **Underground / shaft mining**

- When the ore lies deep below the surface
- Requires specially designed lifts, drills, haulage vehicles, ventilation system for safety and efficient movement of people and material
- Due to high labour costs this method is risky
- Poisonous gases, fires, floods and caving in lead to fatal accidents



The developed economies are retreating from mining, processing and refining stages of production due to high labour costs, while the developing countries with large labour force and striving for higher standard of living are becoming more important.

X ===== X

## **CHAPTER 6**

### **SECONDARY ACTIVITIES**

- **Secondary activities** add value to natural resources by transforming raw materials into valuable products
- Secondary activities are concerned with manufacturing, processing and construction (infrastructure) industries
- **Manufacturing** refers to the moulding of handicrafts or raw products into finished products having values

#### **CHARACTERISTICS OF MODERN LARGE SCALE MANUFACTURING**

##### **1. Specialisation of Skills/Methods of Production**

For manufacturing of goods, the production of large quantities of standard

parts have involved, It needs skill oriented tasks

## **2. Mechanisation**

Mechanisation refers to using machines which finish tasks. Automation is a new technology in manufacturing of goods excessively

**(Automation** – The manufacturing process without the aid of human thinking)

## **3. Technological Innovation**

Technological innovations through research and development strategy are an important aspect of modern manufacturing for quality control, eliminating waste and inefficiency, and combating pollution

## **4. Organisational Structure and Stratification**

*Modern manufacturing is characterised by:-*

- (i) a complex machine technology
- (ii) extreme specialisation and division of labour for producing more goods with less effort, and low costs
- (iii) vast capital
- (iv) large organisations
- (v) executive bureaucracy

## **5. Uneven Geographic Distribution**

Major concentrations of modern manufacturing have flourished in a few number of places. These over less than 10 per cent of the world's land area. These nations have become the centres of economic and political power

## **FACTORS INFLUENCING INDUSTRIAL LOCATIONS**

1. Access to market
2. Access to raw materials
3. Access to labour supply
4. Access to sources of energy
5. Access to Transportation and Communication Facilities
6. Government Policy
7. Access to Agglomeration Economies/ Links between Industries



### **Raw Materials**

- **Industries using weight-losing raw materials and perishable raw materials are located nearby the source regions of raw materials**
- Eg :- **sugar mills** in India located in sugar cane growing areas
- Most of the **iron and steel industries** are located either near coalfields or near sources of iron ore

### **Power**

- ◆ **Power provides the motive force for machines, and therefore, its supply has to be ensured** before the location of any industry.
- ◆ Eg:- aluminium industries tend to be located near sources of power

### **Markets**

- x **Markets provide the outlets for manufactured products.**
- x Heavy machine, machine tools, heavy chemicals are located near the high demand areas
- x Eg :- **Petroleum refineries** (Koyali, Mathura and Barauni) are located near the markets

## Transport

- ➔ All major industrial plants are located on the trunk rail routes
- ➔ **Major cities are the nodal points with good transportation links helps the clustering of industries**

## Labour

- **Industries require skilled labour.**
- In India, labour is quite mobile and is available in large numbers

## Historical Factors

- During the **initial phase of colonisation, manufacturing activities received new impetus provided** by the European traders.
- Places like Murshidabad, Dhaka, Bhadohi, Surat, Vadodara, Kozhikode, Coimbatore, Mysuru etc., emerged as important manufacturing centres
- In the **last phase of colonialism, the British promoted few industries in selected areas. This led to larger spatial coverage by different types of industries in the country.**

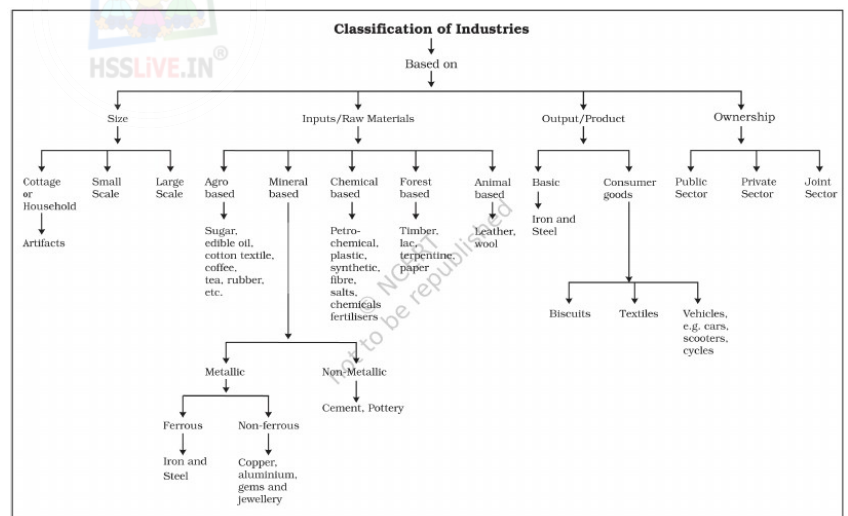
## Industrial Policy

- x **Government of India provides lots of incentives to industries locating in backward areas aiming economic growth with balanced regional development**
- x Eg :- Establishment of iron and steel industry in Bhilai and Rourkela

## CLASSIFICATION OF MANUFACTURING INDUSTRIES

- ➔ Manufacturing industries are classified on the basis of their

- ✓ **Size**
- ✓ **Inputs / raw materials**
- ✓ **Output / product**
- ✓ **Ownership**



## I. CLASSIFICATION OF INDUSTRIES **BASED ON SIZE**

- The size of industry is determined by :-
  - a) The amount of capital invested**
  - b) Number of workers employed**
  - c) Volume of production**
- Based on **size**, industries may be classified into:-
  - a) Household or cottage industries**
  - b) Small-scale industries**
  - c) Large-scale industries**



**a) Household Industries OR Cottage Manufacturing**

- **The smallest manufacturing unit.**
- The artisans **use local raw materials.**
- Produce everyday goods in their homes with the help of family members or part time labour.
- **Finished products** may be for consumption in the **same household** or, for **sale in local (village) markets**, or, **for barter.**
- Most of the **tools are devised locally.**
- Eg :- foodstuffs, fabrics, mats, containers, tools, furniture, shoes etc.

**b) Small Scale Manufacturing**

- x It is distinguished from household industries by its **production techniques** and **place of manufacture** (a workshop outside the home/cottage of the producer)
- x **Uses local raw material**
- x Uses simple power -driven machines and semi-skilled labour
- x **Provides employment and raises local purchasing power**

Countries like **India, China, Indonesia and Brazil**, etc. have developed labour-intensive small scale manufacturing in order **to provide employment to their population.**

**c) Large Scale Manufacturing**

**Large scale manufacturing involves :-**

- A large market
- Various raw materials
- Enormous energy
- Specialised workers
- Advanced technology
- Assembly-line mass production
- Large capital



**On the basis of the system of large scale manufacturing, the world's major industrial regions may be grouped under two broad types :-**

(i) **Traditional large-scale industrial regions** which are thickly clustered in a few more developed countries.

(ii) **High-technology large scale industrial regions** which have diffused to less developed countries.

**II. CLASSIFICATION OF INDUSTRIES ***BASED ON INPUTS or RAW MATERIALS*****

- On the basis of the **raw materials used**, the industries are classified as ;

- (a) Agro- based Industries**
- (b) Mineral based Industries**
- (c) Chemical based Industries**
- (d) Forest based Industries**
- (e) Animal based Industries**

**(a) Agro- based Industries**

- ➔ Agro processing involves the **processing of raw materials from the field and the farm into finished products** for rural and urban markets.
- ➔ Major agro- processing industries are **food processing, sugar, beverage (tea,**

coffee and cocoa), **spices and oils fats, textiles, rubber, etc.**

### **(b) Mineral based Industries**

- These industries use **minerals as a raw material**
- Some industries use ferrous metallic minerals. Eg:- Iron and Steel Industries
- Some use non-ferrous metallic minerals. Eg :- jewellery industries
- Many industries use non- metallic minerals. Eg:- cement and pottery industries.

### **(c) Chemical based Industries**

- ➔ Such industries **use natural chemical minerals**, e.g. mineral-oil (petroleum) is used in petro- chemical industry.
- ➔ Chemical industries are **also based on raw materials obtained from wood and coal.**
- ➔ Salts, sulphur and potash, synthetic fibre, plastic, etc. are other examples of chemical based industries.

### **d) Forest based raw Material using Industries**

- ◆ The forests provide many major and minor products which are used as raw material.
- ◆ **Timber for furniture industry, wood, bamboo and grass for paper industry, lac for lac industries** come from forests.

### **(e) Animal based Industries**

- x **Leather for leather industry** and **wool for woollen textiles** are obtained from animals.
- x Besides, **ivory** is also obtained from **elephant's tusks.**



## **III. CLASSIFICATION OF INDUSTRIES *BASED ON OUTPUT or PRODUCT***

- Based on output or product, industries are of two types;

### **a) Basic Industries**

### **b) Consumer goods Industries**

### **a) Basic Industries**

- The industry whose products are used to make other goods by using them as raw materials are **basic industries.**
- Eg :- Some machines and tools made of iron or steel. The raw material for such machines and tools is iron and steel which is an industry itself.

### **b) Consumer goods Industries / Non – Basic Industries**

- The industries which **produce goods that are consumed by consumers directly** are **consumer goods industries.**
- Eg:- industries producing breads and biscuits, tea, soaps and toiletries, paper for writing, televisions, etc.

## **IV. CLASSIFICATION OF INDUSTRIES *BASED ON OWNERSHIP***

- Based on ownership, industries are of three types;

### **a) Public Sector Industries**

**b) Private Sector Industries****c) Joint Sector Industries****(a) Public Sector Industries**

- These industries are **owned and managed by governments**.
- In India, there were a number of **Public Sector Undertakings (PSUs)**.  
Socialist countries have many state owned industries.

**(b) Private Sector Industries**

- ◆ These industries are **owned by individual investors**.
- ◆ These are **managed by private organisations**.
- ◆ In capitalist countries, industries are generally owned privately.

**(c) Joint Sector Industries**

Joint sector industries are **managed by joint stock companies** or **sometimes the private and public sectors together establish and manage the industries**.

**FOOTLOOSE INDUSTRIES**

- Foot loose industries can be located anywhere
- They are not dependent on any specific raw materials
- They largely depend on component parts which can be obtained anywhere
- They produce in small quantity
- They employ a small labour force
- Generally not polluting industries.
- The important factor in their location is accessibility by road network

**AGRI-BUSINESS**

Agri-business is commercial farming on **an industrial scale often financed by business whose main interests lie outside agriculture**.

Eg. Large corporations in tea plantation business.

**Characteristics**

- farms are mechanised
- large in size
- highly structured
- reliant on chemicals
- may be described as **'agro-factories'**

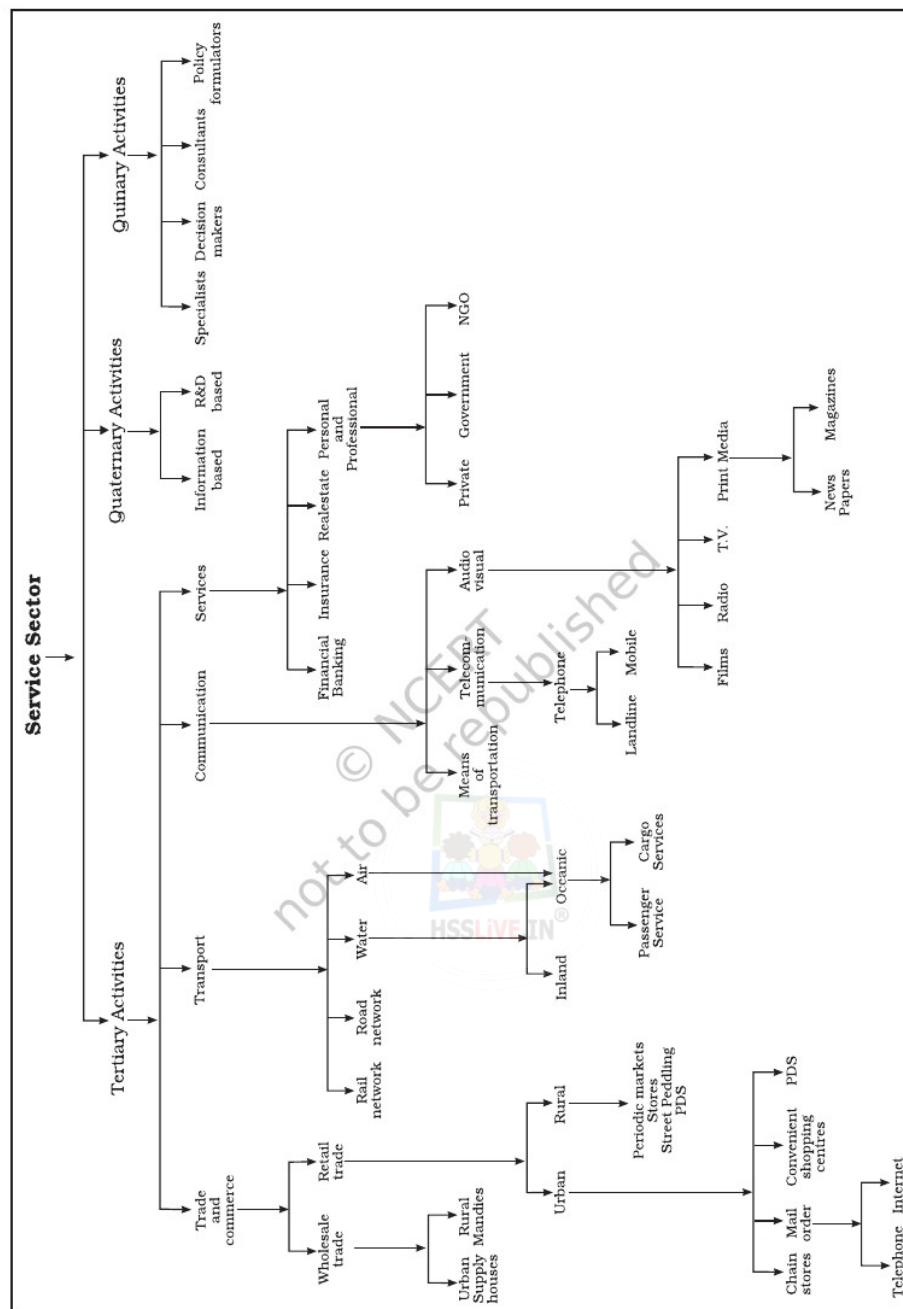
**Food Processing**

Agro processing includes canning, producing cream, fruit processing and confectionery. While some preserving techniques, such as drying, fermenting and pickling, have been known since ancient times

X ===== X

## CHAPTER 7

### TERTIARY AND QUATERNARY ACTIVITIES



#### I.TERTIARY ACTIVITIES

- ➔ Tertiary activities are **related to the service sector**.
- ➔ Tertiary activities involve the **commercial output of services**
- ➔ It includes **both production and exchange**
- ➔ **Tertiary activities involves expertise provided by services relies more heavily on specialised skills, experience and knowledge of the workers**
- ➔ Eg:- plumber, electrician, technician, launderer, barber, shopkeeper, driver, cashier, teacher, doctor, lawyer etc.

#### TYPES OF TERTIARY ACTIVITIES

1. **Trade and Commerce**
2. **Transport**
3. **Communication**
4. **Services**

## **1. TRADE AND COMMERCE**

- Trade is essentially buying and selling of items produced elsewhere
- The towns and cities where all these works take place are known as trading centres
- Trading centres are divided into rural and urban marketing centres.

### **a) Rural Marketing Centres**

- ✓ Cater to nearby settlements.
- ✓ These are quasi-urban centres.
- ✓ They serve as rudimentary type.
- ✓ Form local collecting and distributing centres
- ✓ Periodic markets in rural areas are found where there are no regular markets and local periodic markets are organised at different temporal intervals

### **b) Urban Marketing Centres**

- These have more widely specialised urban services
- Provide ordinary goods and services as well as many of the specialised goods and services required by people

## **Trade and Commerce can be of two types**

### **1. Retail Trading**

- ◆ This is the business activity concerned with the sale of goods directly to the consumers.
- ◆ The places for retail trading are placed in a fixed establishments or stores solely devoted to selling.
- ◆ Street peddling, handcarts, trucks, door-to-door, mail-order, telephone, automatic vending machines and internet are examples of non-store retail trading

**Consumer cooperatives** - the first of the large-scale innovations in retailing.

**Departmental stores** - delegate the responsibility and authority to departmental heads for purchasing of commodities and for overseeing the sale

**Chain stores** – able to purchase goods economically. They employ highly skilled specialists in many executive tasks

### **2. Wholesale Trading**

- Wholesale trading constitutes bulk business through numerous intermediary merchants and supply houses and not through retail stores
- Some large stores including chain stores are able to buy directly from the manufacturers

## **2. TRANSPORT**

- Transport is a service or facility by which people, materials and manufactured goods are physically carried from one location to another
- It is an organised industry created to satisfy man's basic need of mobility
- Transport distance can be measured as:

a) **km distance** - actual distance of route length;

b) **time distance** - the time taken to travel on a particular route

c) **cost distance** - the expense of travelling on a route

**Isochrone lines** - Lines drawn on a map to join places equal in terms of the time taken to reach them

**Factors Affecting Transport****1. Demand**

It is influenced by the size of population. The larger the population size, the greater is the demand for transport

**2. Routes**

Routes depend on location of cities, towns, villages, industrial centres and raw materials, pattern of trade between them, nature of the landscape between them, type of climate etc.

