Block 4

CONTENT BASED METHODOLOGY: GEOGRAPHY AND ECONOMICS

UNIT 14
India: Physical Environment 5

UNIT 15
Resources: Their Development and Utilization 36

UNIT 16
Major Economic Issues 57

UNIT 17
Economic Institutions 80
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COURSE: BES-142 Pedagogy of Social Science

BLOCK 1  PEDAGOGY OF SOCIAL SCIENCES
Unit 1  Social Sciences: Nature, Context and Concerns
Unit 2  Issues and Challenges of Teaching Social Sciences
Unit 3  Teaching Learning Strategies and Learning resources in Social Sciences
Unit 4  Planning and organizing Teaching Learning experiences
Unit 5  Assessment and Evaluation in Social Sciences

BLOCK 2  TEACHING-LEARNING PROCESS: SPECIFIC TO SUBJECT AREAS
Unit 6  Teaching-Learning Process in History
Unit 7  Teaching-Learning Process in Political Science
Unit 8  Teaching-Learning Process in Geography
Unit 9  Teaching-Learning Process in Economics

BLOCK 3  CONTENT BASED METHODOLOGY: HISTORY AND POLITICAL SCIENCE
Unit 10  Events and Processes
Unit 11  Livelihood, Economies and Society
Unit 12  State and Government
Unit 13  Indian Constitution and democratic Politics

BLOCK 4  CONTENT BASED METHODOLOGY: GEOGRAPHY AND ECONOMICS
Unit 14  India: Physical Environment
Unit 15  Resources: Their Development and Utilization
Unit 16  Major Economic Issues
Unit 17  Economic Institutions
Introduction to the Block

Block 4 is the last Block of the Course: Pedagogy of Social Science. It deals with content based methodology pertaining to Geography and Economics. Units 14 and 15 discuss contents from Geography, whereas units 16 and 17 focuses on contents from Economics. Each unit deals with a brief presentation of contents followed by teaching-learning strategy. Teaching-learning strategy includes formulation of learning objectives for the contents presented in the unit, designing teaching-learning activities for transaction of learning experiences and preparation of assessment questions.

Unit 14 deals with physical environment of India. There are six topics which have been covered in this unit. The unit starts with a description of the location and size of India. The six major physiographic divisions of the country have been discussed under major physical features of India. The unit provides a brief account of drainage systems of the country that includes broadly the Himalayan Rivers and The Peninsular Rivers. Monsoon and its characteristics, types of monsoon have been described. The unit also discusses natural vegetation, their distribution and conservation; wild life and their conservation. Each topic is followed by teaching-learning strategy which includes learning objectives, teaching-learning activities and assessment questions.

Unit 15 focuses on resources, their development and utilization. The unit provides a brief description of the meaning of resource, classification of resources into different categories, availability and utilization of resources, relationship between industrial pollution and degradation of environment, need for conservation of resources, and linkages between resource utilization and sustainable development. A suggestive teaching-learning strategy including learning objectives, teaching-learning activities and assessment questions has been presented to transact learning experiences pertaining to the unit.

Unit 16 deals with major economic issues. Three major economic issues which a teacher at secondary level ought to understand are poverty, globalization, and sustainable development. The unit explains the concept of poverty and its magnitude, both in absolute and relative levels. We also explain the nature and phases of globalization; and discuss factors driving globalization. The concept and nature of sustainable development, and measures to achieve sustainable development have been discussed. The unit includes suggestive teaching-learning strategy to teach all three issues in the classroom.

Unit 17 is concerned with major economic institutions. For this unit, we have selected two economic institutions, namely – banks and taxes. We discuss importance of banking, how banks function and create credit. We also explain taxes, important tax revenues for the government and the importance of paying taxes and developing banking habits. The unit includes suggestive teaching-learning strategy to teach banking and taxes in the classroom.
## UNIT 14  INDIA: PHYSICIAL ENVIRONMENT

### Structure

<table>
<thead>
<tr>
<th>Section</th>
<th>Sub-sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 Introduction</td>
<td></td>
</tr>
<tr>
<td>14.2 Objectives:</td>
<td></td>
</tr>
<tr>
<td>14.3 India: Location and Size</td>
<td>14.3.1 Overview of the Topic</td>
</tr>
<tr>
<td>14.4 Teaching-learning Strategy</td>
<td>14.4.1 Learning Objectives</td>
</tr>
<tr>
<td></td>
<td>14.4.2 Teaching-learning Activities</td>
</tr>
<tr>
<td></td>
<td>14.4.3 Assessment Questions</td>
</tr>
<tr>
<td>14.5 Major Physical Features of India</td>
<td>14.5.1 Overview of the Topic</td>
</tr>
<tr>
<td>14.6 Teaching-learning Strategy</td>
<td>14.6.1 Learning Objectives</td>
</tr>
<tr>
<td></td>
<td>14.6.2 Teaching-learning Activities</td>
</tr>
<tr>
<td></td>
<td>14.6.3 Assessment Questions</td>
</tr>
<tr>
<td>14.7 Drainage Systems in India</td>
<td>14.7.1 Overview of the Topic</td>
</tr>
<tr>
<td>14.8 Teaching-learning Strategy</td>
<td>14.8.1 Learning Objectives</td>
</tr>
<tr>
<td></td>
<td>14.8.2 Teaching-learning Activities</td>
</tr>
<tr>
<td></td>
<td>14.8.3 Assessment Questions</td>
</tr>
<tr>
<td>14.9 Monsoon: Its Characteristics</td>
<td>14.9.1 Overview of the Topic</td>
</tr>
<tr>
<td>14.10 Teaching-learning Strategy</td>
<td>14.10.1 Learning Objectives</td>
</tr>
<tr>
<td></td>
<td>14.10.2 Teaching-learning Activities</td>
</tr>
<tr>
<td></td>
<td>14.10.3 Assessment Questions</td>
</tr>
<tr>
<td>14.11 Distribution of Natural Vegetation in India</td>
<td>14.11.1 Overview of the Topic</td>
</tr>
<tr>
<td></td>
<td>14.12.2 Teaching-learning Activities</td>
</tr>
<tr>
<td></td>
<td>14.12.3 Assessment Questions</td>
</tr>
<tr>
<td></td>
<td>14.14.2 Teaching-learning Activities</td>
</tr>
<tr>
<td></td>
<td>14.14.3 Assessment Questions</td>
</tr>
<tr>
<td>14.15 Let Us Sum Up</td>
<td></td>
</tr>
<tr>
<td>14.16 References and Suggested Readings</td>
<td></td>
</tr>
<tr>
<td>14.17 Answers to Check Your Progress</td>
<td></td>
</tr>
</tbody>
</table>
14.1 INTRODUCTION

Physical environment of India is an important content area in geography at the secondary level. It mainly comprises topics like location and size of India, major physical features of India, drainage systems in India, monsoon, natural vegetation and their distributions, conservation of natural vegetation and wildlife. In this unit, we will provide you with a brief description on each of these topics. Each topic is followed by suggestive teaching-learning strategy which includes learning objectives, teaching-learning activities and assessment questions. This unit expects you to foster geographical skills among students by organising relevant activities pertaining to the different topics under physical environment of India and also help you acquire relevant information so that you can analyse and answer to problems related to the topics.

14.2 OBJECTIVES

After going through this unit, you will be able to:

• identify the location and size of India on the map of India;
• describe the major physical features of India;
• describe the drainage system in India;
• enumerate the characteristics of monsoon;
• discuss the natural vegetation and their distribution;
• explain why conservation of natural vegetation and wildlife is important;
• formulate learning objectives for the selected contents;
• plan suitable learning experiences;
• acquaint yourself with use of learning resources; and
• acquire skills of constructing assessment questions.

14.3 INDIA: LOCATION AND SIZE

14.3.1 Overview of the Topic

When it comes to size of our country, you may agree that it is a vast country. If you glance the size of our country on the globe, then you will realize that there are very few countries on the globe which are larger in size than India. Can you find out the countries which are larger in size than India? It is seventh largest country in the world. It has a land boundary of about 15,200 km and a coastline of about 7,516 km including coastline of mainland and islands of Andaman and Nicobar and Lakshadweep. It occupies geographical area of 32,87,263 sq.km. and accounts for about 2.4 % of the total geographical area of the world.

Looking at the globe, you will notice that it lies entirely in the Northern hemisphere. The mainland of India extends between latitudes of 8°4’ N to 37° 6’ N and 68°7’E to 97°25’E. You will further note that the Tropic of Cancer (23° 30’N) divides the country into almost two equal halves. India has latitudinal and longitudinal extent of about 30°. India is bounded by Greater Himalayas in the northwest, north and north east. The Deccan peninsula is triangular in shape.
which is flanked by Arabian Sea in the west, Bay of Bengal in the East and Indian Ocean in the South. Can you find out some of the neighboring countries of our country? The topic on location and size acts as an advance organizer to study critically its relationship with other geographical elements like physical features, drainage system, monsoon climate, natural vegetation, wild life and population of India.

Fig. 14.1 : India: Location and Extent
Source: NCERT (2005)

Check Your Progress

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

1) Mention the distances of land boundary and coastline of India.

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## Content Based Methodology: Geography and Economics

### 2) What is the geographical area of India?

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### 3) Define the Deccan peninsula?

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### 14.4 TEACHING-LEARNING STRATEGY

Teaching-learning strategy for this topic includes learning objectives, teaching-learning activities, and assessment questions.

#### 14.4.1 Learning Objectives

Through this teaching-learning strategy, students will be able to:

- appreciate the vastness of the country;
- describe the relative and absolute location of our country;
- recall latitudinal and longitudinal extent of the country;
- explain the significance of central location of our country at the head of the Indian Ocean;
- state the length of land boundary and coastline of our country;
- describe the size of our country;
- order the place of our country with respect to area and size of other countries;
- explain the relationship between latitudinal extent and its influence on duration of day and night;
- indicate the reasons for selection of particular longitude as standard meridian for India;
- establish the relationship between longitude of a place and its time; and
- compute time based on given longitudes.

**Learning Resources:** The World (Political Map), Asia; (Political Map), India: (Political and Physical Map), Globe, Atlas, Worksheets, 3D-Models of Island, Bay, Peninsula, Charts showing different lines of latitudes, Chart explaining concept of latitude and longitude. Newspaper clipping on India’s relationship with neighbouring countries (issues emerging out of location and size),
14.4.2 Teaching-learning Activities

The following teaching-learning activities are suggested for this topic.

Activity 1: Acquainting students with basic concepts: In order to understand the location and size of India students need to have thorough understanding of concepts given below:

i) **Map**: It is a conventional representation of the earth surface or part of it drawn on a flat surface, drawn according to a scale. They are of different types- physical maps, political maps, wall maps, atlas maps. For teaching-learning process in classroom situation, we normally use wall maps. In order to teach a unit on India- Location and Size, we need to have 3D physical map of India along with India- Political Map. In Figure 14.2 there is an example of Political Map of India.

![Fig. 14.2: India: Political Map](source)

Source: NCERT (2005)

ii) **Globe**: It is a model (miniature form) of the earth. In order to show the exact position of our country on the earth surface we need to use globe. Map may not give us exact visual location and correct shape. On the globe, countries, continents and oceans are shown in correct size. See Figure 14.3.
iii) **Atlas**: A large number of maps bounded in a volume is called atlas. In order to know the relative and specific location of places, regions, continents and geographical features, we need to use atlas as it provides readymade coordinates of these features in index. Students in the classroom may be provided with several worksheets and atlas to carry out several activities.

iv) **Poles**: It is difficult to describe the location on a spherical body like the earth. In order to locate a place on the spherical earth we need to have certain points of reference and lines. Two extreme points on the earth surface are called poles. You may ask your students to notice a needle that is fixed through the globe in a tilted manner, this imaginary needle is called axis. Two points on the globe through which the needle passes are two poles- the North Pole and the South Pole. See Figure 14.4.
v) **Equator:** It is an imaginary line on the globe dividing it into two equal halves. The northern half is known as the Northern Hemisphere and the southern half is known as Southern Hemisphere. It is a very important reference point to locate places on the earth. The value of equator is 0 degree (Figure 14.5).

vi) **Latitude:** It conveys how far you are from the equator. It ranges from 0 degree at the equator to 90 degrees at the North and South Poles. If the value is close to 0 then the place is near to the equator and if the value is close to 90 that means the place is closer to poles.
vii) **Longitude:** In order to know the place, it is important to know something more than the latitude of that place. You may recall that in co-ordinate geometry in order to plot a point we require a set of two co-ordinates ‘x’ and ‘y’, where ‘x’ refers to latitude and ‘y’ refers to longitude. Longitude conveys how far you are east or west from the given line of reference running from the North Pole to the South Pole.

viii) **Parallels of Latitudes:** All parallel circles from the equator up to the poles are called parallels of latitudes. All parallels north of the Equator are called ‘north latitudes’ and similarly south of the Equator are called ‘south latitudes’.

ix) **Major lines of latitude:** Besides the equator (0°), the North Pole (90°N) and the South Pole (90°S), there are four important parallels of latitudes-

1) Tropic of Cancer (23 ½ °N) in the Northern Hemisphere.
2) Tropic of Capricorn (23 ½ °S) in the Southern Hemisphere.
3) Arctic Circle (66 ½ °) north of equator.
4) Antarctic Circle (66 ½ °) south of equator.

x) **Lines of Longitudes:** The lines of references running from pole to pole are called longitudes.

xi) **Standard Meridian:** The longitude of 82½ ° is treated as the Standard Meridian of India. The local time at this meridian is taken as the standard time for the whole country. It is known as the Indian Standard Time (IST).

xii) **Prime Meridian:** The meridian, passing through Greenwich, where the British Royal Observatory is located, is called the Prime Meridian. Its value is 0° longitude and from it we count 180° eastward as well 180° westward. The Prime Meridian divides the earth into two equal halves, the Eastern Hemisphere and the Western Hemisphere.

**Eastern Hemisphere:** The area lying between the Prime Meridian and the 180° east Meridian.

**Western Hemisphere:** The area lying between the Prime Meridian and the 180° west Meridian.

Fig. 14.7: Hemisphere: Northern, Southern, Eastern and Western
xiv) **Heat Zones of the Earth:** The global area bounded by the Tropic of Cancer and the Tropic of Capricorn which receives maximum heat is called Torrid Zone. The area bounded by the Tropic of Cancer and the Arctic circle in the Northern Hemisphere and the Tropic of Capricorn and the Antarctic Circle have moderate temperatures and is called Temperate Zones. The areas falling under this zone experience moderate temperatures. Areas lying between the Arctic Cicle and the North Pole in the Northern Hemisphere and the Antarctic Circle and the South Pole in the Southern Hemisphere are called Frigid Zone. These areas are very cold because in this region the Sun does not rise much above the Horizon and its rays are always slanting.

![Fig. 14.8: Important Lines of Latitudes and Heat Zones](image)

**Activity 2**

**Learning through Map:** You may gather information from students on the relationship between globe and map and initiate a discussion on the location of India. You need to discuss two related concepts of location, i.e. absolute and relative. You may ask questions pertaining to extreme latitudes and longitudes of India. You may ask names of the neighbouring countries of India. You may ask several questions pertaining to the size of our country. You with the help of political map of India may ask students to categorize states according to size (based on visual). As a teacher, you may explain the concept of absolute and relative location to students and provide them several exercises to find out location with the help of atlas.

**Absolute Location:** It describes the location of the place based on a fixed point on the earth. The most common way is to identify the location using co-ordinates such as latitude and longitude. An example of an absolute location using latitude and longitude of New Delhi, capital city of our country is 28.37°N and 77.12°E. Latitude is always written first. Latitude and longitude are indicated by degrees, minutes and seconds (DMS).
Relative Location: It refers to the position of a place or entity based on its positive with respect to other locations. For example, the location of New Delhi, the capital city of India is located around 400 km south east of Amritsar. Relative location can be expressed in terms of direction, distance, travel time or cost.

Activity 3: Interpretation of Data/Graph: You may provide a table/graph related to countries and their geographical areas, most populous countries and their size of population. Students may be asked to interpret these tables and graphs. Students may even be asked to prepare graphs based on the given data.

### Table 14.1: World: Largest Countries according to Geographical Area

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Area (in Lakh Sq Km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Russia</td>
<td>17.09</td>
</tr>
<tr>
<td>2</td>
<td>Canada</td>
<td>9.98</td>
</tr>
<tr>
<td>3</td>
<td>USA</td>
<td>9.62</td>
</tr>
<tr>
<td>4</td>
<td>China</td>
<td>9.59</td>
</tr>
<tr>
<td>5</td>
<td>Brazil</td>
<td>8.51</td>
</tr>
<tr>
<td>6</td>
<td>Australia</td>
<td>7.69</td>
</tr>
<tr>
<td>7</td>
<td>India</td>
<td>3.28</td>
</tr>
</tbody>
</table>

### Table 14.2: World: Most Populous Countries (2015)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>1,367,485,388</td>
</tr>
<tr>
<td>2</td>
<td>India</td>
<td>1,251,695,584</td>
</tr>
<tr>
<td>3</td>
<td>United States</td>
<td>321,368,864</td>
</tr>
<tr>
<td>4</td>
<td>Indonesia</td>
<td>255,993,674</td>
</tr>
<tr>
<td>5</td>
<td>Brazil</td>
<td>204,259,812</td>
</tr>
<tr>
<td>6</td>
<td>Pakistan</td>
<td>199,085,847</td>
</tr>
<tr>
<td>7</td>
<td>Nigeria</td>
<td>181,562,056</td>
</tr>
<tr>
<td>8</td>
<td>Bangladesh</td>
<td>168,957,745</td>
</tr>
<tr>
<td>9</td>
<td>Russia</td>
<td>142,423,773</td>
</tr>
<tr>
<td>10</td>
<td>Japan</td>
<td>126,919,659</td>
</tr>
</tbody>
</table>

Activity 5

Project Work:

i) You may ask students belonging to several states to write an account of location and size of their states and explain the significance of location with respect to climate, vegetation, soil, economic activities and people.

ii) You may ask them to collect information about neighbouring countries of India and provide an account of bilateral relationships with these countries.

iii) You may discuss the role of water bodies (specifically the Indian Ocean, Bay of Bengal and Arabian Sea) in the national development.

iv) You can design several questions on calculation of time based on longitude.

Activity 6: Map Skills:

i) You may ask your students to locate the following features on an outline map of India using meaningful conventional symbols and colours.

   i) Andaman and Nicobar Islands
   ii) Lakshadweep Islands.
   iii) Tropic of Cancer
   iv) Palk Strait
   v) Bay of Bengal
   vi) Standard Meridian of India

You may also ask them to find out details about their geographical co-ordinates/extent.

ii) You may ask your students to find out the places located on the Tropic of Cancer and the Standard Meridian of India and specify their geographical co-ordinates.
iii) You may ask your students to shade the state/UT on an outline political map of India and with the help of atlas describe the absolute and relative location of their states.

14.4.3 Assessment Questions
1) What is a globe?
2) What are the poles?
3) What is equator?
4) Differentiate between longitudes and latitudes.
5) On an outline map of India, find out the standard meridian of India.
6) What is prime meridian?
7) Differentiate between absolute location and relative location.

14.5 MAJOR PHYSICAL FEATURES OF INDIA

14.5.1 Overview of the Topic

The major physiographic divisions of India includes The Himalayan Mountains, The Northern Plains, The Peninsular Plateau, The Indian Desert, The Coastal Plains and the Islands. The Himalayan mountains stretch over the northern borders of India. They cover a distance of about 2,400 km. The width of the Himalayan Mountains range from 400 km in Kashmir to 150 km in Arunachal Pradesh. Some of the highest peaks of the Himalayan Mountains are Mt. Everest, Kanchenjunga, Nanga Parbat, Annapurna, Nanda Devi, etc. The Himalayas has three important ranges – Himadri, Himachal, and Shiwaliks. The Northern Plains consist of three major river systems, namely- the Indus, the Ganga, and the Brahmaputra along with their tributaries.

The Peninsular Plateau is located to the south of the Northern Plains. It has two parts: the Malwa Plateau in the north which slopes towards north and Deccan Plateau in the south. To the north west of the Malwa Plateau lies the Indian Desert, a region made up of rocks and sand. It also lies towards the western margins of the Aravali Hills. The Coastal Plains comprise the Western Coastal Plains and the Eastern Coastal Plains. The Western Coastal Plains which is narrow strip is divided into Konkan coast and Malabar Coast. The Eastern Coastal Plains is wider and divided into Northern Circas and Coromandal Coast. India has two groups of islands. Lakshadweep islands group lies close to the Malabar Coast of Kerala. Andaman and Nicobar islands are elongated chain of islands located in the Bay of Bengal extending from north to south. All these regions complement each other. The mountains are the major sources of water and forest wealth. The northern plains are the granaries of the country. The plateau is the storehouse of minerals. The coastal region and islands provide sites for fishing and port activities. The topic provides inputs for studying relationship of these physical features with other geographical components like climate, natural vegetation, soils, minerals, natural and human resources, economic activities (primary, secondary and tertiary).
Check Your Progress

Notes:  
   a) Write your answers in the space given below.
   b) Compare your answers with those given at the end of this unit.

4) What are the major physiographic divisions of India?

5) What are the important ranges of the Himalayas?

6) Name the major Plateaus constituting the Peninsular Plateau.

14.6 TEACHING-LEARNING STRATEGY

Teaching-learning strategy for this topic includes learning objectives, teaching-learning activities, and assessment questions.

14.6.1 Learning Objectives

Through this teaching-learning strategy, students will be able to:

- identify and locate the major physiographic divisions of India;
- describe broad ideas and familiarity about various physiographical regions of the country;
- state the major landforms features and the underlying geological structure;
- explain the association of various landforms with various rocks and minerals;
- describe unique features of various physiographical divisions of the country;
- estimate the complementary nature of these physiographic divisions;
- compare and contrast the characteristics of various physiographical regions; and
Content Based Methodology: Geography and Economics

- express the reasons responsible for occurrence of these physiographical regions.


