COMMERCIAL GEOGRAPHY

Course Code: 8595/1428

BS/B.Com/ADC

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Faculty of Social Sciences & Humanities
ALLAMA IQBAL OPEN UNIVERSITY
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# CONTENTS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>v</td>
</tr>
<tr>
<td>Objectives</td>
<td>vi</td>
</tr>
<tr>
<td>Unit 1: Introduction to Commercial Geography</td>
<td>1</td>
</tr>
<tr>
<td>Unit 2: World Commercial Geography</td>
<td>15</td>
</tr>
<tr>
<td>Unit 3: Commercial Geography of Pakistan</td>
<td>39</td>
</tr>
<tr>
<td>Unit 4: Natural Resources of Pakistan</td>
<td>59</td>
</tr>
<tr>
<td>Unit 5: Agricultural Resources of Pakistan</td>
<td>77</td>
</tr>
<tr>
<td>Unit 6: Transportation &amp; Communication Channels</td>
<td>99</td>
</tr>
<tr>
<td>Unit 7: Industries and Manufacturing</td>
<td>123</td>
</tr>
<tr>
<td>Unit 8: Domestic Trade</td>
<td>139</td>
</tr>
<tr>
<td>Unit 9: Foreign Trade of Pakistan</td>
<td>155</td>
</tr>
<tr>
<td>References</td>
<td>175</td>
</tr>
</tbody>
</table>
INTRODUCTION OF THE COURSE

Commercial geography is one of the important courses offered in bachelor’s degree program at department of commerce at AIOU. Keeping in view the importance of commercial geography, this course has been included in the scheme of BS/BA/B.Com. This course consists of nine units, each unit is provided with sufficient theoretical background and questions to develop strong understanding of the subject.

Unit-1 is an introduction to commercial geography whereas unit-2 is describing the commercial geography of the world. Unit-3 is an introduction to commercial geography of Pakistan and subsequent units are describing the different aspects of commercial geography of Pakistan such as natural and agriculture resources, transportation and communication channels, service and manufacturing industries, domestic and foreign trade.

The course has incorporated the recent trends, facts, figures and related institutions. The content of the course is taken from reliable sources including Economic Survey of Pakistan, Karachi Port Trust, National Transport Research Centre (NTRC), Pakistan Agriculture Research Council, Chamber of industries and published material in recognized journals. Students are however strongly encouraged to widen their understanding through looking at other supporting books and publications.

At the end I would like to pay gratitude to the experts helped in compiling the contents and faculty at department for their support. Your suggestions however for improvements will be welcomed always.

Ms. Asia Batool
Course Coordinator
OBJECTIVES OF THE COURSE

The main objective of this course is to understand the geography and its importance in economic and commercial prospective. However, after going through this course, student will be able to:

1. to understand basic concepts and key approaches in Commercial and Economic Geography.

2. to know the continents of the world and their location.

3. to introduce the geographical location and neighbor countries of Pakistan.

4. to elaborate the major economic zones of Pakistan.

5. to explain the types of mineral and agriculture resources in different regions of Pakistan.

6. to know the modern electronic media and its role in the development and progress of a country.

7. to know the concept of special industrial and export processing zones.

8. to understand the procedure of domestic and foreign trade.
INTRODUCTION TO COMMERCIAL GEOGRAPHY

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<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Objectives</td>
<td>3</td>
</tr>
<tr>
<td>1.1 Definition and Meaning of Geography</td>
<td>4</td>
</tr>
<tr>
<td>1.2 Branches of Geography</td>
<td>5</td>
</tr>
<tr>
<td>1.2.1 Human Geography</td>
<td>5</td>
</tr>
<tr>
<td>1.2.2 Physical Geography</td>
<td>5</td>
</tr>
<tr>
<td>1.3 Approaches to Economic Geography</td>
<td>6</td>
</tr>
<tr>
<td>1.4 Economic and Commercial Geography</td>
<td>6</td>
</tr>
<tr>
<td>1.5 Scope of Economic and Commercial Geography</td>
<td>7</td>
</tr>
<tr>
<td>1.6 Key Concepts of Economic Geography</td>
<td>8</td>
</tr>
<tr>
<td>1.7 Importance of Economic and Commercial Geography</td>
<td>9</td>
</tr>
<tr>
<td>1.8 Theories in Economic Geography</td>
<td>10</td>
</tr>
<tr>
<td>1.8.1 Neo-Classical Approach, Location Theory</td>
<td>10</td>
</tr>
<tr>
<td>1.8.2 Marxist-Inspired Approaches and uneven development</td>
<td>11</td>
</tr>
<tr>
<td>1.8.3 Alternatives Approaches and New Economic Geography</td>
<td>12</td>
</tr>
<tr>
<td>Summery</td>
<td>13</td>
</tr>
<tr>
<td>Self-Assessment Questions</td>
<td>14</td>
</tr>
</tbody>
</table>
INTRODUCTION

The Commercial geography is the combination of two Greek Words Geo means the earth and Grapy means the description. In this unit introduced about the concept of commercial geography. Commercial geography is the relation between the Geographic features and the commercial activities. In the second section branches of geography like Human Geography, Economic geography and Physical Geography will be discussed in detail. Additionally, concept of Commercial Geography will be explained through different approaches and theories. Neo-classical approach, location theory, Marxist-inspired approaches and uneven development alternative approaches and new concept of economic geography will be discussed in detail. Importance and scope of Commercial geography for students, ECONOMIST, traders, industrialist, agriculturist and rulers will be discussed. This unit will help to understand the modern Economic world through the study of Economic and Commercial Geography.

OBJECTIVES

The main objective of this unit is to understand the geography and its importance in economic and commercial prospective.

The specific objectives of the unit are:

1. to understand the background of Geography.
2. to explain the branches of Geography
3. to highlights the scope and importance of Economic and Commercial Geography.
4. to explore the basic concepts and key approaches in Commercial Geography.
5. finally, to deliberate the theories of Economic Geography
INTRODUCTION TO GEOGRAPHY

Upon hearing the word 'geography' most people immediately think of maps which detail physical landmasses and oceans on the Earth's surface. While geography does include the production of maps (cartography), it is also the study of much more than just physical or even cultural features on a map. Geographers study the space and the temporal distribution of phenomena, processes, and features as well as the interaction of humans and their environment. The study of geography as a science of the Earth began from very early times.

However, its scope remained limited, as its study was confined only to the environmental conditions in which the ancient lived; with the passage of time man also began to study the effects of environment on living things. The modern geographers tried their best to make the subject more interesting and useful. They tried to study geographical facts on scientific basis. Thus, the modern Geography included the activities of man on the Earth as an essential part for the study of Geography.

The history of geography includes many histories of Geography which have differed over time and between different cultural and political groups. In more recent developments, geography has become a distinct academic discipline. The history of geography was influenced by many theories, arising mainly from economics and geography. It is a subject which employs a geographical approach to provide insights and understanding of the economy.

However, as Commercial activities are increasing so geography becomes more important than ever. Geographers illuminated many aspects used today in the field; maps created by different European powers described the resources likely to be found in American, African, and Asian territories. Contemporary economic geographers tend to specialize in areas such as place theory and spatial study with the help of geographic information systems, (GIS), market research Geography, transportation, real estate price evaluation, regional and global development, planning, Internet geography, innovation, social networks.

1.1 DEFINITION AND MEANING OF GEOGRAPHY

The word geography is a combination of two words “Geo” and “Graphy”. Geo is a Greek word which means “The Earth” and the word “Graphy” has been derived from the word “Graphen” which means- “Description”. So, geography means Description of the Earth. Geography is a science that seeks to analyze the physical environment as well as to study human influences and interactions with the environment.
• “Geography is concerned to provide accurate, orderly and rational description and interpretation of the variable character of the Earth surface.” (Reference, Perspective on the nature of Geography. R. Mastshorne- p-21)
• “Geography as a branch of knowledge has for its object the description of the surface of the Earth as evidence of man’s relationship with the Earth’s surface the home of man.” (International Geographical congress 1908)
• “Geography as a whole is regarded as that department of knowledge which studies the varied features of the Earth’s surface as the environment of mankind”. (Dr. Scott, Ritter, Ratzel).

1.2 BRANCHES OF GEOGRAPHY

The field of geography is vast with thousands of researchers working in dozens of interesting sub-disciplines or branches of geography. Geography is divided into two main branches:

1.2.1 Human Geography

**Human Geography** is the branch of social science that deals with the study of people and their communities, cultures, economies, and interactions with the environment by studying their relations with and across space and place. This is the main branch at Geography and it mainly covers studies of the human race. This normally involves their backgrounds, how they interact and their perceptions about various ideologies. Human geography consists of a number of sub-disciplinary fields that focus on different elements of human activity and organization. One of them is commercial Geography.

1.2.1.1 Commercial Geography

Commercial geography is a sub-discipline that uses a geographical approach to study the economy. Commercial geographers examine the distribution of production and distribution of goods, the distribution of wealth, and the spatial structure of economic conditions. It describes and explain the absolute and relative location of economic activities, and the flows of information, raw materials, goods, and people that connect otherwise separate local, regional, and national economies.

1.2.2 Physical Geography

Physical Geography (also known as geosystems or physiographic) is one of the two major sub-fields of Geography. Physical geography is that branch of natural sciences which deals with the study of processes and patterns in the natural environment like the atmosphere, hydrosphere, biosphere and geosphere as opposed to the cultural or built environment.
1.3 APPROACHES TO COMMERCIAL GEOGRAPHY

As economic geography is a very wide discipline, the economic geographers using many different methodologies in the study of economic phenomenon in the world? There are many approaches in economic approaches i.e. Traditional approaches, philosophic approaches and modern approaches. Here we discuss traditional approach of economic geography.

1.3.1 Traditional Approach
Traditional approaches are the approaches which are common in geography and frequently used in Commercial geography. These are:

1.3.2 Regional Approach
In a Commercial geography, the term ‘region’ is very popular. It examines the economic conditions of a particular region i.e. climatic region, a natural region, an industrial region, an agricultural region, an administrative region or political region. So several geographers have chosen this region approach in economic geography because it gives better knowledge of different parts of system, their relationship to each other and to the system as a whole.

1.3.3 Commodity Approach
The commodity approach describes the distribution pattern of a commodity, or an industry (cotton textile industry) or a human occupation (fishing). The commodity approach is very popular. It analyzes the division and sequence of their development.

1.3.4 Principles Approach
In every sphere of human activity certain rules and principles hold well, they provide the foundation upon which the different structures based. Economic regions are based on certain fundamental principles. In the case of extraction of minerals, or the localization of industries or the exchange of commodities different principles based.

1.4 ECONOMIC AND COMMERCIAL GEOGRAPHY

- “Economic Geography is the intellectual interest to the study of geographical facts relating to commerce”. (Reference G.D. Chisholm’s handbook of Commercial Geography).
- “Economic Geography is the study of the way man adjusts his economic activities to the physical environment” (Clime and others)
Economic and commercial geography is that branch of human geography in which we study the Geographical description of production and distribution of various products required by mankind. Therefore, we say that Economic and Commercial Geography is the Geography of production and distribution. While producing any product various factors contribute their effects on production. These factors are related to the surroundings of a place of production or distribution. Hence, one may say that Economic Geography deals with the factors affecting the production of articles required for food, shelter and clothing.

Thus, the purpose of Economic and Commercial Geography is to study the relationship between the factors affecting production, and also factors affecting distribution and their relation with mankind. As the natural resources are unevenly distributed and therefore, prosperity, development, demands and supply are also variable, at different places, and the factors influencing the type or pattern of production and distribution are dissimilar at different places depending upon the progress of mankind.

1.5 SCOPE OF ECONOMIC AND COMMERCIAL GEOGRAPHY

As the purpose and scope of Economic and Commercial Geography is to study the factors responsible for production and distribution for production and distribution of various commodities, to study the trend of consumption, together with the problems involved. Thus we can say that Economics and Commercial Geography is mainly concerned with the study of agriculture, minerals, industrial resources and also means of transportation and trade centers of the world. So more detailed explanation, about the factors of production and distribution are as follows:

1.5.1 Study of Agricultural Resources
For the study of Economic and Commercial Geography it is essential to study the causes to produce various agricultural products. It is also identified which factors are responsible for the growth of agricultural products and also the factors that are responsible for the commerce and trade of the agricultural products.

1.5.2 Study of Minerals Resources
The type and nature of mineral resources are available in the world for study. Minerals are also an important factor of trade and commerce, because every country in the world is not self-sufficient in mineral resources, in Economics and Commercial geography, we study about the production and distribution of different minerals found in the world.
1.5.3 Study of Industrial Resources
Agricultural and mineral resources are responsible for the growth and development of industrial sector because agricultural and minerals are used as an input in industries. So, industrial progress cannot be studied without the study of other factors. Our agricultural produce plays an important role in the industrial sector. A country with limited agricultural and mineral resources cannot be progressed in the industrial sector.