**Network, Node, Link**

- As transport systems develop, different places are linked together to form a **network**
- **A node** is the meeting point of two or more routes, a point of origin, a point of destination
- Every road that joins two nodes is called a **link**

**3. COMMUNICATION**

- Communication services involve the transmission of words and messages, facts and ideas
- Communication system may be of two types

a) Personal media – telephone, fax, e-mail, internet etc

b) Mass media – radio, television, cinema, conference etc.

**Telecommunications**

The use of telecommunications is linked to the development of modern technology. It has revolutionised communications because of the speed with which messages are sent. The time reduced is from weeks to minutes.

**4. SERVICES**

- Services occur at many different levels
- Services are provided to individual consumers who can afford to pay for them

**CBD** – CBD's are the heartlands of urban area. It provides all the urban services.

**Tourism is one of the services**

- ✕ Tourism is travel undertaken for purposes of recreation rather than business
- ✕ It has become the world's single largest tertiary activity in total registered jobs and total revenue
- ✕ **Major tourist regions**
  1. warmer places around the Mediterranean Coast
  2. West Coast of India
  3. Winter sports regions found mainly in mountainous areas
  4. Various scenic landscapes and national parks
  5. Historic towns

**Medical Tourism**

When medical treatment is combined with international tourism activity, it lends itself to what is commonly known as medical tourism.

**Tourist Attractions**

1. Climate
2. Landscape

4. History and Art
5. Culture and Economy

## **II. QUATERNARY ACTIVITIES**

- Quaternary activities involve either **collection or production or dissemination of information**
- Quaternary activities centre around **research, development and may be seen as an advanced form of services involving specialised knowledge and technical skills.**
- Eg:- tax consultants, software developers ,statisticians etc.

## **III. QUINARY ACTIVITIES**

- x **The highest level of decision makers or policy makers perform quinary activities**
- x Quinary activities are services that focus on **the creation, re-arrangement and interpretation of new and existing ideas; data interpretation and the use and evaluation of new technologies.**
- x Eg:-senior business executives, government officials, research scientists, financial and legal consultants, etc.

### **Outsourcing**

- Outsourcing or contracting out is giving work to an outside agency to improve efficiency and to reduce costs
- Business activities that are outsourced include information technology (IT), human resources, customer support and call centre services and at times also manufacturing and engineering.

### **Digital Divide**

Digital divide is the term to describe the difference of Information and Communication Technology between developing and developed countries

**Red collar worker** – The one who engaged in **Primary Activities**

**Blue collar worker** – The one who engaged in **Secondary Activities**

**White collar worker** – The one who engaged in **Tertiary Activities**

**Pink collar worker** – The one who engaged in **Quaternary Activities**

**Gold collar worker** – The one who engaged in **Quinary Activities**

X ===== X



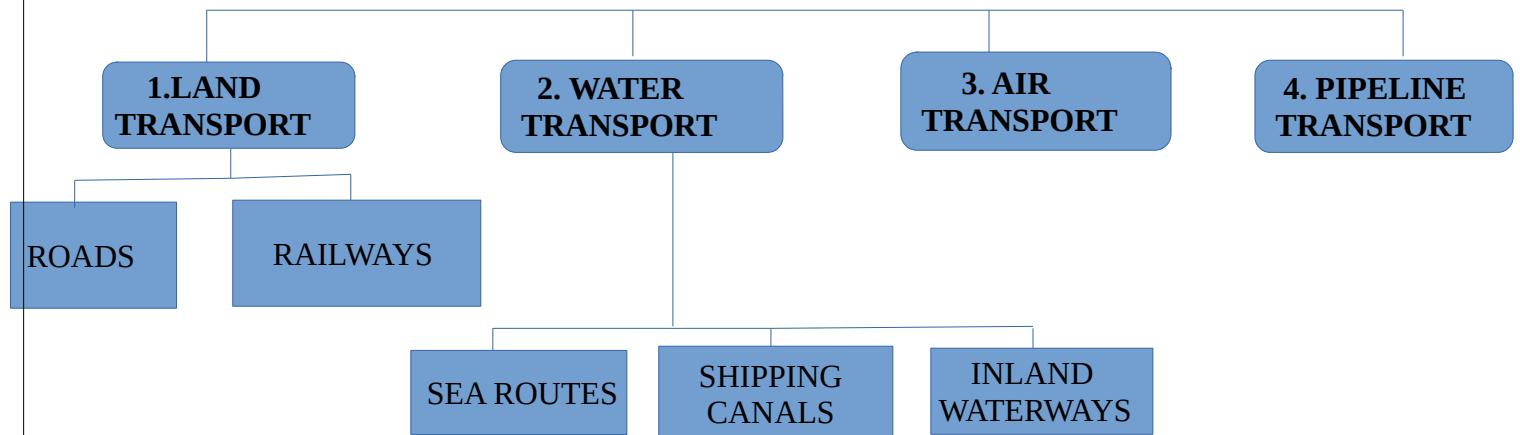
## CHAPTER 8

### TRANSPORT AND COMMUNICATION

#### TRANSPORT

Transport is a service or facility for the carriage of persons and goods from one place to the other using humans, animals and different kinds of vehicles

#### MODES OF TRANSPORTATION



#### ADVANTAGES OF ROAD TRANSPORT

- ➔ Road transport is the most economical for short distances compared to railways.
- ➔ It offers door-to-door service.
- ➔ Roads play a vital role in a nation's trade and commerce and for promoting tourism

#### ADVANTAGES OF WATER TRANSPORT

- It is the cheapest means of transport
- Most suitable for carrying heavy and bulky material
- It does not require route construction.
- The energy cost of water transportation is lower.
- It is a fuel-efficient and eco-friendly mode of transport

#### ADVANTAGES OF AIR TRANSPORT

- The fastest means of transportation
- Being fast, it is preferred by passengers for long-distance travel.
- It has reduced distances by minimising the travel time
- Valuable cargo can be moved rapidly on a world-wide scale.
- It is often the only means to reach inaccessible areas.
- Air transport has brought about a connectivity revolution in the world.

#### ADVANTAGES OF PIPELINE TRANSPORT

- ✓ Pipelines are the most convenient and efficient mode of transporting liquids and gases over long distances
- ✓ Uninterrupted flow of liquids and gases is possible
- ✓ Pipelines can also be used to transport liquidified coal

#### I – LAND TRANSPORT

- Transportation through the land is either by road or by railways



- The revolution in transport came about only after the invention of the steam engine in the eighteenth century
- The first public railway line was opened in 1825 between Stockton and Darlington in northern England
- Among the newer developments in land transportation are pipelines, ropeways and cableways

#### **Pack Animals(animals used for travel)**

Pack animals	Area
Horse	Western countries
Dogs, Reindeers	N.America, N.Europe, Siberia
Mules	Mountainous region
Camels	Desert
Bullocks	Pulling carts in India

#### **a) Roads**

- ➔ Road transport is the most economical for short distances
- ➔ Freight transport by road is gaining importance because it offers door-to-door service
- ➔ The world's total motorable road length is only about 15 million km, of which North
- ➔ America accounts for 33 per cent
- ➔ The highest road density records in North America

#### **Traffic Flows**

When the road network cannot cope with the demands of traffic, congestion occurs. City roads suffer from chronic traffic congestion. Peaks (high points) and troughs (low points) of traffic flow can be seen on roads at particular times of the day

#### **ROADS ARE OF TWO TYPES**

- i) Highways**
- ii) Boarder Roads**

#### **i) Highways**

- Highways are metalled roads connecting distant places
- They are 80 m wide, with separate traffic lanes, bridges, flyovers and dual carriageways to facilitate uninterrupted traffic flow.
- In developed countries, every city and port town is linked through highways.

#### **Distribution of Highways**

##### **a. N. America**

1. **The Trans-Canadian Highway** : links Vancouver in British Columbia (west coast) to St. John's City in Newfoundland (east coast)
2. **The Alaskan Highway** : links Edmonton (Canada) to Anchorage (Alaska)
3. **The Pan-American Highway** : connect the countries of South America, Central America and U.S.A.-Canada

##### **b. Australia**

1. **The Trans-Continental Stuart Highway** : connects Darwin (north coast) and

Melbourne via Tennant Creek and Alice Springs

### c. Europe

#### 1. Moscow-Vladivostok Highway

### d. Asia

#### 1. China

- Highways criss-cross the country connecting all major cities such as Tsungtso Shanghai, Guangzhou and Beijing.
- A new highway links Chengdu with Lhasa in Tibet.

#### 2. India

\* **National Highway NH 7 (NH 44)** - Connecting Varanasi with Kanyakumari

\* **The Golden Quadrilateral (GQ) or Super Expressway** :- connect the four metropolitan cities — New Delhi, Mumbai, Chennai, Kolkata

### ii. Border Roads

- ◆ Roads laid along international boundaries are called border roads.
- ◆ They play an important role in integrating people in remote areas with major cities and providing defence.

### b) Railways

- Railways are a mode of land transport for bulky goods and passengers over long distances
- Different railway gauges across the world

1. *Broad Gauge* : more than 1.5 m

2. *Standard Gauge* : 1.44 m

3. *Metre Gauge* : 1 m

4. *Smaller Gauge* : less than 1 m



### Distribution of Railways

#### 1. Europe

- x Europe has one of the most dense rail networks in the world
- x Belgium has the highest density of 1 km of railway for every 6.5 sq. kms area
- x The important rail heads are London, Paris, Brussels, Milan, Berlin and Warsaw
- x **Channel Tunnel**, operated by Euro Tunnel Group connects London with Paris

#### 2. N. America

- ✓ 40% of the total rail networks in the world
- ✓ Used more for long-distance bulky freight like ores, grains, timber and machinery than for passengers
- ✓ The most dense rail network is found in the highly industrialised and urbanised region of East Central U.S.A. and adjoining Canada

#### 3. Australia

- ➔ 40,000 km of railways
- ➔ The west-east Australian National Railway line runs across the country from Perth to Sydney

#### 4. S. America

- ◆ The rail network is the most dense in two regions, namely, the Pampas of Argentina and the coffee growing region of Brazil

- ◆ There is only one trans-continental rail route linking Buenos Aires (Argentina) with Valparaíso (Chile) across the Andes Mountains

## 5. Asia

- In Asia, rail network is the most dense in the thickly populated areas of Japan, China and India

## 6. Africa

Important Rail routes are:-

- The Benguela Railway** - Angola to Katanga - Zambia Copper Belt
- The Tanzania Railway** - the Zambian Copper Belt to Dar-es-Salaam
- The Blue Train** - Cape Town to Pretoria in the Republic of South Africa
- Railway through Botswana and Zimbabwe**

## TRANS-CONTINENTAL RAILWAYS

- Trans-continental railways run across the continent and link its two ends
- They were constructed for economic and political reasons to facilitate long runs in different directions

### Important trans-continental Railways

- Trans-Siberian Railway**
- Trans-Canadian Railways**
- The Union and Pacific Railway**
- The Australian Trans-Continental Railway**
- The Orient Express**

#### 1. Trans-Siberian Railway

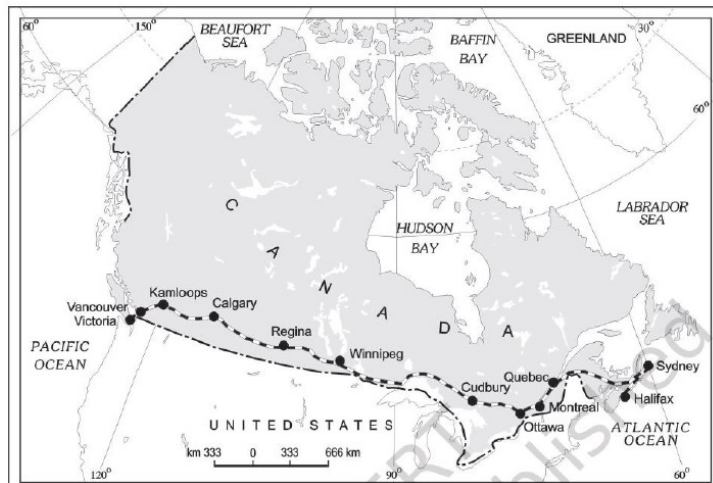
- Major rail route of **Russia**
- Runs from **St. Petersburg** in the West to **Vladivostok** on the Pacific Coast in the East
- Passing through Moscow, Ufa, Novosibirsk, Irkutsk, Chita and Khabarovsk.
- It is the most important route in Asia and the longest (9,332 km) double-tracked and electrified trans-continental railway in the world



#### 2. Trans-Canadian Railways

- x Long rail-line in **Canada**
- x Runs from Halifax in the east to Vancouver in the west-east
- x Passing through Montreal, Ottawa, Winnipeg and Calgary

- x constructed in 1886
- x This line is the economic artery of Canada

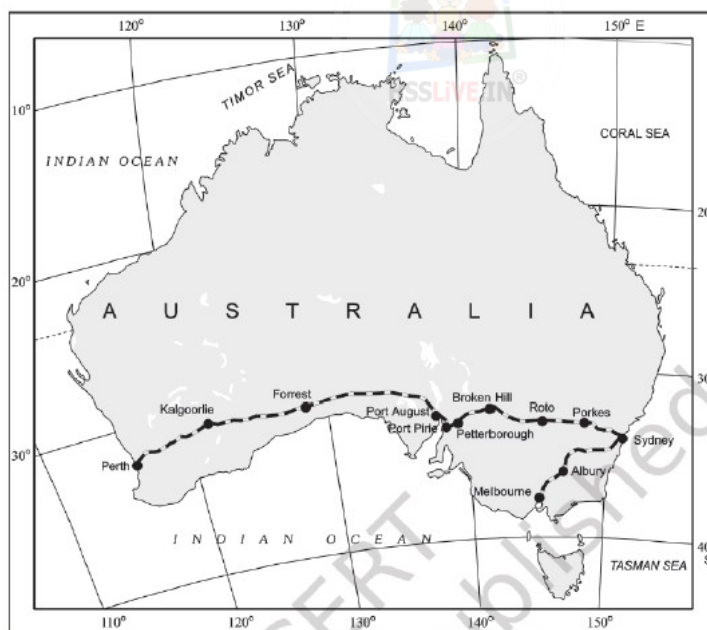


### 3. The Union and Pacific Railway

- ◆ Connects New York on the Atlantic Coast to San Francisco on the Pacific Coast
- ◆ Passing through Cleveland, Chicago, Omaha, Evans, Ogden and Sacramento

### 4. The Australian Trans-Continental Railway

- x Runs from Perth on the west coast, to Sydney on the east coast
- x Passing through Kalgoorlie, Broken Hill and Port Augusta



### 5. The Orient Express

- This line runs from Paris to Istanbul
- Passing through Strasbourg, Munich, Vienna, Budapest and Belgrade

### Trans-Asiatic Railway

- A proposal to build linking Istanbul with Bangkok via Iran, Pakistan, India, Bangladesh and Myanmar

## II. WATER TRANSPORT

- Water transport is of 2 kinds, Sea routes and Inland water ways

### **Important Sea Routes**

- 1. The Northern Atlantic Sea Route**
- 2. The Mediterranean–Indian Ocean Sea Route**
- 3. The Cape of Good Hope Sea Route**
- 4. The North Pacific Sea Route**
- 5. The South Pacific Sea Route**

#### **1. The Northern Atlantic Sea Route**

- This links North-eastern U.S.A. and North western Europe, the two industrially developed regions of the world
- One fourth of the world's foreign trade moves on this route
- Busiest sea route in the world and called the Big Trunk Route

#### **2. The Mediterranean–Indian Ocean Sea Route**

- x This sea route passes through the heart of the Old World
- x Serves more countries and people than any other route
- x **Important Ports** : Port Said, Aden, Mumbai, Colombo and Singapore
- x This trade route connects the highly industrialised Western European region with West Africa, South Africa, South-east Asia, Australia and New Zealand.