14.6.2 Teaching-learning Activities

Activity 1: Learning through Map: The topic on physiographic division can be suitable transacted with the help of 3D physical wall map of India, political wall map of India and an Atlas supported by several outline maps. By this time since the students have already learnt about locational setting of India they are well versed with the boundaries and extent of our country. The locational setting will provide them with a frame for further study. You may hang both the wall maps in the classroom in such a way that they are visible to all the students. You may initiate a discussion on finding out the differences in two set of maps that is political and physical. List out the differences……

i) 
ii) 
iii) 

You may bring their attention to the Map, specifying altitude in meters above the mean sea level and is shown by graded colours. Let students recognize the importance of color scheme used on a physical map of India. Through discussion try to describe the features of mountains, plains and plateaus with respect to their altitude, extent, direction. You may invite students near the wall map and ask them to explore various features of Himalayas like name of several peaks. Ask them to correlate it with India- Political map and let them find out names of Himalayan States. You may ask them to explore the shape of Himalayas whether it is straight, curve, concave or convex. Whether it is a continuous elongated stretch or scattered and broken ranges. You may raise point wise questions related to location of different mountain ranges of Himalayas like Karakoram, Hindukush; height of these ranges, average height, highest peak, important valleys, and rivers originating and flowing through this region. After exploring information about rivers, mountains, hill stations, peaks, land features, valleys and importance of the Himalayas, you can proceed to the Great Plains of India- its extension, major rivers, towns and cities located on the bank of these rivers, tributaries of these rivers and importance of the plain.

- To obtain information on the Deccan Plateau., What questions would you ask to students? Do specify.

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Activity 2: Learning concepts through 3- models/images/dictionaries: You must have noticed that the topic contains several terms like Duns, Pass, Valley, Peak, Range, Hills, Gorge, and Canyon, fold mountains, etc. It may happen that there is insufficient explanation of these terms and concepts in textbook. In such a situation, you can either rely on e-content obtained from National Repository of Open Educational Resources (NROER) of NCERT, other internet resources, or you can also ask your students to have access to subject related illustrative dictionaries. Once these concepts and terms are understood by the students then they can relate this knowledge with major concepts. You can ask your students to observe these images and record their observations; you can provide those parameters for observations, what all they have to record. You may also ask them to search for similar examples.

Activity 3: Teaching with documentary/multimedia: These days a lot of animated multimedia-material is available in the market. In case you have such material then you must be thorough in your planning and you have to customize your lesson. You need to have your discussion points listed out before the presentation, during the presentation and at the end of the presentation.

Activity 4: Map Skills: As a teacher, you may also help your students sharpen their map skills. You may ask them to locate the following geographical features on an outline map of India.

i) Mountain Ranges: the Karakoram, the Zaskar
ii) Hill Ranges: the Aravallis, the Shiwaliks, the Nilgiri, the Cardamom hills.
iii) Mountain Peaks: K2, Kanchenjunga, Anai- Mudi, Gurushikhar.
iv) Plateaus: Malwa, Deccan Plateau, Chotanagpur plateau
v) Eastern Ghats, Western Ghats, the Indian Desert.

Students may be guided to use proper conventional symbols and colours to mark these features.

Activity 5: Project Work: You may inform your students that these are major geographical divisions of the country. These major regions are further divided into meso and micro regions. Ask students to find the meso and micro region in which their school is located. Ask them to write an account of Physiography of their own region. Let students explore the altitude of their place from several sources like one can be railway station. Let students paste images from some special geographical features of their own region.

14.6.3 Assessment Questions
1) Name the major physiographic divisions of India.
2) On the outline map of India, mark the physical features of India. Use appropriate colours.
3) What are the important ranges of the Himalayas?
4) What are major river systems of the Northern Plains?
5) Differentiate between the Malwa Plateau and the Deccan Plateau.
6) Differentiate between Western Coastal plains and Eastern Coastal Plains.
14.7 DRAINAGE SYSTEMS IN INDIA

14.6.1 Overview of the Topic

The drainage systems of the country can broadly be classified into two river systems - The Himalayan Rivers and the Peninsular Rivers. A river along with its tributaries may be called a river system. Indus river system comprise the Indus and tributaries. The Indus rises in Tibet near Lake Manosarowar. The tributaries of the Indus are – the Zaskar, the Nubra, the Shyok, the Jhelum, the Chenab, the Ravi, the Beas, and the Sutluj. The tributaries of the Ganga either rise in the Himalayas or in the Peninsular Plateau. The Yamuna, the Ghaghara, the Gandak, and the Kosi rise in the Himalayas. The Chambal, the Betwa, and the Son, rise in the Peninsular Plateau. The River Brahmaputra rises in Tibet east of Manosarowar lake very close to the sources of the Indus and the Satluj. The Peninsular Rivers like the Mahanadi, the Godavari, the Krishna, the Godavari, the Krishna, and the Kaveri flow eastwards and drain into the Bay of Bengal. The Narmada and the Tapi flow westwards into the Arabian Sea.

India has many lakes. The Dal Lake in Kashmir is famous for its tourist attraction, The Sambhar lake in Rajasthan is a salt water lake. There are lakes in the coastal areas like the Chilika lake, the Pulicat lake and the Kolleru lake. These river systems are very important in terms of water resource availability. They play a significant role in the economy due to their use in irrigation, navigation and hydro-power generation.

Check Your Progress

Notes: a) Write your answers in the space given below.
        b) Compare your answers with those given at the end of this unit.

7) What is a river system?

8) Where do the tributaries of the Ganga rise?

9) Which is a salt water lake?
14.8 TEACHING-LEARNING STRATEGY

Teaching-learning strategy for this topic includes learning objectives, teaching-learning activities, and assessment questions.

14.8.1 Learning Objectives

Through this teaching-learning strategy, students will be able to:

- classify the drainage system of our country;
- describe the features of different drainage systems of the country;
- explain the causes of river pollution in our country;
- discuss the issue of minimizing river pollution in our country;
- indicate the importance of rivers to the regions they occupy;
- discuss the role of rivers in the economy; and
- explain the role of rivers in the evolution of human society.

Learning Resources: Physical Map of India, Drainage Map of India, Worksheets, Newspaper Clippings (Riverine Pollution, Inter-linkages of Rivers, Inter-state water disputes, Government Efforts for Cleaning of Rivers). Pictures (several prominent lakes of the country, Riverside inhabitants of different regions)

14.8.2 Teaching-learning Activities

Activity 1: Teaching with Wall Map: In the Unit 8, you were acquainted with maps as learning resources. In order to teach a unit on Drainage System you need to carry 3D physical map of India or specifically drainage map of our country. Students already know that the region of the Himalayas is covered with snow throughout the year. They also know that the rivers and the tributaries of River Indus, the Ganga and the Brahmaputra rise either in the Himalayas or beyond it. You may initiate a discussion in the classroom by asking sequential questions to get different reasons for these rivers being full of water throughout the year. You may ask them the situation which is other way round like rivers originating from hills and mountains which are not snow fed. From where do these rivers get water? While dealing with major river systems you can use physical map to great extent. Ask your students to identify and locate the source of the river or head of the river, what can be the reason for its origin, name the hill/peak from where that particular river originates. What is the elevation of that place? In which direction the river is flowing. Identify its major tributaries. Ask students to correlate the maps with political maps of India. Ask them to find out the towns and cities located on the bank of these rivers. Initiate a discussion on river and role in economy. Further you may hold a discussion on cities and rivers.

Activity 2: Project Work: You may ask your students to prepare a detailed account of river present in their locality. While preparing report, they must note the source of the river, place from where it originates, length of the river, tributaries of river, impact of river on life of people in that region. Whether that river merges with some other big river or terminates in Ocean/ or some other water body. What is the quality of water of that river? Whether it is good to drink water from that river? Are there any towns/cities located on the bank of that river? (Remember that students must be able to make distinction between canal and river and they
write an account of river and not the canal). Does the river have large multipurpose
dam/ small dam/canals etc? Does the river contain water throughout the year or
in some months? Does flood occur in that river?

Activity 3: Project Work: You may ask your students to collect information of
‘Namami Gange Yojana’ of Union Government which integrates the efforts to
clean and protect the Ganga River in comprehensive manner and hold discussion
in your class.

Activity 4: Discussion: Collect information about ‘Indian Rivers Inter –Link’
project and make a presentation in your classroom.

Activity 5: Map Skills:
On an outline map of India mark and label the following
i) Rivers: the Ganga, the Satluj, the Brahmaputra, the Mahanadi and the Kaveri
ii) Lakes: the Chilka, the Sambhar, the Wular, the Pulikat, the Kolleru.

14.8.3 Assessment Questions
1) What are the major river systems in India?
2) Where does the Indus rise?
3) Where do the Brahmaputra and the Son rise?
4) The Tapi flows into .........................
5) Where is the Dal Lake?
6) Why do the rivers flowing from the Himalayas have water throughout the
year?
7) On an outline map of India, mark and label the rivers – the Narmada, the
Jhelum and the Krishna.

14.9 MONSOON: ITS CHARACTERISTICS

14.9.1 Overview of the Topic
Monsoon climate is found in large parts of India. It is a wind which changes its
direction according to change of seasons. During summer it blows as sea breeze
causing heavy rainfall over a large part of India blowing from south western
direction over the Bay of Bengal and Arabian Sea. It causes relief rainfall owing
to the presence of Western Ghats, the Himalayas and Poorvanchal mountains.
During winter it blows as land breeze from north eastern direction, catches
moisture from the Bay of Bengal and pours heavy rain in eastern coast due to the
presence of Eastern Ghats. Thus monsoon is a rain bearing wind in our country.

Check Your Progress
Notes: a) Write your answers in the space given below.
     b) Compare your answers with those given at the end of this unit.
10) What is the important feature of monsoon climate?
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11) Differentiate between summer monsoon and winter monsoon.

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14.10 TEACHING-LEARNING STRATEGY

Teaching-learning strategy for this topic includes learning objectives, teaching-learning activities, and assessment questions.

14.10.1 Learning Objectives

Through this teaching-learning strategy, students will be able to:

- describe the mechanism that leads to formation of Indian Monsoon;
- explain the seasonal variations in the climatic conditions in different parts of the country;
- describe the characteristics of dry spells and the break in monsoon;
- explain the concept of variability of rainfall; and
- discuss the reasons for monsoon as a unifying bond.

Learning Resources: Chart showing pressure belts, World political and physical map. India: Political and Physical Map. Distribution of Rainfall (map), newspaper clippings, collage.

14.10.2 Teaching-learning Activities

Activity 1: You must be familiar with the following terms before initiating the topic on ‘Monsoon’ in the classroom. These basic concepts are dealt in the Geography Course at the upper primary stage. You must try to reflect on relationships between various climatic controls and the Monsoon. Some of the concepts are presented below for your understanding.

Atmospheric Pressure:

The atmospheric pressure and winds are more significant as climatic controls and less as climatic elements. Contrasts in temperature leads to change in pressure which generate winds. Winds are climatic control which affects both temperature and humidity.

High Pressure and Low Pressure: There are two types of pressure systems:
i) High pressure

ii) Low pressure.

High pressure is also known as anticyclone. When it has an elongated oval shape, it is termed as ridge or wedge. Low pressure is also termed a depression, cyclone or a low. When elongated, it is known as trough.

**Pressure Belts and Winds**

On the earth’s surface there are seven pressure belts. The polar highs, the subtropical highs, the sub-polar lows form matching pairs in the Northern and the Southern Hemispheres. The three belts of the Northern Hemisphere are separated from those of the Southern Hemisphere by the equatorial belt.
**Occurrence of Winds:** Due to horizontal difference in pressure, there is generation of winds. The horizontal differences in the air density lead to the horizontal differences in the air pressure. This generates winds. The wind blows from areas of high pressure to areas of low pressure.

**Ferrel’s Law:** According to this law, the winds turn towards their right in the Northern Hemisphere and to the left in the Southern Hemisphere. The winds are deflected from their true gradient course as a result of the Coriolis force which is generated by the rotation of the earth.

**Coriolis force:** The Coriolis force produced by the rotation of the earth has its effect on every moving object, whether it is an ocean current or a bullet fired from the gun. It is an effect which results from the rotational movement of the earth and movement of air relative to the earth. The Coriolis force is zero at the equator and maximum at the poles. In the northern hemisphere the Coriolis force acts to the right of the direction of wind and in southern hemisphere it acts to the left. That is why all winds in the Northern Hemisphere tend to move toward the right and those of the Southern Hemisphere to the left with respect to the rotating earth. This accounts for the act that in the Northern Hemisphere winds blow counter clock-wise around the centres of low pressure, but clock-wise in the Southern Hemisphere.

**Pressure Gradient:** The rate at which the horizontal pressure change is indicated by the pressure gradient. The rate of air-flow or the velocity of the wind is indicated by the steepness of the pressure gradient. Steepness and the velocity are directly proportional to each other.

**Planetary Winds:** The planetary winds are permanent winds which blow throughout the year from low latitude to the other in response to the latitudinal differences in air pressure. They blow over the vast areas of the continents and oceans. The two most significant winds for climate and human activities are the trade winds and the westerly winds.

**Trade Winds:** The trades are also termed tropical easterlies because in both hemispheres they blow from the east to the west from 30 degree North and 30 degree south toward the equator.

**Westerlies:** The westerlies blow from 35-40 degree to 60-65 degree North and South latitude. They originate in the northern parts of sub-tropical high-pressure cells and blow toward the poles.

**Humidity:** A state of the atmosphere in relation to its water-vapour content, and normally referring to *relative humidity* unless otherwise stated.

**Relative Humidity:** An index of the amount of water vapour present in the atmosphere. It is the actual vapour pressure expressed as a percentage of the saturated vapour pressure which would be possible at the same air temperature. Relative humidity is an attempt to measure the readiness with which vapour will condense from the air, and is concerned with two variables: the actual water vapour in a given mass of atmosphere and the temperature of that mass of air, since this determines the capacity of the air to hold the water vapour. The value of relative humidity varies inversely with temperature and therefore usually rises during the nights, because temperature falls, even though the amount of water vapour may remain constant. It is measured by a Hygrometer.
Content Based Methodology: Geography and Economics

**Type of Rainfall: Convectional, Orographic and Cyclonic/Frontal, and Windward and leeward slopes.** (NCERT Geography textbooks for classes VII and XI may be seen for details.)

**El Nino:** El Nino is a warm ocean current, which occasionally replaces the normal cold Peru Current that moves north along the western coast of South America. The surge of warm ocean waters recurs every three to five years and lasts from six to eighteen months. (Between El Nino there are often periods of cooling surface waters in the same area called La Nina).

**ENSO:** El Nino event is closely associated with the pressure changes in the Central Pacific and Australia. This change in pressure condition over pacific is known as the southern oscillation. The combined phenomenon of southern oscillation and El Nino is known as ENSO (El Nino Southern Oscillation).

**ITCZ - The Inter Tropical Convergence Zone (ITCZ)** is low pressure zone located at the equator where trade winds converge, and so, it is a zone where air tends to ascend. In July ITCZ is located around 20 degree north – 25 degree north latitudes (over the Gangetic plains), sometimes called the monsoon trough. This monsoon trough encourages the development of thermal low over north and North West India. Due to the shift of ITCZ the trade winds of the southern hemisphere cross the equator between 40 degree and 60 degree E longitudes and start blowing from southern to northern due to the Coriolis force. It becomes southwest monsoon. In winter, the ITCZ moves southward and so the reversal of winds from northeast to south and southwest takes place. They are called northeast monsoons.

**Breaks, Bursts and Pulsatory Movements** - The south west monsoon is also characterised by breaks, bursts and pulsatory movements. *Breaks* are the spells of one or more weeks during the height of monsoon in eastern part of India. The *Bursts* is the sudden starting of the monsoon activity with its heavy cloud and rainfall. When the westerly jet stream shifts from the south of Himalayas to its north, the monsoon suddenly enters the Indo-Gangetic Plains. *Pulsatory movements* refer to alternate increase and decrease in the intensity of the monsoon winds with that of the rainfall that occurs.

**Western Disturbance and Tropical Cyclone** - The western disturbances which enter the Indian subcontinent from the west and northwest during the winter months, originate over the Mediterranean Sea and brought into India by the western jet stream. An increase in prevailing night temperature generally indicates an advance in the arrival of these cyclonic disturbances.

Tropical cyclones originate over the Bay of Bengal and the Indian Ocean. These tropical cyclones have very high wind velocity and heavy rainfall and hit the Tamil Nadu, Andhra Pradesh and Odisha coast. Most of these cyclones are very destructive due to high wind velocity and torrential rain that accompanies it.

**Jet Stream:** Interesting fact may be discussed related to jet stream; it was toward the end of World War II that the existence of Jet Stream in upper troposphere was made known to the meteorologists. The sequence of events leading to the knowledge of jet stream is quite interesting. When during the last phase of Second World War, the American bomber pilots tried to fly towards Japan at an altitude of about 13,000 metres, they encountered strong head winds which greatly reduced
their ground speed (sometimes to zero). But while returning to their bases in the east, they found that the speed became much faster and at times it even doubled because of a high velocity tail wind. Thus the pilots returning home from high-level missions brought back unique experiences of upper level winds blowing with terrific speed. Ultimately the formal discovery of so called jet stream was made.

The onset of monsoon is generally considered a highly complex phenomenon and there is no single theory which can explain it fully. In order to explain the causes of Indian Monsoon you need to have fair understanding about these probable causes.

It is still believed that the differentiated heating of land and sea during the summer months is the mechanism which sets the stage for the monsoon winds to drift towards the sub-continent. As discussed earlier, you must be aware of the terms and concepts related to ITCZ, Jet Stream, Pressure belts, Planetary winds Differential heating, Isobar, Isotherms, Isohyets, types of rainfall, windward and leeward slopes, adiabatic lapse rate, etc., before transacting Mechanism of Monsoon in the classroom.

Activity 2: Teaching through Maps and diagrams: You may initiate a discussion by highlighting peculiar characteristics of monsoon wind that is seasonal reversal of wind. In order to make students understand you need to project maps showing atmospheric conditions over the Indian subcontinent in the month of June and January. You may ask students to list out general features of temperature and rainfall during these months. You may also seek information about seasons in which these two months fall. You may ask students to mark the areas lying between 20° N & 20°S on a map of Indian subcontinent. You may make your students recall about the climatic conditions (especially temperature) existing in the month of June. You may make your students to note the presence of vast water bodies around the Indian peninsula. Further you can explore that if both landmass and water bodies are heated then which one will be heated first. What is the relationship between temperature, pressure and winds? With the help of brief description given earlier about the relationship among temperature, pressure and wind you may explain the movement (reversal of wind) due to differential heating and cooling of land and water.

In an instance you may try to explain ITCZ with the help of map and diagram showing winds. You need to focus on equatorial latitudes ask your students to name the winds which converges in this belt. You may make them understand the position of ITCZ and motivate them to come out with answers to the question like why there is movement of ITCZ. What is the association between ITCZ and apparent movement of the sun? What can be the probable reasons for origin of Monsoon winds?

Moving further, you may also make them aware about the location of Madagascar, Tibetan plateau, the Himalayas. You may make your students to estimate the climatic conditions (temperature and pressure) in these areas and let them relate with movement of winds.

You may have to make a distinction between pulsating winds and steady winds. You may have to discuss that why monsoons are pulsating winds due to different atmospheric conditions encountered by it. Your students can make an estimate
Content Based Methodology: 
Geography and Economics

about the pressure conditions on land and sea in the month of June. Ask them to relate it with trade winds of the southern hemisphere. You make them realise that these south east trade winds originate over the warm subtropical areas of the southern oceans. They cross the equator and blow in a south-westerly direction entering in the Indian peninsula as the south west monsoon. You may ask the questions like if winds are travelling over the warm sea then will they be dry winds or moist winds. With the help of map you may have to explain that the monsoon arrives at the southern tip of Indian Peninsula by the first week of June. With the help of map try to mark the way it enters in two streams Arabian Sea branch and Bay of Bengal Branch. You may raise questions about why and how rainfall takes place in coastal Maharashtra, Karnataka and Assam in monsoon season. You may also make your students understand the importance of hills and mountains lying in the course of monsoon winds. You may raise several questions like why rainfall in the Ganga Valley decreases from east to west. Rajasthan and Gujarat gets scanty rainfall?

You may have to explain the reasons for withdrawal of monsoon. You may ask students to estimate climatic conditions in the month of October- November. You may raise questions like why there is occurrences of cyclonic depressions over the Andaman sea. The impact of winter monsoon in the islands and Tamil Nadu coast.

Activity 3: Map Interpretation: You may ask your students to interpret the map to find out answers for the following questions: Why there is less than 60 cm rainfall in Western Rajasthan and adjoining parts of Gujarat, Haryana and Punjab. Why Leh in Jammu and Kashmir receives low rainfall and is termed as cold desert.

Activity 4: Group Discussion: You may plan a group discussion with students on the Unifying Role of Monsoon.

Activity 5: Project Work:

i) You may ask your students to prepare a collage from newspaper clippings collected during monsoon season and write a report in around 250-300 words. You may suggest several themes to your students like impact of monsoons on agriculture, human life, land and air transportation and services etc.

ii) You may ask your students to find out several cultural aspects like songs, dances, festivals and cuisines associated with monsoon season in your region.

Activity 6 Map Skills:

On an outline map of India show the following

i) The direction of south-west monsoon over India.

ii) Areas receiving less than 20 cm of annual rainfall.

iii) Areas receiving more than 400 cm of rainfall.

14.10.3 Assessment Questions

1) Differentiate between high pressure and low pressure.

2) How many pressure belts are there on the earth’s surface/

3) Explain Ferrell’s Law.
4) What are planetary winds?
5) What are westerlies?
6) Differentiate between El Nino and La Nina.
7) What is ITCZ?
8) Explain western disturbance and tropical cyclone.
9) Explain pulsatory movements of the monsoon.