1.5.4 Study of Means of Transportation
Transportation plays an important role for the progress of agricultural, minerals and industrial resources. An industrial and agricultural produce cannot be brought if means of transportation are not efficient. So, without the study of means of transportation study of other factors is not possible.

1.5.5 Study of Traders
Trade centers also play an important role for the development of trade and commerce of certain areas. All trade activities are carried through these centers so, without the studies of trade centers commerce and trade of the other areas cannot be promoted.

1.6 KEY CONCEPTS OF COMMERCIAL GEOGRAPHY

The study of Commercial geography put the concept of space, place scale and trade. After the analysis the geographers draw the concepts. So, it is essential to clearly understand these concepts.

1.6.1 Space
Space is the concept that refers to physical distance and area. In this concept different type of simple questions are to be asked such as where a particular process is happening. Following are the elements that related with the concept of space.

- Form of a particular country.
- Location of a particular country.
- Trade flows between countries.
- For a capitalist system the concept of uneven space is necessary.

1.6.2 Place
The concept of place refers the specificity of a particular place. Through this concept geographers explore the richness and complexity of particular places and also the economic processes that are the part of environmental, social, cultural, institutional and political context. The economic processes are much influenced by the environmental, social, cultural, institutional and political contexts.
Therefore, the way economies are constructed and performed may be very different in different places. So, the concept of place is somewhat indefinite because it takes various shapes and sizes.

1.6.3 Scale
The concept of scale in economic geography helps us to organize places through the spatial scales. Spatial scales that the economic geographers commonly used are:
- Global scale
- Macro-regional scale
- National scale
- Regional scale
- Local scale
- Lived places

It is important to realize that the above key concepts are not neutral tools for describing the world but they are used for the presentation of the world.

1.7 IMPORTANCE OF ECONOMIC AND COMMERCIAL GEOGRAPHY

Economic and Commercial Geography is very important now a day for students and also very important subject for every person because its helps in various fields of life, these some important are given below:
The study of Economic and Commercial Geography play an important role for Economist. It can help the economist while making economic planning. Through the study of Economic and Commercial Geography economist can find out the resources available in a country. The study of Economic and Commercial Geography is also helpful for industrialist. It can help the industrialist to know about the industrial processes and to learn know the raw material. So, an industrial can easily invest his capital after studying the Economic and Commercial Geography.

Agriculturalist can also get maximum advantage after the complete study of Economic and Commercial Geography. When he knows about the quality of seeds and new methods and techniques so, he can get maximum output. A trader can trade his goods and services in such a way if he has complete knowledge about the market, its size location and many others factors.

Thus, a businessman can make his business more efficient after the study of Economic and Commercial Geography. The study of Economic and Commercial Geography is also helpful for the students. Especially it can help the commerce students to choose right path for their future, so that they can become successful businessmen, industrialist, traders and bankers etc. The study of Economic and Commercial Geography can guide the ruling class, they can know about the agricultural, minerals and industrial progress in different parts of the world. It tells the people that how can they utilize the available resources and how they improve their standard of living. The study of Economic and Commercial Geography can guide the ruling class, how the best use of natural resources can be made. So, the Challenges of poverty, hunger and unemployment can be handled.

1.8 THEORIES IN ECONOMIC GEOGRAPHY

Commercial Geography focuses on theories about distribution of economic activities. Following are the theories in Commercial Geography that are discussed below:
8.1 Neo-classical approach, location theory
8.2 Marxist-inspired approaches and uneven development
8.3 Alternative approaches and new economic geography

1.8.1 Neo-classical Approach, Location Theory
In Neo-classical approach the discussion is that the factors of production i.e. (capital and Labour) will move across regions in order to maintain a balanced and an efficient pattern of development. The fact in this theory is that in real life the
factors of production cannot move freely over different regions, there are various constraints that are involved. For instance, the movement of capital such as machinery, material or goods over the distant geographical location usually involves cost. For labors, there is also involved the factors of cost.

One of the obstacles that are involved in the free movement of factors of production is the Friction of distant. For manufacturing firms, there is cost involved in moving raw material storeroom toward factory and there is cost associated with delivering finished products from the factory to ultimate consumers. Thus, for the people and business the strategy for the personal interest and profit maximization is based on the localization. So, the calculation of cost that related with the moving of factors of production in any geographical location forms the basis of Neo-classical location theory. Thus, the obstacle of distant of friction can be eliminating through the element of cost.

1.8.2 Marxist-inspired Approaches and Uneven Development
In this theory the issue of unequal and uneven development will be considered. This theory will include a discussion on wealth, value and circuits of capital. Wealth can be defined as a share of the reward that is generating during the economic process of adding value. The creation of value is therefore general in the economic development and particular in the uneven development. In this theory we learn what is value and how is value created? According to the Marxist theory the value is created through human labour. Value is always created by people or labour. Workers engage in a labour process by applying their labour on raw material in order to produce finished goods and these finished goods create values.

Marxist theory made distinguishes between several types of values. In this theory the key distinction can be made between exchange value and use value. Exchange value is a value for which you need to pay a certain price to buy them that is expressed in money. It is the value of a commodity to the person who uses it. For instance, of drinking a glass of juice. This theory also describes the circulation of value in different circuits of capital. However, for the capitalist the need to make a decision about what to do with the little capital (surplus value) which they create, and the other option is to re-invest their surplus value in the production process.

For instance, the owners of the pen making factory may decide to use the profit to hire a few more workers. Capital is divided into three circuits; Primary circuits involve investing the surplus value in production and continuously putting capital to work with the primary circuit. The secondary circuit involves investing surplus value in fixed capital. Capitalist investing their capital in the secondary
circuit (e.g. property and development project) has much expectations of realizing their profit through the rental income and from the future sale price of the building. **Tertiary circuit** involves investment in science and technology, education, healthcare etc. this will increase the productivity and improving labor capability.

1.8.3 Alternative Approach and New Economic Geography

New economic geography approaches often provide a contrast to both the Neo-classic and Marxist approaches. New economic Geography approach is taking various social, cultural, institutional and other factors. New economic Geography approaches are shedding a new light on the problem of uneven development. For the study of Commercial Geographies many scholars use a combination of various approaches. On the one hand there are some key differences between the Neo-classical and Marxist approaches and on the other hand new Economic geography and the other alternative approaches are introduced for the discussion. By discussing geographical implications among agricultural, stages theory, cycle theories and wave’s theories are the theories that are examined to understand the new Economic Geography concepts.

i. **Stages Theory**

Stages theory is look upon the economic development and implication of broad sector stages between agricultural, manufacturing and services. This theory is composed of four sectors.

- Primary sector related with the agricultural & Extractive activities.
- Secondary sector related with the manufacturing and production.
- Tertiary related with the services.
- Quaternary concerned with the Research & Knowledge intensive activities.

The purpose of Stage theory is that societies and economics move through these stages for their development from agriculture to manufacture to services to knowledge-based form of development.

ii. **Cycle Theories**

These theories are related with the process of economic evolution. Cycle theories focus on the stages if development through product and profit life cycle. Product life cycle show different location pattern from the conception of new product with an idea of innovation product life cycle theory focuses on the product’s profit stages are associated with the product life cycle theory.
iii. **Wave theories, Technical Change & Innovative:**

Wave theories are focus on the technical change and innovations. These technical changes and innovation are related with the four phases of business cycle i.e. prosperity, recession, depression and recovery. Each wave in the business cycle is associated with significant technological changes with other innovations in the production, distribution and organization and ultimately spread through the economy.

### SUMMARY

In this unit introduction and concept of geography has been discussed. Commercial geography is associated with the flows of capital information, commodities trade, and exchange of goods and services over long distances. The exchange of goods and services at specific markets, are core components of the economy. This chapter also described the economic geography, Economic Geography is the study of economic activities across the world like the location of industries and international trade and branches of geography, human geography and physical geography in detail. Further the scope and importance of economic and commercial geography has been explained. In the final section of the unit the theories of Economic Geography have been discussed in detail.
SELF-ASSESSMENT QUESTIONS

1. Define the term Geography? Also explain the branches of Geography.
2. What is meant by geography, explain its scope?
3. Explain the scope of economic and Commercial Geography in detail?
4. What are the key concepts of economic Geography? Discuss.
5. Describe the approaches used in economic Geography?
6. What is economic Geography? Also discuss theories of economic Geography.
7. Discuss Neo-classical Approach, location theory and new Economic Geography.
WORLD COMMERCIAL GEOGRAPHY

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## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>17</td>
</tr>
<tr>
<td>Objectives</td>
<td>17</td>
</tr>
<tr>
<td><strong>2.1 Continents of the World</strong></td>
<td>18</td>
</tr>
<tr>
<td>2.1.1 Asia</td>
<td>18</td>
</tr>
<tr>
<td>2.1.2 Africa</td>
<td>19</td>
</tr>
<tr>
<td>2.1.3 North America</td>
<td>20</td>
</tr>
<tr>
<td>2.1.4 South America</td>
<td>20</td>
</tr>
<tr>
<td>2.1.5 Antarctica</td>
<td>21</td>
</tr>
<tr>
<td>2.1.6 Europe</td>
<td>21</td>
</tr>
<tr>
<td>2.1.7 Australia/Oceania</td>
<td>21</td>
</tr>
<tr>
<td><strong>2.2 World trade routes</strong></td>
<td>22</td>
</tr>
<tr>
<td><strong>2.3 Modern Routes</strong></td>
<td>24</td>
</tr>
<tr>
<td><strong>2.4 Major sea Ports of the World</strong></td>
<td>25</td>
</tr>
<tr>
<td><strong>2.5 Resource and their Categorization</strong></td>
<td>27</td>
</tr>
<tr>
<td><strong>2.6 World Major Economies</strong></td>
<td>32</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>37</td>
</tr>
<tr>
<td><strong>Self-Assessment Questions</strong></td>
<td>38</td>
</tr>
</tbody>
</table>
INTRODUCTION

This unit will introduce the continents of the world. The world economy is characterized by the strong interdependence among market which connects countries together. In the first section of unit the seven continents, its location and climate will be explained. After this, the world trade routes that are used to exchange multiples commodities for the economic activities will also be elaborated to identify the mechanism of trade among different countries. The concept of resource and its categorization will be explained in detail. World major economies will be discussed to explain the industrial progress of different countries and their major products which they export to other countries.

OBJECTIVES

After studying this unit, your will be able to:

1. to introduce the continents of the world and their location.
2. to explain the major resources and their categorization.
3. to highlight the world trade routes.
4. to elaborate major seaports of the world.
5. to list down the global manufacturing centers.
2.1 CONTINENTS OF THE WORLD

The term continent is used to differentiate between the various large areas of the Earth into which all the land surface of the earth is divided. So, continent is a large, continuous area of land on Earth. All continents together constitute less than one third of the Earth’s surface and about two third of the Earth’s surface is covered by water. Two third of the continental land mass is located in the northern hemisphere (the upper half of the globe, north of the equator). The world is divided into seven continents which are given below:

2.1.1 Asia
2.1.2 Africa
2.1.3 North America
2.1.4 South America
2.1.5 Antarctica
2.1.6 Europe
2.1.7 Australia

2.1.1 Asia
Asia is the world’s largest continent having area 43,810,582 kilometer square covering approximately 30% of the Earth’s land and 8.66% of the Earth’s surface. Ural Mountains are on the west side, the Arctic Ocean to the North, the Pacific Ocean to the East and the Indian Ocean to the South. The longest river in Asia and the third longest in the world is the Yangtze (6211km) which flow through China.

The largest desert in Asia is the Gobi desert measuring 281,800 kilometer square. The highest point in the world is Mount Everest(8848m) situated in the Tibetan region of the Himalayas. There are 53 countries in Asia including Russia and Turkey lie in both Europe and Asia and Taiwan which is technically a part of China. Asia is the most populated continent containing 60% of the world’s population. The population of Asia is growing with the growth rate of approximately 2%. The total population of Asia is approximately 4,629,000,000(2005). Asia is broadly divided into Six regions i.e. Northern Asia, Eastern Asia, Central Asia, Western Asia, Southern Asia and South East Asia.

Regions and their Countries
i. **Eastern Asia**
   China, Hong Kong, Macao, Tibet, Japan, North Korea, South Korea, Mongolia and Taiwan

ii. **Northern Asia**
   Russian federation
iii. Central Asia
Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Afghanistan.

iv. Western Asia
Armenia, Azerbaijan, Bahrain, Cyprus, Georgia, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine territories, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates and Yemen.

v. Southern Asia
Afghanistan, Bangladesh, Bhutan, India, Malaysia, Sri Lanka, Nepal and Pakistan.

vi. South East Asia
Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, East Timor and Vietnam.