#### **3. The Cape of Good Hope Sea Route**

- ◆ Across the Atlantic Ocean
- ◆ Connects West European and West African countries with Brazil, Argentina and Uruguay in South America

#### **4. The North Pacific Sea Route**

- Links the ports on the west-coast of North America with those of Asia
- Major Ports:-

American side: Vancouver, Seattle, Portland, San Francisco and Los Angeles  
Asian Side: Yokohama, Kobe, Shanghai, Hong Kong, Manila and Singapore

#### **5. The South Pacific Sea Route**

- x Connects Western Europe and North America with Australia, New Zealand and the scattered Pacific islands via the Panama Canal
- x Important Port: Honolulu

### **Inland Waterways**

- Water transportation through Rivers, canals, lakes
- Boats and steamers are used as means of transport for cargo and passengers
- Factors affecting Inland Waterways
  - > The navigability of the river
  - > Width and depth of the channel
  - > Continuity in the water flow
  - > Transport technology in use
- Problems of Inland waterways
  - \* Competition from railways
  - \* Lack of water due to diversion for irrigation
  - \* Poor maintenance

## **Important Inland Waterways**

- 1. The Rhine Waterways**
- 2. The Danube Waterway**
- 3. The Volga Waterway**
- 4. The Great Lakes – St. Lawrence Seaway**
- 5. The Mississippi Waterways**

### **1. The Rhine Waterways**

- x Flows **through Germany and the Netherlands**
- x It is **navigable for 700 km** from Rotterdam in Netherlands to Basel in Switzerland
- x **This waterway is the world's most heavily used.**
- x It **connects the industrial areas of Switzerland, Germany, France, Belgium and the Netherlands with the North Atlantic Sea Route**
- x Important **Port: Dusseldorf**

### **2. The Danube Waterway**

- ✓ Serves Eastern Europe
- ✓ The Danube river rises in the Black Forest and flows eastwards through many countries
- ✓ The chief export items are wheat, maize, timber, and machinery

### **3. The Volga Waterway**

- Important waterway in Russia
- It provides a navigable waterway of 11,200 km and drains into the Caspian Sea

### **4. The Great Lakes – St. Lawrence Seaway**

- ◆ The Great Lakes of North America Superior, Huron Erie and Ontario are connected by Soo Canal and Welland Canal to form an inland waterway
- ◆ The Major Ports : Duluth and Buffalo

### **5. The Mississippi Waterways**

- ➔ The Mississippi-Ohio waterway connects the interior part of U.S.A. with the Gulf of Mexico in the south

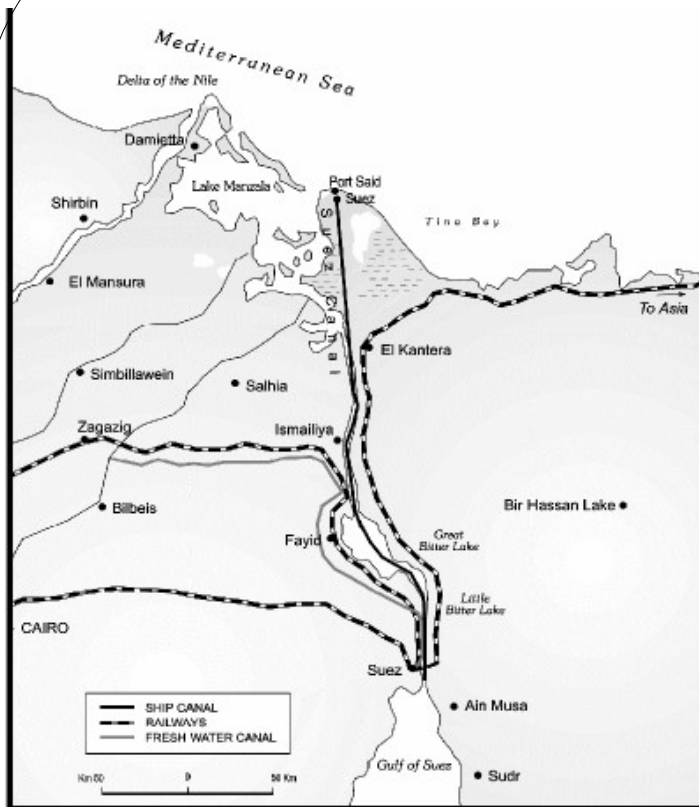
## **SHIPPING CANALS**

The Suez and the Panama Canals are two vital man-made navigation canals which serve as gateways of commerce for both the eastern and western worlds.

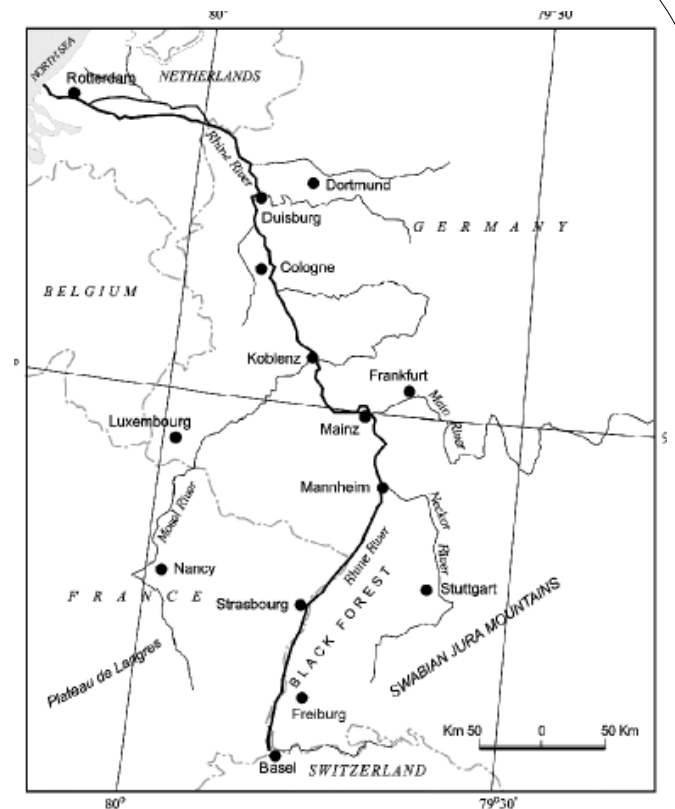
### **1. SUEZ CANAL**

- Constructed in **1869 in Egypt**
- Constructed **between Port Said in the north and Port Suez in the south**
- **Links the Mediterranean Sea and the Red Sea**
- Length - 160 km ; Depth - 11 to 15 m
- It gives **Europe a new gateway to the Indian Ocean and reduces direct sea-route distance between Liverpool and Colombo (Importance)**





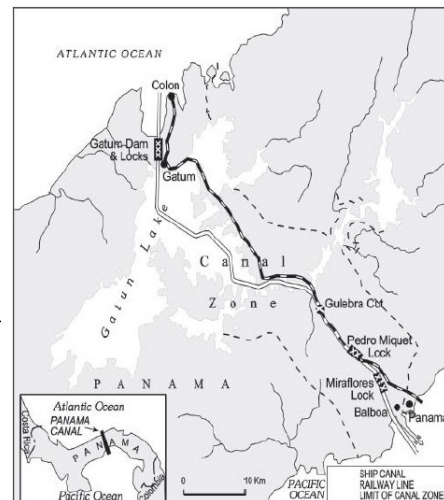
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## 2. Panama Canal

- ➔ This canal connects the Atlantic Ocean in the east to the Pacific Ocean in the west
- ➔ Constructed across the Panama Isthmus between Panama City and Colon by the U.S
- ➔ The Canal is about 72 km
- ➔ It shortens the distance between New York and San Francisco by 13,000 km by sea
- ➔ It is vital to the economies of Latin America



## Coastal Shipping

- ◆ coastal shipping is a convenient mode of transportation with long coastlines, e.g. U.S.A, China and India
- ◆ Shenzhen States in Europe are most suitably placed for coastal shipping
- ◆ If properly developed, coastal shipping can reduce the congestion on the land routes

## III. AIR TRANSPORT

- Air transport has brought about a connectivity revolution in the world
- Today, more than 250 commercial airlines offer regular services to different parts of the world

### Inter-Continental Air Routes

- Dense network exists in Eastern U.S.A., Western Europe and Southeast Asia
- U.S.A. alone accounts for 60 per cent of the airways of the world.
- Major Nodal Airports : New York, London, Paris, Amsterdam, Frankfurt Rome,
- Moscow, Karachi, New Delhi, Mumbai, Bangkok, Singapore, Tokyo, San

Francisco, Los Angeles and Chicago

- There are limited air services between 10-35 latitudes in the Southern hemisphere

- **Reasons**

1. Sparse population
2. Limited landmass and economic development

#### **IV. PIPELINES**

- In Switzerland, milk is being supplied through pipelines
- **Big Inch pipeline** :- which carries petroleum from the oil wells of the Gulf of Mexico to the North-eastern States
- The proposed Iran-India via Pakistan international oil and natural gas pipeline will be the longest in the world

### **COMMUNICATIONS**

#### **A) Telegraph & Telephone / Telecommunication**

- During the early and mid-twentieth century, the American Telegraph and Telephone Company (AT&T) enjoyed a monopoly over U.S.A.'s telephone industry
- The first major breakthrough is the use of optic fiber cables (OFC)
- These allow large quantities of data to be transmitted rapidly, securely, and are virtually error-free
- With the digitisation of information in the 1990s, telecommunication slowly merged with computers to form integrated networks termed as Internet

#### **B) Satellite Communication**

- ◆ Communication through satellites emerged as a new area in communication technology since the 1970s after U.S.A. and former U.S.S.R.
- ◆ Artificial satellites to be launched which have rendered the unit cost and time of communication invariant in terms of distance
- ◆ India has also made great strides in satellite development.
- ◆ Aryabhata was launched on 19 April 1979, Bhaskar-I in 1979 and Rohini in 1980.

#### **Cyber Space – Internet**

- ➔ Cyberspace is the world of electronic computerised space.
- ➔ It is surrounded by the Internet such as the World Wide Web (www).
- ➔ It is the electronic digital world for communicating or accessing information over computer networks without physical movement of the sender and the receiver
- ➔ Now the majority of the world's users are in U.S.A., U.K., Germany, Japan, China and India

X ===== X



## **CHAPTER 9**

### **INTERNATIONAL TRADE**

- The initial form of trade in primitive societies was the **barter system**, where direct exchange of goods took place
- **Slave trade** :- The Portuguese, Dutch, Spaniards, and British captured African natives and forcefully transported them to the newly discovered Americas for their labour in the plantations. Slave trade was abolished in Denmark in 1792, Great Britain in 1807 and United States in 1808.
- **The Silk Route** is an **early example of long distance trade** connecting Rome to China –along the 6,000 km route. The traders transported Chinese silk, Roman wool and precious metals and many other high value commodities from intermediate points in India, Persia and Central Asia.
- The post- war period has introduced the formation of General Agreement for Tariffs and Trade (GATT) which later became the World Trade Organisation (WTO) helped in reducing tariff

#### **Basis of International Trade**

##### **1. Difference in national resources**

The world's national resources are unevenly distributed because of differences in their physical make up

- a) Geological structure:** It determines the mineral resource base and topographical differences ensure diversity of crops and animals raised
- b) Mineral resources:** They are unevenly distributed the world over
- c) Climate:** It influences the type of flora and fauna that can survive in a given region and it ensures diversity in the range of various products

**2. Population factors:** The size, distribution and diversity of people between countries affect the type and volume of goods traded

- a) Cultural factors:** Distinctive forms of art and craft develop in certain cultures which are valued the world over
- b) Size of population:** Densely populated countries have large volume of internal trade but little external trade because most of the agricultural and industrial production is consumed in the local markets

**3. Stage of economic development:** At different stages of economic development of countries, the nature of items traded undergo changes.

**4. Extent of foreign investment:** Foreign investment can boost trade in developing countries which lack in capital required for the development of mining, oil drilling, heavy engineering etc.

**5. Transport:** In olden times, lack of adequate and efficient means of transport restricted trade to local areas. With expansions of rail, ocean and air transport, better means of refrigeration and preservation, trade has experienced spatial expansion.

**BALANCE OF TRADE**

- Balance of trade **records the volume of goods and services imported as well as exported by a country to other countries.**
- If the value of imports is more than the value of a country's exports, the country has **negative or unfavourable balance of trade**. (It means that the country spends more on buying goods than it can earn by selling its goods. This would ultimately lead to exhaustion of its financial reserve)
- If the value of exports is more than the value of imports, then the country has a **positive or favourable balance of trade**.

**TYPES OF INTERNATIONAL TRADE**

- International trade may be categorised into two types:

**(a) Bilateral trade**

**(b) Multi-lateral trade**

**(a) Bilateral trade**

- Bilateral trade is done **by two countries with each other.**
- They enter into **agreement to trade specified commodities amongst them.**

**(b) Multi-lateral trade**

- ◆ Multi-lateral trade is conducted with many trading countries.
- ◆ The same country can trade with a number of other countries.
- ◆ The country may also grant the status of the **“Most Favoured Nation” (MFN)** on some of the trading partners.

**Free Trade or Trade Liberalisation**

- x The act of opening up economies for trading is known as free trade or trade liberalisation.
- x This is done by bringing down trade barriers like tariffs.
- x Trade liberalisation allows goods and services from everywhere to compete with domestic products and services.

**Dumping**

The practice of selling a commodity in two countries at a price that differs for reasons not related to costs is called dumping.

**WTO**

- GATT was transformed into the World Trade Organisation from 1st January 1995.
- WTO is the only international organisation dealing with the global rules of trade between nations
- Head quarters – Geneva (Switzerland)
- At present, 164 members
- India has been one of the founder members of WTO

**PORTS ARE THE GATEWAYS OF INTERNATIONAL TRADE. WHY?**

- The chief gateways of the world of international trade are the harbours and ports.
- Cargoes and travellers pass from one part of the world to another through these ports.

- The importance of a port is judged by the size of cargo and the number of ships handled.
- The quantity of cargo handled by a port is an indicator of the level of development of its hinterland.

### TYPES OF PORTS

#### I - According to cargo handled:-

- Industrial Ports: These ports specialise in bulk cargo-like grain, sugar, ore, oil, chemicals and similar materials.
- Commercial Ports: These ports handle general cargo-packaged products and manufactured goods
- Comprehensive Ports: Such ports handle bulk and general cargo in large volumes.

#### II – On the basis of Location :-

##### a) Inland Ports

- These ports are located away from the sea coast.
- They are linked to the sea through a river or a canal
- **Eg** – Manchester, Memphis, Kolkata

##### b) Out Ports

- ✓ These are deep water ports built away from the actual ports.
- ✓ These serve the parent ports by receiving those ships which are unable to approach them due to their large size
- ✓ **Eg**- Athens and its out port Piraeus in Greece.

#### III - On The Basis Of Specialised Functions:-

##### (i) Oil Ports

- x These ports **deal in the processing and shipping of oil**.
- x **Some of these are tanker ports and some are refinery ports.**
- x **Tanker ports** - Maracaibo in Venezuela, Esskhira in Tunisia, Tripoli in Lebanon
- x **Refinery port** - Abadan on the Gulf of Persia

##### (ii) Ports of Call

- These are the ports which originally developed as calling points on main sea routes where **ships used to anchor for refuelling, watering and taking food items**.
- **Eg - Aden, Honolulu and Singapore**

##### (iii) Packet Station

- ➔ These are **also known as ferry ports**.
- ➔ These packet stations are **concerned with the transportation of passengers and mail across water bodies covering short distances**.
- ➔ These stations occur in pairs located in such a way that they face each other across the water body,
- ➔ **Eg:- Dover in England and Calais in France across the English Channel.**

##### (iv) Entrepot Ports

- These are **collection centres where the goods are brought from different countries for export**.
- **Eg:- Singapore for Asia, Rotterdam for Europe, and Copenhagen for**

theBaltic region.

**(v) Naval Ports**

- x These are ports which **have only strategic importance.**
- x These ports **serve warships and have repair workshops** for them.
- x Eg :- **Kochi and Karwar**

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## **PART 2**

### **INDIA – PEOPLE AND ECONOMY**

<b>Ch. No.</b>	<b>Chapters</b>	<b>Page No.</b>
1	Population: Distribution, Density, Growth and Composition	44 - 49
4	Human Settlements	50 - 53
5	Land Resources and Agriculture	53 - 61
6	Water Resources	61 - 63
7	Mineral and Energy Resources	63 - 69
9	Planning and Sustainable Development	69 - 71
10	Transport and Communication	71 - 77
11	International Trade	78 - 80
12	Geographical Perspective on selected Issues and Problems	81 - 83

**Prepared by**

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GHSS Thiruvalli

## CHAPTER - 1

### INDIA- POPULATION

#### DISTRIBUTION, DENSITY, GROWTH, COMPOSITION

#### SOURCES OF POPULATION DATA

- ➔ Population data are collected through **census**
- ➔ Held every **10 years**
- ➔ The **first population census** in India was held on – **1872**
- ➔ The **first complete census** was conducted only by- **1881**

#### DISTRIBUTION OF POPULATION

- ➔ India's total population as per 2011 census- **1210 million/121 crores**
- ➔ India occupies **17.7% of total world population**
- ➔ **Most populated state** in India- **Uttar Pradesh**
- ➔ **Second most populated state** in India – **Maharashtra**
- ➔ **Least populated state** in India – **Sikkim**
- ➔ **Most populated Union Territory** in India – **NCT Delhi**
- ➔ **Least populated Union Territory** in India - **Lakshadweep**

#### FACTORS AFFECTING DISTRIBUTION OF POPULATION IN INDIA

**Physical/ Geographical factors** – climate, terrain, availability of water, availability of fertile soil, availability of mineral and energy resources.