14.11 DISTRIBUTION OF NATURAL VEGETATION IN INDIA

14.11.1 Overview of the Topic

India has a variety of natural vegetation owing to its terrain and climate. Except the high mountains and hills, the types of natural vegetation in any country are determined by the amount of rainfall. India has five types of forests, namely – Tropical Rain forests, Tropical Deciduous forests, Thorn forests and scrubs, Montane forests, and Mangrove forests. In regions with heavy rainfall (over 200 cms. Per annum) like the North Eastern states and South western Coast, we find tropical rain forests known as tropical Evergreen and Semi-Evergreen forest. The important trees of these forests are rosewood, mahogany, cane etc. In regions with rainfall between 70 and 200 cms. Per annum like the Tarai region, North West Coast, Bihar, we find Tropical Deciduous forests. The important trees of these forests are teak, sal, shisham, sandal wood, etc. In regions with rainfall below 70 cms. Per annum like central and western parts of Rajasthan, we find Thorn forests and scrubs. The plants include scrubs, thorny bushes and cactus. Montane forests are found in the Mountains. The type of natural vegetation cover changes according to fall in temperature as one goes up the mountains. In the Himalayas, we find tropical vegetation up to a height of 500 meters, wet temperate type of forests between a height of 1000 and 2000 meters, temperate vegetation from 1500 to 3500 meters and alpine vegetation above 3600 meters above the sea level. Near the sea coast in the delta region the trees have adopted themselves to salt water and the effect of tides. We find Mangrove tidal forests in the Ganga Delta – the Sunderbans. There are many factors responsible for biodiversity in the country. There is a need of conservation of natural vegetation and several conservational strategies for natural vegetation.

Check Your Progress

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

12) Name the essential factors which determine the type of vegetation.

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13) Where is Evergreen forest found?
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14) Give example of a tidal forest.
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14.12 TEACHING-LEARNING STRATEGY

Teaching-learning strategy for this topic includes learning objectives, teaching-learning activities, and assessment questions.

14.12.1 Learning Objectives

Through this teaching-learning strategy, students will be able to:

- identify the factors determining the natural vegetation;
- explain the reasons for distribution of natural vegetation in the country;
- analyse the relationship between climate and natural vegetation;
- list the natural vegetation belts;
- describe the features of different vegetation belts; and
- identify the trees of different vegetation belts.

Learning Resources: India: Distribution of Natural Vegetation (map), India: Physical map, India, soil map, India, Images of different species of trees. Images of different animal species found in different geographical regions.

14.12.2 Teaching-learning Activities

Activity 1: Discussion: You may make distinction in your classroom to discuss the concept of forest, natural vegetation. You may pick up the example of natural vegetation that exists in your region. Try to seek names of original species of their region. You can inquire about the distance of that place from equator whether the place is near or far. You may ask them to explore for elevation of that place from the mean sea level. You may also have an idea of climatic condition of that area. Ask them to correlate these factors. What do they comment. Build their construction to understanding of Natural Vegetation.
Activity 2: Teaching Through CD: You may use a video containing natural vegetation of different geographical region like tropical rain forests (evergreen and semi evergreen), tropical deciduous, desert and scrub vegetation and montane type of natural vegetation. You may ask children to note down their observations.

Activity 3: Teaching through Map: Hang the Wall map on Natural Vegetation in the classroom; you may project the map through Over Head Projector or Multimedia. With the help of legend let the children name the different natural vegetation belts of our country-

Analyzing and Correlating Maps: In order to have better understanding of natural vegetation you can teach association and relationship of location, relief and climate to understand the type of natural vegetation. You may ask your students to observe the maps given in their textbooks and to compare and correlate these to maps to find out associations. Based on observations you can explore and discuss the generalizations like if a place is located at a particular latitude and altitude and experience a particular type of temperature and rainfall, then in such a situation what kind of natural vegetation can be expected.

Activity 4 Project Work: You may assign project work to deal with the topic on natural vegetation. You may divide the class in six groups. Each group will prepare an account of one natural vegetation belt and collect sufficient material (maps, images, issues and concerns, geographical area (states/UTs) from magazines, open educational resources from internet. You may provide sufficient time for this project work. As a follow up, ask your students to make a presentation.

Activity 5 Map Skills:
On an outline map of India, mark the following:

i) Areas of evergreen forests
ii) Areas of Deciduous forest

14.12.3 Assessment Questions
1) Mention the factors which determine the natural vegetation of India.
2) What is the relationship between temperature and vegetation?
3) Name the important vegetation belts of India.
4) Distinguish between Evergreen and Desert forests.
5) Describe the mountain vegetation of the Himalayas.

14.13 NEED FOR CONSERVATION OF NATURAL VEGETATION AND WILDLIFE AND VARIOUS MEASURES

14.13.1 Overview of the Topic
There is urgent need for the conservation of natural vegetation to maintain balance in environment. This can be done by controlling reckless felling of trees, overgrazing in forests, forest fire, Jhuming, urbanization and shifting agriculture. Research Institutes are required to control the spread of plant diseases. Human made forests (Afforestation) are to be encouraged to produce trees for commercial
purposes and to increase people participation in forestation and social forestry. Various kinds of wild animals and birds are found in Indian forests. There is interdependent relationship of natural vegetation and wild life. There is a wide variety of animal life in our forests like carnivorous, herbivorous, birds, water animals and reptiles. Various kinds of animals and birds forests are known as wild life. Destruction of natural vegetation cover leads to destruction of wild life. As such there is a need for special effort to preserve wild life. National parks and sanctuaries have been developed in large number in addition to restriction on exploitation of forest wealth by human beings. In this topic there is a description of forest and wild life resources. Through this contents, the concern of vanishing forests is projected. The need of conservation of natural vegetation is brought forward with a scope of discussion on suitable measures for conservation of wildlife and natural vegetation.

Check Your Progress

Notes: a) Write your answers in the space given below.
   b) Compare your answers with those given at the end of this unit.

15) Why is conservation of natural vegetation needed?

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16) What is meant by wild life?

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14.14 TEACHING -LEARNING STRATEGY

Teaching-learning strategy for this topic includes learning objectives, teaching-learning activities, and assessment questions.

14.14.1 Learning Objectives

Through this teaching-learning strategy, students will be able to:

• describe the importance of natural vegetation and wildlife in our country;
• list out the vulnerable and extinct species in our country;
• discuss various measures for conservation of natural vegetation and wildlife;
• realize the importance of losing forest and wildlife resources;
• develop concern for depletion of resources; and
• sensitize public on the issue of conservation of forest and wildlife resources

**Learning Resources:** Newspaper Clippings, Images of endangered and extinct plants and animals. Posters of save animals, Movies, documentaries and short films.

### 14.14.2 Teaching-learning Activities

**Activity 1: Brainstorming Session:** Having learnt about natural vegetation in the previous section, it becomes necessary to raise the issue of decline in forest cover in India due to several reasons. You may also initiate a discussion that if forests are reduced at this rate, what will be its implications? You may raise a question that whether it is necessary to protect forest and wildlife. Student will come forward with their arguments in favour and against. You may also probe further that how wild life sanctuaries, national parks and zoological gardens help in conservation of wildlife resources. Teacher can use images pertaining to endangered and extinct species of plants and animals.

**Activity 2:** Students can be asked to collect data regarding poaching of tigers and other animals from newspapers, magazines, and Internet.

**Activity 3 Project Work:** Teachers can assign project work to prepare collage and posters on theme like conservation of natural resources and wildlife. Students need to express their ideas based on collage prepared.

**Activity 4 Educational Tour:** If there is any national park nearby your place take your students on an educational tour. Describe about the tour under the heads given below:

- Objectives of the tour
- Place of visit
- Activities to be taken up by students
- Preparations to be made by students
- Follow-up activities

**Activity 4 Discussion:** Teacher can initiate a discussion on a topic, ‘Rise in Population has led to increased demand of Resource Consumption and Environmental Degradation’. Students are expected to come out with their logical arguments based on available evidences.

**Activity 5 Map Skills:** On an outline map of India mark the areas of endangered wildlife species. Student may also mark the state/area which was in news for rampant forest fire.

### 14.14.3 Assessment Questions

1) Why is the conservation of forest an urgent need?
2) How can forests be conserved?
3) How do you contribute to social forestry?
4) Why is the preservation of wildlife important? What actions have been taken up for the preservation of wildlife?
5) Name the different protected areas of wild life.

6) On the given outline map of India mark the given National parks:
   Corbett, Gir, Periyar, Kaziranga, Simlipal

14.15 LET US SUM UP

In this unit, our major focus was on the topics such as location and size of India, major physical features of India, drainage system of India, monsoon and its characteristics, natural vegetation and their distribution, need for conservation of natural vegetation and wildlife. We presented a brief content of these topics. For each of these topics, we presented teaching-learning strategies which included learning objectives, teaching-learning activities which you may adopt, and assessment questions, which may be used to evaluate students’ performance on the topics. Teaching-learning strategies presented in this unit are suggestive ones. You could develop your teaching-learning strategies for these topics.

14.16 REFERENCES AND SUGGESTED READINGS


14.17 ANSWERS TO CHECK YOUR PROGRESS

1) The land boundary of India is about 15,200 km and the coastline is of about 7,516 km.

2) The geographical area of India is 32,87,263 sq.km.

3) The Deccan peninsula is triangular in shape which is flanked by Arabian Sea in the west, Bay of Bengal in the East and Indian Ocean in the South.


5) The three important ranges of the Himalayas are Himadri, Himachal, and Shiwaliks.

6) The major Plateaus constituting the Peninsular Plateau are the Malwa Plateau in the north which slopes towards north and Deccan Plateau in the south.

7) A river along with its tributaries is called a river system.

8) The tributaries of the Ganga either rise in the Himalayas or in the Peninsular Plateau.

9) The Sambhar lake in Rajasthan is a salt water lake.

10) The important feature of monsoon climate is that it is a wind which changes its direction according to change of seasons.
11) Summer monsoon blows as sea breeze from south western direction and
winter monsoon blows as land breeze from north eastern direction.

12) Temperature and moisture are essential factors determining the type
vegetation in India.

13) The tropical evergreen forests are found in North Eastern states and South
Western coast of India.

14) The Sunderbans is an example of tidal forest.

15) Conservation of natural vegetation is needed to maintain balance in
environment.

16) Animals and birds found in forests are known as wild life.
UNIT 15  RESOURCES: THEIR DEVELOPMENT AND UTILIZATION

Structure

15.1 Introduction
15.2 Objectives
15.3 Resources
  15.3.1 Concept of Resources
  15.3.2 Classification of Resources
  15.3.3 Distribution of Resources
  15.3.4 Industrial Pollution and Degradation of Environment
  15.3.5 Need and Measures for Conservation of Resources
  15.3.6 Resources Utilization and Sustainable Development
15.4 Teaching-Learning Strategy
  15.4.1 Learning Objectives
  15.4.2 Teaching-Learning Activities
  15.4.3 Assessment Questions
15.5 Let Us Sum Up
15.6 References and Suggested Readings
15.7 Answers to Check Your Progress

15.1 INTRODUCTION

All of us know that our country is endowed with rich natural resources—land, water, minerals, flora and fauna. These natural resources have economic importance because of the value attached to them by human-beings. Secondly, with growing need and extensive use of these resources, there is fear of scarcity or exhaustion of these resources. In some cases, these natural resources have been over-exploited. It leads to disturbance in the ecological balance and natural ecosystems. Therefore, there is a need for sustainable resource utilization so that we could maintain a balance between development based on resource utilization and maintaining natural ecosystem. In this Unit, we explain the concept of resources and their development and utilization as well as suggest teaching-learning strategy to transact the learning experiences related to these contents.

15.2 OBJECTIVES

At the end of the unit, you will be able to;

• identify the major terms, concepts and generalizations related to resources: their development and utilization;
• state the meaning of the major concepts in the unit;
• formulate learning objectives for the contents of the unit;
• identify appropriate alternate method of teaching concepts and generalization;
• prepare the required teaching-learning aids;
• formulate assessment questions;
• develop necessary skills required for teaching geography like questioning, describing, drawing, map making etc; and
• organize field visits for providing direct experience.

15.3 RESOURCES

Resources constitute the life-line of an economy. An economy endowed with natural resources has vast potential for economic development and can ensure prosperity to its people. Let us understand the concept of resources and how they are classified and distributed.

15.3.1 Concept of Resources

In simple terms, resources are the matters or substances which satisfy human wants. Therefore, the basic concept of resource is related to human well-being. Resources are produced by the interaction among human being, environment and culture. Before any element can be designated as resource, three basic pre-conditions must be satisfied. They are:

i) knowledge,
ii) technical skill and
iii) demand for the material or services produced.

If one of these conditions is not satisfied, a particular substance cannot be called as a resource. Let us explain it through an example. From time immemorial, water is present on the earth. But it became a source of energy when people acquired the knowledge and technical skills for generation of hydro power. It is, therefore, human ability and need which create value for a substance and thereby make it a resource, not its sheer physical presence.

15.3.2 Classification of Resources

We can classify resources into various types based on different factors. Some of the major classifications and the bases of classifications are as follows:

i) On the basis of origin

Resources are divided into two categories i.e. biotic and abiotic. Biotic resources include all the living beings and organisms such as human beings, flora and fauna, fisheries, livestock, etc. whereas abiotic resources include all the non-living things such as rocks, soil and metals.

ii) On the basis of exhaustibility

Resources are divided into two categories i.e. renewable and non-renewable. Renewable resources are those resources which can be renewed or reproduced where as non-renewable resources are those resources which cannot be renewed or reproduced. Some of the examples of renewable resources are solar and wind energy, water, forests, etc. Minerals and fossil fuels etc. are some of the examples of non-renewable resources.
On the basis of the ways of exploiting natural resources using technological means, resources are divided into four categories, namely, potential resources, developed resources, stock and reserve. **Potential resources** are those resources which already exist but not yet exploited fully or properly. Some examples of potential resources are solar and wind energy resources, which are generally used in Rajasthan and Gujarat. **Developed resources** are those resources which are developed and surveyed for utilization and are being used in present time. Resources that are available, but we do not have proper technology to use them are called **stock**. For example – water is made of oxygen and hydrogen, which can be used as a fuel, but because of lack of proper technology it is not being used as a fuel at present. Resources which are available and the knowhow to use them is also present but they are yet to be used are called **reserves**. For example – river water which is not used to generate electricity.

**Check Your Progress**

**Notes:**

a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

1) Classify the resources given below under the categories of renewable and non-renewable resources.

   Water, iron, forest, solar energy, petrol, natural gas, wild life, coal

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15.3.3 **Distribution of Resources**

Distribution and availability of resources in India are uneven. There are regions which are rich in certain types of resources, but are deficient in some other resources. For example, the states of Jharkhand, Odisha, Chhattisgarh and Madhya Pradesh are rich in mineral deposits and forest resources. Arunachal Pradesh has abundance of water and forest resources, but lacks in mineral resources. The state of Rajasthan is very well endowed with solar and wind energy, but lacks in water resources. This calls for balanced resource planning at the national, state, regional and local levels. But simultaneously, we should remember that mere availability of resources does not lead to any development unless there are corresponding technological and institutional changes. Let us know the availability of soil, water, forest, wild life, mineral and energy resources in India and how they are distributed.

**A) Land as a Resource**

Land as a natural resource is of utmost importance to us because it supports natural vegetation, wild life, human life and their economic activities. However, land resource is finite in magnitude. Therefore, it is important to use the available
land for various purposes with careful planning. India has land under a variety of relief features. About 43%, 30% and 27% of the land area of the total surface area of the country are plains, mountains and plateaus respectively. Plain land is mainly used for agriculture and industry, whereas majority of the rivers in our country originate from mountains and ensure perennial flow of water through them. Plateau areas of our country possess rich reserves of minerals, fossil fuels and forests. To understand land use in a better manner, let us discuss briefly pattern of land use in our country.

**Pattern of Land Use in India:** Land use in India is broadly classified under five categories. These are (i) forests, (ii) land not available for cultivation, (iii) other uncultivated land, (iv) fallow lands, and (v) net sown area. The total geographical area of India is 3.28 million sq km. However, land use data is available only for 93 per cent of the total geographical area. If we look at land use under different categories in terms percentage, net sown area covers maximum area (about 46%) followed by forest (about 23%) and barren and uncultivable waste land covers about 8%.

**Land Degradation and Conservation Measures:** Continuous use of land over a long period of time without taking appropriate measures to conserve has resulted in land degradation. At present, there are about 130 million hectares of degraded land in India. Approximately, 28 per cent belongs to the category of forest degraded area, 56 per cent is water eroded area and the rest is affected by saline and alkaline deposits. Human activities such as deforestation, over grazing, mining and quarrying, industrial effluents as waste have contributed significantly to land degradation. There are many ways to solve the problems of land degradation. Afforestation, proper management of grazing, planting of shelter belts, stabilization of sand dunes by growing thorny bushes, control of mining activities are some of the methods to check land degradation. Proper management of waste lands, proper discharge and disposal of industrial effluents and wastes after treatment can reduce land and water degradation in industrial and suburban areas.

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**Check Your Progress**

**Notes:**

a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

2) State any three ways to check the land degradation.

3) Identify any two natural and human induced factors each that are responsible for land degradation.
B) Soil as a Resource

Soil is the most important renewable natural resource. It is the medium for plant growth and supports different types of living organisms. Relief, parent rock, climate, vegetation and time are important factors in the formation of soil. Various forces of nature such as actions of running water, wind and glaciers, etc. contribute to the formation of soil. On the basis of the factors responsible for soil formation, colour, thickness, texture, age, chemical and physical properties, the soils of India can be classified into the following broad types.

i) Alluvial Soils: These are the most important type and cover forty per cent of the land area. These soils have been brought down and deposited by three great Himalayan rivers- Sutlej, Ganga and Brahmaputra and their tributaries. Northern plains are made up of these soils. These soils are also common in the eastern coastal plains, particularly in the deltas of the Mahanadi, the Godavari, the Krishna and the Kaveri. Alluvial soils are very fertile. They contain adequate potash, phosphoric acid and lime. However, they are deficient in organic and nitrogenous content. Alluvial soils support over half of the Indian population.

ii) Black Soil: The soils are black in color; hence are called black soils. The black soil is suitable for ‘Cotton-Crop’. These soils are spread over north-west Deccan plateau and made of lava flows. They cover the plateaus of Maharashtra, Saurashtra, Malwa and Southern Madhya Pradesh and extend eastwards in the South along the Godavari and Krishna Valley. Their capacity to hold moisture is well known. In addition, they are rich in calcium carbonate, magnesium carbonate, potash and lime.

iii) Red and Yellow Soil: The South-Eastern part of India is covered by red and yellow soils. They have developed on old crystalline igneous rocks in areas of low rainfall in the eastern and southern parts of the Deccan plateau. Yellow and red soils are also found in parts of Odisha, Chhattisgarh, southern parts of the middle Ganga plain and along the piedmont zone of the Western Ghats. These soils develop a reddish colour due to diffusion of iron in crystalline and metamorphic rocks. It looks yellow when it occurs in a hydrated form.

iv) Laterite Soil: Laterite soils have evolved as a result of intense leaching owing to heavy rains. These soils are mainly found in Tamil Nadu, Karnataka, Kerala, Madhya Pradesh and hilly areas of Odisha and Assam. They lack soil nutrients. After adopting appropriate soil conservation techniques particularly in the hilly areas of Karnataka, Kerala and Tamil Nadu, this soil is very useful for growing tea and coffee. Red laterite soils in Tamil Nadu, Andhra Pradesh and Kerala are more suitable for crops like cashew nut.

v) Arid Soils: Arid soils range from red to brown in colour. They are generally sandy in texture and saline in nature. Due to the dry climate, high temperature, faster evaporation, these soil lack humus and moisture. The lower horizons of the soil are occupied by *Kankar* because of the increasing calcium content downwards and restrict the infiltration of water. After proper irrigation these soils become cultivable as has been in the case of Western Rajasthan.

v) Forest soils: These soils are found in the hilly and mountainous areas where sufficient rain forests are available. The soils’ texture varies according to
the mountain environment where they are formed. They are loamy and silty in valley sides, coarse grained in the upper slopes and acidic with low humus content in the snow covered areas of the Himalayas. The soils found in the lower parts of the valleys particularly on the river terraces and alluvial fans are fertile.

**Soil Erosion and Soil Conservation:** The denudation of the soil cover and subsequent washing down is described as soil erosion. There are certain human as well as natural factors responsible for soil erosion. Some of the major human activities that led to soil erosion are deforestation, over-grazing, construction and mining. Natural forces like wind, glacier and water are also responsible for soil erosion. The running water cuts through the clayey soils and makes deep channels as gullies. The land becomes unfit for cultivation and is known as bad land and known as ravines in the Chambal basins. Many a times water flows as a sheet over large areas down a slope and washes away the top soil. This is known as sheet erosion. Wind blows loose soil off flat or sloping land known as wind erosion. Soil erosion is also caused due to defective methods of farming. Ploughing up and down the slope form channels for the quick flow of water that lead to soil erosion. On the other hand, ploughing along the contour lines can decelerate the flow of water down the slopes. This is called contour ploughing. Steps can be cut out on the slopes making terraces. Terrace cultivation restricts erosion. Western and central Himalayas have well developed terrace farming. Large fields are divided into strips. Strips of grass are left to grow between the crops. This breaks up the force of the wind. This method is known as strip cropping. Planting lines of trees to create shelter belt also works in a similar way. These shelter belts have contributed significantly to stabilising sand dunes in the desert of western India.

### Check Your Progress

**Notes:**

a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

4) Match the soil types with the region where it is mostly available

<table>
<thead>
<tr>
<th>Soil Types</th>
<th>Regions</th>
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<tbody>
<tr>
<td>a) Black Soil</td>
<td>i) Northern Plains</td>
</tr>
<tr>
<td>b) Arid Soil</td>
<td>ii) Chotanagpur</td>
</tr>
<tr>
<td>c) Laterite Soil</td>
<td>iii) Western Rajasthan</td>
</tr>
<tr>
<td>d) Alluvial Soil</td>
<td>iv) Deccan Plateau</td>
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5) How does strip cropping help in checking soil erosion in hilly and mountainous region?