2.1.2 Africa
Africa is the world’s second largest continent having area 30,065,000 square kilometer. It covers about 6% of the Earth’s surface and 20% of the Earth’s land. Africa continent is covered by the Atlantic Ocean to the West, the Indian Ocean to the East and the Mediterranean Sea to the North East and separate Africa from Europe. The world’s largest desert, the Sahara, measuring 9000,000 square kilometer cover much of North Africa. The Atlas mountain range lies in the North West of Africa and the highest mountain Kilimanjaro 5895m is in Tanzania. There are 54 countries in the continent of Africa. Africa continent is divided into five regions such as Northern Africa, Western Africa, Eastern Africa, Central Africa, Southern Africa and Indian Ocean Islands. The population of Africa is approximately 1,330,780,233(2020). Its population is growing with a growth rate of 3% per annum. The desert regions are least populated and the regions where weather conditions are suitable having more population.

Regions and their Countries
i. Northern Africa
   Algeria, Egypt, Libya, Morocco, Sudan, Tunisia.

ii. Eastern Africa
   Burundi, Comoros, Djibouti, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Reunion, Rwanda, Seychelles, Somalia, Tanzania, Uganda, Zambia and Zimbabwe.
iii. **Central Africa**  
Angola, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Equatorial Guinea, Gabon and Sao Tome and principle.

iv. **Western Africa**  
Benin, Burkina Faso, Cape Verde, Ivory coast, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Saint Helena, Senegal, Sierra Leone and Togo.

v. **Southern Africa**  
Botswana, Lesotho, Namibia, South Africa and Swaziland.

### 2.1.3 North America
North America is the world’s third largest continent. It covers area of 24,474,000 square kilometers. It is covered by the Atlantic Ocean of the East, the Arctic Ocean to the North and the Pacific Ocean to the West. The highest mountains of this continent are Alaska (6194) and the longest river of this continent is Mississippi (3765km). There are 38 countries that lie in this continent. North America is the fourth most populated continent with a total population of 368,187,260(2020) which is 5.5% of the world’s population. North America can be broadly divided into the six regions i.e. Greenland, Canada, United States, Mexico, Central America and Caribbean. There are 23 countries in this continent; Canada and USA comprise 80% of the total land.

**Countries**  
Anguilla, Antigua and Barbuda, Barbados, Belize, Canada, USA, Mexico, Guatemala, Cuba, Dominican Republic, Haiti, Honduras Costarica, Panama etc.

### 2.1.4 South America
South America is the fourth largest world’s continent. The area of this continent is about 17, 84,000 square kilometers. South America is the fifth most populated continent with a total population of 429,705,655(2020). Brazil is by far the most populous South American country, with more than half of the continent’s population. The north-west coastal region and the eastern coast of Brazil are the most densely populated areas. There are 12 countries in this continent. The largest river in the world, the Amazon (6400 km) flows across the top of the continent.

i. **Countries in South America**  
Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela.
2.1.5 Antarctica
Antarctica is the fifth world’s largest continent. Its area is about 14 million km². It is covered by Southern Ocean and it lies entirely within the Antarctica circle. 98% of the land area is permanently covered with ice. West Antarctica, on the other hand, is a series of frozen islands stretching toward the southern tip of South America. The ice of Antarctica is not a smooth sheet but a continuously changing expanse. Glaciers inch across the continent, cracking and breaking the ice. East Antarctica makes up two thirds of the continent, and is about the size of Australia. There are no countries in Antarctica but have various regions. Antarctica is nearly twice the size of Australia. Antarctica, on average, is the coldest, driest, and windiest continent. There are a number of rivers and lakes in Antarctica. The continent is divided into two regions, known as East and West Antarctica.

2.1.6 Europe
Europe is the world’s second smallest continent. Its area is about 10,180,000 km². It covers by Atlantic Ocean to the west, the Arctic Ocean to the North, and the Mediterranean Sea to the south and Asia to the East. Europe is the third most populated continent with a total population of around 747,504,293(2020) about 11% of the world’s population. Southern England, Western Germany, the Netherlands and North Italy are the most populated areas. There are 50 countries in Europe. Europe can be broadly divided into three regions; Western Europe, Eastern Europe and central Europe.

Regions and their Countries
i. Central Europe
Austria, Croatia, Czech Republic, Germany, Hungary, Liechtenstein, Poland, Slovakia, Switzerland and Slovenia.

ii. Eastern Europe
Albania, Bosnia and Herzegovina, Bulgaria, Greece, Macedonia, Montenegro, Romania, Serbia, Turkey and Kosovo.

iii. Western Europe
Belgium, France, Ireland, United Kingdom, Luxembourg, Monaco and Netherlands, Portugal, Denmark, Norway.

2.1.7 Australia/Oceania
Australia is the smallest of the world's continents. Its area is about 7,686,850 km². The population of this continent is approximately 42,677,813(2020). It is surrounded by the Indian and Pacific oceans. It is the flattest continent, with the oldest and least fertile soils. Australia is the driest inhabited continent; its annual
rainfall averaged over continental area is less than 500 mm. The continent primarily sits on the Indo-Australian plate. Because of its central location on its tectonic plate, Australia doesn’t have any active volcanic region, the only continent with this distinction. Best known animals are the Kangaroo, Koala, Echidna, Dingo, Platypus, Wallaby and Wombat. Temperature remains constant over a long period of time.

i. **Countries:**
   Australia, New Zealand, Papua New Guinea

### 2.2 WORLD TRADE ROUTES

A trade route is a route, often covering long distances i.e. an area or land or sea etc. that is used by traders for trading their goods and services. For Economic activities, traders used these routes in order to exchange multiple commodities. A trade route can be established between any multiple points that are linked by trade, whatever the distance between them and these routes can exist within a small area or specific region or over large distances between a numbers of regions. No matter what type of commodities they transported, trade routes played a vital role. For the formation of good trade relations around the globe and were often sources for the exchange of not only goods, but of people and ideas. All trade routes exchanged multiple goods, the largest and most famous trade routes became known for the transportation of specific precious commodities such as gold, salt and silk. For the development of human history, there must be the connection between trade routes and the development of cultures and political entities. So the trade routes which are created by the traders are very important to bring political and social change.

#### 2.2.1 Land Routes

Land routes are the routes through which trade activities among different parts of country exist through land roads. Following are the land routes that are given below:

1. **Silk Road**

The Silk Road was a network of trade routes, which linked the regions of the ancient world in commerce and it also links the ancient civilization of china and the Roman Empire. While many different kinds of merchandise traveled along the Silk Road, the name comes from the popularity of Chinese silk with the West especially with Rome. Silk was traded from china to the Roman Empire which starts in the first century in exchange for wool, silver and gold coming from Europe. The greatest value of the Silk Road was the exchange of culture. Art, religion, philosophy, technology, language, science, architecture and every other
element of civilization was exchanged through the Silk Road along with the commercial goods the merchants carried from country to country.

2.2.1.2 Trans-Saharan Route
The Trans-Saharan route from North Africa to West Africa was made up of number of routes, providing a crisscross of trading links across the desert. The Sahara once had a very different environment. Thousands of camels would carry goods across the Sahara. Gold, slaves, salt and clothes were the most important commodities on this route. This route also encouraged the development of state building and monetary system. This trade route was instrumental in spread of Islam.

2.2.1.3 Amber Road
Amber has been traded since 3000 BCE. Romans developed Amber road linking the Baltic with the rest of Europe. They valued stones for both decorative and medicinal purposes. Large deposits of Amber are found under the Baltic Sea. Today traces of the old Amber Road can be found in Poland, where one of the major routes is known as the “Amber Highway”.

2.2.1.4 Grand Trunk Road
The grand trunk road is one of Asian’s great historical road and a major route connecting much of the Indian subcontinent. It runs through parts of Bangladesh, India, Pakistan and Afghanistan. The objective of this route is to facilitate trade activities. It was built by Sher shah Suri. The road continues to Pakistan near Peshawar through Khyber Pass from Afghanistan.

2.2.2 Sea Routes
A sea route is a regularly used route for vessels on oceans and large lakes to carry the trade activities among different countries of the world. Following are the sea routes of the world:

2.2.2.1 Mediterranean Suez Asiatic Route
It links Europe to the Far East. This route transport goods and services from the Middle East and the raw material from the Asian countries. Due to wars in the Middle East the trade activities through this route are disturbed especially through Suez Canal. However, trade in the Mediterranean Sea still flourishes with ports like Tel-aviv, Algiers and Venice.

2.2.2.2 North Atlantic Route
North Atlantic Route lies in the area which is considered the busiest in the world. It links Europe with the North America. On both sides of North Atlantic are areas
of very dense rich population and with various industrial activities. It has some of
the world’s largest sea and one of the European sides. The major ports of this
route include Rotterdam, Amsterdam, London and Lisbon. These are outlets for
the rich agricultural, commercial and industrial areas of Europe. Large quantities
of manufactured goods are traded to North America.

2.2.2.3 West-Indies Route/Panama Route.
It is through Panama Canal. It has become the great way to the pacific. It has
facilities of the trade activities like minerals, food stuffs and manufactured goods
between the East west coastal areas of USA. It is also an important trade route for
China, Japan and south-East Asian countries with Western Europe.

2.2.4 The Rhine Water Way
The Rhine is Europe’s most important water way. It flows through Switzerland
and Germany. The Rhine River is linked to Rhone River and the Mediterranean
by the Rhone river canal. It passes through the most important industrialized areas
in the world i.e. Rahur industrial region and enter the busiest sea in the world i.e.
North Sea. The trade activities on the River Rhine include machinery, steel pipes,
diesel engines, watches, food stuffs, oil, and coal and iron ore.

2.3 MODERN ROUTES
With the development of means of transport and free trade agreements, modern
routes are introduced. Newer means of transport led to the establishment of new
routes, and countries opened up borders to allow trade activities of goods as per
prevailing free trade agreement. Some trading routes were reopened during the
modern times.

2.3.1 Wagon Way Route
Wagon way consists of the horses, equipment and tracks used for hauling wagons.
The advantage of using wagon way was that far bigger loads could be transported
with the same power. The settlers in the U.S used this wagon train for westward
emigration during the 18th and 19th centuries. Wagon route were crossing rivers,
mountains and hostile Native Americans. Wagon frightening was also essentials
for American growth until it was replaced by the railroad and the truck.

2.3.2 Railway Route
Through this route trade are benefited as the workers and the lower classes had
the ability to travel to other towns frequently. The British constructed a vast
railway network in India but it was considered to serve a strategic purpose in
addition to the commercial purpose. These remain the best means of transporting large volumes of commodities such as coal, grain, chemicals, and ore over long distances. The development of containerization has made the railroads more effective in handling finished goods at relatively high speeds.

2.3.3 Air Routes
Air transport has become an essential part of modern world. People have come to use air transport both for long and middle distances. This mode of transportation links national, international, and global economies that are beneficial to many other industries. Express delivery through international cargo airlines touched $20 billion in 1998 and according to the world trade organization; it is expected to triple in 2015. Air transport particularly favors light, expensive and small products.

2.4 MAJOR SEA PORTS OF THE WORLD

An inland port is a port on a navigable lake, river (fluvial port), or canal with access to a sea or ocean, which therefore allows a ship to sail from the ocean inland to the port to load or unload its cargo. Port locations are selected to optimize access to land and navigable water, for commercial demand, and for shelter from wind and waves. Ports with deeper water are rarer, but can handle larger ships. Since ports throughout history handled every kind of traffic, support and storage facilities vary widely, may extend for miles, and dominate the local economy. Following are the sea ports of the world.

2.4.1 Port of Shanghai
The Port of Shanghai is the biggest port in the world based on cargo throughput. The Chinese port handled 744 million tons of cargo in 2012, including 32.5 million twenty-foot equivalent units (TEUs) of containers. The port is located at the mouth of the Yangtze River covering an area of 3,619 km². Shanghai International Port Group (SIPG) owns the port facility. It serves more than 2,000 container ships on a monthly basis and accounts for a quarter of China's total foreign trade.

2.4.1.1 Port of New York and New Jersey
The Port of New York and New Jersey is the port district of the New York-Newark metropolitan area, encompassing the region within approximately a 25-mile (40 km) radius of the Statue of Liberty National Monument. The port is by tonnage the third largest in the United States and the busiest on the East Coast. The port is the nation's top gateway for international flights and its busiest center
for overall passenger and air freight flights. There are two foreign-trade zones (FTZ) within the port. The port handled $208 billion in shipping cargo in 2011, and 3,342,286 containers and 393,931 automobiles in 2014. It includes the system of navigable waterways in the New York–New Jersey Harbor Estuary.