**Socio- Economic factors** – evolution of settled agriculture and and agricultural development, development of irrigation, pattern of human settlement, development of transport network, industrialisation, urbanisation

**Historical factors** – early history of human development and development of transport network

#### POPULATION DENSITY

- ➔ The number of persons per unit of area is population density
- ➔ The **population density** in India (2011) – **382**
- ➔ There is an increase of **more than 200 persons per sq km over the last 50 years.** (1951- 117/sq km, 2011- 382/ sq km)

The **highest population density states** in India

1. **Bihar** (1102)
2. **West Bengal** (1029)
3. **Kerala** ( 859)

The **lowest population density state** in India  
**Arunachal Pradesh** (17)

The **UT** having **highest population density** – **NCT Delhi (11297)**

The **UT** having **lowest population density** – **Andaman Nicobar Islands ( 46)**



→ **Physiological density** =  $\frac{\text{total population}}{\text{net cultivated area}}$

→ **Agricultural density** =  $\frac{\text{total agricultural population}}{\text{net cultivable area}}$

\* **Agricultural population** includes cultivators and agricultural labourers and their family members

## **POPULATION GROWTH**

- **Growth of population** is the change or difference in the number of people living in an area between two points of time.
- The population **growth rate** is **expressed in percentage**
- The population growth has **two components**
  1. **Natural components**- crude birth and death rates
  2. **Induced components**- The volume of inward and outward movement of people in any given area.

**Natural Growth**- It is analysed by assessing the crude birth and death rates

**Induced growth/ Actual growth** – It is analysed by assessing crude birth and death rate along with inward and outward migration of people in any given area.

- The **annual growth rate** of India's population – **1.64 %**
- The **decadal growth rate** of India's population – **17.70 %**( 2001-2011)/
- The decadal population growth can be calculated by using following formulae

$$\text{Decadal growth rate; } g = \frac{P_2 - P_1}{P_1} \times 100$$

$P_1$  = population of the base year

$P_2$  = population of the present year

- **Population Doubling Time**- The time taken by any population to double itself as its current annual growth rate.

## **THE PHASES OF POPULATION GROWTH IN INDIA/ THE DEMOGRAPHIC TRANSITION STAGES OF POPULATION IN INDIA (4)**

PHASE	NATURE OF POPULATION GROWTH	CHARACTERISTICS
Phase 1: 1901-1921	Period of Stagnant or Stationary phase	<ul style="list-style-type: none"> <li>* Growth rate was very low</li> <li>* Recorded a negative growth rate during 1911-1921</li> <li>* Both the birth and death rates were very high</li> <li><b>Causes for low growth rate</b> <ul style="list-style-type: none"> <li>• poor health and medical services</li> <li>• illiteracy of people at large</li> <li>• inefficient food distribution system</li> </ul> </li> </ul>

<b>Phase 2: 1921- 1951</b>	<b>Period of Steady population growth</b>	<ul style="list-style-type: none"> <li>* Crude birth rate remained high</li> <li>* An over all improvement in health and sanitation throughout the country lowered mortality rate</li> <li>* Better transport and communication system improved distribution system.</li> <li>* This steady growth rate is impressive at the background of The Great Economic Depression(1920s) and World War 2<sup>nd</sup>.</li> </ul>
<b>Phase 3: 1951- 1981</b>	<b>Period of Population Explosion</b>	<ul style="list-style-type: none"> <li>* Rapid fall in mortality rate but a high fertility rate</li> <li>* The average annual growth rate was as high as 2.2%</li> </ul> <p><b>Causes for high growth rate</b></p> <ul style="list-style-type: none"> <li>• After the independence, the developmental activities through a centralised planning made the economy to ensure the improvement of living condition of people at large. Thus there was a high natural growth of population happened.</li> <li>• Increased international migration from Tibet, Bangladesh, Nepal, and Pakistan brought a high population growth rate.</li> </ul>
<b>Phase 4: 1981- 2011</b>	<b>Growth rate remained high and started slowing down gradually</b>	<ul style="list-style-type: none"> <li>* Downward trend of birth rate</li> </ul> <p><b>Causes for the lowering growth rate</b></p> <ul style="list-style-type: none"> <li>• Increased mean age at marriage</li> <li>• improved quality of life</li> <li>• Improvement of female education</li> </ul>

### REGIONAL VARIATION IN POPULATION GROWTH

- ➔ The **state** having the **highest population growth rate** in India – **Meghalaya** ( 27.8%)
- ➔ The **state** having the **lowest or negative population growth rate** in India – **Nagaland** ( -0.47%)

### THE ADOLESCENT POPULATION IN INDIA

- The adolescent population is regarded as the youthful population with high potentials.
- The age group of 10-19 years constitutes 20.9% of total population (2011)
- **The challenges faced by the adolescents**
  - \* Lower age at marriage
  - \* Illiteracy
  - \* School dropouts
  - \* Low intake of nutrients
  - \* High rate of maternal mortality of adolescent mothers
  - \* High rate of HIV and AIDS infections

- \* physical and mental disability or retardedness
  - \* drug abuse and alcoholism,
  - \* juvenile delinquency
  - \* committence of crimes
- **National Youth Policy- 2014**
    - Launched in February 2014 proposes a holistic 'vision' for the youth of India
    - NYP is implemented **"to empower the youth of the country to achieve their full potential, and through them enable India to find its rightful place in the community of nations"**
    - The NYP–2014 has defined 'youth' as persons in the age group of 15–29 years
  - **National Policy for Skill Development and Entrepreneurship – 2015**
    - \* Launched on first ever World Youth Skill Day (2015 July)
    - \* NPSDE is to **provide an umbrella framework to all skilling activities being carried out within the country, and to align these to common standards and link skilling with demand centres**

## **POPULATION COMPOSITION**

- **Rural – Urban Composition**
- **Linguistic Composition**
- **Religious Composition**
- **Composition of Working population**



### **Rural – Urban Composition**

- ◆ Categorised on the basis of place of residence
- ◆ India's **rural population – 68.8 %**
  - \* The relative degree of urbanisation of both at intra-State and inter- State levels and extent of rural-urban migration regulate the concentration of rural population
  - \* The **state** having the **highest rural population – Bihar**
- ◆ India's **urban population – 31.16 %**
  - \* The economic development , improvement in health and hygienic conditions and rural to urban migration has accelerated the growth rate of urban population.
  - \* The **state** having the **highest urban population – Goa**

### **Linguistic Composition**

- ➔ In modern India, there are about **22 scheduled languages**
- ➔ According to Linguistic Survey of India, there are 179 languages and as many as 544 dialects in the country.
- ➔ Among the scheduled languages, the speakers of **Hindi have the highest percentage.**
- ➔ Among the scheduled languages, the speakers of **Sanskrit, Bodo and Manipuri have the lowest percentage.**

**The Classical Languages in India (6)**

Tamil(2004), Sanskrit(2005), Kannada(2008), Telugu(2008), Malayalam(2013), Odiya(2014)

**Linguistic Classification**

Family	Sub-Family	Branch/Group	Speech Areas
Austic (Nishada) 1.38%	Austro-Asiatic  Austro-Nesian	Mon-Khmer Munda	Meghalaya, Nicobar Islands West Bengal, Bihar, Orissa, Assam, Madhya Pradesh, Maharashtra Outside India
Dravidian (Dravida) 20%		South-Dravidian  Central Dravidian  North Dravidian	Tamil Nadu, Karnataka, Kerala Andhra Pradesh, M.P., Odisha, Maharashtra Bihar, Odisha, West Bengal, Madhya Pradesh
Sino-Tibetan (Kirata) 0.85%	Tibeto-Myanmari  Siamese-Chinese	Tibeto-Himalayan  North Assam  Assam-Myanmari	Jammu & Kashmir, Himachal Pradesh, Sikkim Arunachal Pradesh Assam, Nagaland, Manipur, Mizoram, Tripura, Meghalaya
Indo-European (Aryan) 73%	Indo-Aryan	Iranian Dardic Indo-Aryan	Outside India Jammu & Kashmir Jammu & Kashmir, Punjab, Himachal Pradesh, U.P., Rajasthan, Haryana, M.P. Bihar, Orissa, West Bengal, Assam, Gujarat, Maharashtra, Goa.

The **largest language family – Indo-European/Aryan (73%)**

The **smallest language family- Sino-Tibetan/ Kirata (0.85%)**

**Religious Composition**

- ➔ **Hindus** are distributed as a major group in India (**79.8 %**)
  - \* Major religious group in many states
- ➔ **Muslims** are the **largest religious minority** in India (**14.2 %**)
  - \* They are mainly concentrated in Jammu & Kashmir, certain districts of West Bengal and Kerala, many districts of Uttar Pradesh , in and around Delhi and in Lakshadweep.
  - \* They form **majority in Kashmir valley and Lakshadweep.**
- ➔ The **Christian** population is distributed mostly in rural areas of the country. (**2.3 %**)
  - \* The main concentration is observed along the Western coast around Goa, Kerala and also in the hill states of Meghalaya, Mizoram, Nagaland, Chotanagpur area and Hills of Manipur.
- ➔ **Sikhs (1.7 %)** are mostly concentrated in the states of **Punjab**, Haryana and Delhi.
- ➔ **Buddhists (0.7 %)** are concentrated mostly in **Maharashtra**
- ➔ **Jains ( 0.4 %)** have major concentration in the urban areas of **Rajasthan**,

## Gujarat and Maharashtra

Religious Group	2011	
	Population (in million)	% of Total
Hindus	966.3	79.8
Muslims	172.2	14.2
Christians	27.8	2.3
Sikhs	20.8	1.7
Buddhists	8.4	0.7
Jains	4.5	0.4
Other Religions and Persuasions (ORP)	7.9	0.7
Religion Not Stated	2.9	0.2

**Composition of Working Population**

\* The population of India according to their **economic status** is divided into **three groups**

1. main workers, .
2. marginal workers
3. non-workers.

\* The **proportion of workers** in India (both main and marginal) is – **39.8%**

→ **Standard Census Definition of Workers**

\* **Main Worker** is a person who works for **atleast 183 days ( or six months) in a year.**

\* **Marginal Worker** is a person who works for **less than 183 days ( or six months) in a year.**

→ **Work Participation Rate**

\* Percentage of total workers to the total population

\* The **state** having the **highest Work Participation Rate – Himachal**

**Pradesh**

→ **Occupational Categories (2011 census)**

\* The 2011 Census has divided the working population of India into four major categories

1. Cultivators
2. Agricultural Labourers
3. Household Industrial Workers
4. Other Workers.

\* Cultivators and Agricultural Labourers – 54.6 %

\* Household Industrial Workers – 3.8 %

\* Non household industrial workers and other workers – 41.6 %

→ Male workers out-number female workers in all the three sectors in the country.

X ===== X

## CHAPTER 4

### HUMAN SETTLEMENTS

- \* **Human Settlement** means cluster of dwellings of any type or size where human beings live.
- \* The sparsely located small settlements, specialising in agriculture or other primary activities are called **villages**
- \* Larger settlements specialising in secondary and tertiary activities are termed as **urban settlements**

#### THE BASIC DIFFERENCES BETWEEN RURAL AND URBAN SETTLEMENTS

RURAL	URBAN
<ul style="list-style-type: none"> <li>● Derive their life support or basic needs from <b>land based primary economic activities</b></li> </ul>	<ul style="list-style-type: none"> <li>● depend on <b>processing of raw materials and manufacturing of finished goods (secondary activities) and a variety of services ( tertiary, quaternary and quinary activities)</b></li> </ul>
<ul style="list-style-type: none"> <li>● provides food and raw materials to the urban area</li> </ul>	<ul style="list-style-type: none"> <li>● Cities act as nodes of economic growth</li> <li>● provides goods and services not only to the urban dwellers but to the people of rural area in their hinterlands</li> </ul>
<ul style="list-style-type: none"> <li>● Rural people are <b>less mobile</b> and social relations among them are <b>intimate</b></li> </ul>	<ul style="list-style-type: none"> <li>● life is <b>complex and fast</b>, and social relations are <b>formal</b></li> </ul>

#### RURAL SETTLEMENTS IN INDIA

- \* Types of the settlement are determined by the extent of the built-up area and inter-house distance

#### THE FACTORS AND CONDITIONS RESPONSIBLE FOR HAVING DIFFERENT TYPES OF RURAL SETTLEMENTS IN INDIA

1. **Physical features** – nature of terrain, altitude, climate and availability of water
2. **Cultural and ethnic factors** – social structure, caste and religion
3. **Security factors** – defence against thefts and robberies

#### RURAL SETTLEMENTS IN INDIA CAN BROADLY CLASSIFIED INTO FOUR TYPES .(CLASSIFICATION OF RURAL SETTLEMENTS IN INDIA)

1. CLUSTERED / AGGLOMERATED / NUCLEATED
2. SEMI-CLUSTERED / FRAGMENTED
3. HAMLETED
4. DISPERSED / ISOLATED.



**1. CLUSTERED / AGGLOMERATED / NUCLEATED SETTLEMENTS**

- Compact or closely built up area of houses
- General living area is distinct and separated from the surrounding farms, barns and pastures
- The closely built-up area and its intervening streets present some recognisable pattern or geometric shape, such as rectangular, radial, linear etc.
- Found in fertile alluvial plains (especially in Northern plains) and in the north eastern states
- The clustered settlements in Bundelkhand and Nagaland are formed by security or defence reasons
- Scarcity of water became the reason for developing clustered settlements in Rajasthan.

**2. SEMI-CLUSTERED / FRAGMENTED SETTLEMENTS**

- Formed as clustering in a restricted area of dispersed settlement OR formed from segregation or fragmentation of a large compact settlement
- One or more sections of the village society choose or is forced to live a little away from the main cluster or village
- People of lower strata of society and menial workers settle on the outer flanks of the village.
- Found in in the Gujarat plain and some parts of Rajasthan.

**3. HAMLETED SETTLEMENTS**

- Such settlement is fragmented into several units physically separated from each other bearing a common name.
- Hamlets are locally called panna, para, palli, nagla, dhani, etc.
- This segmentation of a large village is often motivated by social and ethnic factors
- Found in the middle and lower Ganga plain, Chhattisgarh and lower valleys of the Himalayas.

**4. DISPERSED / ISOLATED.**

- Appears in the form of isolated huts or hamlets of few huts
- Found in remote jungle or on small hills with farms or pasture on the slopes
- Developed due to the rugged topography
- Found in Meghalaya, Uttarakhand, Himachal Pradesh, Kerala

**URBAN SETTLEMENTS IN INDIA**

\* Urban settlements are generally compact and larger in size

\* On the basis of their **evolution** in different periods, **Indian towns** may be classified as:-

ANCIENT TOWNS	MEDIEVAL TOWNS	MODERN TOWNS
<ul style="list-style-type: none"> <li>◆ Historical background over 2000 years</li> <li>◆ Most of them developed as religious and</li> </ul>	<ul style="list-style-type: none"> <li>◆ Developed as headquarters of principalities and kingdoms</li> <li>◆ <b>Delhi</b></li> </ul>	<ul style="list-style-type: none"> <li>◆ Developed by British and other Europeans</li> <li>◆ <b>Mumbai</b></li> <li>◆ <b>Chennai</b></li> </ul>

cultural centres	<ul style="list-style-type: none"> <li>◆ <b>Hyderabad</b></li> <li>◆ <b>Jaipur</b></li> <li>◆ <b>Lucknow</b></li> <li>◆ <b>Agra</b></li> <li>◆ <b>Nagpur.</b></li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>Kolkata</b></li> <li>◆ <b>Surat</b></li> <li>◆ <b>Daman</b></li> <li>◆ <b>Goa</b></li> <li>◆ <b>Pondicherry</b></li> <li>◆ <b>Jamshedpur</b></li> </ul>
<ul style="list-style-type: none"> <li>◆ <b>Varanasi</b></li> <li>◆ <b>Prayag (Allahabad),</b></li> <li>◆ <b>Pataliputra (Patna), Madurai</b></li> </ul>		

- ➔ **Administrative headquarters** developed after Independence - **Chandigarh, Bhubaneswar, Gandhinagar, Dispur**
- ➔ **Industrial centres** developed after independence - **Durgapur, Bhilai, Sindri, Barauni**

**Satellite towns around Delhi - Ghaziabad, Rohtak, Gurugram**

### **URBANISATION IN INDIA**

- \* **Urbanization** is the increase in the proportion of people living in towns and cities
- \* The **level of urbanisation** is measured in terms of percentage of urban population to total population
- \* The level of urbanisation in India (2011) - 31.16 %

**Most Urbanised State in India- Tamil Nadu**

**Largest Urban Agglomeration (UA) in India- Greater Mumbai**

### **URBAN AGGLOMERATION (UA)**

- \* Majority of metropolitan and mega cities are urban agglomerations.
- \* An urban agglomeration may consist of any one of the following three combinations:
  - (i) a town and its adjoining urban outgrowths,
  - (ii) two or more contiguous towns with or without their outgrowths,
  - (iii) a city and one or more adjoining towns with their outgrowths
 together forming a contiguous spread.