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C) Forest and Wild life Resources

Our country is endowed with diverse flora and fauna and is one of the 12 mega biodiversity countries in the world. India has nearly 8 per cent of the total number of species in the world. Over 47,000 species of flora and 81,000 species of fauna are found in our country. This diversity of flora and fauna is due to varied relief and land forms, soil, varying temperature and amount of rainfall. Forest and wild life resources have a great significance in our daily life. We are not fully aware of their significance and most of the times we take these for granted. Today, they are under great stress mainly due to insensitivity to our environment. Some estimates suggest that about 10 per cent of India’s wild flora and 20 per cent of its mammals are on the threatened list. Why is it so?

Habitat destruction, hunting, poaching, over-exploitation, environmental pollution and forest fires are major factors that led to the decline in India’s biodiversity. The destruction of forests and wildlife is not just a biological issue. It is strongly correlated with the loss of cultural diversity. Such losses have increasingly marginalised and impoverished many indigenous and other forest-dependent communities, who directly depend on various components of the forest and wildlife for food, drink, medicine, culture, spirituality, etc. Within the poor, women are affected more than men. In many societies, women bear the major responsibility of collection of fuel, fodder, water and other basic subsistence needs. As these resources are depleted, the hardship of women increases. Many times they have to walk for more than 10 km to collect these resources. The indirect impact of degradation include severe drought or deforestation-induced floods, etc. which also hits the poor the hardest. Therefore, it is our responsibility to devise various effective forest and wildlife conservation strategies. Let us discuss in brief some of the conservation strategies adopted by the Government of India.

Conservation of Forest and Wildlife in India: Why do we need to conserve our forests and preserve our wildlife? It would help us to preserve the ecological diversity which is directly related to our life support systems – water, air and soil. It also preserves the genetic diversity of plants and animals for better growth of species and breeding. The Indian Government is fully conscious of the protection and conservation of the ecological diversity. In the 1960s and 1970s, conservationists demanded a national wildlife protection programme. The Indian Wildlife (Protection) Act was implemented in 1972, with various provisions for protecting habitats. The thrust of the programme was towards protecting the endangered species by banning hunting, giving legal protection to their habitats, and restricting trade in wildlife. Subsequently, central and many state governments established national parks and wildlife sanctuaries. The central government also announced several projects for protecting specific animals, which are threatened including the tiger, the one-horned rhinoceros, the Kashmir stag or hangul, fresh water and saltwater crocodile and the Gharial, the Asiatic lion. India has preserved vast tracts of natural habitats, birds and plants in its 551 Wildlife Sanctuaries, 96 National Parks, 25 Wetlands and 18 Biosphere Reserves spread almost in all the states of India. Besides this, there are number of Botanical Gardens, Zoological Parks, Deer Parks, Safari Parks, Aquaria, etc.
Check Your Progress

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

6) Why is India endowed with diverse flora? Explain

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7) Why do we need to conserve our forest and preserve our wildlife?

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D) Water as a Resource

As you know that earth is a watery planet having 71 percent of the earth surface covered with water. But fresh water accounts for only about 2.5 percent of the total water available on the earth. This freshwater is mainly obtained from surface run off and ground water that is continually being renewed and recharged through the hydrological cycle. Despite that, there are many countries and regions around the globe that suffer from water scarcity. It is being predicted that by 2025, nearly two billion people will live in absolute water scarcity? You might be either reading in newspapers or watching in television about various issues and concerns associated with water scarcity. Why is it so? Let us analyse availability, utilization, scarcity and conservation measures related to water resource in India.

India is the land of monsoon where major amount of rainfall occurs for a brief period of three to four months. So a large part of the country has to depend upon ground water-supply. Availability of water resources varies over space and time. This is mainly due to the variations in seasonal and annual precipitation. Our ground water resources are fairly good in the northern and coastal plains. In states like Rajasthan, plateau regions face problem of water-supply. This is either due to low rainfall or the areas are drought prone. But the irony is that we are now facing water scarcity in the areas known for availability of ground water. Water is essential in almost all spheres of life, be it drinking, domestic use, irrigation, industries, etc. Looking at the importance of water resource, the Government of India planned to build big dams with an integrated water resource management approach. Let us discuss in brief about multi-purpose river valley projects in India.
Multi-purpose river valley projects: As the name suggests, these projects utilize water-resources for more than one purpose. Some of the uses of these usages are (i) generation of electricity, (ii) irrigation, (iii) flood control, (iv) afforestation of catchment areas (v) inland water navigations (v) fisheries activities. Damodar Valley Project, Bhakra Nangal project, the Hirakud project, Indira Gandhi (Rajasthan Canal) project, the Nagarjun Sagar Project, The Tungabhadra Project etc. Try to find out location of these projects in an Atlas. When these projects were planned it was thought that these projects would lead the nation to development and progress. It was also thought that these projects would integrate development of agriculture and the village economy with rapid industrialisation and growth of the urban economy. However, there are lots of dissent and resentment among the people about this large and multipurpose dam. There are also lots of inter-state disputes related to sharing of river water. Why is it so? Try to find out with the help of internet, newspapers and discussions with your students.

Water Conservation and Management: Water scarcity in most cases is caused by over-exploitation and excessive use of water. These are quantitative aspects related to water scarcity. There are certain qualitative issues like water pollution. Let us take an example of big cities located either in northern plain or coastal plains which are supposed to be having good availability of ground water. In these cities water scarcity is due to large population, greater demand for and unequal access to water. Apart from domestic consumption, water resources are being over-exploited to expand irrigated areas and dry-season agriculture. It leads to falling groundwater levels in many states. Similarly, industries have made the situation worse by exerting pressure on existing freshwater resources. There is concern related to quality of water even if there is ample water to meet the needs of the people. Yes, we are referring to pollution and contamination of water due to discharge of domestic and industrial wastes, chemicals, pesticides and fertilizers used in agriculture etc. Therefore, all efforts should be made to save the precious fresh water so that we can save maximum people from water scarcity in future. Apart from reducing wastage, recycling and reusing, we have to give utmost importance to rain water harvesting and reviving age old traditional methods prevailing in different parts of the country. Effort should be made to transfer water from flood prone basin to drought prone basin.

Check Your Progress

Notes: a) Write your answers in the space given below.
       b) Compare your answers with those given at the end of this unit.

8) Describe various functions performed by multipurpose river valley projects.

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E) Mineral and Energy Resources

India has fairly rich and varied mineral resources. As mentioned in the beginning of this section, these are unevenly distributed. Peninsular rocks contain most of the reserves of coal, metallic minerals and many other non-metallic minerals. Sedimentary rocks on the western and eastern flanks of the peninsula, in Gujarat and Assam have most of the petroleum deposits. Rajasthan with the rock systems of the peninsula has reserves of many non-ferrous minerals. If we look at India’s situation in terms of individual resources, it has been observed that India possesses about one-fourth of world’s iron resources. Manganese and limestone used as one of the inputs in steel industry are found abundantly in India. India has adequate coal reserves too. So is the position with bauxite. India is in an advantageous position because coal, iron ore, bauxite, manganese, limestone etc. are found almost in the same mineral belt. We have poor deposits of non-ferrous metals. Some of the non-ferrous minerals found in India are zinc, lead and copper.

Energy Resources: Coal, petroleum, natural gas and nuclear power are the major sources of energy. These are known as conventional sources of energy. Availability of petroleum is not in sufficient quantity to meet our domestic demand. We have to depend upon imports. Non-conventional sources-bio-gas, wind energy, solar energy are also being tapped to supplement demand.

India has a very large proportion of sedimentary rocks which hold potential oil and natural gas deposits. Northern plains of the Ganga- Brahmaputra Valley, the coastal strips, the plains of Gujarat and Rajasthan have ‘oil- deposits’ potential. Oil and Natural Gas Commission (ONGC) has undertaken exploration in collaboration with other agencies. Besides old oil fields in Assam and Gujarat, reserves were found in off-shore Mumbai coast known as Bombay High and in off-shore areas off the deltaic coasts of the Godavari, the Krishna, the Kaveri and the Mahanadi. New reserves have also been discovered in Rajasthan. The gas reserves which are generally found in association with oil fields are located in Tripura, Rajasthan, Gujarat, Maharashtra, Tamil Nadu, Andhra Pradesh and Odisha. The Hazira- Bijapur- Jagdishpur (HBJ) gas pipe line is 1,730 km long and carries 18 million cubic meters of gas every day. There are 22 refineries in the country which refines the ‘crude oil’ into different grades of petroleum products. Petro-chemical industry is one of the most upcoming industries in India.

Growing consumption, rising prices of oil and gas and their potential shortages have raised uncertainties about the security of energy supply in future. Moreover, increasing use of fossil fuels also causes serious environmental problems. Therefore, there is an urgent need to use renewable energy sources like solar, wind, tide, biomass, etc. India is fortunate to have an abundance of sunlight,
Content Based Methodology: Geography and Economics

water, wind and biomass. Today in India we have many programmes for the development of these renewable energy resources. Another major advantage of this non-conventional source of energy is that these are clean and green energy having least negative impact on our environment. Simultaneously, there is also an urgent need to adopt various conservation measures particularly for the above mentioned finite sources of mineral and energy resources for future generation for their own development.

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| **Notes:**  
a) Write your answers in the space given below.  
b) Compare your answers with those given at the end of this unit. |
| 10) Describe in brief the geographical distribution of mineral and energy resources in India. |
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| 11) Why is there a need for urgent development of non-conventional source of energy? |
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15.3.4 Industrial Pollution and Degradation of Environment

Industries act as both boon and bane for India. As a boon, industries contribute significantly to India’s economic growth and development. However, increase in pollution of land, water, air, noise and resulting degradation of environment cannot be overlooked. Let us have brief discussion about each type of pollution.

**Air pollution** is caused by the presence of high proportion of undesirable gases, such as sulphur dioxide and carbon monoxide. Airborne particulate materials contain both solid and liquid particles like dust and smoke. Smoke is emitted by chemical and paper factories, brick kilns, refineries and smelting plants. Toxic gas leaks can be very hazardous and affect human health, animals, plants and the atmosphere as a whole. You must have heard about the Bhopal Gas tragedy and the repercussions which are being felt by the sufferers till today.

**Water pollution** is caused by organic and inorganic industrial wastes and effluents discharged into rivers by paper, chemical, textile, petroleum refineries, tanneries and electroplating industries by letting out dyes, detergents, acids and heavy metals, fertilisers, synthetic chemicals and solid wastes namely fly ash, and iron and steel slags into the water bodies.
**Thermal pollution** of water occurs when hot water from factories and thermal plants is drained into rivers and ponds before cooling. Wastes from nuclear power plants, nuclear and weapon production facilities cause cancers, birth defects and miscarriages.

**Noise pollution** not only results in irritation and anger, it can also cause hearing impairment, increased heart rate and blood pressure among other physiological effects. Unwanted sound is an irritant and a source of stress. Industrial and construction activities, machinery, factory equipment, generators, saws and pneumatic and electric drills also make a lot of noise.

**Control of Environmental Degradation:** How can the industrial pollution of fresh water be reduced? Some suggestions are: (i) minimising use of water for processing by reusing and recycling it in two or more successive stages; (ii) harvesting of rainwater to meet water requirements; and (iii) treating hot water and effluents before releasing them in rivers and ponds. Particulate matter in the air can be reduced by fitting smoke stacks to factories. Smoke can be reduced by using oil or gas instead of coal in factories. Machinery and equipment can be used and generators should be fitted with silencers. Almost all machinery can be redesigned to increase energy efficiency and reduce noise. Noise absorbing material may be used apart from personal use of earplugs and earphones.

**15.3.5  Need and Measures for Conservation of Resources**

By now, you might have understood that the above discussion leads us to understand that these natural resources particularly those non-renewable resources that are finite in nature need to be conserved. With rapid increase in population and high consumption life style, the demands for all these resources have been increasing at an exponential rate. Therefore, we should (i) conserve non-renewal resources which are finite in nature; and (ii) use these resources in such a manner that results in optimal but judicious use of resources. This requires a long-term perspective for management and conservation so that these natural resources will last for the future generations and will not merely be exploited for short term gains. This management should also ensure equitable distribution of resources. There are many things we can do to achieve this goal. You must have come across the three R’s to save the environment: Reduce, Recycle and Reuse. What do they refer to? Let us discuss about them in brief.

i) **Reduce:** This means that you use less. You save electricity by switching off lights and fans when they are not required. You save water by repairing leaky taps. You do not waste food. Can you think of other things that you can reduce the usage of?

ii) **Recycle:** This means that you collect plastic, paper, glass and metal items and recycle these materials to make required things instead of synthesising or extracting fresh plastic, paper, glass or metal. Does your village/town/city have a mechanism in place for recycling these materials?

iii) **Reuse:** In the ‘reuse’ strategy, you simply use things again and again. For example, instead of throwing away used envelopes, you can reverse it and use it again. The plastic bottles in which you buy various food-items like jam or pickle can be used for storing things in the kitchen. Can you suggest names of more items which we reuse?
**15.3.6 Resources Utilisation and Sustainable Development**

Till now you might have realized that natural resources are essential for sustained economic development. This is also prerequisite for poverty eradication and foundation for wealth generation in many developing countries. Therefore, decline in the stocks of these natural capital and ecosystem services provided by these natural capitals would affect poor and marginalized communities the most. This is because the poor directly depend on natural resources for food, fuel, medicine, shelter and livelihood. This has already been experienced in many developing countries of the world including India. Now the question is how to maintain a balance between economic developments and maintaining resource base for the future generation. If you remember correctly, sustainable development refers to “development that meets the need of the present generation without compromising the ability of the future generation to meet their own needs”.

Therefore, we can say sustainable development is the real development which emphasises on satisfying the current needs of population keeping in mind availability of resources for future generation. This development does not mean a check on the existing pace of economic growth and development. It only means a judicious or optimum utilisation of resources in such a manner that pace of economic growth sustains with inter generational equity. Therefore, there is a need for reorienting our model of development with efficient and responsible use of natural resources that would ensure social equity and environmentally benign economic growth. Hence, opportunities for enhancing resource productivity lie not in a specific technology but in policies and processes that enable systemic improvements and synergies running through the whole production and consumption chains. There is no ‘one size fits all’ prescription or single policy instrument that can be applied everywhere because a variety of resource challenges determined by local contexts. A wide range of measures are required to facilitate continued improvement in the management of natural resources. These include innovations, investment in resource-efficient technologies; education and awareness of resource productivity; design at all levels (for products, services, cities, infrastructures, etc.) for sustainable resource management.

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**Check Your Progress**

**Notes:**

a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

12) Explain in brief any two measures to reduce water pollution due to industrialisation.

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13) State one example each for Reduce, Recycle and Reuse in the context of conservation of resources.

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15.4 TEACHING-LEARNING STRATEGY

Teaching-learning strategy for this unit include learning objectives, teaching-learning activities and assessment questions:

15.4.1 Learning Objectives

Through this teaching-learning strategy, students will be able to:

- describe the meaning of resource;
- classify resources into different categories;
- explain the availability, utilisation of resources and associated problems in India;
- analyse the relationship between industrial pollution and degradation of environment;
- justify the need for conservation of resources;
- suggest measures for conservation of resources; and
- highlight the linkages between resources utilisation and sustainable development.

15.4.2 Teaching-Learning Activities

Teaching-learning activities for the contents given in the unit are presented in the subsequent sections.

Teaching-Learning activities for sections on:

a) Concept of resources
b) Classification of resources
c) Distribution of resources
d) Industrial pollution and degradation of Environment
e) Need and Measures for Conservation of Resources
f) Resources Utilisation and Sustainable Development
i) **Concept and Classifications of Resources**
   - Prepare a list of natural resources which could be divided in terms of renewable and non-renewable resources.
   - Prepare a list of potential resources and developed resources and discuss how technology has been used to raise productivity of such resources.
ii) Distribution of Resources

A) Land as a Resource

- Compare data related to land use pattern in India of two periods having at least differences of five to six decades and analyse the differences you observe.
- Students may be asked to collect information about the major land use change that occurs in their village/city over the last fifty years in consultation with concerned revenue officials in their area.

B) Soil as a Resource

- Take the physical map of India which depicts types of soils with marked areas (colour). Show to students the region of alluvial, black, red, laterite, arid and forest soils.
- Try to get a sample of these soils and show these samples to your students so that they are able to distinguish between different types of soils.
- Discuss in the class properties of these soils which are most suitable for producing crops, etc and bring home the point why a particular crop, for example, regur soil is most useful for growing cotton. Further explain that desert soil could be used for dry farming.
- Discuss why in mountains a different method of cultivation is to be used. Exemplify the negative factor of Jhum cultivation in North-Eastern States of India.
- Students can be asked to collect further information from the library, and undertake project work on this topic. They can be encouraged to collect samples of different soils and keep them in the geography resource room.
- Discuss in the class various soil conservation measures to be adopted in different types of soil erosions.

Activities

- On an outline map of India, show the following:
  a) Area covered with black soil
  b) Area covered with alluvial soil
  c) Areas covered with arid soil
  d) Areas covered with red soil
- Prepare a scrap-book on:
  i) ‘Soil-erosion’ and its conservation in different parts of India.

2) Forests and Wild Life Resource

- Ask students to collect the names of three species of plants and animals/birds found in your locality and their importance.
- Ask students to prepare a list of industry which are based upon forests and employment potential.
- Organize an exhibition of industrial products which are based upon forests.
Resources: Their Development and Utilization

- Assign project work to students’ for preparing scrap-book on the subjects and guide students to collect material for the project.
- Hang the wild life map of India in the classroom, with the photograph of wild life (species). Ask students to mention their regions of natural habitat.
- Discuss in the class governmental steps for protecting forest and wild life.
- Assign students a project to collect information about national parks, sanctuaries which have been created over the years and ask students to locate them on the map of India.

Activities

- Procure a video-film which depicts rich heritage of forest-resources and show the video film to your students.
- Prepare a scrap-book on forest resources
- If you happen to belong to an urban area, visit a nearby factory and see how it is dependent upon agro-based material. (Prepare a comprehensive report based upon secondary data on “Forestry-Wealth of India”.
- Suggest some strategy to teach students about forest and wild life of India.

C) Water Resources

- Discuss in the class the multifarious uses of water resources.
- Ask students to prepare a list of activities which are based on water resource.
- Assign project work to students for preparing scrap-book on the subjects and guide students to collect material for the project.
- Hang in the classroom the map of multipurpose river valley projects of India.
- Procure a video film or film slides on this subject and show them to your students.
- Ask students to collect pictures, newspaper clippings.
- Give practice on an outline map of India in depicting the location of some of the important multipurpose dams of India.
- Ask your students to prepare scrap-books on:
  i) Damodar Valley Project
  ii) Bhakra Nangal Project
iii) Indira Gandhi (Rajasthan Canal) Project  
iv) The Hirakud Project  
v) The Nagarjun Sagar Project  
vi) The Tungabhadra Project  

- Discuss in the class issues that lead to water scarcity in India.  
- Assign project work to students for preparing scrap-book on traditional water harvesting methods practiced in different parts of India.  

**Activities**  

- How would you design teaching-learning activities to teach the topic on water resources?  

- Hang in the classroom the map of minerals of India. Ask the students to locate on the map the mineral resources found in various parts of the country.  
- Provide students practice on map work.  
- Discuss in the class the multifarious uses of mineral resources.  
- Ask students to collect more material on each ‘mineral and ask students to prepare scrap-books with the help of pictures, textual material and paper clippings.  
- Try to obtain film/slides on mineral resources and discuss with students the information presented in the film/slides.  
- Prepare cards indicating conventional and non conventional sources of power.  
- Ask students on the outline map of India indicating the location of  
  a) major oil-fields  
  b) major oil refineries  
  c) off-shore Bombay High  
  d) Hazira-Bijapur-Jagdishpur gas pipeline.  

**Activities**  

- List atomic minerals which are found in India. Also locate on the map of India some nuclear power stations which have been established after independence.
iii) Industrial Pollution and Degradation of Environment

- Organize a discussion session to explain the concept of pollution, types of pollution. Students can be asked to come out with the reasons of pollution
- You can organize an educational tour to industrial sites for study of the kind of pollution those industries are creating.
- Assign students a project work to study the air pollution of a particular locality in a town or city.
- You can organize a brainstorming session to come out with possible measures to control environmental degradation.

iv) Need and Measures for Conservation of Resources

- Ask students to watch television programmes on the conservation of our natural resources. They should be encouraged to watch TV programmes on pollution, degradation of resources, deforestation, reckless poaching and illegal smuggling forest products.
- Motivate students to discuss the topic on the ‘need for conservation of resources.
- Ask students to collect newspaper clippings and pictures from magazines which depict conservation of resources.
- Discuss government policies and their implementation with particular reference to soil, forest, wildlife and water conservation programmes.
- Discuss the use of solar-energy and bio-gas and organise exhibitions in the school on this theme.

Activity

- Suggest the way you would teach the topic on depletion and degradation of resources and their conservation.

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v) Resources Utilization and Sustainable Development

- Motivate students to discuss the topic on resource utilization and sustainable development.
- Ask students to collect newspaper clippings and pictures from magazines related to sustainable resource utilization.

15.4.3 Assessment Questions

1) Differentiate the following with suitable examples:
   i) Potential and developed resource
   ii) Stock and reserve
2) Explain the major changes in the land utilization patterns that took place during the last sixty years.

3) Describe any three soil conservation measures adopted in different geographical regions of India.

4) State any five functions of multi-purpose river valley project.

5) Describe in brief spatial distribution of mineral resources in India.

6) Name four non-conventional sources of energy.

7) Why do we need resource planning at national, regional and local levels? Explain.

8) Suggest any three measures to control industrial pollution of fresh water.

9) List two steps taken by the government for conservation of resources.

10) Explain any two measures that are required to facilitate continued improvement in the management of natural resources to achieve sustainable development.

11) Fast industrialization and rapid rise population in India would create situations which will be counterproductive to conserve our natural resources. Discuss.

12) It is not the Government that is responsible for conservation of natural resources but the active involvement of people is the need of the hour to safeguard against the increasing onslaught on our natural resources.