2.4.1.2 Port of Kolkata
The Port of Kolkata is a river in port in the city of Kolkata, India, located around 203 kilometers (126 mi) from the sea. It is the oldest operating port in India, and was constructed by the British East India Company. The Port has two distinct dock systems - Kolkata Docks at Kolkata and a deep water dock at Haldia Dock Complex, Haldia. In the 19th century, the Kolkata Port was the premier port in British India. From 1838 to 1917, the British used this port to ship off over half a million Indians from all over India, mostly from the Bhojpuri Belt, Bengal, and Tamil Nadu and take them to places across the world. After independence, the port's importance decreased because of factors including the Partition of Bengal (1905) and reduction in size of the port.

2.4.1.3 Porto de Santos/Port of Santos
It is located in the city of Santos. This port is the largest in Brazil and one of the busiest in Latin America, currently serving 26 Brazilian states. The Porto de Santos is important for the economy of the state, Santos is the most important port of the country, and it is the one that has the highest number of problems, especially related with the workforce. The most marketed products at this port are sugar, soy, containerized cargo, coffee, corn, wheat, salt, citrus pulp, orange juice, paper, automobiles and alcohol.

2.4.1.4 Port of Durban
The Port of Durban, commonly called Durban Harbour, is the 2nd largest and busiest shipping terminal in sub-Saharan Africa. It handles up to 31.4 million tons of cargo each year. It is the fourth largest container terminal in the Southern Hemisphere. Durban is the busiest port in South Africa and generates more than 60% of revenue. The distance around the port is 21 kilometers (13 miles). The port has 58 berths which are operated by more than 20 terminal operators. The entrance channel had a depth of 12.8 meters (42 ft) from Chart Datum, and a width of 122 meters (400 ft) between the caissons. The port has recently been widened.

2.4.1.5 Port of Hedland
It is the biggest part in located on the west coast of Australia, handling about 452 million fans of Cargo. It is mainly used for the expert of Iran are.
2.4.1.6 Port of Yokohama
The Port of Yokohama is operated by the Port and Harbor Bureau of the City of Yokohama in Japan. It opens onto Tokyo Bay. In 2013, the Port of Yokohama served 37,706 ships. It handled 271,276,977 tons of cargo and 2,888,220 TEU containers. The total value of the cargo was 10,921,656 million yen. The Port of Yokohama formally opened to foreign trade on the 2nd of June 1859. The port grew rapidly through the Meiji and Taisho periods as a center for raw silk export and technology import. Honmoku Pier is the port's core facility with 24 berths including 14 container berths.

2.4.1.7 Port of Gawadar
The Gawadar Port is the deepest sea port in the world, situated on the Arabian Sea at Gawadar in Balochistan province of Pakistan and is under the administrative control of the Maritime Secretary of Pakistan and operational control of the China Overseas Port Holding Company.

Gawadar's potential to be a deep water sea port was first noted in 1954, while the city was still under Omani sovereignty. Plans for construction of the port were not realized until 2007, when the port was inaugurated by Parvez Musharraf after four years of construction, at a cost of $248 million.

2.5 RESOURCE AND THEIR CATEGORIZATION

A resource is a source or supply from which benefit is produced. Resources are materials, cash, services, staff or other assets that are transformed to produce benefit. Benefits of resource utilization may include increased wealth, satisfaction of needs or wants, proper functioning of a system. Resources can be broadly classified on basis upon their availability they are renewable and non-renewable resources. Resources can also be classified as actual and potential on the basis of level of development and use, on the basis of origin they can be classified as biotic and abiotic. Resources have three main characteristics; utility, limited availability and have potential for consumption.

2.5.1 Economic Resources
Economic resources are the factors used in producing goods or providing services. They are inputs that are used to create things or help us to provide services. Economies itself has been defined as the study of how society manages its scarce resources. Economic resources can be divided into human resources such as labor and non-human resources include land and capital goods. Land includes all natural resources that are viewed as both the site of production and the source of
raw materials. Labor or human resources consist of human effort that produces the products and in return wages are paid to the labor. Capital consists of human made goods or means of production that are used in the production of goods and services, paid in interest.

2.5.1.1. Land or Natural Resources
Natural resources are the resources which are derived from the environment. Many natural resources are compulsory for human beings to survive while some resources are not necessary they are used for satisfying human desire. Natural resources may be classified in different ways.

2.5.1.2 On the Basis of Origin
Resources can be classified on the basis of origin i.e. Abiotic resources and biotic resources. **Abiotic resources** are the resources that comprise non-living things e.g. land, water, air and minerals etc. **Biotic resources** are the resources that are obtained from the biosphere. Forests and their products, birds and their products, fish and other marine organisms are important examples. Resources that are formed from fossilized organic matter are also included in this category.

2.5.1.3 On the Basis of Stage of Development
Resources are also categorized based on the stage of development. Potential Resources are the resources whose entire quantity may not be known and these are not being used at present. These resources could be used in future. The level of technology we have at present may not be good or advanced enough to easily utilize these resources. Actual Resources are those resources that have been surveyed, their quantity and quality has been determined, and they are currently being used. The development of actual resources is dependent on technology.

2.5.1.4 On the Basis of Renewability
Natural resources can be categorized on the basis of renewability. **Non-Renewable Resources** are those resources whose formation is very slow. They are formed over long geological periods and do not naturally form in the environment. Minerals and fossil fuels are the examples of non-renewable resources. **Renewable Resources** are the resources that cannot be finished. They are available continuously and their quantity cannot be affected by human consumption. Sunlight, water air and wind are the examples of renewable resources.

2.5.1.5 On the Basis of Distribution
On the basis of distribution natural resources can be further classified. **Ubiquitous Resources** are formed everywhere e.g. air, light and water etc. **Localized Resources** which are formed only in certain parts of the world e.g. copper, iron ore etc.
2.5.2.1 Labor or human resources
Human beings provide their labor work to the organization in order to get their benefit considered as human resources. Skills, energies, talents, abilities and knowledge used by the labor for the production of goods and services are also including in the human resources. Labor provides their services with best of their knowledge and abilities in order to get maximum output and in return they get their reward in the form of wages.

2.5.3 Capital Resources
Capital resources are the resources that are already produced durable goods and further used for production of goods and services. Examples of capital include buildings, machinery, railways, roads and ships. However, the capital resources are not fully consumed, they may be depreciating in the production process.

2.5.4 Tangible or Intangible Resources
Tangible Resources are those resources which have actual physical existence such as equipments. Intangible Resources such as corporate images, brands and patents exist in abstraction.

2.5.5 Mineral Resources
Minerals provide the material source that is used in the industries for the production of various commodities. A mineral is a pure inorganic substance that occurs naturally in the earth’s crust. Minerals are valuable natural resources being finite and non-renewable. A demand for minerals is increasing day by day as the population increases and the consumption demands of individual increase. Following are the types of mineral resources.

i. Iron
Iron is a mineral that our bodies need for many functions. For example, iron is part of hemoglobin, a protein which carries oxygen from our lungs throughout our bodies. It helps our muscles store and use oxygen. Iron is also part of many other proteins and enzymes.

Your body needs the right amount of iron. If you have too little iron, you may develop iron deficiency anemia. Causes of low iron levels include blood loss, poor diet, or an inability to absorb enough iron from foods. People at higher risk of having too little iron are young children and women who are pregnant or have periods. Too much iron can damage your body. Taking too many iron supplements can cause iron poisoning. Some people have an inherited disease called hemochromatosis. It causes too much iron to build up in the body.
ii. **Copper**

It is one of the most important and widely used metals of modern society. Pure copper is soft and malleable. Its surface has a reddish-orange color. It is used as a conductor of heat and electricity. The largest use of copper is in the electrical industry where copper wires and cables are produced. Copper is used as a conductor of heat and electricity, as a building material, and as a constituent of various metal alloys, such as sterling silver used in jewelry and coins and constantan used in strain gauges and thermocouples for temperature measurement. Copper reserves are found in South Central Africa, China, Western USA, Kazakhstan and Canada.

iii. **Gold**

Gold is the soft, dense and malleable mineral with a bright yellow color. It is one of the least reactive chemical elements. It is highly prized by people because of its attractive color and its many special properties. In its purest form, it is a bright, slightly reddish yellow, dense, soft, malleable and ductile metal. Gold is a good conductor of heat and electricity. Whereas most metals are gray or silvery white, gold is slightly reddish-yellow. As a precious metal gold has been used for coinage, jewelry, and other arts throughout recorded history. Trace amount of gold are found almost everywhere, but large deposits are found in only a few locations. Gold producing countries are South Africa, Canada, Russia, USA, Australia and India.

iv. **Silver**

Silver is one of the so called precious metals because of its brilliant white color, malleability and ductility. Silver used in the manufacturing of coins, ornaments and jewelry. Unlike gold, silver are present in many naturally occurring materials. Silver is often found in conjunction with these or alloyed with other metals such as gold, it usually must be further extracted through amalgamation or electrolysis. Silver mining has been undertaken since early times. Silver is found generally in lead ores, copper ores and cobalt ores and is also frequently associated with gold in nature. Silver is found in Mexico, USA, Canada and Peru.

v. **Coal**

Coal is a brownish-black sedimentary rock that contains elements of carbon. Coal is composed primarily of carbon, along with variable quantities of other elements such as hydrogen, sulfur, oxygen, and nitrogen. Coal also contains same percentage of solid, liquid and gaseous hydrocarbons. It is divided into different groups on the basis of properties, such as anthracite, bituminous, lignite and peat. A fossil fuel, coal forms when dead plant
matter is converted into peat, which in turn is converted into lignite, then sub-bituminous coal, after that bituminous coal it lastly form anthracite. This involves biological and geological processes that take place over time. It is referred as a fossil fuel. Coal producing countries are China, Australia, Russia, South Africa and Germany.

vi. **Oil / Petroleum**
Oil is a clear, colorless & odorless liquid. Mineral oil is a liquid by producing of refining crude oil to make gasoline and other petroleum products. Oils have a high carbon and hydrogen content and are usually flammable and surface active. They are used for food fuel (e.g., heating oil), medical purposes (e.g., mineral oil), lubrication (e.g. motor oil), and the manufacture of many types of paints, plastics, and other materials. Oil producing countries are Canada, Iran, Iraq, Kuwait, United Arab Emirates, and Russia etc.

2.5.6 **Agricultural Resources:**

i. **Wheat**
Wheat is a food crop. It is the crop of temperate region. It is the most widely grown crops in the world and provides 20% of the daily proteins and also food calories. Wheat is grown on more land area than any other food crop. After rice, wheat is the second most important food crops in the developing world. Today, wheat is grown on more land area than any other commercial crop and continues to be the most important food grain source for humans. Wheat is the primary food staple in North Africa and the Middle East, and is growing in Asia. All countries share the need to increase wheat yield, as well as to improve input use efficiency in order to increase the wheat production.

ii. **Rice**
It is the crop of tropical region. It is the plant of water. It is the most widely consumed staple food for a large part of the world's human population, especially in Asia. Cultivation of Rice is originated is China over 4000 years ago. Rice is an essential agricultural product in many countries. In poor and developing countries, rice is used as a staple commodity due to its low costs and high caloric value. Rice was first cultivated commercially in the United States in South Carolina during the 17th century. Rice cultivation is well-suited to countries and regions with low labor costs and high rainfall, as it is labor-intensive to cultivate and requires ample water. Rice consumption is increasing day by day in many countries due to growth in population and people’s demand.
iii. **Cotton**
Cotton is a soft, fluffy staple fiber that grows in a protective case, around the seeds of the cotton plants. The fiber is almost pure cellulose. Under natural conditions, the cotton bolls will increase the dispersal of the seeds. Successful cultivation of cotton requires a long period, plenty of sunshine, and a moderate rainfall. Cotton plant produces fibers which are used to make clothes and other products like towels, carpets or sheets. Cotton is a subtropical plant that grows in many warm areas of the world. China is the world's largest producer of cotton, but most of this is consumed domestically. Most important cotton-growing countries are the USA, China, India, Pakistan and Australia.

iv. **Sugarcane**
Sugarcane is a crop that is grown in many countries. It is mainly grown for sugar production. Most of the World’s sugarcane is grown in subtropical and tropical areas. The world demand for sugar is the primary driver of sugarcane agriculture. Sugarcane is also used in industries for the production of essential items like chip board, paper, chemicals, plastics, paints, synthetic fiber, insecticides and detergents. In some regions, people use sugarcane reeds to make pens, mats, screens, and thatch. Sugarcane producing countries are Brazil, China, India, Thailand, Pakistan and Mexico.

v. **Maize**
Maize is cereal plant of the grass family and it is edible grain. Maize has become a staple food in many parts of the world, with total production surpassing that of wheat or rice. Maize was first domesticated by native peoples in Mexico about 10000 years ago. The domesticated crop originated in the Americans and is one the most widely distributed of the world’s food crops. However, not all of this maize is consumed directly by humans. Some of the maize production is used for corn ethanol, animal feed and other maize products, such as corn starch and corn syrup. Crops are used as livestock feed, as human food, as biofuel and as raw material in industry. The Maize producing countries are USA, China, Brazil, India, Argentina etc.