### **FUNCTIONAL CLASSIFICATION OF TOWNS**

\* On the basis of dominant or specialised functions, Indian cities and towns can be broadly classified as follows :-

- **ADMINISTRATIVE TOWNS AND CITIES** -
  - Towns supporting administrative headquarters of higher order
  - Eg :- Chandigarh, New Delhi, Bhopal, Shillong, Guwahati, Imphal, Srinagar, Gandhinagar, Jaipur, Chennai
- **INDUSTRIAL TOWNS** -
  - Industries constitute prime motive force
  - Eg :- Mumbai, Salem, Coimbatore, Modinagar, Jamshedpur, Hugli, Bhilai
- **TRANSPORT CITIES**
  - May be ports primarily engaged in export and import activities

- Eg:- Kandla, Kochchi, Kozhikode, Vishakhapatnam (port cities)  
Agra, Dhulia, Mughal Sarai, Itarsi, Katni (Hubs of inland transport )
- **COMMERCIAL TOWNS**
- Specialising in trade and commerce
- Eg:- Kolkata, Saharanpur, Satna
- **MINING TOWNS**
- Towns have developed in mineral rich areas
- Eg:- Raniganj, Jharia, Digboi, Ankaleshwar, Singrauli
- **GARRISSON CANTONMENT TOWNS**
- Emerged as garrison towns
- Eg:- Ambala, Jalandhar, Mhow, Babina, Udhampur
- **EDUCATIONAL TOWNS**
- Starting as centres of education
- Eg:- Roorki, Varanasi, Aligarh, Pilani, Allahabad
- **RELIGIOUS AND CULTURAL TOWNS**
- Prominence due to their religious/cultural significance.
- Eg:- Varanasi, Mathura, Amritsar, Madurai, Puri, Ajmer, Pushkar, Tirupati, Kurukshetra, Haridwar, Ujjain
- **TOURIST TOWNS**
- Tourist destinations
- Eg:- Nainital, Mussoorie, Shimla, Pachmarhi, Jodhpur, Jaisalmer, Udagamandalam (Ooty), Mount Abu

X ===== X

## **CHAPTER 5 – LAND RESOURCES AND AGRICULTURE**

- Land use records are maintained by- land revenue department
- The Survey of India is the agency for measuring geographical area of administrative units in India

**The land-use categories** as in the Land Revenue Records are as follows:-

1. Forests - Forests is the area which the Government has identified and demarcated for forest growth
2. Barren and Wastelands – The area normally cannot be brought under cultivation with the available technology. Eg- barren hilly terrains, desert lands, ravines
3. Land put to Non-agricultural Uses - Land under settlements, infrastructure, industries, shops, etc. are included in this category
4. Area under Permanent Pastures and Grazing Lands - Most of this type land

is owned by the village 'Panchayat' or the Government. (The land owned by the village panchayat comes under 'Common Property Resources')

**5. Area under Miscellaneous Tree Crops and Groves** (Not included in Net sown Area) - The land under orchards and fruit trees are included in this category

**6. Culturable Wasteland** - Any land which is left fallow (uncultivated) for **more than five years** is included in this category

**7. Current Fallow** - This is the land which is left **without cultivation for one or less than one agricultural year**

**8. Fallow other than Current Fallow** - This is also a cultivable land which is left **uncultivated for more than a year but less than five years**

**9. Net Area Sown** - The physical extent of land on which crops are sown and harvested is known as net sown area.

### **LAND USE CHANGES IN INDIA**

- Land-use in a region, is influenced by the nature of economic activities carried out in that region.
- There are three types of changes that an economy undergoes, which affect land-use

#### **a) The size of the Economy**

- The size of the economy grows over time as a result of increasing population, change in income levels, available technology and associated factors.
- As a result, the pressure on land will increase with time and marginal lands would come under use.

#### **b) The Composition Of The Economy**

- ◆ The secondary and the tertiary sectors usually grow much faster than the primary sector.
- ◆ This type of change is common in developing countries
- ◆ This process would result in a gradual shift of land from agricultural uses to non agricultural uses.

#### **c) Pressure On Land For Agricultural Activities**

- Though the contribution of the agricultural activities reduces over time, the pressure on land for the same does not decline.
- In developing countries, the share of population dependent on agriculture usually declines much more slowly compared to the decline in the sector's share in GDP

### **LAND CATEGORIES**

\* According to ownership, land can broadly be classified under two broad heads – **private land and common property resources (CPRs)**

#### **Private land**

- Land owned by an individual or a group of individuals

#### **Common Property Resources (CPRs)**

- x Land **owned by the state** meant for the use of the community
- x CPRs provide fodder for the livestock and fuel for the households along with

- other minor forest products like fruits, nuts etc.
- x CPRs can be defined as community's natural resource, where every member has the right of access and usage with specified obligations, without anybody having property rights over them
  - x Eg- Community forests, pasture lands, village water bodies and other public spaces

The cropping intensity (CI) is calculated as follows :

$$\text{Cropping Intensity in percentage} = \frac{\text{GCA}}{\text{NSA}} \times 100$$

GCA = Gross Cultivated Area

NSA = Net Sown Area

### CROPPING SEASONS IN INDIA

- There are three distinct crop seasons in the northern and interior parts of country, namely;
  1. **kharif**
  2. **rabi**
  3. **zaid**.

#### The kharif season

- Largely **associates with South west Monsoon**
- Cultivation of tropical crops, such as **rice, cotton, jute, jowar, bajra and tur** is possible

#### The rabi season

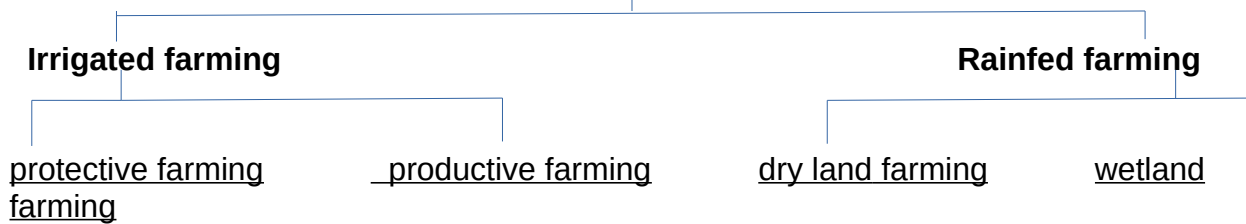
- ➔ **Begins** with the onset of winter in **October-November** and **ends in March - April**.
- ➔ The **low temperature conditions** during this season **facilitate the cultivation of temperate and subtropical crops**
- ➔ **Wheat, gram and mustard**.

#### Zaid

- x It is a **short duration summer cropping season**
- x **Begins** after harvesting of rabi crops.
- x **Watermelons, cucumbers, vegetables and fodder crops** during this season is done on irrigated lands.

<u>CROPPING SEASONS</u>	<u>MONTHS</u>	<u>CROPS CULTIVATED</u>
<b>Kharif</b>	<b>June-September</b>	Rice, Cotton, Bajra, Maize, Jowar, Tur
<b>Rabi</b>	<b>October – March</b>	Wheat, Gram, Rapeseeds and Mustard, Barley
<b>Zaid</b>	<b>April–June</b>	Vegetables, Fruits, Fodder

## TYPES OF FARMING



On the basis of **main source of moisture for crops**, the farming can be classified as;

1. Irrigated Farming
2. Rainfed Farming (barani).

### 1. Irrigated farming

Based on the nature of irrigated farming, as well as the objective of irrigation, this type of farming is of two types:-

- a) Protective farming
- b) Productive farming

#### a) Protective farming

- The objective is to protect the crops from **adverse effects of soil moisture deficiency**
- Here, **irrigation acts as a supplementary source of water** over and above the rainfall.
- This is meant to **provide soil moisture to maximum possible area**.

#### b) Productive irrigation farming

- ➔ It is meant to **provide sufficient soil moisture in the cropping season to achieve high productivity**.
- ➔ In such irrigation the **water input per unit area of cultivated land is higher than protective irrigation**.

### 2. Rainfed farming

Based on the adequacy of soil moisture during cropping season, this type of farming is further classified into;

- a) Dryland farming
- b) Wetland farming.

#### a) Dryland farming

- ◆ It is largely **confined to the regions having annual rainfall less than 75 cm**.
- ◆ These regions **grow hardy and drought resistant crops** such as **ragi, bajra, moong, gram and guar** (fodder crops)
- ◆ Practise various measures of soil moisture conservation and rain water harvesting.

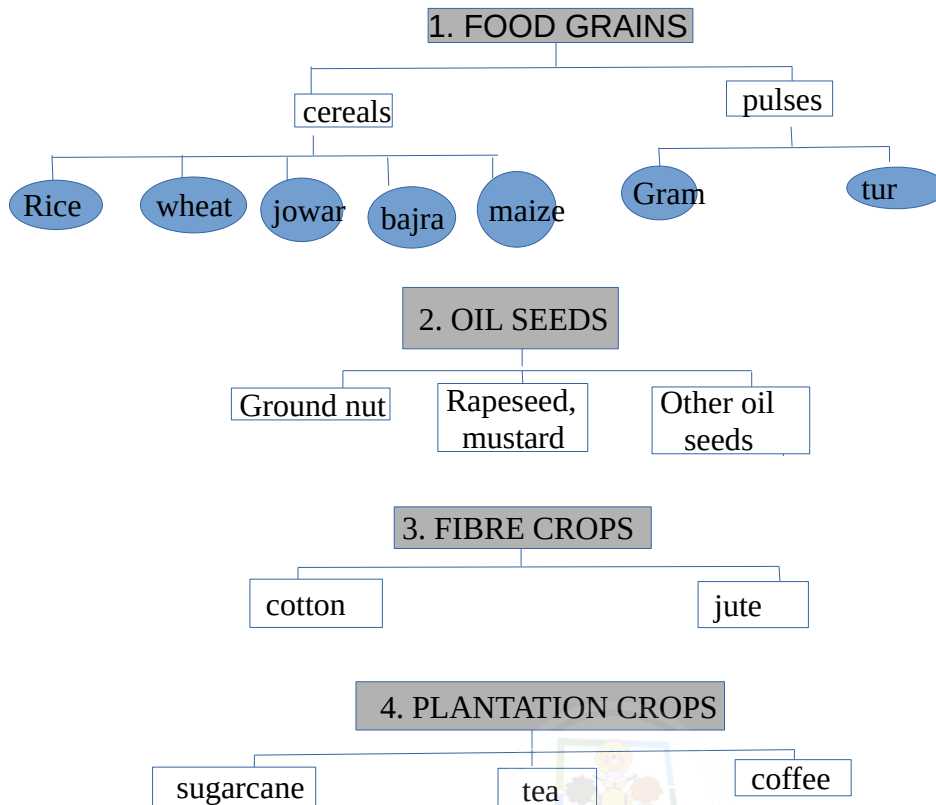
#### b) Wetland farming

- x Here, the **rainfall is in excess of soil moisture requirement of plants** during rainy season. Such regions may face flood and soil erosion hazards.
- x These areas **grow various water intensive crops** such as **rice, jute and sugarcane**



x **Practise aquaculture in the fresh water bodies.**

## **CROPPING PATTERN**



### **I. Food Grains**

- Occupy about **two-third of total cropped area** in the country
- On the basis of the structure of grain the foodgrains are **classified as cereals and pulses.**

#### **a) Cereals**

- Occupy about 54 per cent of total cropped area
- Cereals can be classified as fine grains (rice, wheat) and coarse grains (jowar, bajra, maize, ragi)

#### **i) Rice**

- ✓ A crop of tropical humid areas
- ✓ In West Bengal farmers grow three crops of rice called '**aus**', '**aman**' and '**boro**'
- ✓ India contributes 21.6 per cent of rice production
- ✓ **India ranked second** after China
- ✓ **West Bengal is the leading producer of rice**

#### **ii) Wheat**

- Wheat is the second most important cereal crop in India
- India produces about 12.3%
- It is primarily a crop of temperate zone, hence **produce in rabi season**
- **Uttar pradesh** is the leading producer of wheat

#### **iii. Jowar**

- x **Maharashtra** is the leading producer
- x Occupy about 5.3 per cent of total cropped area

**iv. Bajra**

- It is cultivated in hot and dry climatic regions of the country
- It is a hardy crop which resists frequent dry spells and drought
- occupies about 5.2 per cent of total cropped area
- **Maharashtra** is the leading producer

**V. Maize**

- ➔ It is a food as well as fodder crop grown under semi-arid climatic conditions
- ➔ Occupies about 3.6 per cent of total cropped area
- ➔ **Madhya Pradesh** is the leading producer

**b) Pulses**

- ◆ These are rich sources of proteins.
- ◆ These are legume crops which increase the natural fertility of soils through nitrogen fixation
- ◆ **India is a leading producer of pulses in the world**
- ◆ The cultivation is largely concentrated in the drylands of Deccan and central plateaus and northwestern parts of the country
- ◆ **Gram and tur** are the main pulses cultivated in India.

**i. Gram**

- ✓ A rainfed crop cultivated during rabi season
- ✓ **Madhya Pradesh** is the leading producer

**ii. Tur**

- It is also known as red gram or pigeon pea
- A rainfed crop of dry land-land
- **Maharashtra** is the leading producer

**II. Oil Seeds**

- The oilseeds are for extracting edible oils
- Occupy about 14 per cent of total cropped area
- Drylands of Malwa plateau, Marathwada, Gujarat, Rajasthan, Telangana, Rayalseema region of Andhra Pradesh and Karnataka plateau are oilseeds growing regions of India.
- **Groundnut, rapeseed and mustard, soyabean and sunflower** are the main oilseed crops

**a) Groundnut**

- ✓ India produces about 16.6 per cent of the total groundnut production
- ✓ A rainfed kharif crop of drylands
- ✓ **Gujrat** is the leading producer

**b) Rapeseed and Mustard**

- x Comprise several oilseeds as rai, sarson, toria and taramira.
- x **These are frost sensitive crops**
- x **Rajasthan** is the leading producer

**c) Other Oil Seeds**

- ✓ Soyabean and sunflower are other important oilseeds grown in India
- ✓ **Madhya Pradesh** is the leading producer of soyabean
- ✓ **Karnataka** is the leading producer of sun flower

**III. Fibre Crops**

Cotton and jute are two main fibre crops

**a) Cotton**

- x Cotton is a tropical crop grown in kharif season
- x India lost a large proportion of cotton growing area to Pakistan during partition

- x India grows both short staple (Indian) cotton as well as long staple (American) cotton called 'nama'
- x **India ranks second** in the world in the production of cotton
- x **Maharashtra** is the leading producer

#### b) Jute

- x Jute is used for making coarse cloth, bags, sacks and decorative items
- x It is a cash crop in West Bengal
- x India lost large jute growing areas to East Pakistan (Bangladesh) during partition
- x India produces about three-fifth of jute production of the world
- x **West Bengal** is the leading producer

### IV. Other Crops / Plantation Crops

#### a) Sugarcane

- A crop of tropical areas
- **Uttar Pradesh** is the leading producer of sugarcane
- India is the second largest producer of sugarcane after Brazil
- It accounts for about 19 per cent of the world production

#### b) Tea

- Tea is a plantation crop used as beverage
- It is an indigenous crop of hills in northern China
- In India, tea plantation started in 1840s in Brahmaputra valley of Assam
- Accounts for about 21.1% of total production
- **India ranks second** among tea exporting countries in the world
- **Assam** is the leading producer

#### c) Coffee

- Coffee is a tropical plantation crop.
- There are three varieties of coffee i.e. arabica, robusta and liberica.
- India mostly grows superior quality coffee, **arabica**, which is in great demand in International market
- India produces about 3.7% of total production
- **Karnataka** is the leading producer

### AGRICULTURAL DEVELOPMENT IN INDIA

#### \* **THREE ACTIONS** OF THE GOVT. TO INCREASE FOOD GRAINS PRODUCTION **AFTER INDEPENDENCE**

1. switching over from cash crops to food crops
2. Intensification of cropping over already cultivated land
3. Increasing cultivated area by bringing cultivable and fallow land under plough

#### \* **TWO PROGRAMMES** TO OVERCOME STAGNATION IN AGRICULTURAL PRODUCTION DURING **LATE 1950s.**

- 1) *Intensive Agricultural District Programme*
- 2) *Intensive Agricultural Area Programme*

**GREEN REVOLUTION -1960s.-** A package technology of HYVs of seeds, Chemical fertilizers and Irrigation facilities.

In 1960s, a new programme was launched in Mexico, that is new seed varieties of wheat and rice were made available for cultivation which was able to increase the production of food grains. This programme is known as Green

Revolution. India took this advantage to produce food grains largely in the irrigated lands of Haryana, Punjab, U.P, Gujrat, and Andhra Pradesh

#### **\* DURING 1980s.**

- The Planning Commission of India focused on the problems of agriculture in rainfed areas
- Agro – Climatic Plan in 1988
- Emphasised on the need for diversification of agriculture and harnessing of resources

#### **National Mission for Sustainable Agriculture (NMSA)**

Objectives :-

- To make agriculture more productive, sustainable, remunerative and climate resilient
- To conserve natural resources through appropriate soil and moisture conservation measures.