13) “There is enough for everybody’s need and not for any body’s greed.” Do you agree with the statement given by Gandhiji? Justify your arguments.

14) Bring a report of latest developmental activities around your neighbourhood, which focus on economic development with judicious use of natural resources. Discuss this report in your contact programme with your supervisor/peer group.

15.5 LETS SUM UP

In this unit, we explained the concept of resources and discussed their classification, availability and distribution. Not a single region in the country is self-sufficient in terms of availability of all the resources. There are regions which are rich in certain types of resources but are deficient in some other resources. This calls for balanced resource planning at the national, state, regional and local levels. A brief description of distribution, availability and utilization of land, soil, water, forest and wild life and mineral and energy resources in India was undertaken in this unit. These resources are used as raw materials for different industries that contribute significantly to India’s economic growth and development. However, this has also led to increase in land, water, air, noise pollution and resulted in degradation of environment.

The rapid increase in population and increase in high consumption life style lead to increasing demands for all these resources. Therefore, we should conserve non-renewal resources which are finite in nature; and use these resources in such
a manner that results in optimal but judicious use of resources. This requires a long-term perspective for management and conservation so that these natural resources will last for the future generations and will not merely be exploited for short term gains. After presenting the contents, teaching-learning strategy comprising learning objectives, teaching-learning activities and assessment of questions was presented to transact learning experiences pertaining to the unit.

### 15.6 REFERENCES AND SUGGESTED READINGS

NCERT (2006): Contemporary India Part II, Textbook in Geography for Class X Chapter- 1-3 and 5, NCERT, New Delhi.


### 15.7 ANSWERS TO CHECK YOUR PROGRESS

1) Renewable resources: water, forest, solar energy, wild life.

   Non-renewable resources: iron, petrol, natural gas, coal.

2) Planting of shelter belts of plants, control on over grazing, stabilisation of sand dunes by growing thorny bushes, proper management of waste lands, control of mining activities, proper discharge and disposal of industrial effluents and wastes after treatment (Any three)

3) Natural factors: Action of wind, water, chemical action like salinity and alkalinity (Any two)

   Human induced factors: deforestation, over grazing, mining and quarrying (Any two)

4) (a)-(iv); (b)-(iii); (c)-(ii); (d)-(i)

5) Large fields are divided into strips. Strips of grass are left to grow between the crops. This breaks up the force of the wind. This method is known as strip cropping.

6) The diverse and rich flora in India is due to varied relief and land forms, terrain, soil, range of daily and annual temperature, and varying amount of rainfall and its duration.

7) It would help us to preserve the ecological diversity which is directly related to our life support systems – water, air and soil. It also preserves the genetic diversity of plants and animals for better growth of species and breeding.

8) Activities performed by multi-purpose river valley projects are (i) generation of electricity, (ii) irrigation, (iii) flood control, (iv) afforestation of catchment areas and preservations of wild life (v) inland water navigations and (v) fisheries activities.

9) Activities that affect the quality of water are pollution and contamination of water due to discharge of domestic and industrial wastes, chemicals, pesticides and fertilizers used in agriculture, etc.
10) Peninsular rocks contain most of the reserves of coal, metallic minerals, mica and many other non-metallic minerals. Sedimentary rocks on the western and eastern flanks of the peninsula, in Gujarat and Assam have most of the petroleum deposits. Rajasthan with the rock systems of the peninsula has reserves of many non-ferrous minerals.

11) The growing consumption of the above mentioned conventional energy has resulted in the country becoming increasingly dependent on these fossil fuels. Rising prices of oil and gas and their potential shortages have raised uncertainties about the security of energy supply in future, which in turn has serious repercussions on the growth of the national economy. Moreover, increasing use of fossil fuels also causes serious environmental problems.

12) Some of the measures to reduce water pollution due to industrialization are (i) minimising use of water for processing by reusing and recycling it in two or more successive stages; (ii) harvesting of rainwater to meet water requirements; and (iii) treating hot water and effluents before releasing them in rivers and ponds.

13) Reduce: Save electricity by switching off unnecessary lights and fans. Save water by repairing leaky taps. Do not waste food.

Recycle: This means that you collect plastic, paper, glass and metal items and recycle these materials to make required things instead of synthesising or extracting fresh plastic, paper, glass or metal.

Reuse: Instead of throwing away used envelopes, you can reverse it and use it again. The plastic bottles in which you buy various food-items like jam or pickle can be used for storing things in the kitchen.
UNIT 16  MAJOR ECONOMIC ISSUES

Structure
16.1 Introduction
16.2 Objectives
16.3 Poverty
  16.3.1 What is Poverty?
  16.3.2 Magnitude of Poverty in India
16.4 Globalization
  16.4.1 What is Globalization?
  16.4.2 Historical Phases of Globalization
  16.4.3 Drivers of Globalization
  16.4.4 Impacts of Globalization
16.5 Sustainable Development
  16.5.1 What is Sustainable Development?
  16.5.2 Why is Sustainable Development required?
  16.5.3 Dimensions of Sustainable Development
  16.5.4 Promoting Sustainability in India
16.6 Teaching-learning Strategy
  16.6.1 Learning Objectives
  16.6.2 Teaching Learning Activities
  16.6.3 Assessment Questions
16.7 Let Us Sum Up
16.8 Suggested References and Readings
16.9 Answers to Check your Progress

16.1 INTRODUCTION

Three economic phenomena which every teacher needs to understand today are poverty, globalization and sustainable development. We need to understand each one and the linkages between these issues as they influence our lives in different ways.

Poverty is a challenge faced not only by India, but also by many other countries. Thirty years before, India housed 20 percent of world’s poor and today India has about 40 percent of world’s poor. This suggests that though all countries have reduced the level of poverty, India’s performance in reducing poverty is not satisfactory. Due to globalization, today we use Information and Communication Technologies (ICTs), which we could have never imagined prior to 1990. Due to rapid economic growth and adoption of globalization policies, India has become an important nation in the world politics and economy. Yet the developmental model used to achieve this growth is being questioned. Near stagnation in employment growth with unsustainable use of natural resources, low agricultural productivity despite the intensive application of fertilizers and pesticides call for relooking at the development strategies India has been following during the last seven decades. Sustainable development practices are one step in this direction. In this unit, we will familiarize you with these three important issues.
We will also demonstrate how to teach these contents using teaching-learning strategy.

16.2 OBJECTIVES

After going through this unit, you will be able to:

- explain the concept of poverty;
- discuss the magnitude of poverty both in absolute and relative levels;
- describe how the number of poor is estimated in India;
- state the levels of poverty across Indian states;
- explain the nature of globalization and its phases;
- discuss the factors driving globalization and its impacts;
- explain the nature of sustainable development;
- analyse the need to take up sustainable development as a policy goal;
- acquaint yourself with exemplary sustainable development practices followed in India;
- formulate learning objectives for the contents of the unit;
- develop suitable teaching-learning activities to teach the contents; and
- prepare assessment questions to evaluate students’ performance.

16.3 POVERTY

16.3.1 What is Poverty?

Poverty is a situation in which people are not able to meet the basic needs required for the survival. The phrase “meet the basic needs” refers to the ability to buy and consume essential food items such as rice, wheat and cereals, vegetables, milk and milk products, edible oil, spices, and non-food items such as fuel, medicines, clothes, education of family members, housing, transport, etc. When a family is not in a position to meet these needs, it is considered as a poor family.

Poverty affects people in different ways. Its impacts on education are severe. India’s dream is to see every child gets educated for at least eight years. Yet the large magnitude of poverty imposes constraints in many ways in achieving this dream. When a large section of people in a country are poor, it may be difficult to plan for education which requires a long term vision. Poverty restricts us to have only a short term vision. This is true not only for India as a whole but also for the individual family as well. Poverty leads to child labour, which deprives children losing the opportunity to learn in schools. Poverty forces people live with unpredictability. For example, when a large section of people get irregular and casual low paying jobs, they are not sure whether they can earn for the next day. Similarly, children coming to school do not know about the basic necessities required for schooling. Poverty also imposes vulnerability in the health sector. Children from low income families are more prone to sickness, malnutrition and other kinds of health problems.
16.3.2 Magnitude of Poverty in India

We see many poor families in our surroundings. Children from poor families also attend our schools. How do we know how many poor are in India? NITI Aayog, the erstwhile Planning Commission of the Government of India, is the official agency, which provides us with the details of the number of poor in India. The details of poor families are essential for government to identify and support. Poverty measurement mainly helps governments to know whether the developmental activities are beneficial to all the people – which then results in the reduction in the number of low income families. In federal systems such as India, the financial support by the Union Government to states is based on the levels of poverty in the state. Poverty statistics is also used by governments to seek aid from developed nations and from international financial institutions such as the World Bank. Political parties use changes in poverty levels as the performance indicator of the party in power.

Look at the following figure (Fig.16.1) which provides the details of number of poor persons in India and how their number has changed over the last four decades.

![Fig. 16.1: The Number of Poor Persons in India, 1973-2012](image)

**Source:** GOI (2014) and GOI (2016)

The magnitude of poverty in India may appear as a staggering number, the black line shows that more than 250 million – 25 crore people in India were poor. Compared to rural areas, the number of poor is less in urban areas. More than three-fourth of India’s people live in rural India. About 50 million – 5 crore people in urban areas are not able to meet their basic needs. You may think that not much has changed over the last four decades.

The absolute number of poor in India may be necessary but not sufficient to understand the magnitude of poverty. For this we need to know Head-Count Ratio (HCR) the proportion of poor in the whole population. The HCR is estimated using a simple formula - total number of poor divided by total population. Look at Fig.16.2.

In the early 1970s, nearly 60 per cent of people in India were poor. In 2011-12, this has come down to about 25 per cent. Barring the year 2004-05, we find stable decline in the levels of poverty. Also the urban poverty levels are always lower than that of rural poverty. Hence, the intensity of poverty has declined.
However, when compared with other countries and their poor peoples, India still has a large number of poor in the world.

![Fig. 16.2: Head Count Ratio in India, 1973-2012](image)

**Fig. 16.2: Head Count Ratio in India, 1973-2012**

*Source: GOI (2014) and GOI (2016)*

Table 16.1 shows the levels of poverty in Indian states and Union Territories.

<table>
<thead>
<tr>
<th>Poverty levels (in %)</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td>Delhi, Himachal Pradesh, Sikkim, Puducherry, Andaman &amp; Nicobar Islands, Daman &amp; Diu, Lakshadweep, Goa, Kerala, Punjab, Andhra Pradesh</td>
</tr>
<tr>
<td>10-20</td>
<td>Jammu &amp; Kashmir, Haryana, Uttarakhand, Tamil Nadu, Meghalaya, Tripura, Rajasthan, Gujarat, Maharashtra, Nagaland, West Bengal</td>
</tr>
<tr>
<td>20-30</td>
<td>Mizoram, Karnataka, Uttar Pradesh</td>
</tr>
<tr>
<td>30-40</td>
<td>Madhya Pradesh, Assam, Odisha, Bihar, Arunachal Pradesh, Manipur, Jharkhand, Chhattisgarh, Dadra &amp; Nagar Haveli</td>
</tr>
</tbody>
</table>

*Source: GOI (2014) and GOI (2016)*

Many smaller states have low levels of poverty. Six large states viz., Karnataka, Uttar Pradesh, Madhya Pradesh, Assam, Odisha and Bihar have higher levels of poverty. Large states having lower levels of poverty are Andhra Pradesh (now Telangana and Andhra Pradesh), Punjab and Kerala.

In our daily lives, we judge a person as poor based on the dress, physical appearance and other aspects. How do governments identify a person as poor? We require energy for our survival. This is measured in terms of calories. The poverty line is based on the minimum calorie requirements. It is 2400 kcal per capita per day in rural areas and 2100 kcal per capita per day for urban areas. The National Sample Survey (NSS) data on household consumer expenditure is used...
to estimate the monetary expenditure equivalent of these calorie norms. Those who spend below the expenditure are called poor. In 2011-12, it was estimated that, on an average, consumer expenditure (food and non-food) of Rs. 816 per capita per month is associated with a calorie intake of 2400 per capita per day in rural areas and Rs.1000 per capita per month is equivalent to the calorie intake of 2100 per day in urban areas. This monthly per capita expenditure (MPCE) is recognized by the Government of India as poverty line. The poverty line changes over the years (see Fig.16.3). In 1973-74, it was Rs.50 and Rs.57 in rural and urban areas respectively.

Did you notice the data on poverty is not given in the figure for every year? Poverty line is estimated on the basis of statistics of household consumer expenditure surveys conducted by National Sample Survey Office, New Delhi. These surveys are conducted once in 5-7 years. This is the reason why we do not have data on poverty on a continuous basis. Such a data discontinuity exists not only for poverty but also for many other economic and demographic issues.

When we say 26 per cent of rural Indians and 14 per cent of urban Indians are poor as shown in Fig.16.2, it means that this proportion of people in India are not able to buy essentials worth Rs.816-1000 per month per person. Poverty line is an approximate number used by the government to understand the income deprivation and purchasing capacity of its citizens. This is not generally applied to each individual. Suppose there are five persons (husband, wife, two children and one grandparent) in a family living in Bhopal, the capital city of Madhya Pradesh. The poverty line for Urban Madhya Pradesh is Rs.897. If the earnings of all the members in the family are less than Rs.4485 (897 × 5), it is treated as poor family. The poverty line differs from state to state and from region to region within the state as well.

There are many criticisms against the use of calorie norms for determining poverty levels. For example, it is said that the calorie norms used to estimate poverty line which was fixed in 1970s is outdated. Also poverty has other social, political and cultural dimensions. Due to this, many scholars and institutions come out with alternative definitions and concepts to identify the poor.
For example, the United Nations Development Programme as part of its report ‘Human Development Report’ constructed an index called Multi-Dimensional Poverty Index. This index - computed for 102 developing countries, is a measure of deprivation in the three basic dimensions of human development viz., (i) vulnerability to death at a relatively early age (ii) exclusion from the world of reading and communications, and (iii) lack of access to economic provisioning.

Do you think that such alternative measures of poverty are required? Why?

### Check Your Progress

**Notes:**

a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

1) Define poverty line.

2) There is no major change in the poverty scenario in India. Do you agree with this statement? Justify.

3) Why is it necessary to study poverty?

4) List five larger states which reported high levels of poverty.
16.4 GLOBALIZATION

16.4.1 What is Globalization?

Joseph Stiglitz in his book, *Globalisation and Its Discontents*, defines globalization as “…the closer integration of the countries and peoples of the world which has been brought about by the enormous reduction of costs of transportation and communication, and the breaking down of artificial barriers to the flows of goods, services, capital, knowledge, and (to a lesser extent) people across borders.” We could note that definitions also change depending upon the time and ideology scholars tend to believe. In a globalized world, goods and services are produced in different countries and consumed in different countries.

Globalization is not necessarily associated with economic aspects viz., production, consumption and distribution. People adopt socio-cultural practices of other countries - willingly or unwillingly and consume goods and services, adopt or adapt lifestyles which are not native to their culture. For example, breads, biscuits, chocolates, pizza, burger, noodles that we eat or shirts, pants, jeans, tie, coat and many more clothes that we wear today came to India just a few decades before from other countries. Our lifestyle has also changed particularly in urban India. This means globalization has other dimensions as well.

16.4.2 Historical Phases of Globalization

Globalization has a long history. It can be studied in three phases viz., (i) from Neolithic period to Second World War, (ii) 1945 to 1990 and (iii) 1990 onwards. Over the three phases, there has been an increased interdependence between geographically distinct people.

Globalization facilitates homogenization. Whatever the language that we use in computer is the same that is used in USA, UK, France or Germany. Computer software is developed all over the world in the same way. Smart phones used in India are not different from that are used in USA, Singapore, Japan, Canada or Mexico. There is little difference in soaps, shampoos, washing powders, tooth pastes used in developed and developing countries, barring the difference in brands. What is more striking is the nature of production and distribution – who, how and for whom of the production of goods and services.

In globalization, some countries benefit much more than others. For example, less developed countries export agriculture-based goods to developed countries. In contrast to this, developing countries export manufacturing –based goods. Developed countries export technologies and capital goods. Developing countries export large quantities of agrarian goods and raw materials. Developed countries export high value technical goods and services and their investment levels are higher. Due to this MNCs in developed-countries earn more than those MNCs in developing country. What share of MNCs’ profits is shared among workers and owners also make differences in the process globalization works today.

16.4.3 Drivers of Globalization

Look at the following flow chart. This shows how different factors shape the globalization. Each one plays an important role in intensifying the globalization process.
Let us take technology. During the first phase, goods were traded through seas. Changes in technology in shipping and introduction of printing helped to increase the volume of trade among companies and among countries. Industrial Revolution led to establishment of factories, and change in production techniques. Use of aero planes for commercial purpose which started in the second phase of globalization and continues till today reduced the cost of transportation quite considerably. Use of containers for transporting goods in ships led to reduction in costs and increased the speed and volume of exports. Today, Information and Communication Technologies (use of computers, satellites, silicon chip, optical fibre cables, software programming, etc.) shape the third phase of globalization.

The second drivers of globalisation are multinational corporations. We know how the British East India Company (EIC) came to India to trade spices and made India a colony of Britain three centuries before. The Dutch East India Company founded in 1602 is often considered as the first Multinational Corporation of the world. It put the seeds of globalization by trading with countries such as Indonesia, India, Japan, China and Arabia. It even minted its own coins for trading activities, set up shops in different country port cities particularly in the coastal areas to trade nature-based goods such as spices. Industrial Revolution helped EIC-like companies to procure goods from factories in large quantities and increase the volume of trade across countries.

The functioning of today’s MNCs were unimaginable even three decades before. They invest and use a variety of industrial organisation methods such as subcontracting, outsourcing, original manufacturing export (OEMs), subsidiaries and so on. They keep moving their production locations depending upon the availability of cheap labour and raw materials and tax-liability. They use capital-intensive and labour-saving technologies to reduce the production costs.

Governments are the third factor driving globalisation. Multinational corporations cannot move beyond their geographical boundaries to do their trading without the approval of governments. About one century ago or prior to the second phase of globalization, governments did not interfere in the trading activities. It was called laissez-faire policy. In the second phase of globalization governments
followed protectionist policies – putting barriers to trade in different ways such as tax on imports, restricting imports, etc. Today, many countries including India follow free-trade policies guided by international organizations such as World Bank and World Trade Organisation (see Box-1).

Box-1

**World Bank, WTO and Globalisation**

Political developments such as the two World Wars and Cold War, and economic crisis such as Great Depression forced governments to form institutional mechanisms for peace and cooperation. They promote trade and help countries to come out of crisis and devastation caused by wars and colonization.

Just after the Second World War, like-minded countries established International Bank for Reconstruction and Development (popularly called as the World Bank), the International Monetary Fund (IMF) and the United Nations (UN) Organisation. To promote trade between countries, they signed General Agreement of Trade and Tariff (GATT). In 1995, the World Trade Organisation was established. Till then, governments worked with bilateral agreements (between two countries) to trade. The formation of WTO led to multilateral agreements (among member countries or group of countries). The mobility of goods, services, capital and even people are now determined in the WTO meetings. Though the formation of the WTO, it is criticized that, helped the trading activities of only USA and European countries, one cannot deny that there is greater scope for countries to debate whether Indian Government invests in agriculture, or US Government stops giving subsidy to its farmers in WTO. Only after agreements are signed by country governments, MNCs can begin their business.

Globalization requires capital for use by the multinational corporations. There were not many legal sources for funding trading activities. Stock markets are one important source of capital. Governments have relaxed laws which led to mobility of capital across countries. If you have money, you can invest in a company in any country. If you do not find the company in which you invested is not doing well, you can withdraw your money using your fingertips at any time, using ICT.

### 16.4.4 Impacts of Globalization

Globalization is a continuous process. Its impact is also looked upon by the scholars differently. India became a colonized nation during the first phase of globalization. It is argued that this resulted in colonial government bringing technologies such as railways, telecommunication and a few factory-based production techniques. This did not result in economic development of India.

After India’s independence in 1947, India followed protectionist policies to bring the country out of the colonial impact of long stagnation. India did not participate actively in the second phase of globalization. A few East Asian countries such as Singapore, Hong Kong (China), South Korea and Taiwan known as Asian Tigers participated and benefitted during this phase.
The post-1991 economic policies encouraged the entry of ICT into India. This has led to increase in the volume India’s trade with other countries - foreign investment and particularly the foreign direct investment.

Investors from other countries come to India and invest in various economic activities. This is known as Foreign Investment. Such investments are of two types – Foreign Direct Investment and Foreign Institutional Investment. When a foreign investor brings capital, set up an enterprise in India and produce goods and services, it is called foreign direct investment. If the investor puts the capital in stock markets, bonds and securities, it is called foreign institutional investment.

During 1991-2000, nearly Rs. 80,000 crore worth of FDI came to India. At times, foreign capital comes to India with sophisticated technology and production methods. In recent years, the foreign institutional investors have also increasingly investing in India.

Indian companies today have no options except to change their technologies, leave their business or sell themselves to foreign MNCs. Many government-owned public sector undertakings (PSUs) are also facing the same situation. Every year, the Indian governments sell the shares of public sector undertakings to the tune of Rs.15-25,000 crores. This is known as disinvestment. Government also set targets every year for disinvestment and hence leading to privatization.

Indian companies face severe competition from Chinese counterparts. In 2012-13 for example, India exported Rs.73,000 crore worth of goods to China but imported nearly goods worth Rs.3,00,000 crores.

The globalization benefited mainly the urban part of India, particularly the metropolitans rather than the rest of India. Urban people get a variety of mobile phones, i-phones, tablets, computers, television and many more electronic and electrical gadgets, and a variety of cars at low prices containing latest technologies in developed countries. The ICTs help to communicate electronically much faster than in the past. Banks and other financial institutions conduct their business digitally. We watch television channels telecast in other countries instantly. Cinemas are released in theatres all over the world at the same time!!