2.6 **WORLD MAJOR ECONOMIES**
Global manufacturing centers are the centers that are involved in manufacturing processes. Manufacturing industries where raw material transformed into finished goods on a large scale. Such finished goods may be sold within the country or export to other countries. Finished goods may also be sold to other manufacturers
for the production of other more complex products such as aircrafts, household appliances, furniture, sports equipment or automobiles. Developed countries regulate manufacturing activity with labor laws and environmental laws.

2.6.1 Economy of Japan
The economy of Japan is the third largest in the world by nominal GDP and the fourth-largest by purchasing power parity (PPP) and is the world’s second largest developed economy. The Japanese economy faces considerable challenges posed by a declining population. Japan is the world’s third largest automobile manufacturing country and has the largest electronics good industry and is considered among the world’s most innovative countries. The petrochemical industry experienced moderate growth in the late 1980s. The highest growth came in the production of plastics, polystyrene and polypropylene prices for petrochemicals remained high because in the newly developing countries of Asia the demand is increased.

In the long term, the Japanese petrochemical Industry faces intensifying competition by other Asian countries to catch up with Japan. The motor vehicle industry is one of the most successful industries in Japan. Japan is a six of the top of the largest vehicle manufacturer in the world. E.g. it is home to multinational companies such as Toyota, Honda, Suzuki and Mazda. The textile industry showed a strong revival in the late 1980s because of increased domestic demand from the construction, automobiles, housing and civil engineering industries for various synthetic fibers. The fields in which Japan enjoys relatively high technological development include semiconductor manufacturing, optical fibers, video discs and videotext, facsimile and copy machines, industrial robots and fermentation processes.

i. Japan’s Major Industries
Automobiles, consumer electronics, computers semiconductors, iron and steel are major industries of Japan. Other key industries in Japan are mining, petrochemicals, pharmaceuticals, bio industry, shipbuilding, aerospace, textiles and processed foods.

ii. Major industrial Cities of Japan
Tokyo, Osaka, Nagoya, Southwestern part of Honshu, Northern Shikoku, Northern part of Kyushu and Fukuoka.

2.6.2 Economy of China
China is the world’s second largest economy by nominal GDP and the world largest economy by purchasing power parity. China is the world’s largest manufacturer, sometimes referred as the “the world’s factory”. In recent years
China has been an attractive destination for manufacturing due to its low labor costs, skilled workforce and good infrastructure. But China’s manufacturing profile is changing with developed regions moving downward. China is the world's largest producer of rice and other agriculture produce include wheat, corn (maize), tobacco, soybeans, potatoes, sorghum, peanuts, tea, millet, barley, oilseed, pork, and fish.

i. **Major industries of China**

Mining and more processing, iron and steel, aluminum, coal, machinery, ornaments, textiles, petroleum, cement, chemical, fertilizers, food processing, automobiles and other transportation equipment including rail cars, ships, and aircrafts, consumer products including footwear, toys and electronics, telecommunication and information technology. China’s cotton textile industry is the largest in the world producing yarns, cloths, woolen piece goods, knitting wools, silk, jute bags and synthetic fibers. High technology industries produce high speed computers 600 types’ semiconductors, specialized electronic measuring instruments and telecommunication equipment.

ii. **Major industrial cities of China**

Shanghai, Beijing, Tianjin, Guangzhou and Shenzhen.

2.6.3 **Economy of Germany**

Germany is the largest national economy in Europe, the fourth largest by nominal GDP in the world and fifth by purchasing power parity. The economy of Germany is the largest manufacturing economy in Europe and it is less affected by the financial crises. In 2016, Germany recorded the highest trade surplus in the world worth $310 billion that makes the Germany the biggest capital exporter globally. Germany is the manufacturer of automobiles, machinery, electrical equipment and chemicals. It was the world’s fourth largest producer and largest exporter of automobiles. The best known and the second largest industry in Germany is automotive manufacturing. Almost half of all German produced automobiles are exported to other EU members and to North America. Other important industries are the traditional German industries of steel and coal mining, both heavily subsidized and still large employers. Aerospace is a small but growing industry, also heavily subsidized.

i. **Main industries of Germany**

Machine tools, automobiles manufacturing, electrical engineering, iron, steel, chemicals and optics are major industries of Germany. The manufacturing in East Germany is expected to concentrate in the same industries overtime, thus, the future German economy will retain a powerful industrial component that will above 30% of German.
ii. Major industrial region
   Germany, Rhine, Hamburg, Berlin and Leipzig

2.6.4 Economy of France
France has the world's 6th largest economy in the world and the 10th largest economy by purchasing power parity. Various reform measures have been adopted to increase the economy’s competitiveness and flexibility. France is the world’s largest industrial producers. Manufacturing in France is serves as primary source of export income. Manufacturing sector consist of mostly family owned small firms, which produce low volumes of crafted goods. France become a leading producers of automobiles, steel, electrical equipment, and chemicals and earned a reputation for technological innovation. Food processing is the largest manufacturing sector in terms of employment. France is the world’s largest producer of sugar beets, the second largest producer of wine. Other well-known French food include meats, bread etc. French firms are known for technological innovation in aerospace, defense, transportation and other specialized industries.

i. Major industries of France
   Food products, automobiles, aircrafts, ships, trains, electrical machinery, mechanical equipment and machine tools, chemicals, pharmaceuticals, textiles and clothing. France produces advanced commercial and military aircraft as well as many kinds of military hardware. A large electronics industry in France produces telecommunication equipment, computers, television, radios and other items. The French chemical industry produces a diverse range of products, including industrial chemicals, plastics, fertilizers, beauty products and pharmaceuticals. The textile industries famous for cotton, silk and woolen goods remain important.

ii. Major Industrial Region of France
   North-east industrial region that include (Dunkirk, Denain, Tourcoing, Cambrai and Roubaix), Lorraine industrial region, the Paris Basin, Dijon industrial region, Rhone Sone valley region and Lorraine region

2.6.5 Economy of USA
The economy of USA is the world's largest national economy in nominal terms and second largest according to purchasing power parity (PPP). It represents 22% of nominal GDP and 17% of gross world product (GWP). The US has abundant natural resources, a well-developed infrastructure, and high productivity. The U.S. is the world's third largest producer of oil and natural gas. The United States is estimated to have a population of 323,127,513 in 2016, The US manufacturing industries created good paying employment opportunities for workers. Due to industrial progress, employment growth in industries such as construction,
finance, insurance and real estate and services industries played a significant role in provision of employment. Manufacturing continues evolve due to factors such as information technology and supply chain innovations.

i. Major Industries of U.S
Petrochemical, steel, automobiles, aerospace, telecommunication, chemicals, lead electronics, food processing, consumer goods and mining are major industries of U.S. The large portion of U.S industrial output in the world is aircraft manufacturing. The primary export commodities were transportation equipment, computer and electronics products, agricultural products, machinery chemicals and food product.

2.6.6 Economy of South Korea
The economy of South Korea is the fourth largest economy in Asia and the 11th largest in the world. South Korea is famous for its amazing rise from one of the poorest countries in the world to a developed high-income country in just one generation. South Korea has almost no natural resources and a problem of overpopulation which cause continued population growth and the formation of large internal consumers market, to stabilize its economy.

South Korea adopted export-oriented strategies and in 2014, South Korea was the seventh largest exporter and seventh largest importer in the world. South Korea still remains one of the fastest growing developed countries in the world following the great recession. South Korea effective education system and the highly motivated and educated people are responsible for rapid economic development and research into the future. The total population in South Korea was estimated at 50.8 million people in 2016, according to the latest census figures.

i. Main Industries of South Korea
Major industries of South Korea include Steel, automobiles, ships, chemicals, clothing, television sets, household appliances, computers and semiconductor chip.

2.6.7 Economy of Holland
According to World Bank, Holland was the 18th largest economy of the world in 2012. The judicial system is independent and free of corruption, provides strong protection of property rights. Global trade and investment is well established in this economy and there is transparent and efficient regulatory environment. Netherlands has discovered huge natural gas resources since 1959. The sale of natural gas generated revenues for the country which added hundreds of billions of Euros to the government’s budget. The Netherlands has a prosperous and open economy which depends heavily on foreign trade. The economy is stable
industrial relations, low unemployment and inflation and a very big size current account surplus. Netherlands being a small country is a big player in the world’s trade and the global transfer of capital. Netherlands is the 66th most populated country in the world and it has a population of 17,000,000 (2016).

ii. Major Industries of Netherlands
Transport equipment, machinery, food and agricultural products, electronics, footwear and clothing, pharmaceuticals, optical, technical and medical equipment, iron, steel, live trees, plants and cut flowers.

SUMMARY
In this unit the basic concept of continents and their geographical location has explained. The term continent is used to differentiate between the various large areas of the earth into which all the land surface of the earth is divided. In second section of this unit concept of resources has been explained. A resource is a source or supply from which benefit is produced. Resources are materials, cash, services, staff or other assets that are transformed to produce benefit. Classification of resources according to its nature and characteristics has been discussed in detail. In third section of the unit major world trade routes that are used for trade activities among different countries has been elaborated. Lastly, world major economies that explain the manufacturing of different commodities in different countries have been discussed.
SELF-ASSESSMENT QUESTIONS

1. What are the continents of the world and their location?
2. Describe the suitable physical and Nonphysical factors for the growth of industrial development.
3. Explain the worldwide production of iron and steel industry.
4. Write a detail note on World trade routes.
5. Describe World major economies and discuss major seaports of the world.
COMMERCIAL GEOGRAPHY OF PAKISTAN

Compiled by: Arifa Asia Batool
Reviewed by: Huss-Nul-Amin

39
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>41</td>
</tr>
<tr>
<td>Objectives</td>
<td>41</td>
</tr>
<tr>
<td>3.1 Introduction to Pakistan</td>
<td>42</td>
</tr>
<tr>
<td>3.2 Demography of Pakistan</td>
<td>42</td>
</tr>
<tr>
<td>3.3 Neighbors of Pakistan</td>
<td>45</td>
</tr>
<tr>
<td>3.4 Physical Features of Pakistan</td>
<td>58</td>
</tr>
<tr>
<td>3.5 Climate of Pakistan</td>
<td>52</td>
</tr>
<tr>
<td>3.6 Major Industries of Pakistan</td>
<td>53</td>
</tr>
<tr>
<td>3.7 Major Economic Zones of Pakistan</td>
<td>55</td>
</tr>
<tr>
<td>Summary</td>
<td>57</td>
</tr>
<tr>
<td>Self-Assessment Questions</td>
<td>58</td>
</tr>
</tbody>
</table>
INTRODUCTION

In the previous unit you learned about the world Commercial Geographic and in this unit you will introduce the geography of Pakistan. In the first section of the unit the introduction of Pakistan and its neighboring countries will be discussed in detail. Pakistan is located in the continent of Asia. Pakistan is surrounded by land on three sides: east, west and north and ocean in the South. The physical features and climatic regions of Pakistan will be described. The major part of our country consists of fertile alluvial plain which is drained by the river Indus and its tributaries. The demography of different provinces of Pakistan and distribution of urban and rural population will also have elaborated. Major industries of Pakistan will also explain.

OBJECTIVES

After reading this unit, you will able;
1. to introduce the geographical location of Pakistan.
2. to discuss the neighbor countries of Pakistan.
3. to explain the physical features of Pakistan.
4. to explain the climate of different regions of Pakistan.
5. to highlight major industries of Pakistan.
6. to elaborate the major economic zones of Pakistan.
3.1 INTRODUCTION TO PAKISTAN

Pakistan is located in the continent of Asia. The Areas wise Pakistan is 36th largest nation in the world with a total area of 796096 km². Pakistan became an independent state in 1947 after gaining its sovereignty from the United Kingdom. Pakistan is a profound blend of landscapes varying from plains to deserts, forests, mountains, and plateaus. It is largely a dry area drained by large streams. It is poor in metallic minerals, but rich in several non-metallic minerals. It is an agricultural country, but it is trying to acquire modern technology. The population of Pakistan is 207,774,520 and the nation has a density of 256 Persons/km². It extends from 23° 35’ N to 37° 05’ N (latitude). Therefore, Pakistan records high temperatures in summer, and winters are not very severe. Pakistan extends from 60° 57’ to 77° 50’ E (Longitude). Longitudinal extension is not much; therefore, it is possible to have a one standard time for the whole country.