#### **Two organic farming schemes under NMSA**

1. Paramparagat Krishi Vikas Yojana (PKVY)
2. Rashtriya Vikas Yojana (RKVY).

#### **Farmers Portal Of India**

- ◆ Online platform for farmers to seek any information related to agriculture
- ◆ Information like insurance, crops, seeds, pesticides, farm machineries, welfare schemes, etc. are provided.

#### **PROBLEMS OF INDIAN AGRICULTURE**

- x **Dependence on Erratic Monsoon**
- x **Low productivity**
- x **Constraints of Financial Resources and Indebtedness**
- x **Lack of Land Reforms**
- x **Small Farm Size and Fragmentation of Landholdings**
- x **Lack of Commercialisation**
- x **Vast Underemployment**
- x **Degradation of Cultivable Land**

#### **Dependence on Erratic Monsoon**

- ◆ Majority of the cultivated land directly depends on rain
- ◆ Poor performance of SW monsoon adversely affects the canal water for irrigation
- ◆ Rainfall in drought prone areas is unreliable
- ◆ Drought and floods remains to be the twin threats in Indian agriculture.

#### **Low productivity**

- ✓ Yield of the crops per hectare in the country is low in comparison to the international level
- ✓ Labour productivity is also very low because of the high pressure on the land
- ✓ The vast rainfed areas of the country, particularly drylands have low yields

#### **Constraints of Financial Resources and Indebtedness**

- The resource intensive approach is unmanageable for marginal and small

farmers

- Crop failures and low return from agriculture have forced them to fall in the trap of indebtedness.

### **Lack of Land Reforms**

- Land reforms were not implemented effectively due to lack of strong political will
- Results unequal distribution of cultivable land which hinders agricultural development

### **Small Farm Size and Fragmentation of Landholdings**

- ◆ The average size of land is shrinking under increasing population pressure.
- ◆ The landholdings are mostly fragmented.
- ◆ The small size fragmented landholdings are uneconomic

### **Lack of Commercialisation**

- ➔ A large number of farmers produce crops for self consumption.
- ➔ Most of the farmers do not have enough land to produce more than their requirement.
- ➔ Modernization and commercialisation of agriculture developed only in the irrigated areas

### **Vast Underemployment**

- Seasonal unemployment ranging from 4 to 8 months
- Do not have the opportunity to work round the year

### **Degradation of Cultivable Land**

- A large tract of agricultural land has lost its fertility due to alkalisation and salinisation of soils and water logging
- Excessive use of chemicals has led to their concentration in toxic amounts in the soil profile.
- Rainfed areas in humid and semi arid tropics experience degradation like soil erosion and wind erosion

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## **CHAPTER 6 WATER RESOURCES**

- **71%** of the earth's surface is covered with it but freshwater constitutes only about **3 %** of the total water.

### **WATER RESOURCES OF INDIA**

- India accounts 4% of the world's water resources
- The total water available from precipitation in the country in a year is about 4,000 cubic km.
- The availability from surface water and replenishable groundwater is 1,869 cubic km.
- But the total utilisable water resource in the country is only 1,122 cubic km.

### **Water Resources can be Grouped into 2**

#### **a) Surface water resources**

- There are four major sources of surface water - rivers, lakes, ponds and tanks

- In the country, there are about 10,360 rivers and their tributaries longer than 1.6 km each
- The mean annual flow in all the river basins is about 1,869 cubic km.
- However, due to topographical, hydrological and other constraints, only about 690 cubic km (32 per cent) of the available surface water can be utilised

#### **b) Ground Water Resource**

- The total replenishable groundwater resources in the country are about 432 cubic km.
- The groundwater utilisation is very high in the states of Punjab, Haryana, Rajasthan, and Tamil Nadu
- States like Chhattisgarh, Odisha, Kerala, etc., which utilise only a small proportion of their groundwater potentials

#### **Lagoons and Backwaters**

India has a vast coastline and the coast is very narrow in some states. Due to this, a number of lagoons and lakes have formed. The States like Kerala, Odisha and West Bengal have vast surface water in these lagoons and lakes. The water of lagoons and lakes is brackish in nature, but can be used for fishing and irrigating lands of paddy crops, coconut, etc.

#### **WATER PROBLEMS**

1. Deterioration of water quality
2. Water pollution

**Ganga and Yamuna are the two highly polluted rivers in the country**

#### **WATER CONSERVATION AND MANAGEMENT**

The steps for conserving water resources are :-

##### **a) Prevention of water pollution**

- The Prevention and Control of Pollution Act – 1974
- Environment Protection Act – 1986
- The Water Cess Act - 1977

##### **b) Develop water saving technologies**

##### **c) Encourage watershed management**

##### **Watershed Management**

- Watershed management basically refers to **efficient management and conservation of surface and groundwater resources.**
- It involves **prevention of run off and storage and recharge of groundwater through various methods like percolation tanks, recharge wells, etc.**

##### **Haryali project**

- Haryali is a **watershed development project** sponsored by the **Central Government** which aims at **enabling the rural population to conserve water** for drinking, irrigation, fisheries and afforestation.
- The Project is being **executed by Gram Panchayats with people's participation**

##### **Neeru – Meeru & Arvari pani sansad**

- **Neeru-Meeru** (Water and You) programme (in Andhra Pradesh) and **Arvary Pani Sansad** (in Alwar, Rajasthan) have taken up **constructions of various water-harvesting structures such as percolation tanks, dug out ponds,**



check dams, etc., through people's participation

#### d) Rainwater harvesting

- x Rainwater harvesting is a method to capture and store rainwater for various uses.
- x It is also used to recharge groundwater aquifers.
- x It is a low cost and eco-friendly technique for preserving every drop of water by guiding the rain water to borewell, pits and wells.
- x Rainwater harvesting increases water availability, checks the declining groundwater table etc.
- x **Rainwater harvesting has been practiced through various methods**
  1. Harvesting through Watershed management
  2. Harvesting through Lakes
  3. Harvesting through Service wells
  4. Harvesting through Recharge wells

#### e) Water recycle and reuse

#### f) Sustainable use of water

X ===== X

### CHAPTER 7

## MINERAL AND ENERGY RESOURCES

\* A **mineral** is a natural substance of organic or inorganic origin with definite chemical and physical properties.



#### Characteristics of Mineral Resources

- Distribution over the earth surface is uneven
- Inverse relationship in quantity and quality of minerals i.e. good quality minerals are less in quantity as compared to low quality minerals
- Minerals are exhaustible over time
- Once they are used cannot be replenished immediately

#### Distribution of Minerals in India

- x Most of the metallic minerals in India occur in the peninsular plateau region in the old crystalline rocks
- x Over 97 % of coal reserves occur in the valleys of Damodar, Sone, Mahanadi and Godavari
- x Petroleum reserves are located in the sedimentary basins of Assam, Gujarat and Mumbai High
- x Minerals are generally located on three broad belts in India
  - 1. The North-Eastern Plateau Region**
    - ◆ This belt includes the regions of Chotanagpur (Jharkhand), Odisha Plateau, West Bengal and parts of Chhattisgarh
    - ◆ Important minerals are iron ore, coal, manganese, bauxite and mica
    - ◆ Most of the iron and steel industries are located here
  - 2. The South-Western Plateau Region**
    - x This belt extends over Karnataka, Goa, uplands of Tamil Nadu and Kerala
    - x Rich in ferrous metals and bauxite
    - x **Major Minerals:** Iron ore, manganese and limestone
    - x This belt packs in coal deposits except **Neyveli lignite**

- x **Kerala** has deposits of monazite and thorium, bauxite clay
- x **Goa** have Iron ore deposit

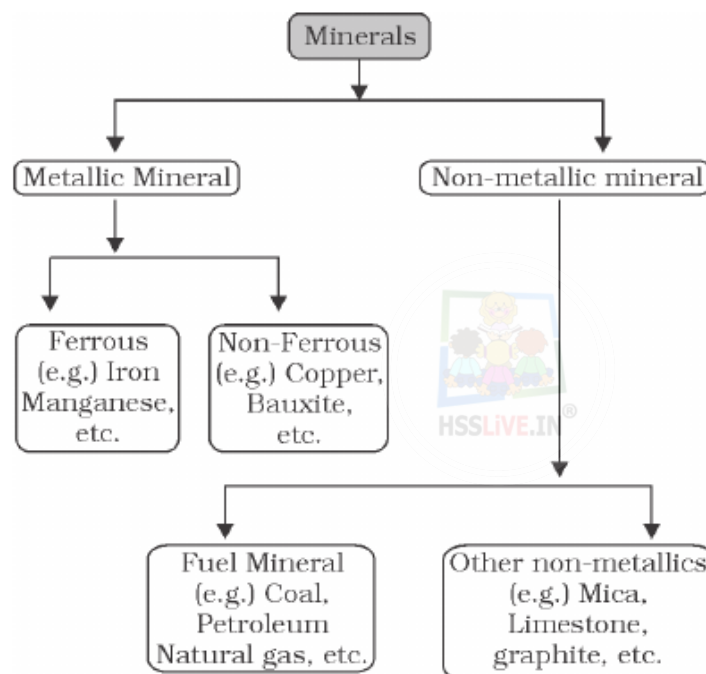
### **3. The North-Western Regions**

- ✓ Minerals are associated with Dharwar system of rocks
- ✓ This belt extends along Aravali in Rajasthan and part of Gujarat
- ✓ Major Minerals: Copper, zinc
- ✓ **Rajasthan is rich in building stones** i.e. sandstone, granite, marble
- ✓ Gujarat and Rajasthan have rich sources of salt
- ✓ **Gujarat** also known for petroleum deposit.

#### **Himalayan Belt**

- Minerals occur on both the eastern and western parts
- Major Minerals: copper, lead, zinc, cobalt and tungsten
- Assam valley has mineral oil deposits

### **TYPES OF MINERAL RESOURCES / CLASSIFICATION OF MINERALS**



**Fig. 7.1 : Classification of Minerals**

**On the basis of chemical and physical properties**, minerals may be grouped under two main categories

#### **1. Metallic Minerals**

#### **2. Non-metallic Minerals**

##### **1. Metallic Minerals**

➔ Metallic minerals are the sources of metals

Eg: Iron ore, Copper, Gold

➔ Metallic minerals are further divided into **ferrous and non-ferrous metallic minerals**

##### **a. Ferrous Minerals**

- x Minerals which have **iron content**
- x Eg:- Iron ore, Manganese

##### **b. Non-ferrous Minerals**

- Do not have iron content

- Eg:- Copper, Bauxite, etc

## 2. Non-metallic Minerals

- x These minerals **do not have contents of metals**
- x They are further classified into -**Fuel minerals and other Non-metallic minerals**

### a. Fuel Minerals or Organic Minerals

- These are **made up of organic matter** of buried animal and plants
- Eg:- Coal, Petroleum

### b. Other non-metallic or Inorganic Minerals

- x Eg:- Mica, Limestone, Graphite, etc.

## MAJOR MINERALS AND THEIR DISTRIBUTION

### 1. Metallic Minerals

#### a. Ferrous Minerals

- India is well placed in respect of ferrous minerals like iron-ore, manganese, chromite, etc
- These minerals provide a strong base for the development of metallurgical industries

#### i. Iron ore

- x India has largest iron ore reserves in Asia
- x The **two main types** of ore found in our country are **Haematite and Magnetite**
- x It has great demand in international market due to its superior quality
- x The iron ore mines occur in close proximity to the coal fields in the north-eastern plateau region of the country
- x About 95 per cent of total reserves of iron ore is located in the States of **Odisha**, Jharkhand, Chhattisgarh, Karnataka, Goa, Telangana, Andhra Pradesh and Tamil Nadu

#### I. Odisha

Iron ore occurs in a series of **hill ranges** in Sundergarh, Mayurbhanj and Jhar  
**The important mines** - Gurumahisani, Sulaipet, Badampahar, Kiruburu and Bonai

#### II. Jharkhand

It has oldest mines and most of the iron and steel plant in India

**Important mines** - Noamundi and Gua in Poorbi and Paschimi Singhbhum districts

#### III. Karnataka

Iron ore deposits **occur in Sandur-Hospet area of Ballari district**  
**Baba Budan hills and Kudremukh** in Chikkamagaluru district

**IV. Maharashtra** - Chandrapur, Bhandara and Ratnagiri districts

**V. Tamil Nadu** - Salem and Nilgiri districts

### **II. Manganese**

- Manganese is an important raw material for **smelting of iron ore and also used for manufacturing Ferro alloys**
- It is mainly associated with **Dharwar rocks**
- Leading producer of Manganese : **Odisha**

#### I. Odisha

**Major mines** - Bonai, Kendujhar, Sundergarh, Gangpur, Koraput, Kalahandi

**II. Karnataka** - Dharwar, Ballari, Belagavi, North Canara, Chikkmagaluru, Shivamogga, Chitradurg and Tumakuru

**III. Maharashtra** - Nagpur, Bhandara and Ratnagiri districts

**IV. Madhya Pradesh** - Extends in a belt in Balaghat-Chhindwara-Nimar-Mandla and Jhabua districts

## **b. Non- Ferrous minerals**

### **I. Bauxite**

- Bauxite is the ore which is **used in manufacturing of Aluminium**
- Bauxite is **found mainly in tertiary deposits**
- Associated with **laterite rocks on the plateau** or hill ranges of peninsular India and also in the coastal area
- Largest producer of Bauxite- **Odisha**

### **I. Odisha**

**Important producing areas** - Kalahandi, Sambalpur, Bolangir and Koraput

**II. Jharkhand** - Patlands of Jharkhand in Lohardaga

**III. Gujarat** - Bhavanagar and Jamnagar

**IV. Chattisgarh** - Amarkanatak plateau region

**V. Madhya Pradesh**- Katni-Jabalpur area and Balaghat

### **II. Copper**

- x Copper is an indispensable metal in the electrical industry for making wires, electric motors, transformers and generators
- x It is alloyable, malleable and ductile
- x It is also **mixed with gold** to provide strength to jewellery

**I. Jharkhand**- Leading Copper Producing State ;Singhbhum district

**II. Madhya Pradesh** - Balaghat

**III. Rajasthan** - Jhunjhunu and Alwar

**IV. Andhra Pradesh** - Agnigundala in Guntur district

**V. Karnataka** - Chitradurg and Hasan

**V. Tamil Nadu** - South Arcot district

## **2. Non – Metallic minerals**

- Important Non-Metallic Mineral - Mica
- Others: limestone, dolomite and phosphate

### **I. Mica**

- x Mica is mainly **used in the electrical and electronic industries**
- x It can be split into very thin sheets which are tough and flexible

**I. Jharkhand** - **leading producer** of Mica

Hazaribagh plateau produces a high quality of mica

**II. Andhra Pradesh**- Nellore district

**III. Rajasthan**- A 320 km long belt from Jaipur to Bhilwara near Udaipur

**IV. Karnataka**- Mysore and Hasan

**V. Tamil Nadu** - Coimbatore, Tiruchirappalli, Madurai and Kanniyakumari

**VI. Kerala**- Alleppey

## **ENERGY RESOURCES**

**Two types -conventional or non-conventional energy resources**

### **1. Conventional Sources of Energy or Non-renewable Source of Energy**

- ◆ Exhaustible resources
- ◆ Eg:- fossil fuels like coal, petroleum and natural gas and Nuclear Energy

### **i. Coal**

- x Used for generation of thermal power and smelting of iron ore
- x Coal occurs in rocks mainly of two geological ages, Gondwana and tertiary deposits
- x About 80 per cent of the coal deposits in India is of **bituminous type** and is of non-coking grade

#### **Gondwana Coal Fields**

- Located in Damodar Valley
- They lie in Jharkhand-Bengal coal belt
- Important coal fields - Raniganj, Jharia, Bokaro, Giridih, Karanpura
- **Largest coal field- Jharia** followed by Raniganj

#### **Tertiary Coal Fields**

- x Tertiary coals occur in Assam, Arunachal Pradesh, Meghalaya and Nagaland
- x Meghalaya - Darangiri, Cherrapunji, Mewlong and Langrin
- x Assam - Makum, Jaipur and Nazira