MNCs look for production sites where the cost of production is low. They move once the wages begin to go up. The profits earned by multinational corporations increased manifold running into hundreds and thousands of crores whereas the real wage rates are stagnating globally and India is no exception to this trend. Globalization is making labour working in developing countries – victims of profit war of MNCs.

The third phase of globalization is not generating employment particularly in India. A few new jobs which require high skills such as computer programming, managerial jobs, accounting are created in private sector. The job loss particularly in the public sector is very high. The environmental damage which globalization has created in the last century led the governments to look for alternative approach to economic development which is called sustainable development.
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<th>Notes: a) Write your answers in the space given below.</th>
<th>b) Compare your answers with those given at the end of this unit.</th>
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<tr>
<td>5) Define globalization.</td>
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<td>6) Why do you think that we are now living in the third phase of globalization?</td>
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<td>8) Describe two major impacts of globalization.</td>
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<td>9) What are Asian Tigers?</td>
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16.5 SUSTAINABLE DEVELOPMENT

16.5.1 What is Sustainable Development?

The World Commission on Environment and Development defined ‘sustainable development’ as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” *Down to Earth*, a magazine published from New Delhi, India suggests sustainable development as the “outcome of a political order in which a society is so structured that it will learn fast from its mistakes in the use of its natural resources and rapidly rectify its human-nature relationships in accordance with the knowledge it has gained.” Definitions always change so also the issues dealt with in the concept of sustainable development.

According to *Down to Earth*, sustainable development demands two aspects to be given serious consideration. First, the “creation of political order in which, the control of natural resources rests to the maximum extent possible with local communities who are dependent on those sources; second, decision making within the community is as participatory, open and democratic as possible. The more this happens, the more the economy will move towards sustainable development.” Sustainable development also requires governance system which gives “freedom to community or nation, within a universally accepted social framework that prescribes penalties for harming another community or nation, to control the use and management of its natural resources so that it can determine its own way of economic and social development.”

16.5.2 Why is Sustainable Development Required?

In 2015, travel by privately owned cars was restricted for about 15 days on the Delhi roads. It was called *Odd and Even Scheme*. Cars having registration numbers ending with odd numbers (1,3,5,7,9) were allowed on dates ending with 1,3,5,7 and 9 and cars having registration numbers ending with even numbers (0, 2,4,6,8) were allowed on dates ending with 0,2,4,6,8. A section of the media reported that this scheme reduced pollution levels in the city. Pollution is defined as the presence of substances in the environment which has harmful or poisonous effects. Industries now required clearance from government agencies regulating forests and other natural resources. New industries using water for their plants set up effluent treatment plants for reducing pollution. In many cities, factories are relocated to non-residential areas to reduce pollution.

Economic growth – sustained increase in the value of gross domestic product - signifies the development of the nation. India is one of the countries which have reported high levels of economic growth – 7-8% during the last two decades. To what extent this development is sustainable when the amount of natural resources are limited and scarce? In India, the economic growth did not increase the required employment opportunities. You may recall that in India, there was no major decline in the number of poor over the last four decades. A large section of world’s poor live in areas which are environmentally degraded. The local people do not have access to resources available in those areas. This is also one of the root causes of poverty. The poverty, hence, is closely related to ecological conditions or ecological poverty of the area. What kind of developmental activities
can restore these areas environmentally and scientifically? Where is the scope for additional employment opportunity in future when MNCs and domestic companies use labour-displacing technologies? How a substantial section of India’s population, those who cannot learn new skills and illiterate could sustain their lives? Answers to these questions may lie in promoting sustainable development practices.

The concept of ‘sustainable development’ emerged in 1970s to balance between economic growth and better utilization of natural resources. It was envisaged to improve the quality of life through economic development without compromising on the environment and conservation of natural resources.

### 16.5.3 Dimensions of Sustainable Development

The issue of sustainable development first began to receive wide attention due to United Nations Environment Programme (UNEP) as initiative of United Nations Organisation. Initially this idea was mooted to protect the environment. However, over the years, sustainable development has become an overarching framework for economic development. The UNEP suggests the following as the three dimensions of sustainable development.

a) **Sustainable Environment:** This refers to preservation of important functions of the environment. This includes the capacity to increase and bring up the value of the environment and its peculiarities and assure the protection and renewal of the natural resources. All the steps taken to protect environment, reduce the levels of pollution and improvement of the living conditions and afforestation measures are part of this dimension.

b) **Economic Sustenance:** The economic system need to use resources in such a manner that it helps to generate incomes for the country and provide employment opportunities to people so that they are able to live a dignified life.

c) **Social Sustainability:** The development needs to guarantee welfare (security, health, education) to all sections of the society - rich and poor, all social classes such as Scheduled Castes, Scheduled Tribes, religious groups and gender. This helps them to interact efficiently and aim and work towards larger goals of the nation.

These dimensions suggest that sustainable development deals with economic, social and environmental aspects of the country.

### 16.5.4 Promoting Sustainable Development

In 2015, United Nations member countries came together and agreed to work on 17 aspects of developmental agenda for the world. They are called sustainable development goals (SDGs). Look at pictorial format given in Fig. 16.4. Economic issues such as ending poverty and hunger, reducing inequality, decent work and economic growth are part of this global agenda. Many SDGs also cut across disciplinary boundaries. Nearly 170 measurable targets were set by countries to achieve by 2030.

Sustainable development is not something only the government and international organisations are concerned with. Each individual has greater role to play. It is
Content Based Methodology: Geography and Economics

hierarchical and starts with individuals. When every individual begins to believe in different dimensions of sustainable development, it results in the benefits for the whole world.

Fig. 16.4: Sustainable Development Goals

The central and state governments establish legal institutional mechanisms, enact laws and implement sustainable development practices. The Odd and Even Scheme discussed earlier is one such example.

In January 2015, India’s Prime Minister launched National Programme for LED-based Home and Street Lighting. LED bulbs require small amount of electricity (80% less than a normal bulb), have a long life and less hazardous. India roughly has more than 25 crore homes and each house uses 2-4 bulbs. If all households begin to use LED bulbs, it would result in saving electricity which is a scarce energy resource in India.

In the past, Indian Government enacted laws such as Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986. All these led to establishment of Pollution Control Boards (PCBs) in all states. The PCBs guide industries and various establishments in promoting sustainable development practices.

Some strategies taken to promote sustainable development in their daily lives are (i) use of non-conventional sources of energy; (ii) use of liquid petroleum gas, Gobar Gas in rural areas in place of firewood and kerosene; (iii) use of compressed natural gas and Piped Natural Gas (PNG); (iv) use of wind and solar power; (vi) establishment of mini-hydel plants; (vii) organic farming - use of bio-composting and bio-pest control measures. Some of these require large investment and hence support of the government. A few also have limitations (see Box-3).
Why we must have water budgets?

Electricity is supplied to farmers free of cost. This policy made sense when groundwater was abundant in the 1980s. Indeed, it helped millions of farmers escape poverty. But today, where groundwater levels have fallen hundreds of feet below the ground, the subsidy is actually only utilised by the richest farmers who can afford to drill deep. And even so, not all are lucky enough to strike water. Access to groundwater in hard-rock regions has almost become a lottery. Yet in the absence of alternative water sources, charging farmers for electricity is seen as political suicide.

Groundwater is inherently difficult to monitor and control, in part because of its invisibility, which also perpetuates the illusion that each well is independent. The myth is enshrined in Indian groundwater law that allows landowners to extract as much as they want. In reality, not only is groundwater within an aquifer interconnected, but aquifers and rivers are also interconnected. So depleting groundwater means drying rivers. Despite this, groundwater and rivers are regulated by different agencies that do not properly account for the linkages between them, often double counting the quantum of the resource.

Much of the current action on the ground is through techno-economic fixes. These have clear benefits in terms of reducing pumping costs and using local aquifers instead of building big, expensive dams. But what they do not do is create “new” water.

Boosting recharge through rainwater harvesting structures such as small check dams is a popular measure. However, any water that recharges is water that does not flow downstream. Often users located near check dams simply extract more water, while users further downstream wonder why their rivers and tanks are drying up. Another technological solution is to improve efficiency through subsidised drip irrigation or energy-saving pumps. Again, these have often resulted in farmers increasing their irrigation area with no decrease in water extracted. And farmers are not alone; conscientious urban dwellers take pride in reusing wastewater for gardens and parks. But this could result in more wasteful water use, with the additional “wastewater” used in lawns or golf courses where none previously existed.

Techno-economic fixes do not address the underlying “zero-sum game” nature of water resource use. Ultimately, the water management problem is that of allocating the water available each year among users — both people and the ecosystem. Without understanding how much water is available, how much is being used and by whom, solving India’s water crisis is going to be a non-starter. The way forward, therefore, is comprehensive water budgets.

Source: Veena Srinivasan & Sharachchandra Lele, Why we must have water budgets, The Hindu, 29 March 2016.
Bitter Organic Brew

P Nagaraj’s tryst with organic coffee happened in 2001. He was visiting a relative who served him a cup of green coffee. Nagaraj instantly took a liking to the uniquely strong taste. Being a farmer who grew coffee using chemical fertilisers, Nagaraj was even more amazed at the low input cost for growing organic coffee and the high demand from traders. After gathering information about organic farming from locally available literature and meeting organic coffee growers, Nagaraj started an organic coffee plantation in his native Palangana village in Karnataka’s Kodagu district in 2001.

But after 14 years of a not-so-successful experiment, Nagaraj decided to move back to inorganic coffee in 2015. “I would have liked to continue, but my livelihood was at risk. I could produce over 1.5 tonnes of coffee cherries in an acre (0.4 hectare) by using chemical fertilisers. But the yield of organic coffee was much less—around 0.7 tonne,” he says. “Though it is still profitable because the input costs are low, due to the continuous dip in the yield I am doubtful if organic coffee will remain profitable. In 2014, the yield was just 0.6 tonne. With inorganic coffee, there is at least a guarantee of good yield and good market,” Nagaraj adds.

Source: Jitendra, Down to Earth, 15 March 2016.

Today, sustainable development has become developmental goal for the whole world. Its scope has widened to include economic and social dimensions. Achieving this goal depends on the efforts taken by country governments, all those – big and small who engaged in production of goods and services and we – each individual consuming these goods and services.

Check Your Progress

Notes: a) Write your answers in the space given below.
   b) Compare your answers with those given at the end of this unit.
10) Define sustainable development.

11) There is no need to follow sustainable development strategies in India. Do you agree with this statement? Justify.
12) What is organic farming? Explain one major advantage and one limitation of organic farming.

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13) List the three dimensions of sustainable development. Illustrate with one example

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14) List UN Sustainable Development Goals. In your view, elaborate five important ones India should take seriously and immediately.

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16.6 TEACHING-LEARNING STRATEGY

Teaching-learning strategy for this unit includes learning objectives, teaching-learning activities and assessment questions

16.6.1 Learning Objectives

Through this teaching-learning strategy, students will be able to:
- define the terms - poverty, globalisation and sustainable development;
- examine the linkages among these economic issues;
- identify the poor based on the monthly per capita expenditure;
- state the levels of poverty in states;
- describe how poverty is estimated;
- know who estimates poverty and why;
- explain the meaning of poverty, globalization and sustainable development;
- distinguish between poor and non-poor;
- explain the meaning and the process of globalization;
Content Based Methodology: Geography and Economics

- describe how multinational companies function;
- explain the meaning of foreign investment;
- distinguish between foreign direct investment and foreign institutional investment;
- critically examine the impact of globalization on livelihood and environment;
- develop empathy towards the poor;
- distinguish between economic growth and sustainable development; and
- identify, appreciate and follow the sustainable development practices.

16.6.2 Teaching Learning Activities

This unit provides you scope to get many examples of goods and services students use in their daily lives. All the three economic issues can be approached in the class through daily-life examples.

i) **Inter-connectedness:** You need to teach students to look at all the three economic issues separately and also the interconnectedness of the three issues. For example, one can see poverty and its magnitude separately. Students need to be trained to see how poverty is caused by or exacerbated by globalisation process. Or they can see how sustainable development practices can help to improve the living conditions of poor.

ii) **Perspective building:** Perspective building is the major aim of this unit. In the case of poverty, students are expected to learn to show empathy towards poor and vulnerable sections of the society. When students begin to look at sustainable development, they also have to see ways through which each one attempts to promote sustainable development practices. For example, one can travel to short distances by walk or bicycle rather than using motor bikes and cars.

Students at times presume that some people are poor because they are lazy, illiterate and unclean and so on. As a teacher, you know that the problem of poverty is structural and need to demystify students’ perceptions. You can emphasise on analysing evidence and help students to develop sensitivity - empathy towards the poor, follow certain ethical behavior in our daily lives. For example, we have to be empathetic and raise our voice to improve the lives of poor collectively, reduce unnecessary consumption of non-renewable resources and avoid wastage of any kind. Students need to be provided with various opportunities to understand the impact of being poor.

iii) **Understanding of basic concepts and institutions:** This unit is not aimed to provide comprehensive details of each economic issue. Rather a few important concepts associated with each issue are introduced. You need to help students to (a) understand a few concepts such as poverty line, head count ratio, foreign investment, multinational companies; (b) understand the functioning of organizations working in all the three areas - national ones such as National Sample Survey Organisation, NITI Aayog, Pollution Control Boards and international organizations such as the World Bank and the World Trade Organisation. Students need to critically look at the functioning of the legal institutions such as MNREGA and other laws used by the government to address poverty and promote sustainable development.
iv) **Scientific analysis:** This unit contains a lot of statistics. Students need to be taught to see data with an investigative eye, interpret the statistics and find out possible explanations based on reading and reflection. Students need to be taught to discuss on the sustainable development practices, critically look at all the initiatives of government and non-government organizations. In India, people follow many practices as part of their daily lives and religious practices. Students can be given training and opportunity to document traditional practices people follow in different regions of India. Teachers can help students to differentiate scientific sustainable development practices from superstitions using science and reasoning.

v) **Use of multimedia materials:** Two major economic issues – poverty and sustainable development can be taught using multimedia materials. This includes movies, documentaries and other videos. Many national and international level organisations have uploaded videos to sensitize internet users to these issues. They can be either watched directly from internet or can be downloaded. For example, www.livingonone.org contains documentaries on how students attempt to live with one dollar a day.

vi) **Discussion and debate:** This unit gives ample scope for debate in the class. A few suggested topics: (a) globalisation has led to income inequality and unemployment; (b) sustainable development is not possible in India; (c) government did not do anything to address the problem of poverty; (d) is it necessary to invite foreign investment for the economic development of India? (e) Allowing technology as part of globalisation policies led to unemployment in India. In fact you can give provocative topics and encourage students to debate in the class. If the school is located in remote area, you need to provide students with support materials. If the students are residing in urban areas and have scope to explore encyclopedias and internet, you can help students to explore materials from internet.

Concept maps and flow diagrams can be used to see the linkages among various concepts in the unit.

**Activities**

- Government is taking many steps to improve the conditions of poor in India. One step is to ensure purchasing capacity to buy essential goods and services. Under Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) rural persons are given employment for 100 days in a year. Teachers and students can visit the sites where the MNREGA activities are taking place and interact with workers and government officials. Students can also collect details through household survey. In this survey, the nature of the work and in what way this job ensures essentials for them can be collected and presented in the class.

- You can take an example of students from two different families – one from a family with a reasonable expenditure pattern and another one from a family trying to make its ends meet. Using board, discussion can be initiated to discuss. List facilities on the two columns. This should take students to look at the prevailing definition of poverty. You can also promote them to come out with alternative definitions for poverty.
**Content Based Methodology: Geography and Economics**

- Prepare two tables based on the charts (Figure 16.1 and 16.2) given in this unit. Similarly students can be given opportunity to convert table (16.1) into different chart forms. Table 16.1 contains details of Indian states. Group states into four regions – north, east, west and south. Which region has more proportion of poor people and why? Students can discuss.

- Students can collect the population details of some countries and compare that number of poor persons in Indian states.

- Choose five electronic goods; identify their places of manufacturing, marketing and packaging details. Identify the countries from where they come. Why can these goods not be produced in India? Students can be initiated to discuss and list the reasons and possibilities.

- Identify five food items that came to be used in India in the recent decades such as noodles, pizza, pasta, burger, soups, coco cola, etc. Students can collect the history of each food item and present in the class using PPTs or Chart Paper Display.

### 16.6.3 Assessment Questions

1) Define the following terms: (i) head count ratio; (ii) poverty line; (iii) foreign investment and (iv) pollution.

2) List Indian states which have moderate levels of poverty in 2011-12.

3) Why do definitions for economic issues change? Illustrate with one example.

4) Calorie-based poverty definition is not sufficient to understand poverty. Explain.

5) The following table shows the expenditure of four families in India. Identify those which are living above poverty line as per the recent poverty line (2011-12).

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<thead>
<tr>
<th>Name of head of the household</th>
<th>No. of family members</th>
<th>Total expenditure per month</th>
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<tbody>
<tr>
<td>Abhay (Rural)</td>
<td>5</td>
<td>4000</td>
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<tr>
<td>Preeti (Urban)</td>
<td>4</td>
<td>4000</td>
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<tr>
<td>Chandrakala (Rural)</td>
<td>3</td>
<td>2500</td>
</tr>
<tr>
<td>Siva (Urban)</td>
<td>4</td>
<td>3000</td>
</tr>
<tr>
<td>Ayaz (Rural)</td>
<td>6</td>
<td>10000</td>
</tr>
</tbody>
</table>

6) Describe the economic dimension of sustainable development with one example.

7) Why is it necessary to move from economic development to sustainable development?

8) India could not become one of the Asian Tigers because of its protectionist policies. Explain.

9) How can sustainable development improve the living conditions of poor? Illustrate with one example.

10) How can globalization be used as an effective vehicle to promote sustainable development? Illustrate with one example.
11) How can globalization be used to reduce poverty and eliminate hunger?

12) Why is poverty level more in rural areas than in urban areas?

13) Multinational Companies regularise the life of people. Do you agree with this statement? Justify.

14) Given the nature of Indian economy today, which form of foreign investment is more useful for India? Why?

16.7 LET US SUM UP

Nearly one-fifth of Indian population is living below poverty line. Though India’s performance, when compared with historically, is impressive reducing the poverty levels from 55% to about 20%, when compared with other countries, India is yet to make progress. Many large states report higher levels of poverty. In India, calorie norms and household consumption expenditure are used to identify poor. Governments are involved in generating poverty statistics to identify poor and to help them to come out of poverty. MNREGA is one such example of government welfare activity.

Though India is yet to make sufficient progress in poverty eradication, globalization process mooted in 1990s in India has led to rapid growth of Gross Domestic Product and availability of goods and services using latest technology. Today, Indians particularly in urban areas are able to access goods and services containing sophisticated technology. The economic globalisation is driven by multinational companies, technology and facilitated by government through trade-promoting policies. Many consumer goods in India are available at low prices. Globalisation is yet to generate additional employment and rise in wages for workers particularly in India.

Sustainable development is an alternative development framework to take care of livelihood issues such as employment and wages, protecting the environment and saving the earth for future generation. Recognising the relevance of this framework, the United Nations has come out with 17 Sustainable Development Goals to be achieved by 2030. In India, various measures are being taken by both citizens and governments to follow sustainable development practices. After presenting the contents, teaching-learning strategy comprising learning objectives, teaching-learning activities and assessment of questions was presented to transact learning experiences pertaining to the unit.

16.8 REFERENCES AND SUGGESTED READINGS


16.9 ANSWERS TO CHECK YOUR PROGRESS

1) The monthly per-capita expenditure associated with the minimum calorie intake for survival. In 2011-12, it was Rs.816 in rural areas and Rs.1000 in urban areas.

2) (a) Yes. India had about 25 crore poor persons in 2011-12. When compared with other countries of similar nature, India’s poverty figures are very high.
   (b) No. The intensity of poverty has declined. In 1970s, more than half the population was under poverty. In 2011-12, it was about one-fifth only.

3) It impacts people in different ways. Understanding it scientifically would help in developing sensitivity towards poor and also come out with innovative ways to address poverty as a challenge.

4) Madhya Pradesh, Assam, Odisha, Bihar and Jharkhand.

5) Integration of countries for production and distribution of goods and services.

6) It started after 1990 and based on the extensive use of ICT.
7) (a) multinational companies; (b) technology; (c) export oriented trade-promoting policies of governments; (iv) mobility of capital (any two can be elaborated).

8) (a) availability of consumer goods containing sophisticated technology at low price; (b) use of ICT in many manufacturing and service sector activities (c) no new employment opportunities; (d) stagnation or no increase in wages (choose any two and elaborate).

9) Asian countries which have used globalisation processes during 1945-1990. They developed economically within a short span of time.

10) (i) Development using the natural resources and keeping a part of the resources for future generation.

11) (a) No. India faces a lot of challenges in the area of environment and livelihood. We are not able to generate employment opportunities in the present development model. Our natural resources such as groundwater, top soil minerals, etc. are getting depleted; (b) Yes. India needs infrastructure and development of manufacturing sector so that additional employment can be generated. The ICT and other modern technology are not yet entered in the areas such as agriculture.

12) (a) use of bio-composting and bio-pest control measures; (b) advantage: low cost of production and no harm to the soil / promote sustainable development. Disadvantage: low yield and profitability.

13) (a) environmental – protecting the groundwater by wise use of fertilizer; (b) economic – use of labour-intensive technologies rather than capital-intensive technologies; (c) government generating employment opportunities (MNREGA), old-age pension and mid-day meal scheme.