Pakistan is surrounded by land on three sides: east, west and north. The Arabian Sea, which is a part of the Indian Ocean, lies to its south. Pakistan, therefore, has full access to the ocean routes, particularly the Asian- Mediterranean route, which connects Pakistan to Japan, China and other East Asian countries, south East Asia, south Asia, south-western Asia, north and north-East Africa, Europe and North America. The Arabian Sea has moderating effects of the coastal areas of Pakistan.

3.2 DEMOGRAPHY OF PAKISTAN

The population of a country and the trend of population growth determine the number of persons to be fed, clothed, housed and employed today and tomorrow. The population of Pakistan is growing at an explosive rate. Pakistan's estimated population as of March, 2020 was 219.4 million people, making it the world's fifth-most-populous country, just behind Indonesia and slightly ahead of Brazil.

During 1950–2011, Pakistan's urban population expanded over sevenfold, while the total population increased by over fourfold. In the past, the country's population had a relatively high growth rate that has been changed by moderate birth rates. In 1998 Pakistan’s population was 132.4 million with a population density of 166 person’s km². Between 1998-2017, the average population growth rate stood at 2.40%. Pakistan has a multicultural and multi-ethnic society and hosts one of the largest refugee populations in the world as well as a young population.
<table>
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<th>Households</th>
<th>Total Population</th>
<th>1998-2017 Average Annual Growth Rate</th>
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<td>Pakistan</td>
<td>32,205,111</td>
<td>207,774,520</td>
<td>2.40</td>
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<tr>
<td>Khyber Pakhtunkhwa</td>
<td>3,845,168</td>
<td>30,523,371</td>
<td>2.89</td>
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<tr>
<td>FATA</td>
<td>558,379</td>
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<td>Punjab</td>
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<td>Sindh</td>
<td>8,585,610</td>
<td>47,886,051</td>
<td>2.41</td>
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<td>Balochistan</td>
<td>1,775,937</td>
<td>12,344,408</td>
<td>3.37</td>
</tr>
<tr>
<td>ICT</td>
<td>336,182</td>
<td>2,006,572</td>
<td>4.91</td>
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Major cities population:

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<tr>
<td>Karachi</td>
<td>14,051,521</td>
<td>9,339,023</td>
</tr>
<tr>
<td>Lahore</td>
<td>11,126,285</td>
<td>5,143,495</td>
</tr>
<tr>
<td>Faisalabad</td>
<td>3,203,846</td>
<td>2,008,861</td>
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<tr>
<td>Rawalpindi</td>
<td>2,098,231</td>
<td>1,409,768</td>
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<tr>
<td>Gujranwala</td>
<td>2,027,001</td>
<td>1,132,509</td>
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<tr>
<td>Peshawar</td>
<td>1,970,042</td>
<td>982,816</td>
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<tr>
<td>Multan</td>
<td>1,871,843</td>
<td>1,197,384</td>
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<td>Hyderabad</td>
<td>1,732,693</td>
<td>1,166,894</td>
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<tr>
<td>Islamabad</td>
<td>1,014,825</td>
<td>529,180</td>
</tr>
<tr>
<td>Quetta</td>
<td>1,001,205</td>
<td>565,137</td>
</tr>
</tbody>
</table>

3.2.2 Provinces of Pakistan
Pakistan is divided into the following provinces

1. Baluchistan
It is one of the four provinces of Pakistan, forming the southwestern region of the country. Its provincial capital and largest city is Quetta. Baluchistan is situated in the southwest of Pakistan and covers an area of 347,190 square kilometers. Baluchistan is Pakistan’s largest province by area, constituting 44% of Pakistan's total land mass. The province is bordered by Afghanistan to the north and north-west, Iran to the south-west, Punjab and Sindh, and Khyber Pakhtunkhwa and the federally administered Tribal Areas to the north-east.

The main ethnic groups in the province are the Bloch people and the Pashtun’s, who constitute 52% and 36% of the population respectively.
Baluchistan’s population density is low due to the mountainous terrain and scarcity of water. According to survey report of 2017 the population of Baluchistan is 12,344,408. In 1981 the population was 4,332,376 and in 1998 (6,565,885).

2. **Punjab**
   It is Pakistan's second largest province by area, after Baluchistan, and its most populous province. It occupies 25.8% of the total landmass of Pakistan. Nearly 53% of Pakistan's population lives in the Punjab. The population of Punjab in 1981 was 47,292,441, in 1998 (73,621,290) and according to census 2017 the population of Punjab is 110,012,442. On the east, it has border with India.

Punjab province is bordered by Sindh to the south, the province of Baluchistan to the southwest, the province of Khyber Pakhtunkhwa to the west, and the Islamabad Capital Territory and Azad Kashmir in the north. The capital and largest city is Lahore which was the historical capital of the wider Punjab region. Other important cities include Faisalabad, Rawalpindi, Gujranwala, Sargodha, Multan, Sialkot, Bahawalpur, Gujarat, Sheikhpura, Jhelum and Sahiwal.

3. **Sindh**
   It is one of the four provinces of Pakistan, in the southeast of the country. It occupies an area of 140,915 square kilometers. Sindh is the third largest province of Pakistan by area and second largest province by population after Punjab. According to census-2017 the population of Sindh is 47,886,051. In 1981 the population was 10,028,666 and in 1998 (29,991,161).

Sindh is bordered by Baluchistan province to the west, and Punjab province to the north. Sindh also borders the Indian states of Gujarat and Rajasthan to the east, and Arabian Sea to the south. Sindh has Pakistan's second largest economy with Karachi being its capital that hosts the headquarters of several multinational banks. Sindh is bounded by the Thar Desert to the east, the Kirthar Mountains to the west and the Arabian Sea in the south.

4. **Khyber Pakhtunkhwa**
   It is one of the four administrative provinces of Pakistan, located in the northwestern region of the country along the international border with Afghanistan. It covers an area of 47,521 km². According to census report of 2017 the population of KPK is 30,523,371. The population of KPK in 1981 was 11,061,328 and in 1998 it was 17,743,645.
Khyber Pakhtunkhwa's provincial capital and largest city is Peshawar, with Mardan being the second-largest. It shares borders with the Afghanistan to the west; Gilgit–Baltistan to the northeast; Azad Kashmir, Islamabad and Punjab to the east and southeast. FATA (Federally Administered Tribal Areas) with a population of 5,001,676 (2017) is now a part of KPK, which was officially merged with the Khyber – Pakhtunkhwa on 31 May, 2018 by the 25th Amendment of the constitution of Pakistan.

### 3.2.3 Administrative Units

Pakistan administrative units consist of:

i. **Azad Jammu & Kashmir**

   Azad Jammu and Kashmir abbreviated as AJK is a nominally self-governing administered by Pakistan. Azad Kashmir is part of the greater Kashmir region, which is the subject of a long-running conflict between Pakistan and India. The territory lies west of the Indian-administered state of Jammu and Kashmir. It was previously part of the state of Jammu and Kashmir which was separated by the Line of Control as a result of the first Kashmir war fought between India and Pakistan. Azad Kashmir is one-sixth of the size of Gilgit-Baltistan. Azad Kashmir has a total area of 13,297 square kilometers and a total population of 4,045,366 according 2017 census.

ii. **Gilgit-Baltistan**: Gilgit-Baltistan is formally known as the Northern Areas. It is the northernmost administrative territory in Pakistan. It borders Azad Kashmir to the south, the province of Khyber Pakhtunkhwa to the west, the Wakhan Corridor of Afghanistan to the north, the Xinjiang region of China, to the east and northeast, and the Indian-administered state of Jammu and Kashmir to the southeast. The territory of present-day Gilgit-Baltistan became a separate administrative unit in 1970 under the name "Northern Areas". Gilgit-Baltistan covers an area of over 72,971 km² with a population of 1,900,000 (2017).

### 3.3 NEIGHBORS OF PAKISTAN

Pakistan is situated in the South Asia, and is positioned in both the eastern and northern hemispheres. It shares its borders with the Iran, Afghanistan, India and China. Following are the interesting facts about the Neighbors of Pakistan include India, china, Afghanistan and Iran.
3.3.1 India
India lies to its east. The Radcliffe Line became the official border between Pakistan and India. Pakistan has a long border with India, which is approximately 1610 km. When discussing Indo-Pak border, Wagah is an important place for both countries. It is the only road border crossing between India and Pakistan, and lies on the Grand Trunk Road between the cities of Amritsar and Lahore. Wagah is also famous for 'the lowering of the flags' ceremony which is held there every evening, and is witnessed by a large crowd from both the nations. Wagah is actually a village from which the Radcliffe line was drawn separating India and Pakistan.

3.3.2 China
The border between Pakistan and China is nearly 523 kilometers long and is situated in the northeast of Pakistan China lies to the North of Pakistan. Several agreements took place between 1961 and 1965 in which the borderline was determined between the two countries. The famous agreement called the Sino-Pakistan Agreement, or the Sino-Pakistan Frontier Agreement was passed in 1963 between Pakistan and China, according to which both countries agreed on the border between them.
Lofty snow-capped mountains lie between the two countries. The Karakorum Highway also known as the Eighth Wonder of the World, lies on the border between Pakistan and China links the two countries via the Khunjerab Pass. It connects Sinkiang Uighur of China and Gilgit–Baltistan of Pakistan and is one of the highest paved international roads in the world.

3.3.3 Afghanistan
Afghanistan is located on the North-western and western border of Pakistan. The border between Pakistan and Afghanistan formally known as the Durand Line is located on the west of Pakistan. The Durand Line is named after Sir Mortimer Durand, who was the foreign secretary of the British India.

There are two important roads that link Afghanistan with Pakistan. One links Peshawar (Pakistan) with Kabul (Afghanistan) via the Khyber Pass. There is a proposal to extend the railway from Chaman (Pakistan) to Kandahar (Afghanistan). Afghanistan is landlocked; therefore, a large part of its trade passes through Pakistan. With Afghanistan Pakistan has the longest boundary, which is 2252 km.

3.4.4 Iran
Iran lies to the south-west of Pakistan. The border between Pakistan and Iran is located on the west side, and is known as the Pakistan-Iran Barrier. It is 909 kilometers long and a 700 km concrete wall that is, three feet wide and 10 feet high has been built to stop the flow of illegal border crossings.

There is a railway link between Pakistan and Iran as well. The railway runs from Quetta via Dalbandin and Nok Kundi to Iran. Kuh-i-Taftan is the border railway station in Pakistan and Iran. A road runs parallel to the railways. There is another good road link between the two countries, which connects southern Balochistan through Turbat and Mand with Iran. A large trade exists between Pakistan and Iran.

3.3.5 Other neighbors of Pakistan
Other neighbors of Pakistan include Turkmenistan, Uzbekistan, Tajikistan and Kyrgyzstan. All these countries are landlocked, but they could take advantage of port facilities of Pakistan. These countries have rich resources of oil, gas and other minerals. Already there is a proposal to lay down an oil pipeline between Turkmenistan and Pakistan. Pakistan is located to close to the oil-rich countries bordering the Gulf, Oman, United Arab Emirates, Qatar, Bahrain, Saudi Arabia, Kuwait, Iraq and Iran.
3.4 PHYSICAL FEATURES OF PAKISTAN

The major part of our country consists of lofty mountains on the north and west, it has the world fertile alluvial plain which is drained by the river Indus and its tributaries. It has plateaus and few deserts also and thus Pakistan can be divided into a number of physical regions which are given below:

3.4.1. The North Eastern Mountains
The highest mountain of the world known as “The Himalayas and Karakurram comprising of a series of ranges which is situated in the north-east of our country. The Himalayas stretches like a bow in the north of Indo-Pak sub-continent having a length of about 1500km. The part of this mountain which came into our share, consists of four parallel ranges. With beautiful valleys. The slope of these goes decreasing from the north to south. Thus according to their altitudes, these ranges can be sub-divided as:

3.4.1.1 The Siwalik Range
These are line of low altitude hills, situated adjacent to plain areas of Hazera district in KPK and Attock, Rawalpindi, Jhelum, Gujrat and Sialkot districts in Punjab. Here these hills have a height of between 3000 and 4000 feet from sea level.

3.4.1.2 The Pir Panjal Range
Pir Panjal range is one of the famous ranges that lie in these areas, it has an average altitude of 14000 to 15000 feet; most of the peaks remain snow covered during winter. These are also covered with natural vegetation; The thickest forests of Pakistan like here. Forests are also seen at some places.