**The brown coal or lignite coal occurs in Neyveli of Tamil Nadu**

**Minerals which is known as brown diamond - Lignite**

### **ii. Petroleum**

- Petroleum is **known as liquid gold** because of its scarcity and diversified uses
- **Essential source of energy for all internal combustion engines** in automobiles, railways and aircraft
- Crude petroleum consists of hydrocarbons of liquid and gaseous states varying in chemical composition, colour and specific gravity
- It is also **used as a raw material in petrochemical industries** to produce fertilizer, synthetic rubber, synthetic fibre, medicines, vaseline, lubricants, wax soap and cosmetics, etc.
- Crude petroleum occurs in sedimentary rocks of the tertiary period
- Oil exploration and production was systematically taken up by Oil and Natural Gas Commission (ONGC) set up in 1956
- **Assam** - Digboi, Naharkatiya and Moran
- **Gujarat** - Ankaleshwar, Kalol, Mehsana, Nawagam, Kosamba and Lunej
- **Mumbai High** which lies 160 km off Mumbai was discovered in 1973 and production commenced in 1976
- There are total 21 refineries as on June 2011.
- There are two types of oil refineries in India:
  1. **Field Based Refineries** – Eg:- Digboi
  2. **Market Based Refineries** – Eg :- Barauni

### **iii. Natural Gas**

- x The Gas Authority of India Limited(GAIL) was set up in 1984 as a public sector undertaking to transport and market natural gas
- x Exclusive reserves have been located along the eastern coast (Tamil Nadu, Odisha and Andhra Pradesh) as well as Tripura, Rajasthan and off-shore wells in Gujarat and Maharashtra

### **iv. Nuclear Energy Sources**

- ✓ Nuclear energy has emerged as a viable source in recent times

- ✓ Important minerals used for the generation of nuclear energy are Uranium and Thorium

### Uranium Deposits in India

- It is found in **Dharwar rock system**

**Jharkhand** - Singhbhum (along with the copper belt)

**Rajasthan** - Udaipur, Alwar, Jhunjhunu districts

**Chhattisgarh** - Durg district

**Maharashtra** - Bhandara district

**Himachal Pradesh** - Kullu district

### Thorium Deposits in India

- Thorium is mainly obtained from **monazite and ilmenite** in the beach sands of Kerala and Tamil Nadu
- World's richest monazite deposits occur in Palakkad and Kollam districts of Kerala

### History of Nuclear Energy in India

- Atomic Energy Commission was established in **1948**
- Progress could be made only after the establishment of the **Atomic Energy Institute at Trombay in 1954** which was renamed as the **Bhabha Atomic Research Centre in 1967**

### Important Nuclear Projects

**Tarapur** (Maharashtra), **Rawatbhata** near Kota (Rajasthan), **Kalpakkam** (Tamil Nadu), **Narora** (Uttar Pradesh), **Kaiga** (Karnataka) and **Kakarapara** (Gujarat)

## 2. Non-Conventional or Renewable Energy Sources

- ➔ These are the **only renewable energy sources**.
- ➔ These energy sources are more **equitably distributed and environment-friendly**.
- ➔ The non-conventional energy sources will **provide more sustained, eco-friendly cheaper energy** after the initial cost is taken care of.
- ➔ Eg:- **Solar energy, wind energy, tidal and wave energy, geothermal energy and bio-energy**.

### i. Solar Energy

- Sun rays tapped in photovoltaic cells can be converted into energy
- The two effective processes to tap solar energy are photovoltaics and solar thermal technology
- It is cost competitive, environment friendly and easy to construct
- Solar energy is 7 per cent more effective than coal
- Used more in appliances like heaters, crop dryers, cookers, etc
- The western part of India has greater potential for the development of solar energy in **Gujarat and Rajasthan**

### ii. Wind Energy

- Wind energy is absolutely pollution free, inexhaustible source of energy
- The kinetic energy of wind, through turbines is converted into electrical energy
- The permanent wind systems such the trade winds, westerlies and seasonal wind like monsoon have been used as source of energy
- The country's potential of wind power generation exceeds 50,000 megawatts
- Rajasthan, Gujarat, Maharashtra and Karnataka, favourable conditions for wind energy



**iii. Tidal and Wave Energy**

- x Ocean currents are the store-house of infinite energy
- x Large Potential: West coast of India
- x But these waves have not yet been utilised properly because of lack of technology

**iv. Geothermal energy**

- ◆ When the magma from the interior of earth, comes out on the surface, tremendous heat is released and this heat energy can successfully be tapped and converted to electrical energy
- ◆ Apart from this, the hot water that gushes out through the geyser
- ◆ Eg- Manikaran in Himachal Pradesh
- ◆ The first successful (1890) attempt to tap the underground heat was made in the city of Boise, Idaho (U.S.A.)

**v. Bio-Energy**

- Bio-energy refers to energy derived from biological products which includes agricultural residues, municipal, industrial and other wastes
- It can be converted into electrical energy, heat energy or gas for cooking
- This will improve economic life of rural areas in developing countries
- Enhance self-reliance and reduce pressure on fuel wood
- Eg- Okhla in Delhi

**CONSERVATION OF MINERAL RESOURCES**

- ➔ Adoption of renewable resources like solar power, wind, geothermal energy
- ➔ Use of scrap metals
- ➔ Use of substitutes for scarce metals
- ➔ Export of strategic and scarce minerals must be reduced, so that the existing reserve may be used for a longer period

X ===== X

**CHAPTER - 9****PLANNING AND SUSTAINABLE DEVELOPMENT IN INDIAN CONTEXT****PLANNING**

Planning involves the **process of thinking, formulation of a scheme or programme and implementation of a set of actions to achieve some goal.**

- Generally, there are two approaches to planning;
  1. **sectoral planning**
  2. **regional planning.**

**1. Sectoral planning**

Sectoral planning means **formulation and implementation of the sets of schemes or programmes aimed at development of various sectors of the economy**, such as **agriculture, irrigation, manufacturing**, power, construction, transport, communication, social infrastructure and services.

**2. Regional planning**

There is no uniform economic development over space in any country. Some areas are more developed and some lag behind. **The planners have to view this in**



**a spatial perspective and should plan to reduce regional imbalance in development. This type of planning is termed as regional planning**

### **NITI Aayog**

- **Foremed on 1 January 2015**
- The Planning Commission was replaced by the NITI Aayog.
- NITI Aayog has been set up with the objective of involving the states in economic policy making for India for providing strategic and technical advice to the Central and State governments.

### **TARGET AREA PLANNING AND TARGET GROUP PLANNING**

- In order to check the regional and social disparities, the **planning commission introduced “ Target area” and “Target Group” approaches** to planning.
- The planning process has to take special care of those areas which have remained economically backward. The economic development of a region depends upon its resource base
- **Eg for target area programme:-**
  1. Command Area Development Programme
  2. **Drought Prone Area Development Programme**
  3. Desert Development Programme
  4. **Hill Area Development Programme**
- **Eg for target group programme**
  1. The Small Farmers Development Agency (SFDA)
  2. Marginal Farmers Development Agency ( MFDA)

### **Hill Area Development Programme**

- **Initiated during 5<sup>th</sup> FYP**
- Comprising all the hilly districts of **Uttar Pradesh** (present Uttarakhand), Mikir Hill and North Cachar hills of **Assam**, **Darjeeling district of West Bengal** and **Nilgiri district of Tamil Nadu**.
- The hill areas having the height above 600 m and not covered under tribal sub-plan be treated as backward hill areas
- These programmes aimed at harnessing the indigenous resources of the hill areas through development of horticulture,plantation, agriculture, animal husbandry, poultry, forestry and small-scale and village,industry

### **2. Drought Prone Area Development Programme**

- x **Initiated during 4<sup>th</sup> FYP**
- x **Aims at providing employment to the people in drought-prone areas and creating productive assets**
- x Programme laid emphasis on the construction of labour-intensive civil works
- x Broadly, the drought- area in India spread over semi-arid and arid tract of Rajasthan, Gujarat, Western Madhya Pradesh etc.

### **Integrated Tribal Development Project in Bharmaur\* Region**

- ◆ Bharmaur is inhabited by 'Gaddi', a tribal community who have maintained a distinct identity in the Himalayan region as they practised transhumance
- ◆ This area development plan was aimed at improving the quality of life of the Gaddis and narrowing the gap in the level of development between Bharmaur and other areas of Himachal Pradesh

### **SUSTAINABLE DEVELOPMENT**

Sustainable development can be defined as "a development that meets the needs of the present without compromising the ability of future generations to meet their own needs." - **Brundtland Report**

### **Important Works**

1. 'The Population Bomb' by Ehrlich in 1968
2. 'The Limits to Growth' by Meadows and others in 1972
3. World Commission on Environment and Development (WCED) report - 'Our Common Future' in 1987.

### **Measures for Promotion of Sustainable Development**

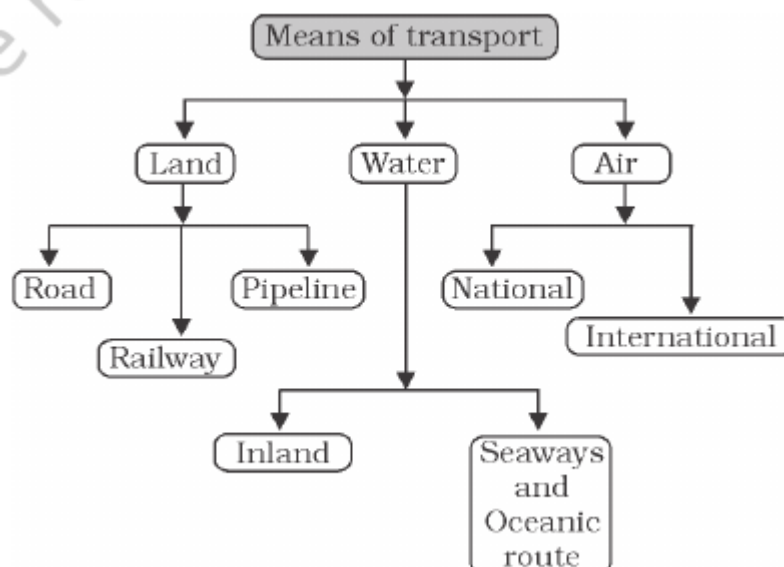
1. Strict implementation of water management policy
2. The cropping pattern shall not include water intensive crops
3. Measures to reduce the conveyance loss of water.
4. The areas affected by water logging and soil salinity shall be reclaimed
5. The eco- development through afforestation, shelterbelt plantation and pasture development
6. Adequate financial and institutional support for cultivation of land
7. The agricultural and allied activities have to develop

X ===== X

## **CHAPTER 10** **TRANSPORT AND COMMUNICATION**

### **TRANSPORTATION**

- The use of transport and communication depends upon our need to move things from place of their availability to the place of their use



## I. LAND TRANSPORT

### i. Road Transport

- India has one of the second largest road networks in the world
- The **two projects** for road transport in modern times are **Nagpur Plan** (1943) and **Twenty Year road plan** (1961)

#### **Sher Shah Suri's road – Shah (Royal) Road -**

- x From the Indus valley to the Sonar valley in Bengal.
- x It was renamed Grand Trunk (GT) road during the British period, connecting Calcutta and Peshawar.
- x At present, it extends from Amritsar to Kolkata.

It is bifurcated into **2 segments** :-

- (a) NH-1 from Delhi to Amritsar,
- (b) NH- 2 from Delhi to Kolkata.

- For the purpose of construction and maintenance, **roads are classified as:-**

1. National Highways (NH)
2. State Highways (SH)
3. Major District Roads
4. Rural Roads
5. Other roads



#### 1. National Highways (NH)

- **Constructed and maintained by the Central Government**
- meant for inter-state transport and movement of defence men and material in strategic areas
- Connect the state capitals, major cities, important ports, railway junctions, etc
- The National Highways constitute only about **2 % of** the total road length
- The **National Highways Authority of India (NHAI)** was operationalised in 1995 and It is **entrusted with the responsibility of development, maintenance** and operation of National Highways

NHAI has constructed the following projects:-

#### **1. Golden Quadrilateral :-**

- x It comprises construction of 5,846-km long; 4/6 lane, high density traffic corridor
- x Connects India's four big metro cities of Delhi-Mumbai-Chennai-Kolkata.

#### **2. North-South and East-West Corridors :-**

**North-South corridor** - aims at connecting Srinagar in Jammu and Kashmir with Kanniyakumari in Tamil Nadu with 4,076-km length

**The East-West Corridor** - to connect Silchar in Assam with the port town of Porbandar in Gujarat with 3,640-km of length.

## 2. State Highways(SH)

- These are constructed and maintained by state governments.
- They join the state capitals with district headquarters and other important towns
- These constitute **4%** of total road length in the country.

## 3. District Roads

- ➔ These roads are the connecting link between District Headquarters and the other important nodes in the district.
- ➔ They account for **14%** of the total road length of the country

## 4. Rural Roads

- ◆ Connects rural areas
- ◆ About **80%** of the total road length in India

## 5. Other roads

- Other roads **include Border Roads and International Highways**
- The Border Road Organisation (BRO) **was established in May 1960** for accelerating economic development and strengthening defence preparedness through rapid and coordinated improvement of strategically important roads
- The international highways are meant to promote the harmonious relationship with the neighbouring countries by providing effective links with India

## ii. Rail Transport

- ◆ Indian Railways, network is one of the longest in the world.
- ◆ It facilitates the **movement of both freight and passengers**
- ◆ **Indian Railway was introduced in 1853**
- ◆ **The first railway line was constructed from Bombay to Thane covering a distance of 34 km**
- ◆ **Indian railway system** has been divided into **16 zones**
- ◆ On the basis of the width of track of the Indian Railways, three categories have been made:-
  - 1. Broad gauge – 1.676m width**
    - 46,807 km
    - Accounts 74.14 %
  - 2. Metre gauge – 1 m width**
    - runs over 13,290 km
    - 21 %

### 3. Narrow guage – 0.762 m or 0.610 m width

- Runs over 3124 km

-4.94 %

➔ Nowadays, railway system in India revolutionised as Metro rail system in Kolkatha and Delhi, replacing diesel engine by CNG

#### Konkan Railway

- x Constructed in **1998**
- x **760 KM** long rail route
- x connecting **Roha in Maharashtra to Mangalore** in Karnataka
- x It is considered an engineering marvel
- x crosses 146 rivers, streams, nearly 2000 bridges and 91 tunnels
- x **Asia's largest tunnel which is nearly 6.5 km** long, also lies on this route
- x The states of **Maharashtra, Goa and Karnataka** are partners in this undertaking

## II. WATER TRANSPORT

- Important mode of transport for both passenger and cargo traffic in India
- It is the cheapest means of transport and is most suitable for carrying heavy and bulky material
- It is a fuel-efficient and eco-friendly mode of transport
- The water transport is of two types–

**(a) inland waterways, and (b) oceanic waterways.**

### i. Inland waterways

- x It was the chief mode of transport before the advent of railways
- x India has 14,500 km of navigable waterways
- x Contributing about 1% to the country's transportation
- x Comprises rivers, canals, backwaters, creeks
- x For the development, maintenance and regulation of national waterways in the country, the Inland Waterways Authority was set up in 1986

**Table 10.3:1 National Waterways of India**

Waterways	Stretch	Specification
NW 1	Allahabad-Haldia stretch (1,620 km)	It is one of the most important waterways in India, which is navigable by mechanical boats up to Patna and by ordinary boats up to Haridwar. It is divided into three parts for developmental purposes– (i) Haldia-Farakka (560 km), (ii) Farakka-Patna (460 km), (iii) Patna-Allahabad (600 km).
NW 2	Sadiya-Dhubri stretch (891 km)	Brahmaputra is navigable by steamers up to Dibrugarh (1,384 km) which is shared by India and Bangladesh
NW 3	Kottapuram-Kollam stretch (205 km)	It includes 168 km of west coast canal along with Champakara canal (14 km) and Udyogmandal canal (23 km).
NW 4	Specified stretches of Godavari and Krishna rivers along with Kakinada Puducherry stretch of canals (1078 km)	
NW 5	Specified stretches of river Brahmani along with Matai river, delta channels of Mahanadi and Brahmani rivers and East Coast canals (588km).	

**ii. Oceanic Routes**

- India has a vast coastline of approximate 7,517 km
- 12 major and 185 minor ports provide infrastructural support to these routes.
- About 95 per cent of India's foreign trade by volume and 70 per cent by value moves through ocean routes

**III. AIR TRANSPORT**

- ✓ Air transport in India started in **1911; between Allahabad and Naini about 10 km**
- ✓ The **Airport Authority of India** is responsible for providing safe, efficient air traffic and aeronautical communication services in the Indian Air Space
- ✓ The authority manages 125 airports include 11 international airports, 86 domestic and 29 civil enclaves at defence fields
- ✓ After nationalisation, the air transport in India is managed by 2 corporation; that are **Air India** and **Indian Airlines** . Now Indian Airlines is known as **Indian**.