14) There are 17 goals viz., (a) no poverty; (b) zero hunger; (c) good health and well-being; (d) gender equality; (e) quality education; (f) affordable and clean energy; (g) decent work and economic growth; (h) reduced inequalities; (i) sustainable cities and communities; (j) responsible consumption and production; (k) climate action; (l) life below water; (m) life on land; (n) peace, justice and strong institutions; (o) partnership for the goals. Important ones for India: zero hunger, no poverty, quality education, decent work and economic growth and reduced inequalities.
UNIT 17 ECONOMIC INSTITUTIONS

Structure
17.1 Introduction
17.2 Objectives
17.3 Banks
  17.3.1 Why are banks Important?
  17.3.2 Bank Deposits and Interest Rates
  17.3.3 Credit Creation: Lending Business of Banks
  17.3.4 Important Credit Instruments
  17.3.5 Sources of Credit
17.4 Taxes
  17.4.6 What are Taxes?
  17.4.7 Budget and Taxes
  17.4.8 Major Taxes in India
  17.4.9 Direct and Indirect Taxes
  17.4.10 Goods and Services Tax
  17.4.11 Black Money and Tax Evasion
17.5 Teaching-Learning Strategy
  17.5.1 Learning Objectives
  17.5.2 Teaching Learning Activities
  17.5.3 Assessment Questions
17.6 Let Us Sum Up
17.7 References and Suggested Readings
17.8 Answers to Check Your Progress

17.1 INTRODUCTION

Schools, colleges and universities are usually known as institutions. The Library of Economics and Liberty define economic institutions as “all the well-established arrangements and structures that are part of the culture or society”. Economic institutions include property rights, discriminatory and exclusionary practices, competitive markets, the banking system, taxes, wage system and many other economic systems. Giving tips to service staff is also an example of economic institution. They are fundamental in development, both as a determinant and as an outcome of economic change. Economic institutions affect production, consumption, efficiency, accumulation, growth and income distribution. In recent times, financial institutions such as banks, credit arrangements – both formal and informal, tax systems, etc. have become major force of economic development. It is now established that the globalization processes and growth of multinational corporations are driven by finance capital. In this unit, we discuss the functioning of two major economic institutions – banks and taxes along with the teaching-learning strategy for transacting the contents pertaining to these concepts.
17.2 OBJECTIVES

After going through the unit, you will be able to:

- define the concept of economic institution;
- discuss the importance of banking;
- describe how banks function and create credit;
- describe some important services available in banks including credit instruments;
- explain taxes and Union Budget;
- list out important tax revenues for the government;
- explain why it is important to pay taxes and develop banking habits.
- formulate learning objectives for the contents of the unit;
- develop suitable teaching-learning activities to teach the contents; and
- prepare assessment questions to evaluate students’ performance.

17.3 BANKS

17.3.1 Why are Banks Important?

Banks are financial institutions which collect funds from the people and place them in financial assets such as deposits, loans and credit instruments. They provide a variety of services ranging from collecting deposits, keeping our valuable materials and documents safely, selling gold and silver, collecting electricity, telephone and water bills to work as financial advisors. We get interest on our savings and we are charged interest on loans we get from banks. Banks play an important role in promoting savings habit among people and also contribute to country’s development by meeting its financial requirements. More than 150 government and private banks with hundreds of their branches conduct their business in India.

Banks mainly collect individuals’ savings and accumulate their funds. Banks lend depositors’ money to needy – to set up factories, shops and companies or to pay medical bill, school fees, buy homes, cars and computers etc., and earn incomes. Banks charges 10-24% interest depending on the nature of amount and the purpose for which loan is sought. For depositors, banks pay not more than 8% per annum as interest and thus make profit up to 2-16%. Since banks deal with crores of rupees, their profit also gets added up to a sizable amount. This is what a bank does. It takes people’s savings and lends it to others. So a bank is an establishment dealing in other peoples’ money.

17.3.2 Bank Deposits and Interest Rates

Banks provide mainly two types of deposit facilities: (a) demand deposits and (b) time deposits. Demand deposits mean that the depositors can withdraw money on demand. In the case of time deposits, money can be withdrawn only after a certain period of time or after giving due notice.

In demand deposits, we have two categories. One is the current account and the other is the savings account. Banks do not pay interest on current account.
Companies, traders and business establishments prefer to maintain current account deposits while others maintain savings account deposits.

On savings deposit, banks pay interest. Banks decide interest to be paid for savings deposits. This range from 4 to 7 per cent depending on the minimum amount kept in the account. The savings deposit facility encourages people to save through banks and cultivate banking habits. That is why interest is offered. The depositor has to keep a minimum amount in the bank. This amount varies from bank to bank and sometimes the nature of occupation. For example, students and employees of some organisations need not have to keep any minimum amount with the bank. The savings bank depositors cannot withdraw all their savings on one day. For example, the State Bank of India allows people to withdraw from savings account through ATM only Rs.45,000 on a day. Those who wish to withdraw from bank inform banks in advance. However, those who have availed internet banking facilities can transfer beyond this amount as well. State Bank of India, for example, allows Rs.10 lakhs a day to transfer to other bank account through internet banking.

People engaged in small business activities cannot save so much in a month. Banks help them to save such people’s money through time deposits, which are of two kinds: (a) fixed deposits and (b) recurring deposits.

In fixed deposits, we can deposit money for a specific period ranging from 15 days to 10 years. The longer the period you leave the deposit with the bank the higher is the interest paid to you. Rate of interest is the major factor for people to deposit their savings. It is also an important means through which banks attract people to deposit savings. The amount put in fixed deposits can be withdrawn only at the end of the specified period. However, if we urgently need money, we can take a loan against our fixed deposit by paying interest.

In recurring deposits, every month you can deposit Rs. 500 or Rs. 1000 or more for a fixed period of years, say 2 or 5 years. The small savings every month keep on multiplying until, at the end of a few years, you have a good amount.

Banks compete with one another to attract people’s savings and also in providing credit facilities. All the time they invent new schemes. There are banks which accept deposits from school children who have completed age 10.

Banks serve both people and the government. Banks by encouraging people to save appear to provide a good service to the people as savings are necessary for all of us. In times of need, we do not have to depend on anybody. By saving for some years, we can buy assets like land, houses and other things we want. If we leave our savings with banks, they multiply. But if we keep them at home they remain idle. For a country to develop, savings are necessary. People’s savings is borrowed by investors and Governments for building roads, factories, dams, etc.

### 17.3.3 Lending Business of Banks

Banks lend money for a variety of purposes – some of them are for productive purposes such as farming, setting up an Information Technology company, dairy, factory, mobile shop, etc.. The term ‘productive’ purpose means, you are able to produce a good or a service, generate surplus or profit from your venture and able to repay the loan. Banks also lend for consumption goods such as buying a
computer, scooter, house, car, television. Generally banks prefer lending to people who use it for productive purposes. For some productive purposes banks also lend with low interest. In contrast, banks charge higher rate of interest for consumption loans.

While lending, banks look into whether or not you are trustworthy, and have the capacity to repay what bankers call ‘credit worthiness’. This means you need to have good relations with the bank. When banks ask for security, called, ‘collateral’, you need to show ownership of documents of assets you possess. You are required to provide sufficient evidence that you have the ability to repay.

**Credit Creation:** When you deposit money in the bank it is called *primary deposit*. When the bank gives loan to a person through a new deposit it is known as *secondary* or *derivative deposit*. Bank deposit is considered part of money supply in an economy. Let us see how much loan bank can create out of a primary deposit with an example. This requires some exercise in elementary arithmetic. Let us assume that there is only one bank having branches all over India. That means, all the cheques will be encashed with that bank and deposited in the same bank. Secondly, let us also assume that all payments are made by cheque.

With the two assumptions mentioned above, let us suppose that a bank is required by law to keep 10 per cent of its deposits in cash. That is for every hundred rupees deposited, it has to keep ten rupees as cash reserve. It is known as *cash reserve ratio*. Since all loans are created by fresh (secondary) deposits, let us see how much loan a bank can create out of a primary deposit of Rs. 10,000.

**Table 17.1: Credit Creation by a bank**

<table>
<thead>
<tr>
<th>Stages</th>
<th>Deposits (Rs.)</th>
<th>10% Cash Reserve</th>
<th>Excess Cash (Rs.)</th>
<th>Loan (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary deposit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Stage</td>
<td>10000</td>
<td>1000</td>
<td>9000</td>
<td>9000</td>
</tr>
<tr>
<td><strong>Secondary or Derivative Deposits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second stage</td>
<td>9000</td>
<td>900</td>
<td>8100</td>
<td>8100</td>
</tr>
<tr>
<td>Third stage</td>
<td>8100</td>
<td>810</td>
<td>7190</td>
<td>7190</td>
</tr>
<tr>
<td>Fourth stage</td>
<td>7190</td>
<td>719</td>
<td>6471</td>
<td>6471</td>
</tr>
<tr>
<td>Fifth stage</td>
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<td>...</td>
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<tr>
<td>Sixth stage</td>
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<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Last stage</td>
<td>1,00,000</td>
<td>10,000</td>
<td>90,000</td>
<td>1,00,000</td>
</tr>
</tbody>
</table>

**Source:** GOI (2013)

A depositor deposits Rs. 10,000 and we have called it the first stage and a primary deposit. We have assumed that the bank keeps 10 per cent as cash. With every deposit, the bank keeps $1/10^{th}$ cash reserve and lends the excess cash as new deposit. In the first stage, for example, bank keeps Rs.1000 as reserve and lends the excess cash of Rs.9000 to a borrower. The fresh loan of Rs.9000 becomes a secondary or derivative deposit in the second stage. This is because we assume
that every loan is given in the form of a deposit and not in cash. Against this new deposit, 10 per cent cash is kept, the excess cash being lent to another borrower in the third stage and thus a credit pyramid is built.

We can calculate the total deposit this bank created using a simple formula and this term is called deposit multiplier. We know that credit creation mainly depends on the ratio of cash reserves to deposits, the deposit multiplier (K) is

\[
K = \frac{1}{2}
\]

where \( K = \text{Deposit multiplier} \)

\( r = \text{ratio of cash reserves to deposits} \)

if cash reserves ratio is 10 per cent, i.e., \( r = 0.1 \), the deposit multiplier is

\[
K = \frac{1}{10\%} = \frac{1}{0.1} = 10
\]

The higher the cash reserve ratio, the lower will be the deposit multiplier. The total deposit creation will be additional cash (AC) multiplied by the deposit multiplier. That is Additional Aggregate Deposit (D) = AC \( \times \) K. We know that Rs.10,000 was deposited in the bank, it can multiply deposits by giving loans to the extent of Rs. 1,00,000 (assuming a cash reserve of 10 per cent). That is D = AC \( \times \) K = Rs. 10,000 \( \times \) 10 = Rs. 1,00,000. A small volume of cash available with a bank becomes the basis for multiplication of deposits through multiplication of loans. In this way, bank deposits form the basis of investment in the economy.

Does this actually happen in the real world? All the time it may not, because people accepting cheques for payments may encash them, which will reduce the cash available with the bank. That will, in turn, reduce the bank’s capacity to lend. Also, the amount of money to be kept with the bank for making payments to its depositors is decided by Reserve Bank of India, the regulator of all banks in India. If cash reserve ratio is high, again the bank would be compelled to keep deposits with them rather than lending to business persons. How deposits can get multiplied also depends on how much people deposit in the bank. If people show less interest in savings through bank or if the bank is not able to mobilise deposits or receive money from government, it cannot multiply its deposits.

Three important points we need to keep about the role of banks: (i) Banks lend many times more than the deposit it has mobilised from people; (ii) They also earn from our savings and at the same time encourage us to save and (iii) Banks also help anyone who come with productive work plan and seek loan.

Check Your Progress

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

1) How is fixed deposit different from savings account deposit?

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2) How is recurring deposit different from current account deposit?
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3) Define cash reserve ratio.
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4) What is deposit multiplier?
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5) What is credit creation? If deposit in a bank is Rs. 15000 and the cash reserve ratio is 5 per cent. Every year one person gets loan of Rs. 15000. What will be total deposit the bank created in 10 years?
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6) If a person save Rs.2,00,000 in savings bank account. How much she would earn after one year as interest payments? What will be interest payments, if the same person saves in current account?
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17.3.4 Important Credit Instruments

Once we open an account in bank and deposit our savings, banks expect us to use ‘credit instruments’ to conduct their business with its customers. These are written documents containing the details of our transactions with bank for future reference – amount of money deposited and withdrawn. Over the years, banks have evolved many credit instruments. Some of these are called Negotiable Instruments which means people can go to court if these are misused or if a person failed to make payment as agreed in the instrument.

We can withdraw money from our account in many ways. We need to visit the bank and fill in the withdrawal form in which we can fill the details of our account and put our signature and submit along with the passbook to the bank. People also use Automated Telling Machine (ATM)/Debit card and withdraw from hundreds of ATMs located in India. Bank deducts the amount we want from our account and will give us cash.

Banks now allow us to withdraw and manage our account using a new facility using information technology device called internet banking. By availing this facility we can transfer money from our account to another account or get the money transferred to our account, book tickets, make payments for purchase of goods and services. For this, we use internet or mobile phone. Banks send information to our mobile phone and email account all transactions that we do with our account. Many safety measures are also inbuilt while operating our account using net banking. We can also use passbook with all these latest facilities.

i) Cheques: These are provided by banks to its customers having current or savings account deposits. Cheques can be used in lieu of cash when we make a purchase. A cheque entitles the person whose name it bears to claim the amount mentioned in the cheque. If she wants, she can also transfer it in favour of another person.

In order to use cheques, we need to maintain a minimum amount in our account. This amount varies with locations we reside and banks. A few banks also provide cheque book facility with zero balance in the account. People maintain accounts with cheque book facility so that they do not have to carry much cash while making purchases. Another advantage of using cheques is that if we want to send money to someone, it is safe to send cheques rather than cash. Suppose you do not have sufficient balance in your account, the person on whose favour you issue the cheque will send the cheque back to you. This is called bouncing of cheques. As per the bank laws in India, you will be penalised for issuing cheque without having sufficient balance in your account.

One precaution we need to take while making payments through cheque is to record the amount in your cheque book so that we can always come to know how much money is in your account. As mentioned earlier, we can also ask the bank over phone about our balance amount. When we pay a small fee, banks also send SMS providing the details of latest transactions and balance. By keeping track of our account balance, we can make sure that the cheque does not bounce back. When your cheques bounce, you also lose credibility, even if we make payment without looking at our account balance unintentionally.
One limitation of cheque facility is that suppose you issue a cheque, the person will have to wait till your money is transferred which may take a few days or week depending upon the distance between you and the person issued cheque. Cheques cannot be used as money. If you are issued a cheque, you need to encash within three months from the issue date.

**Overdraft Facilities:** For business persons who have been dealing with a bank for a long period and is involved in large business transactions get a facility called overdraft. Suppose you issue a cheque for Rs.20,000, whereas you had only Rs.10,000 in your account. Normally the cheque would bounce and you would have been fined or even jailed. Under overdraft facility, when your bank receives the cheque, it gives you an automatic loan Rs.10,000 to cover the difference between your account balance and cheque amount. The bank will charge you later a flat fee for the loan.

**ii) Bank Draft:** Another credit instrument widely used is the bank draft. Let us explain with an example. Ashok Banerjee in Kolkata has to pay Sundaram in Mumbai Rs.2,000. Ashok Banerjee can go to a bank in Kolkata, hand over the Rs.2,000 with a small commission and ask for a bank draft on another bank in Mumbai. The Kolkata bank writes a draft in favour of Sundaram directing the bank in Mumbai to pay him the amount on demand. Banerjee takes the draft from the Bank and posts it to Sundaram in Mumbai. On receipt of it, Sundaram takes it to the bank mentioned in the draft and presents it. He is paid cash or Sundaram can give the draft to his own bank to collect the amount on his behalf. People also get demand draft for making payment to government for a variety of purposes such as taking part in competitive examinations, apply for admission into educational institutions and to apply for tenders.

**iii) Bill of Exchange:** This is a credit instrument used mainly by traders doing business across countries. Let us take a concrete example and explain it. We will simplify it by omitting many of the processes through which a modern bill actually passes.

Shiwanri, an exporter in Mumbai, sells shirts for Rs.50 lakhs to Jason Stanley in London. Shiwanri does not know Stanley personally. So before selling him, Shiwanri will make enquiries through her bank about Stanley’s creditworthiness. Now, Stanley knows that the shirts will take two months to reach London after they are shipped in Mumbai. Then it will take another two months to sell them and convert them into money. So, he sees no reason why he should pay Shiwanri till then. Shiwanri too will feel the same way. She has parted with her goods and why should she wait for three or four months to get money for shirts exported?

The bill of exchange is a clever device by which Shiwanri gets her money immediately after shipping her shirts and Stanley can pay after he has received the goods. Shiwanri draws a bill of exchange on Stanley in London for Rs.50 lakhs payable on demand or after 30 - 90 days. Then Shiwanri sends it to her bank in Mumbai, call it State Bank of India, which will sign it and send it to Stanley’s Bank in London. In actual practice, the State Bank of India will pay Shiwanri Rs.48,50,000 immediately after the bill is given to it. The Bank will wait for three months and get Rs.1,50,000 from Stanley. The difference
of Rs.1,50,000 is the ‘discount’ for the bank for its waiting and is an income for the bank.

When the State Bank of India has signed the bill of exchange, it will send it (with other documents showing that the shirts have been shipped) to Stanley’s Bank in London. It will present it to Stanley who will sign across it after writing the word ‘accepted’. That means, Stanley accepts his debt for Rs. 50 lakhs.

Here we can distinguish between two types of bills. Now, Stanley can get the documents necessary to clear the goods from the London port by paying Rs. 50 lakhs when the London Bank presents him the bill. That is known as Document against Payment (DP). It is also known as sight bill because it is paid on demand or at sight.

The other type is called Document against Acceptance called in short DA. Stanley ‘accepts’ to pay the London Bank after, say, 60 days from 1st July. The London SBI will now give him documents, but will wait till 1st September to receive payment of Rs.50 lakhs. Such a bill payable after a certain number of days is called usance bill. When Stanley has paid Rs.50 lakhs to the London Bank it will remit that amount to the State Bank of India. Now the entire transaction is complete.

The DA bill is also known as time bill, because the bank has to wait before receiving payment in full. It is for such waiting that the bank gets a discount. Let us now suppose that the SBI wants cash for some purpose. The bill of exchange, as you know, is a liquid asset of a bank. It can be marketed. The Bombay SBI will approach the Reserve Bank of India for rediscounting the bill. The RBI will rediscount the bill. The RBI will rediscount the bill and pay the State Bank of India an amount less than Rs.50 lakhs say Rs.49.3 lakhs. The sum of Rs. 70,000 is the RBI’s earnings. It is because the RBI provides such a facility to all the scheduled commercial banks in India.

iv) Treasury Bill: It is (hence forth T-bill) is a promissory note by the Government. The Government borrows money for a short period from three months to one year, because it takes time for the Government to collect taxes and in the meantime it needs money for its expenditure such as paying salaries, procuring medicines for use in government hospitals, constructing buildings, schools, offices, factories, producing electricity and so on.

The Reserve Bank of India receive bids in an auction from the public and issue T-bills subject to some cut-off limits and for a specific period (14 days, 91 days and 364 days). T-bills are available for a minimum amount of Rs.25,000 and its multiples (Rs.50,000, Rs.75,000, Rs.1,00,000 etc.). Usually banks can submit tenders. The bank which is ready to lend at the lowest rate of interest is given the bills. At the end of the period it will be paid the amount with interest. If a bank urgently needs money, it can sell the treasury bills in the market.

17.3.5 Sources of Credit

All the credit instruments we have read so far are associated with banks. Banks are not the only source of credit for people. Sources of credit may be of different
types. When we borrow money from friends, relatives, local money lenders, it is called informal source; all our borrowings from banks, cooperative societies and micro-credit agencies are called formal sources of credit. Read the following table.

**Table 17.2: Sources of Credit in India (%)**

<table>
<thead>
<tr>
<th>Source of Credit</th>
<th>Rural Areas</th>
<th>Urban areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Cooperative Societies and banks</td>
<td>22%</td>
<td>18%</td>
</tr>
<tr>
<td>2) Commercial Banks</td>
<td>25%</td>
<td>57%</td>
</tr>
<tr>
<td>3) Other Formal Sources</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>4) Money Lenders</td>
<td>33%</td>
<td>11%</td>
</tr>
<tr>
<td>5) Friends and Relatives</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>6) Other Informal Sources</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 17.2 shows that access to credit through banks is more in urban areas. Nearly 85 per cent of credit needs are accessed through formal sources such as banks and cooperative societies whereas in rural India, only about 56 per cent of credit needs are met from formal sources. Still money lenders are the major sources for rural borrowers who meet one-third of credit requirements of rural India. Why?

**Check Your Progress**

**Notes:**

a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this unit.

7) What are credit instruments? Give one example.

8) Suppose someone issued a cheque in favour of you and banks report no money in that persons’ account. What will you or the bank do?
17.4 TAXES

17.4.1 What are Taxes?

Modern governments – both democratic and non-democratic ones all over the world take care of many essential services. Governments run hospitals, schools, colleges, universities, post offices, lay roads and provide transport services, set up and maintain parks, provide social security, irrigation facilities, supply water and electricity, give monetary support to unemployed, food grains and other essential goods at subsidized rates. Many of these are called public goods. This means, its benefits can be shared by many people. Governments also run huge offices, maintain law and order by employing police and keep armed forces to
Taxes are mandatory financial contribution of people to the government. It is collected by the governments (all the three - central, state and local) and the amounts vary with incomes earned by people or organisation. Governments collect taxes from people both directly and indirectly. Indian Constitution through various laws expects that all those who earn beyond a determined limit of incomes pay taxes. Those earning incomes from agriculture are exempted from paying taxes in India. Every tax payer in India possesses a Permanent Account Number (PAN) card. PAN is a 10-digit alphanumeric number, issued in the form of a laminated card by the Income Tax Department of the Union government. Those running establishments also possess Taxpayer Identification Number (TIN). Most financial and business transactions require reporting these identification numbers. This is done to keep track of taxes paid by tax payers.

17.4.2 Budget and Taxes

All the taxes collected by government are called tax revenue. There are different ways through which governments collect taxes. Governments spend tax revenues in different activities depending on the priority. The planning of collecting revenue and spending is called budget.