3.4.1.3 The Central or Great Himalayas
The average height of these ranges is 20,000 feet. These mountains lie in between the Pir Panjal range and Karakoram Range and most of the peak remains snow-covered throughout the year. The highest peak of this range known as Nanga Parbat lies in Kashmir with 26,660 feet height. The beautiful valley of Kashmir lies between the Pir Panjal range and the great Himalayas.

3.4.1.4 The Karakoram Range
The famous Karakorum Range lies to the north of central Himalayas in northern Kashmir and Gilgit area. These ranges have an average height of more than 20,000 above sea level. The peaks having a high altitude remain snow covered throughout the year. The north eastern mountains of our country are quite high
and it is difficult to cross them. The highest Peak of these ranges is K-2 with 2,825/feet height which is the 2nd highest peak of the world offer Mount Everest.

3.4.1.4 The North Western Mountains
The north western ranges of our country are also known as western branches of the Himalayas Mountains. These mountains consist of several parallel ranges and are lower in altitude than the north eastern mountains. As most of these ranges lie outside the course of summer monsoons coming from Arabian Sea, and so there the rainfall is low and these are almost baren of natural vegetation. These mountains act as a boundary between Afghanistan, Iran and Pakistan. These mountain ranges lie north to south, having some passes in river and beds in the valleys. So the north western mountains can be sub-divided into the following divisions:
1. **The Hindu-Kush:** Between the Knot Pamir and Kabul river lies the Hindu Kush range. The average height of this range is between 10000 to 16000 feet above sea level. Most of the mountain remains snow-covered during winter months. The highest Peak is Tirchmir with 25,230 feet height.
2. **Koh-Sufaid:** South of the Kabul River up to Khurram pass lies the Koh-Sufaid range which runs east and west. These mountains have an average height of 12000 feet are often covered with snow in winter.
3. **Waziristan Hills:** Between the Khurram and the Gomal rivers lies the Waziristan hills area. These hills have low altitude. The Tochi River joins the Kurram River from the west in North Waziristan and Gomal River coming from Afghanistan joins Indus near Dera Ismail khan.
4. **The Sulaiman Mountain:** In the south of the Gomal river lays the Sulaiman Mountain. Its highest peak is known as Takht-i-sulaiman, whose height is 11,440 ft above sea level.
5. **The Kirthar Hills:** In the west of lower Indus plain lies a hilly area known as “The Kirthar hills”. These hills are not high enough, their average height being about 7000 feet. Hab river drains from these ranges.

3.4.3 The Indus Plain
River Indus is the largest river of our country. This river after originating from the northern slopes of Kailash Range in Tibet (china) passing through the Himalayas and enters in Pakistan’s territory near Gilgit. In the upper region a number of streams join in it, but at the later stage, some of its western and eastern tributaries make it huger and vast in volume and speed. All the plain areas of our country have existed by the sediments brought by river Indus and its tributaries, the whole of the Indus plain can be sub-divided into two main parts:
1. **The Upper Indus Plain**
   From the point of junction of eastern tributaries of river Indus is known as the upper Indus plain. It includes most of the areas of Punjab province. The
upper Indus plain has a height from 600 feet to 1000 feet. The north eastern part is comparatively higher. The five big rivers of Punjab drain this plain. The land which lies between the two rivers is known as “Doab”. Thus the area of Punjab plain can be divided into Bari Doab, The Rachna Doab, The chaj Doab and the Sindh Sagar Doab. Although the north eastern areas of Upper Indus plain receive enough amount of rainfall, but here the average annual rainfall is less than 20 inches, which is insufficient for the agricultural activities, So Irrigation is practical number of crops such as wheat, rice, cotton, maize and pulses are cultivated in these areas.

2. The Lower Indus Plain: the lower Indus plain differs from the upper Indus plain because of its structure. The lower Indus plain has been formed by the changing course of a single great river and the deposits are of a comparatively recent origin. The lower Indus plain situated between the left bank of the Indus River and Thar Desert. It is a level alluvial plain. It is more productive, but rainfall is scanty and agricultural activities cannot be performed on western side of Indus are comparatively less fertile and most of the areas lying north west of Indus river have been suffering from the disease of water logging and salinity.

3.4.4 Plateaus
Plateaus includes
1. The salt range: The area of salt range begins in the east near the Jhelum and runs south-west to the north of the river Jhelum for some distance before turning North West to cross the Indus near kalabagh. Large quantities of rock salt and minerals like gypsum and coal are found in this range.

2. Potwar plateau: North of salt range the area of Rawalpindi, Jhelum and Mianwali districts are known as Potwar Plateau. These areas have also an uneven surface. The Haro and Soan rivers pass across the potwar plateau. Due to scarcity of rainfall and uneven surface these areas are not suitable for agricultural activities, but some of the minerals of our country such as mineral oil, coal, iron, ore, lime-stone etc. are found from the potwar plateau.

3. The Baluchistan Plateau: this plateau lies to the west of the sulaiman and Kirthar Mountains. Like potwar plateau, the dry hills run across the plateau from the north east to the south west. The mountains in the north-east are higher than those in the south and contain valuable deposit of coal, iron, chromite and other minerals. These areas receive a small amount of rainfall and there is scarcity of water. So due to shortage of water and uneven surface these are not suitable for cultivation.
3.4.5 The Desert Areas

Deserts, in Pakistan, make up a large part of the country’s geography, especially in the central and south-eastern regions. These areas receive very little rain fall and have large tracts of barren wastelands, with formation of sand dunes rising sometime to 150 m above ground level. The desert areas also support wildlife including desert gazelles, bustards, jackals, foxes, wild cats, lizards and snakes etc. The major deserts are:

1. **Thar Desert:** Thar is the world's 17th largest desert located in Pakistan. This desert also enters the boundary of India therefore it is one of the largest deserts of Asia. It covers an area of 175,000 square kilometers and covers large areas of Pakistan and India. About 85% of the Thar Desert is in India, and the remaining part in Pakistan. In Pakistan, the desert covers eastern Sindh province and the southeastern portion of Pakistan's Punjab province. Rainfall in the area is very low and the climate is harsh with temperatures ranging from near freezing up to 50°C.

2. **Cholistan Desert:** It covers an area of about 16,000 square km and extends into the Thar Desert of India. The south border area of Bahawalpur division is known as Cholistan. The average annual rainfall is only 12 cm, and the little cultivation is made possible by underground wells, drawn up by the camels. Due to shortage of rainfall the areas of Cholistan desert have become dry barren land. The soil of desert is fertile but due to lack of water facilities the cultivation is not possible. Sand dunes can be seen everywhere in the desert.

3. **Thal Desert:** The Thal deserts situated in Punjab, Pakistan. It is located between the Jhelum and Sindh rivers near the Potohar Plateau. The total length from north to south is 190 miles and a maximum breadth is 70 miles (110 km) and minimum breadth is 20 miles. The desert covers the districts of Bhakkar, Khushab, Mianwali, Muzaffargarh as well as Jhang, from the left bank of the river Jhelum. Here rainfall is very low and scattered. Sand dunes are seen everywhere. Large area of the Thal desert is irrigated by canal of river Indus.

4. **Kharan Desert:** This is also called the Sandy Desert. It is located in the Province of Balochistan. It covers an area of about 48,051 sq. km. It is basically covered with sand dunes and scrub vegetation. Rainfall is very limited in the desert leaving it with dry lakes. The land is not fit for agriculture due to low irrigation. The altitude of this desert moves from about 1000 m in the north to approximately 250 m in the southwest. The average rainfall in the desert is about 100 mm annually. Hamun-e-Mashkhel is the largest Saltish Seasonal dry lake of this desert.
3.5 CLIMATE OF PAKISTAN

The atmospheric conditions at any place for a short time (a day, a week, or even months or so) is known as weather. “The generalized picture of weather is called climate”, thus to have a general picture of the atmospheric conditions of a place, the average conditions of weather are obtained. Temperature, pressure, wind rainfall, etc., are the composite parts or elements of climate. The elements depend upon a number of factors. Climate differs from place to place and from time to time according to the changing factors. Pakistan enjoys arid and semi-arid conditions with hot summer and cold winter. So while studying the climate of Pakistan it has been seen that a great difference is found in climatic conditions of various areas of our country. Our country has three main seasons:
1. Winter season: (from November to February)
2. Summer season: (from March to June)
3. Rainy season: (from July to October)

Climatic Regions:
In Pakistan humidity is mostly low and the air is dry for the greater part of the year. Only in coastal area there is enough amount of humidity throughout the year. Pakistan can be divided into the following climatic regions:
1. **Sub-tropical continental highland type:** This region includes the mountains in the north and west of the Indus plain. In this region winters are cold and lengthy and often the temperature goes below the freezing point; and the higher peaks remain snow-covered throughout the year. But here summer remains short, cool and temperate. This region receives highest rainfall.
2. **Sub-tropical continental plateau type:** This region includes the north western part of Baluchistan province. Here winters are cold, and in summer temperature goes higher enough and often dust storms prevail. Although it has higher altitude, but due to poor rainfall, these have turned into arid desert. In these areas there is scarcity of rain water, but in some of the places of these areas have the lowest rainfall.
3. **Sub-tropical continental low land type:** This region includes the interior areas of Punjab and Sindh province. It has generally arid hot climate. Here summer remains long and hot. But winters are cool and short. It has the hottest places of the country. The rainy season begins in the middle of the summer months. But the western part of this plain is drier than the eastern due to very poor rainfall.
4. **Sub-tropical coastal areas type:** This region includes the coastal strip around Karachi and Makran coast in Baluchistan. Here due to the influence of the sea, the temperature remains moderate. But due to proximity of the sea, a large amount of humidity remains in the atmosphere.
5. **Temperature:**
From keeping in view temperature can be divided into the following divisions:

1. **The north east and north western mountainous region:** north east and north western mountainous areas of our country are higher enough from the sea level. Here due to a higher altitude the winters are cold and longer, and during winter months temperature often goes down below freezing point, there is enough snow falls, and the higher peaks remain covered with snow. But summers remain cool and temperate.

2. **The plain areas of Punjab and Sindh Provinces:** the plain areas of Punjab and Sindh are situated in the south of the mountainous region. Thus due to low altitude and being far away from the ocean, these areas have a typically continental type of climate. The temperature reaches the maximum during summer months and the summer is hot and lengthy. So, after dry hot weather, thunderstorms or dust storms appear; the thunderstorms bring heavy rainfall and light rainfall is often followed by the dust storms. Thus, due to rainfall a slight decrease in temperature occurs which gives temporary relief.

3. **Southern coastal areas:** these areas are situated in the south of the lower Indus plain, here due to nearness of sea; the temperature does not reach up to extreme, the atmospheric conditions remain humid, and the heat in the summer months is oppressive.

4. **Baluchistan plateau:** here the summer temperature is somewhat higher and winter temperature is also low. As these areas are also far away from sea, so due to high altitude temperature in winter often remains below freezing point. Rainfall being low, these areas are dry.

3.6 **MAJOR INDUSTRIES OF PAKISTAN**

The Industrial Sector is the second largest individual sector of the economy accounting for 24% of the GDP. The activity in the manufacturing sector is comprised of large, medium and small-scale. The development of industrial sector means more investment, employment and production. Increase in production will increase the national income. The growth rate of industrial sector for the year 2009-2010 remained 4.9 percent %. Industrial sector contribution to GDP (Gross Domestic Product) for the year 2009-2010 remained 18.5%. Industrial sector earns a good amount of foreign exchange for the country which is used for repairing national debt and for import oil and machinery important industries are given below:

1. **Textile Industry:** The Textile industry in Pakistan is the largest manufacturing industry in Pakistan. Pakistan is the 8th largest exporter of textile commodities in Asia. Pakistan is the 4th largest producer of cotton
and it contributes 5% to the global spinning capacity. The textile industry is the second largest employment sector in Pakistan and it employs about 45% of the total labor force in the country. In the 1950s, textile manufacturing emerged as a central part of Pakistan's industrialization. Cotton is the largest segment of textile production. Other fibers produced include synthetic fiber, filament yarn, art silk, wool, and jute.

Textiles comprise 57% of Pakistan's export revenues. However, in recent years textile exports have declined significantly. The Pakistan Textile Exporters Association recently requested the government to take significant measures to ensure the growth of textile exports.

2. **Sports Industry:** Pakistan is one of the greatest exporters of sports items. Almost all the goods of sports are exported outside the Pakistan because there is a very high demand of Pakistan’s goods of sports in every country of the world. In Pakistan almost all sports related items are produced but the famous products are soccer ball, cricket bat, cricket ball, tennis ball etc. Sports industry of Pakistan has even manufactured the soccer ball for the FIFA World cup of the year 1994.