**A) Air India International**

- Air India provides international air services for both passengers and cargo traffic
- It connects all continents of the world

**B) Indian Airlines aka Indian**

- x Air transport in India launched under Indian airlines
- x Upto 1947, the air transport was provided by 4 major companies namely Indian National Airways, Tata Sons Limited, Air Services of India



and Deccan Airways.

- x Later, after nationalisation, 2 corporation were formed
- x Now Indian Airlines is known as **Indian**
- x It is the country's largest state owned domestic carrier

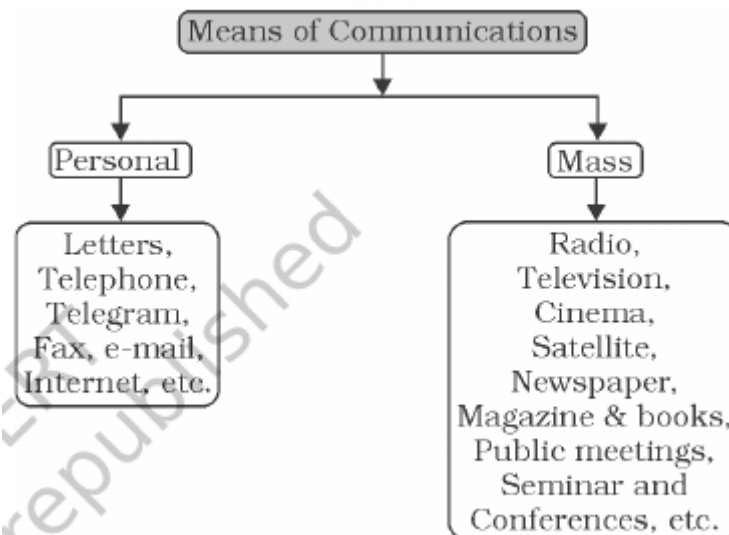
### Pawan Hans

- ➔ Pawan Hans is the helicopter service operating in hilly areas and is widely used by tourists in north-eastern sector.
- ➔ In addition, Pawan Hans Limited mainly provides helicopter services to petroleum sector and for tourism.

## IV. OIL AND GAS PIPELINES

- ◆ Oil India Limited (**OIL**) under the administrative set up of the Ministry of Petroleum and Natural Gas is engaged in the exploration, production and transportation of crude oil and natural gas
- ◆ Asia's **first cross country pipeline** covering a distance of 1,157 km was constructed by OIL **from Naharkatiya oilfield in Assam to Barauni refinery in Bihar**
- ◆ Another extensive network of pipelines has been constructed in the western region of India of which Ankleshwar-Koyali, Mumbai High-Koyali and Hazira-Vijaipur-Jagdishpur (HVJ) are most important
- ◆ OIL is in the process of constructing of 660 km long pipeline from Numaligarh to Siliguri.

## COMMUNICATION



- On the basis of scale and quality, the mode of communication can be divided into:-
  - a) **Personal Communication System**
  - b) **Mass Communication System**

### a) Personal Communication System

- It enables the user to **establish direct contact**
- Among all the personal communication system **internet is the most effective**



and advanced one.

## **b) Mass Communication System**

### **1. Radio**

- ➔ Radio broadcasting started in India in **1923 by the Radio Club of Bombay.**
- ➔ Since then, it gained immense popularity and changed the socio- cultural life of people.
- ➔ **Government** took this popular mode of communication under its **control in 1930 under the Indian Broadcasting System.**
- ➔ It was **changed to All India Radio in 1936** and to **Akashwani in 1957.**

### **2. Television**

- x Television broadcasting has emerged as **the most effective audio-visual medium for disseminating information and educating masses**
- x **T.V. services** were limited only to the National Capital where it **began in 1959.**
- x **In 1976,** TV was delinked from All India Radio (AIR) and **got a separate identity as Doordarshan (DD)**
- x **After INSAT-IA (National Television-DD1) became operational,** Common National Programmes (CNP) were started for the entire network and **its services were extended to the backward and remote rural areas**

### **3. Satellite Communication**

- ✓ Satellites are mode of communication in themselves as well as they regulate the use of other means of communication
- ✓ Satellite images can be **used for the weather forecast, monitoring of natural calamities, surveillance of border areas, etc.**
- ✓ **On the basis of configuration and purposes, satellite system** in India can be grouped into two:-
  - (i) **Indian National Satellite System (INSAT)**
  - (ii) **Indian Remote Sensing Satellite System (IRS)**
- ➔ The **INSAT**, which was established in **1983,** is a **multi-purpose satellite system for telecommunication, meteorological observation and for various other data and programmes**
- ➔ The **IRS** satellite system became operational in **1988 from Vaikanour in Russia**
- ➔ **IRS satellites collect data in several spectral bands and transmit them to the ground stations for various uses.**
- x India has also developed her **own Launching Vehicle PSLV (Polar Satellite Launch Vehicle)**
- x **The National Remote Sensing Centre (NRSC) at Hyderabad** provides facilities for acquisition of data and its processing

X ===== X

## **CHAPTER 11**

### **INTERNATIONAL TRADE**

**The nature of India's foreign trade-** there has been an increase in the total volume of import and export, the value of import continued to be higher than that of exports.

#### **Changing Pattern of the Composition of India's Exports**

- ◆ The share of agriculture and allied products has declined, whereas, shares of petroleum and crude products and other commodities have increased
- ◆ The shares of ore minerals and manufactured goods have largely remained constant
- ◆ Manufacturing sector alone accounted for 73.6 per cent of India's total value of export in 2016-17.
- ◆ Engineering goods have shown a significant growth in the export
- ◆ Amongst the agricultural products, there is a decline in the export of traditional items, such as coffee, cashew, etc
- ◆ Gems and jewellery contributes a larger share of India's foreign trade.

#### **Changing Patterns of the Composition of India's Import**

- ✓ The major item of import during 1950s and 1960s was food grain, capital goods, machinery and equipment.
- ✓ The energy crisis of 1973 pushed the prices of petroleum, and import budget was also pushed up and remained high afterwards.
- ✓ Food grain import was replaced by fertilisers and petroleum.
- ✓ Other major items of India's import include pearls and semi-precious stones, gold and silver, metalliferous ores and metal scrap, non-ferrous metals, electronic goods, etc.

#### **India's Direction of Trade**

- Asia and Oceania accounted for 47.41% of India's **export**
- 2<sup>nd</sup> – West Europe – 23.8%
- India's **imports** were highest from Asia and Oceania (35.4%) followed by West Europe
- **USA is India's largest trading partner** and the most destination of India's export
- Most of India's foreign trade is carried through sea and air routes

#### **Sea Ports as Gateways of International Trade (Indian Scenario)**

- India is surrounded by sea from three sides and is bestowed with a long coastline. Water provides a smooth surface for very cheap transport provided there is no turbulence.
- India has a long tradition of sea faring and developed many ports with place name suffixed with **pattan** meaning port.
- **West coast has more ports than its east coast.**
- India has **13 major ports** which handle **75% of the country's oceanic traffic**

#### **Major Sea Ports in India**

##### **1. Kandla Port**

- ➔ Situated at the **head of Gulf of Kutch in Gujrat**
- ➔ Reduced the pressure at Mumbai port

- ➔ The port is specially designed to receive large quantities of petroleum and petroleum products and fertiliser

## **2. Mumbai Port**

- It is a natural harbour and **the biggest port of the country.**
- Situated closer to the general routes from the countries of Middle East, Mediterranean countries, North Africa, North America and Europe where the major share of country's overseas trade is carried out (Importance )
- The port is 20 km long and 6-10 km wide with 54 berths and has the country's largest oil terminal.
- Hinterland - M.P., Maharashtra, Gujarat, U.P. and parts of Rajasthan

## **3. Jawaharlal Nehru Port**

- x At Nhava Sheva in Maharashtra
- x It was developed as a satellite port to relieve the pressure at the Mumbai port.
- x It is the **largest container port in India.**

## **4. Marmagao Port**

- ◆ Situated at the **entrance of the Zuari estuary,**
- ◆ It is a natural harbour in **Goa**
- ◆ iron-ore exports to Japan via here
- ◆ Hinterland - Karnataka, Goa, Southern Maharashtra

## **5. New Mangalore Port**

- It is located in Karnataka
- It handles iron-ore, iron-concentrates, fertilisers, petroleum products, edible oil etc.

## **6. Kochi Port**

- ✓ Situated at the head of Vembanad Kayal, popularly **known as the 'Queen of the Arabian Sea'**
- ✓ It is a natural harbour.
- ✓ Hinterland - Kerala, southern- Karnataka and south western Tamil Nadu.

## **7. Kolkata Port**

- x Located on the Hugli river, 128 km inland from the Bay of **Bengal**
- x Developed by the British
- x Hinterland - U.P., Bihar, Jharkhand, West Bengal, Sikkim and the north-eastern states

## **8. Haldia Port**

- ◆ It is located 105 km downstream from Kolkata.
- ◆ It has been constructed **to reduce the congestion at Kolkata port.**

## **9. Paradwip Port**

- ➔ Situated in the Mahanadi delta, about 100 km from Cuttack. (**Odisha**)
- ➔ It has the deepest harbour specially suited to handle very large vessels.
- ➔ Hinterland - Odisha, Chhattisgarh and Jharkhand

## **10 . Visakhapatnam Port**

- x In **Andhra Pradesh**

- x It is a land-locked harbour, connected to the seaby a channel cut through solid rock and sand.
- x Hinterland - Andhra Pradesh and Telangana

### 11. Chennai Port

- It is one of the oldest ports on the eastern coast.
- It is an artificial harbour
- Built in 1859
- Hinterland - Tamil Nadu and Puducherry

### 12. Ennore Port

- ✓ Newly developed port in **Tamil Nadu**
- ✓ It has been constructed 25 km north of Chennai to relieve the pressure at Chennai port

### 13. Tuticorin Port

- ◆ It was also developed to relieve the pressure of Chennai port.
- ◆ It deals with a variety of cargo, including coal, salt, food grains, edible oils etc.

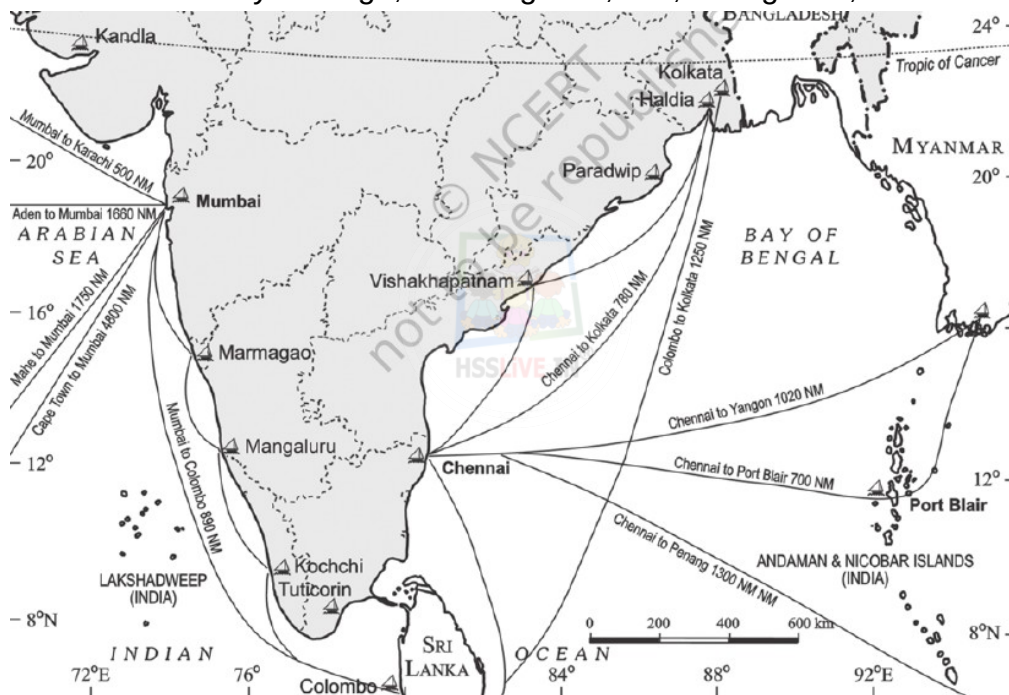


Fig. 11.4 : India – Major Ports and Sea Routes

### Airports in India

There were 25 major airports functioning in the country (Annual Report 2016-17). They are Ahmedabad, Bengaluru, Chennai, Delhi, Goa, Guwahati, Hyderabad, Kolkata, Mumbai, Thiruvananthapuram, Srinagar, Jaipur, Calicut, Nagpur, Coimbatore, Cochin, Lucknow, Pune, Chandigarh, Mangaluru, Vishakhapatnam, Indore, Patna, Bhubaneswar and Kannur.

X ===== X

## CHAPTER 12

### GEOGRAPHICAL PERSPECTIVE ON SELECTED ISSUES AND PROBLEMS

**Table 12.1 : Types and Sources of Pollution**

Pollution Types	Pollution Involved	Sources of Pollution
Air Pollution	Oxides of sulphur (SO <sub>2</sub> , SO <sub>3</sub> ), Oxides of nitrogen, carbon monoxide, hydro-carbon, ammonia, lead, aldehydes asbestos and beryllium.	Combustion of coal, petrol and diesel, industrial processes, solid waste disposal, sewage disposal, etc.
Water Pollution	Odour, dissolved and suspended solids, ammonia and urea, nitrate and nitrites, chloride, fluoride, carbonates, oil and grease, insecticide and pesticide residue, tannin, coliform MPM (bacterial count) sulphates and sulphides, heavy metals e.g. lead, arsenic, mercury, manganese, etc., radioactive substances.	Sewage disposal, urban run-off, toxic effluents from industries, run-off over cultivated lands and nuclear power plants.
Land Pollution	Human and animal excreta viruses and bacteria, garbage and vectors therein, pesticides and fertiliser-residue alkalinity, fluorides, radio-active substances.	Improper human activities, disposal of untreated industrial waste, use of pesticides and fertilisers.
Noise Pollution	High level of noise above tolerance level.	Aircrafts, automobiles, trains, industrial processing and advertising media.



#### Water Pollution

- ◆ **Major water polluting industries** are leather, pulp and paper, textiles and chemicals
- ◆ The World Health Organization shows that about **one-fourth of the communicable diseases in India are water-borne**
- ◆ To improve the water quality of the river Ganga, **National Mission for Clean Ganga ( Namami Gange Programme)** was initiated.

#### **Objectives of Namami Ganga Programme:-**

- developing sewerage treatment systems in towns,
- monitoring of industrial effluents,
- development of river front,
- afforestation along the bank of increase biodiversity,
- cleaning of the river surface,
- development of 'Ganga Grams' in Uttarakhand, UP, Bihar, Jharkhand and West Bengal
- creating public awareness

#### Air Pollution

- Air pollution is taken as addition of contaminants, like dust, fumes, gas, fog, odour, smoke or vapour to the air

- Air pollution causes various diseases related to respiratory, nervous and circulatory systems.
- **Smoky fog over cities called as urban smog**
- Air pollution can cause acid rains

### **Noise Pollution**

- ◆ Noise pollution refers to the state of unbearable and uncomfortable to human beings which is caused by noise from different sources.
- ◆ The level of steady noise is measured by **sound level expressed in terms of decibels (dB)**

### **Urban Waste Disposal**

- x **Solid waste** refers to a variety of old and used articles dumped at different places

### **Slums**

- ➔ **Asia's largest slum** – Dharavi
- ➔ **Slums** are residential areas of the least choice, dilapidated houses, poor hygienic conditions, poor ventilation, lack of basic amenities, like drinking water, light and toilet facilities, etc.
- ➔ **The Swachh Bharat Mission (SBM)** is part of the urban renewal mission launched by the Government of India to improve the quality of life in urban slums.

### **Problems of Slums**

- Most of the slum population works in low-paid, high risk-prone, unorganised sectors of the urban economy
- They are the undernourished prone to different types of diseases and illness and can not afford to give proper education to their children.
- The poverty makes them vulnerable to drug abuse, alcoholism, crime, vandalism, escapism, apathy and ultimately social exclusion

### **Land Degradation**

- **Soil erosion, waterlogging, salinisation and alkalinisation of land** lead to land degradation
- There are two processes that induce land degradation. These are natural and created by human beings

### ***Classification of Wasteland by National Remote Sensing Centre (NRSC) according to the processes that have created them;-***

#### **1. Wastelands caused or created by Natural Agents**

- a. Gullied / ravinous land,
- b. Desertic or coastal sands,
- c. Barren rocky areas,
- d. Steep sloping land,
- e. Glacial areas

#### **2. Wastelands caused by natural as well as human factors.**

- a. Waterlogged and marshy areas,
- b. Land affected by salinity and alkalinity
- c. Land with or without scrub



### 3. Wastelands caused by human action

- a. Degraded shifting cultivation area,
- b. Degraded land under plantation crops,
- c. Degraded forests,
- d. Degraded pastures,
- e. Mining and industrial wastelands

**X ===== X**