![Fig. 17.1: Share of Different Tax Revenues, 2015-16](source: GOI (2013))

Every year, Indian government submits its budget proposal containing the details of revenues and expected government expenditure on various activities to Indian Parliament. Though all forms of governments makes budget every year, the largest and important budget in India is Union Budget. The Union Government spends and distributes its revenues to states on the basis of budget and Five Year Plans. For instance, during the year 2015-16, central, state and local governments together collected about Rs. 14.6 lakh crores as taxes. Look at the Fig. 17.1.
Check Your Progress

Notes: a) Write your answers in the space given below.
   b) Compare your answers with those given at the end of this unit.

13) Why do we have to pay taxes?
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14) What do governments do with the tax money?
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15) Explain the importance of Union Budget.
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16) Distinguish between PAN and TIN.
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17.4.3 Major Taxes in India

Since people are engaged in hundreds and thousands of economic activities to earn incomes, government formulates different ways and means to generate tax revenue. This also means government uses different nomenclature depending on the economic activity to generate revenue through tax system. Let us study some important taxes in India.

i) **Excise Duty:** It is the tax levied on goods manufactured in factories and paid by the factory owners before the goods are sold. There are a few goods
Economic Institutions

on which this tax is not imposed. Excise duty is paid by the factory owner, but in reality, the burden of the tax falls on those who buy the goods. The general practice is that the factory owner raises the prices of the goods they sell in order to cover the amount they pay as tax.

If excise duty is increased on one commodity, say wheat flour, the prices of commodities requiring wheat flour (bread, biscuits, noodles, pastries, cakes, sweets, roti / poori / chapatti in hotels etc.) will also go up. In this way, changes in excise duty can have far reaching effects.

ii) **Value Added Tax:** It is a tax system in which tax is levied at each stage of the value addition chain. Let us take the example of wheat flour. Suppose a biscuit pocket is sold in a retail grocery shop and undergoes the following stages.

<table>
<thead>
<tr>
<th>Manufacturer/Seller</th>
<th>Input Cost</th>
<th>Output Value</th>
<th>Value Addition</th>
<th>Tax Rate</th>
<th>Selling price including tax rate</th>
<th>Tax Burden under VAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What flour maker</td>
<td>-</td>
<td>1000</td>
<td>500</td>
<td>10%</td>
<td>1550</td>
<td>50.00</td>
</tr>
<tr>
<td>2. Biscuit factory</td>
<td>1550</td>
<td>2000</td>
<td>450</td>
<td>10%</td>
<td>2045</td>
<td>45.00</td>
</tr>
<tr>
<td>3. Grocery Retailer</td>
<td>2045</td>
<td>2500</td>
<td>455</td>
<td>10%</td>
<td>2545.50</td>
<td>45.50</td>
</tr>
</tbody>
</table>

Under VAT system, at each stage of the value addition chain, the sellers of goods are required to pay tax on the basis of value that they add to the commodity procured by them. For example, in the above table, the biscuit factory owner will have to pay tax of 10% (as decided by the government from time to time or changed at the time of budget announcement) only for the value added to the wheat flour and converted into biscuit i.e. Rs.450.

In India, both state and central governments collect VAT but taxes for the goods and services vary.

iii) **Customs duty:** This tax is levied on imported goods. It is collected at airports and ports. Companies, jewellers and traders import raw materials from other countries through ships. They pay customs duty at the Indian ports depending upon rates decided by the Government of India.

Prior to 1991, India used to discourage import of foreign goods. It was called import substitution policy. Government levied 200-300 percent of the price as customs duty on imported goods. Due to certain pressures from other countries, the World Trade Organisation (WTO) and changes in the government policy, customs duty has been reduced considerably on most manufactured goods. It is now about 20-30 per cent and varies with commodity and country from where it is imported.

iv) **Income Tax:** This is collected from people based on their incomes. Both central and state governments collect this tax but goes for use in Union government budget. It is one of the direct taxes where the individual pay the tax directly to the government. Regular salaried employees earning beyond certain amount pay taxes. Besides incomes earned as salaries, people also pay taxes for incomes generated from properties (rent accruing from
buildings, flats, shops and land) and capital gains (earnings from the sale of movable and immovable assets such as houses, jewellery, business stocks and other properties etc.).

In India, the income tax system is based on the progressive tax policy. For example, those who earn up to Rs.5 lakh per year are exempted from income tax. Those who earn between Rs.5 - 10 lakhs per year are required to pay 20 per cent of their income as taxes. Those who earn Rs.10 lakhs or more in a year are required to pay 30 per cent of their income as taxes.

v) Corporate Tax: It is paid by the large companies based on the profit they earn from the sale of their goods and services. During the last two-three decades, this has become an important source of tax revenue for India. Indian companies are expected to pay taxes on the basis of profit earned from within and outside India. Foreign companies pay taxes on the basis of their operations within India. Corporate tax accounted for nearly one third of tax revenue during 2015-16.

Check Your Progress
Notes: a) Write your answers in the space given below.
   b) Compare your answers with those given at the end of this unit.

17) Match the following

<table>
<thead>
<tr>
<th>Item</th>
<th>Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Goods made in factories</td>
<td>A. Customs Duty</td>
</tr>
<tr>
<td>2. Imported washing machines</td>
<td>B. Income tax</td>
</tr>
<tr>
<td>3. Income from house sold</td>
<td>C. Excise duty</td>
</tr>
</tbody>
</table>

18) Distinguish between customs duty and excise duty.

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...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
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...........................................................................................................................................

19) What is progressive tax policy?
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...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
17.4.4 Direct and Indirect Taxes

Generally taxes are divided into two groups – direct taxes and indirect taxes. Direct taxes are those which are paid directly by the tax payers to the government - example income tax. Indirect taxes are collected by the government through intermediaries such as producers and sellers (both wholesalers and retailers) indirectly. For example, Value Added Tax. This tax is levied on the goods and services.

17.4.5 Goods and Services Tax

In India, many indirect taxes are levied by both central and state governments. Since different states follow different policies, producers pay higher taxes and consumers pay higher price for the goods and services. In order to bring one common tax system using value added method, Indian Parliament passed a new law – Goods and Services Tax (GST) Act in 2016. This system is similar to system followed only in developed countries. The GST is expected to increase the tax-net – increase in the number of tax payers, simplify the tax collection system, reduce price, generate more revenue for the government and reduce corruption in the tax administration.

17.4.5 Tax Evasion and Black Money

Avoid paying taxes is called tax evasion. Though there are more than 20 crore PAN Card holders, during the last few years, only one percent of Indians pay taxes. India is one country in which tax evasion is very high. Salaried people in government services and in private companies pay taxes on a regular basis. In corporate sector, only about 7.5 lakh workers pay income tax. It is also common to find in many business enterprises earning incomes and professionals do not disclose actual sales or service details and hence do not pay taxes. At times, we as consumers do not ask for bills for the purchase and hence evade taxes.

All these money involving unaccounted transactions are known as black money. This means money on which tax should have been paid, but was not. Scholars report that the value of black money is equivalent of nearly half the value of India’s Gross Domestic Product (about Rs.125 lakh crores). People also put black money in the banks of other countries. Governments simplify procedures for paying taxes and enact laws so that possessors of black money pay taxes. India’s tax administration is taking various steps to simplify tax laws, procedures for paying taxes and concessions to tax evaders and encourage people pay taxes. It is the people’s willingness that can lead to development of banking habits and tax compliance.

Check Your Progress

Notes: a) Write your answers in the space given below.
       b) Compare your answers with those given at the end of this unit.

20) How is Goods and Services Tax (GST) different from Income Tax?

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.................................................................................................................................
.................................................................................................................................
21) What is black money? Do you think we should be concern about black money? Explain.

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...............................................................................................................
...............................................................................................................
...............................................................................................................
...............................................................................................................
...............................................................................................................

17.5  TEACHING-LEARNING STRATEGY

Teaching-learning strategy for this unit includes learning objectives, teaching-learning activities and assessment questions.

17.5.1  Learning Objectives

Through this teaching-learning strategy, students will be able to:

• describe what banks do;
• explain why we have to develop banking habits;
• discuss why and how banks pay interest for deposits and calculate interest rate for different kinds of deposits and loans;
• describe how banks create credit;
• elaborate how banks use important credit instruments;
• distinguish between formal and informal sources of credit and understand the inequality in access to credit in India;
• define tax and distinguish between different types of taxes;
• state major sources of tax revenue for the Union Government;
• recognise some challenges faced by tax administration in India such as tax evasion; and
• differentiate between PAN and TIN

17.5.2  Teaching Learning Activities

Though banking and tax system are not going to affect life of the learners, these two economic institutions are going to play major role in every student’s lives in the future. It is necessary that students are introduced to these in simple ways and are provided with opportunity for understanding their relevance both politically and economically.

• Students may be asked the need for saving in their life. For example, whether they get money as pocket money and how much they spend in a week or month out of this money. They can also be asked the details of hundi / piggybank which they keep or maintain in their house.

• Credit creation activity can be given to students in groups. Every student group can be given different amount of initial deposit and cash reserve ratio.
Students can be given a topic whether there should be different interest rates charged by the bank for loans advanced by them. For example, is it necessary to provide loan to farmers / industries / Information Technology Companies at lowest interest rate? One group may speak in favour of the policy and another group may speak against this policy. One can also debate on tax concessions currently given to exporters, many industries and foreign companies.

Students may be encouraged to conduct a small survey among 15-20 families in their locality. They can collect the details of occupation of head of families and other members, whether the family borrows from different sources (given in 17.3.5). After summarizing the data, they can present the findings in the classroom and compare with what is given in the section 17.3.5. Each group can also develop pie diagram to show the summary results of their survey on a chart paper and display them in the class.

The teacher can bring a cancelled cheque, draft to show in the class. If not they can show the copy of these. Different details are available in each cheque. The teacher can explain them and also explain what banks do with these cheques.

**Activity 1:**

The following table contains the details of interest rate fixed by SBI and ICICI in India for fixed deposits during 2015-16. (a) Prepare two bar charts and compare interest rates fixed by the banks. (b) Students may be asked to form two groups and discuss why these two private banks charge different interest rates. Prior to this, they need to analyse the table and see what is hidden behind the maturity period and interest rates.

**Table 17.4: Interest Rate fixed by SBI and ICICI for Fixed deposits in 2015-16 (%)**

<table>
<thead>
<tr>
<th>Maturity Period</th>
<th>State Bank of India</th>
<th>ICICI Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General</td>
<td>Senior citizens</td>
</tr>
<tr>
<td>7 days to 45 days</td>
<td>5.25</td>
<td>5.50</td>
</tr>
<tr>
<td>46 days to 179 days</td>
<td>6.50</td>
<td>6.75</td>
</tr>
<tr>
<td>180 days to 210 days</td>
<td>6.75</td>
<td>7.00</td>
</tr>
<tr>
<td>211 days to 1 year</td>
<td>7.00</td>
<td>7.25</td>
</tr>
<tr>
<td>1 year to 455 days</td>
<td>7.25</td>
<td>7.50</td>
</tr>
<tr>
<td>456 days to less than 2 years</td>
<td>7.50</td>
<td>7.75</td>
</tr>
<tr>
<td>2 years to less than 3 years</td>
<td>7.50</td>
<td>7.75</td>
</tr>
<tr>
<td>3 years to 10 years</td>
<td>7.00</td>
<td>7.25</td>
</tr>
<tr>
<td></td>
<td>7.50</td>
<td>8.00</td>
</tr>
<tr>
<td>5 years 1 days to 10 years</td>
<td>7.25</td>
<td>7.75</td>
</tr>
</tbody>
</table>

Economic Institutions
Activity 2:

Students may be taken to a nearby bank. Prior to this, students may be asked to write down questions to be posed to bank officials and ask while visiting the bank. They can collect the details of opening an account with a bank, the documents required to open the account, various forms available in the bank – withdrawal form, form for making demand draft, depositing money in different deposit accounts, forms to be used for other services. They can be trained to fill up those forms. If students are aged more than 10, if the bank provides savings account facility for school students, one or two accounts may be opened by the students.

Activity 3:

Interest is paid by banks to depositors vary with the economic situation in the country. Ask students to visit or go to the website of a private or government bank. They need to collect the interest rates for fixed deposits. Discuss the probable reasons for the difference between what you see in the above table and the current rates.

- As in the case of banks, tax system is also an important part students can be familiarized with using examples. Students may be introduced to a copy of Form 16 or Income Tax Return (ITR).

- This unit provides scope for students to do some arithmetic. For example, students may be encouraged to calculate interest rates for different kind of savings accounts deposits and loans. In the case of taxes, they can calculate taxes to be paid to government. Teacher can create a situation where students are expected to be tax payers producing goods and services or earn incomes directly as part of income tax or as part of corporate tax.

Activity 4

Students may be given an imaginary situation and encouraged to understand progressive tax policy in India. Let us take the income details of four friends – Akash, Ayaz, Mary and Suresh. Their incomes and tax details under three situations - fixed amount, fixed proportion and variable proportion are given in the following table.

<table>
<thead>
<tr>
<th>Name</th>
<th>Work</th>
<th>Monthly income (in Rs.)</th>
<th>Tax on salary per month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Situation I</td>
</tr>
<tr>
<td>Akash</td>
<td>Teacher in a private school</td>
<td>10,000</td>
<td>Rs.1500</td>
</tr>
<tr>
<td>Ayaz</td>
<td>Nurse in a private hospital</td>
<td>20,000</td>
<td>Rs.1500</td>
</tr>
<tr>
<td>Mary</td>
<td>Police sub-inspector</td>
<td>50,000</td>
<td>Rs.1500</td>
</tr>
<tr>
<td>Suresh</td>
<td>Doctor</td>
<td>75,000</td>
<td>Rs.1500</td>
</tr>
</tbody>
</table>

The first situation is a fixed amount tax. Whatever the income, everyone pay a fixed amount. In situation II, a fixed proportion is levied as taxes regardless of the incomes. In the third situation, income slabs are given and taxes are levied as per the slab in which tax payer fall under – (a) earning less than Rs. 11000 are
exempted from paying tax (0% tax). (b) those who are earning between Rs. 11001-20000 are levied with 10% tax (c) for those who earn between Rs. 25000-50000, 20% tax is levied and (d) all those who are earning beyond Rs.50,000, 30% tax is levied. Discuss the following questions in either through debate with two groups or in the whole class. (a) Which of the three tax systems is followed in India? (b) In your view, which is a fair tax system? Suppose you are expected to decide a particular tax system, which one you will choose and why?

- Students can debate on the topics: (a) Do you think the government is using the taxpayer’s money wisely? (ii) The tax policies in India and its implementation reduced income inequality.

- The “taxes” topic provides opportunities for debate. For example, tax evasion and black money are two major challenges facing the government in India. During the last two years, unearthing the black money also received attention of the people of the country. Students need to collect newspaper clippings regarding this topic and discuss them in the class.

Activity 5: Read the information given in the bill given to a customer and answer the questions that follow.

<table>
<thead>
<tr>
<th>No.</th>
<th>Code</th>
<th>Description</th>
<th>Tax</th>
<th>Qty</th>
<th>Rate</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>71</td>
<td>KB Sugar 1Kg</td>
<td>0</td>
<td>1.00</td>
<td>43.00</td>
<td>43.00</td>
</tr>
<tr>
<td>2</td>
<td>206</td>
<td>Fortune Soyabean Oil 1lt</td>
<td>1</td>
<td>1.00</td>
<td>80.00</td>
<td>80.00</td>
</tr>
<tr>
<td>3</td>
<td>266</td>
<td>Motherdiary Ghee 500</td>
<td>1</td>
<td>1.00</td>
<td>188.00</td>
<td>188.00</td>
</tr>
<tr>
<td>4</td>
<td>1514</td>
<td>Oreo Biscuits</td>
<td>4</td>
<td>1.00</td>
<td>33.00</td>
<td>33.00</td>
</tr>
<tr>
<td>5</td>
<td>2018</td>
<td>Hide &amp; Seek Biscuits</td>
<td>4</td>
<td>1.00</td>
<td>29.00</td>
<td>29.00</td>
</tr>
<tr>
<td>6</td>
<td>1348</td>
<td>Nescafe 50g Refl</td>
<td>3</td>
<td>1.00</td>
<td>118.00</td>
<td>118.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Sub_Tot</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>491.00</strong></td>
</tr>
</tbody>
</table>

Cash 491.00

Includes Following Taxes
Vat-1 @ 5.00% On 255.23 12.77
Vat-3 @ 5.00% On 112.38 5.62
Vat-4 @ 12.50% On 55.11 6.89
Non_Taxable 43.00

Goods Once sold will not be Taken Back

a) What was the total amount collected as VAT and goes to government from the bill?
Content Based Methodology:
Geography and Economics

b) Are there any differences in the tax imposed on goods? Why? It is generally argued that there should be uniformity in taxes levied on different goods. Give your opinion on the basis of goods listed in the bill.

c) What are the other aspects that received your attention in the bill? Describe.

You can bring similar bills containing a variety of tax payments and discuss them in the class.

17.5.3 Assessment Questions

1) What are banks?
2) Describe the relevance of banks for a country and for an individual in a country.
3) Differentiate between time deposits and demand deposits.
4) Distinguish between PAN and TIN.
5) Suppose you are a farmer, which account you wish to open and why?
6) Suppose you are a vegetable vendor, which account you prefer to open and why?
7) If you are a petrol pump operator, which account you prefer to open and why?
8) What are the commonalities and differences between Treasury Bill and Bill of Exchange?
9) Suppose you and your friend wishes to borrow from banks for two different purposes – buy LCD TV and setting up a cycle repairing shop. Will there be any difference in the interest rate for setting up a cycle repairing shop and LCD TV?
10) Tax system followed in India is detrimental to economic development. Do you agree with this statement? Explain.
11) Describe differences between direct and indirect taxes. Illustrate with an example for each.
12) What is Goods and Services Tax?
13) Define the following terms: (a) Tax Evasion; (b) Black Money; (iii) Cash Reserve Ratio; (iv) Excise duty; (v) Value Added Tax.
14) What is overdraft facility? How banks and their customers benefit from overdraft facility?
15) Do you think government spends the taxpayer’s money wisely?
16) Explain the role of Reserve Bank of India based on what is given in this unit.

17.6 LET US SUM UP

Economic institutions play crucial role in the daily lives of people. They are also instrumental in modern democracies. Banks are financial institutions which help people to save their earnings for the future. These are used by government and investors for development of the country in different ways. While government’s functioning results in overall welfare of the economy, individuals borrowing
from banks produce goods and services and meet the material needs of people. Banks provide savings account, current account, fixed deposit and recurring deposit facilities depending upon the convenience of the people. They also provide loan for variety of productive and consumption purposes. They thrive on the basis of interests received from loans and earnings from various services and use of credit instruments.

Tax system is another economic institution used by governments to provide welfare services and to reduce income inequality. Governments also collect taxes for meeting its financial needs. Over the years, different kinds of taxes were evolved by the tax administration in India. Excise Duty, Goods and Services Tax, Customs Duty, Corporate Tax, Income Tax are some examples of taxes introduced in this unit. Based on the nature of economic activity, the tax systems are also evolved. Tax evasion and accumulation of black money are two major challenges faced by government’s tax administration in India. After presenting the contents, teaching-learning strategy comprising learning objectives, teaching-learning activities and assessment of questions was presented to transact the learning experiences pertaining to the unit.

### 17.7 REFERENCES AND SUGGESTED READINGS


https://www.sbi.co.in/
indiabudget.nic.in/
www.incometaxindia.gov.in
http://www.cbgaindia.org/

### 17.8 ANSWERS TO CHECK YOUR PROGRESS

1) In fixed deposit, deposits can be made for a specific period and can be withdrawn at one point of time. There is no time specificity in savings deposit.
We can deposit or withdraw any day we wish. Returns to fixed deposits are higher than that for savings account.

2) We can deposit periodically in the recurring deposit account and withdraw at the end of stipulated period. The current account allows us to deposit or withdraw on any day. Recurring deposit gives returns whereas there is no interest paid for current account deposits.

3) The proportion of deposits mobilised by the bank and kept in the form of cash with the bank. This is determined by the Reserve Bank of India.

4) The ratio of cash reserve to deposits

5) Rs. 3,00,000

6) Interest rate for savings= 4-7 per cent; Rs.8000-14000. No interest is paid on current account deposits.

7) Written documents containing the details of transactions with bank for future reference. Example: Cheque or Demand draft.

8) The cheque will return and is called bouncing of cheque. Either the bank or person received the cheque can go to the court and court can penalize cheque issuer including jail term. Banks can also provide overdraft facility and hence penal action can be avoided.

9) (a) visit the bank and use withdrawal slip; (ii) by issuing a cheque; (iii) from ATM and (iv) Internet banking

10) It is a short term loan facility provided by banks when a person without sufficient bank balance issues a cheque that required to be honoured.

11) Treasury bills

12) No. Only about 10 per cent of urban households borrowed from moneylenders. Rural people are depending more on moneylenders.

13) (i) to meet the expenditure of government which involves in various welfare and administrative activities. (ii) It reduces income inequality among people.

14) Involved in various welfare and administrative activities.

15) Budget is the government’s planning document containing the proposal of expenditure and possible source of revenue during the forthcoming financial year. This is submitted for approval by the legislature (state / central / local). All the welfare activities of the government which will benefit the people depend on the budget. The possible sources of revenue are also based on taxes levied by the government.

16) These are issued by government to facilitate tax collection. The Permanent Account Number (PAN) is for individual to pay income or other taxes; Taxpayer Identification Number (TIN) is meant for enterprises to pay taxes such as Value Added Tax, Corporate Tax, Excise or Customs Duty.

17) 1-C; 2-A; 3-B
18) Customs duty is paid for imports and excise duty is paid for goods produced within the country.

19) As the income increases, the proportion of tax paid by income earners also increases.

20) Goods and Services Tax is an indirect tax – producers and sellers of goods and services collect and submit to the government; income tax is a direct tax – people pay directly to the government. GST is based on value added at each stage of production / sale whereas income tax is based on the income earned by individuals from different sources.

21) Money unaccounted – money earned or acquired by individuals or enterprises for which taxes are not paid. If more and more people do not pay taxes, government may not able to do welfare activities. It increases income inequality between rich and poor. Government economic policies may not yield required results.