The sports industry of Pakistan lies in the city of Sialkot which is a part of the province of Punjab. All the items of sports of the best quality are manufactured in the city of Sialkot and sports industry in Sialkot is the main factor of Sialkot’s economy as it earns great profit from it due to the high demand of sports good in international market. All other goods related to the sports are also produced in the sports industry of Pakistan like sports bags, sports jackets, sports cap etc.

3. **Sugar Industry:** The sugar industry plays an important role in the economy of the country. It is the second largest industry after textiles. The output of sugar as well as the production of sugarcane increased at an average rate 24 percent. At the time of independence in 1947, there were only two sugar factories in Pakistan. The output of these factories was not sufficient for meeting the domestic requirements. The country started to import sugar from other countries and huge foreign exchange was spent on this item. So, to meet the requirements of sugar the Government setup a commission in 1957 to frame a scheme for the development of sugar industry.

At present there are 76 sugar mills operating in Pakistan. In Pakistan about 99% of the sugar is extracted from sugar production than the requirements and in adverse years the country falls short resulting in imports.

4. **Cement Industry:** Cement industry is one of the few industries that existed in Pakistan before the partition of the sub-continent. The annual production of the cement at the time of the creation of Pakistan was only 300000 tons per year. At the time of independence in 1947 there were four cement factories with an installed capacity of 470,000 tons per annum. These units
were located at Karachi, Rohri, Dandot and WAH. In 1956 PIDC established two plants at Daudkel and Hyderabad and subsequently more plants were established in the private sector.

The major reason for the existence of this industry is the availability of the raw materials. Pakistan is a country rich in deposits of limestone, shale and gypsum, which are the main ingredients for the production of cement. The cement market in Pakistan is divided into two zones: The North zone and the South zone. The North zone includes Punjab, Azad Kashmir, KPK and the upper region of Baluchistan. The remaining area of the Baluchistan and entire Sindh constitute the Southern zone. The demand for cement has grown at a steady rate of 8% in the northern region while 4% in the southern region. The way the new plants are being set up and the existing plants are undertaking expansion. The demand and supply situation is bound to create surpluses. New projects are being undertaken in the cement sector.

**Fertilizer Industry:** Over the past years, this sector has been facing several challenges due to insufficient gas supplies, high gas tariffs and heavy taxation. The capacity of Pakistan’s fertilizer production is 6 million tons per year. The fertilizer sector is heavily supported by the government because of its significant position in the agricultural sector. At present government started to focus on strengthening the agricultural and fertilizer sectors. Special packages are announced for the farmers in order to support the agricultural sector and also providing subsidies on fertilizers.

Further both urea and Di-ammonia phosphate prices are deregulated and there is no excise duty or sales tax on fertilizer sales. Government also provides loans to small farmers. The soil of Pakistan is to be deficient in nitrogen so, Urea is the most used fertilizer which eliminates this factor. Urea represents 65% of total fertilizer consumed and Di-ammonium phosphate (DAP), which accounts for 18%, are the main types of fertilizer used in Pakistan. The main market for urea is wheat growers, followed by cotton growers, rice and sugarcane cultivators. Although urea produced in Pakistan cannot meet demand of local community, so the rest is imported from the other country. However, the only way to get a higher production of agriculture output is through a more widespread use of fertilizers.

### 3.7 MAJOR ECONOMIC ZONES OF PAKISTAN

Since independence, Pakistan has been focusing on its industrial development. Recently some special Economic Zones were approved under CPEC.
1. **Special Economic Zone:**
A Special Economic Zone (SEZ) is a specific area of the land used to promote industrial growth in a country by providing moderate economic and tax policies. Government of Pakistan has promoted five industrial estates such as Multan Industrial Estate Phase-II, Bhawal Industrial Estate and Mianwali, Rahim Yar Industrial Estate, Dera Ghazi Khan and Rawalpindi Industrial Estate, as special economic Zone.
- Khairpur Special Economic Zone
- Rashakai Economic Zone Mardan
- Gadoon Economic Zone
- Hathar Economic Zone

**Export processing zones (EPZ):**
Export Processing Zones Authority is a Pakistan Government venture conceived and designed to increase and improve the exports of the country. EPZA is one of the fast-growing projects undertaken by the government and carries a great appeal for both local and overseas investors. The reason for success in this venture is simple: to provide service with a mission. And this success would not have come about without active cooperation and participation of some other sectors which worked closely and helped The EP2A. Following are the export processing units of Pakistan:
- Karachi EPZ
- Risalpur EPZ
- Sialkot EPZ
- Gujranwala EPZ
- Saindak EPZ
- Duddar EPZ
- Gwadar EPZ

2. **Industrial Estates:**
Industrial estates are the ones that are used to carry industrial activities. Activities such as roads, power, and other utility services are provided to facilitate the growth of industries and to minimize impacts on the environment. Selection of industrial sites should depend on social, environmental and economic factors. Industrial estates should maintain safe distances from residential areas. Industrial estates units monitor data, review it at regular intervals, and compare it with the operating standards so that any necessary corrective actions can be taken. These include:
- Multan Industrial Estate phase-II
- Rahim Yar Industrial Estate
- Bhawal Industrial Estate
• Mianwali Industrial Estate
• Rawalpindi Industrial Estate
• Dera Ghazi Khan Industrial Estate
3. CPEC Special Economic Zones (SEZs)
• Rashakai Economic Zones - Noshera
• China Special Economic Zone – Dhabeji
• Bostan Industrial Zone
• Allama Iqbal Industrial city – Faisalabad
• ICT Model Industrial Zone – Islamabad
• Development of Industrial Park at Port Qasim.
• Special Economic Zone at Mirpur, AJK
• Mohmand Marble City
• Moghandass SEZ Gilgit – Baltistan.

**SUMMARY**

This unit explained the geographical location of Pakistan. Pakistan became an independent state in 1947 after gaining its sovereignty from the United Kingdom. Pakistan is a profound blend of landscapes varying from plains to deserts, forests, hills, and plateaus. In the second section of this unit neighboring countries of Pakistan, Iran, Afghanistan, India and China has been discussed. Physical features of Pakistan i.e. landforms and plain areas have been explained. In the third section of this unit the different climatic regions have been discussed with different type of climate. After this, the demography of Pakistan has been explained to show the population of different provinces. Distribution of rural and urban areas population have been elaborated. After that, the major industries of Pakistan have been discussing in detail. Major economic zones of different provinces of Pakistan have been explained.
SELF-ASSESSMENT QUESTIONS

1. Describe the geographical importance of Pakistan.
2. Write a detail note on neighbors of Pakistan.
3. Describe the physical features of Pakistan in details.
4. Define Industry and explain the major industries in Pakistan.
5. Define soil? Explain the classification of soil of Pakistan.
6. Discuss the major economic zones of Pakistan in details.
NATURAL RESOURCES OF PAKISTAN

Compiled by: Arifa
Asia Batool

Reviewed by: Huss-Nul-Amin

59
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Introduction</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Objectives</td>
<td>61</td>
</tr>
<tr>
<td>4.1</td>
<td>Natural Resources</td>
<td>62</td>
</tr>
<tr>
<td>4.2</td>
<td>Mineral Resources of Pakistan</td>
<td>62</td>
</tr>
<tr>
<td>4.2.1</td>
<td>Coal</td>
<td>64</td>
</tr>
<tr>
<td>4.2.2</td>
<td>Natural Gas</td>
<td>64</td>
</tr>
<tr>
<td>4.2.3</td>
<td>Mineral Salt</td>
<td>64</td>
</tr>
<tr>
<td>4.2.4</td>
<td>Copper and Gold</td>
<td>65</td>
</tr>
<tr>
<td>4.2.5</td>
<td>Iron Ore</td>
<td>65</td>
</tr>
<tr>
<td>4.2.6</td>
<td>Lime Stone</td>
<td>66</td>
</tr>
<tr>
<td>4.3</td>
<td>Water Resources</td>
<td>66</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Rainfall</td>
<td>67</td>
</tr>
<tr>
<td>4.3.2</td>
<td>The Indus Water Treaty</td>
<td>67</td>
</tr>
<tr>
<td>4.3.3</td>
<td>Glaciers</td>
<td>67</td>
</tr>
<tr>
<td>4.3.4</td>
<td>Rivers</td>
<td>68</td>
</tr>
<tr>
<td>4.3.5</td>
<td>Dams</td>
<td>68</td>
</tr>
<tr>
<td>4.3.6</td>
<td>Barrages</td>
<td>70</td>
</tr>
<tr>
<td>4.3.7</td>
<td>Canals</td>
<td>71</td>
</tr>
<tr>
<td>4.3.8</td>
<td>Groundwater in Pakistan</td>
<td>71</td>
</tr>
<tr>
<td>4.3.9</td>
<td>Fishing in Pakistan</td>
<td>71</td>
</tr>
<tr>
<td>4.4</td>
<td>Natural Vegetation</td>
<td>72</td>
</tr>
<tr>
<td>4.4.1</td>
<td>Forests</td>
<td>73</td>
</tr>
<tr>
<td>4.4.2</td>
<td>Grass lands</td>
<td>75</td>
</tr>
<tr>
<td>4.5</td>
<td>Agricultural Resources</td>
<td>75</td>
</tr>
<tr>
<td>4.5.1</td>
<td>Oil Seeds</td>
<td>75</td>
</tr>
<tr>
<td>4.5.2</td>
<td>Livestock</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>Self-Assessment Questions</td>
<td>76</td>
</tr>
</tbody>
</table>
INTRODUCTION

In the previous unit you learned a brief knowledge about the commercial geography of Pakistan and now in this unit Natural resources of Pakistan will be discussed in detail. Ever since the Earth was inhabited, humans and other life on earth have depended on things that exist freely in nature to survive. All the resources that exist naturally are called natural resources. The introduction of mineral resources, types of mineral resources and the regions where these mineral resources found will be explained. The water resources (rainfall, rivers, dams, barrages and canals) and fishing in Pakistan will also be elaborated in detail. After this, the natural vegetation of Pakistan that consists of forests and grasslands will be elaborated. At the end agricultural resources i.e. crops and livestock will be described.

OBJECTIVES

After reading this unit, you will able,

1. to understand the natural resources of Pakistan.
2. to know the minerals resources of Pakistan.
3. to explain the types of mineral resources in different regions of Pakistan.
4. to show the water resources of Pakistan.
5. to explain the fish industry in Pakistan
6. to highlight the natural vegetation of Pakistan.
7. to elaborate the major agricultural resources of Pakistan.
4.1 NATURAL RESOURCE

Natural resources are the resources that exist without actions of humankind. On earth it includes, sunlight, atmosphere, water, land (includes all minerals) along with all vegetation, crops and animal life. All these mentioned above are natural, and they exist in nature no human created them. Natural resources can be consumed directly or indirectly. Natural resources can be classified into various types. Mainly they are divided into two categories A-biotic resources and biotic resources. The biotic resources consist of plants, animals and microorganisms whereas the A-biotic resources include nonliving materials such as soil, land, metals, water and minerals. Other common categorization of natural resources is renewable resources and nonrenewable resources. Renewable resources are those natural resources that can be replaced by nature over a period of time. Nonrenewable sources are those natural resources that are available only in limited amounts and are not easily replaced by nature.

4.2 MINERAL RESOURCES OF PAKISTAN

After independence of Pakistan, only a few mineral resources that were exist in the country. So with the help of different surveys, the presence of different resources has been confirmed. The mineral resources of a country are valuable means and measures for its economic and industrial growth. These resources are important for Pakistan because of its favorable geological environment. Pakistan has a widely geological frame work that includes a number of zones hosting several metallic minerals, industrial minerals, precious and semi-precious stones. As a result of various efforts that were made for the development of mineral sector, several mineral resources have been discovered in different areas of Pakistan, including world class resources i.e. coal, copper, Iron, gypsum, rock salt etc.
Mineral industry in Pakistan requires Government support for the exploration and extraction of minerals. However, the government shows full interest in developing the mining sector. An institution named Geological survey of Pakistan is established in Pakistan for the mapping and investigation of different mineral resources in a particular area. The province of Sindh has large quantities of minerals. In all there are 24 minerals which are being mined at present. The province also has large quantities of coal and granite reserves. Karunjhar Range of Mountains in Nagar parkar has huge reserves of granite and other types of rocks which has the potential to compete the international market. Some the mineral resources of Pakistan are given:
4.2.1 Coal
Mining of coal began in 1887 in different areas of the present Pakistan. After independence very small quantity of coal was taken out but with the passage of time more mines of coal have also been discovered. The coal found in our country is of poor quality. Coal is used in thermal power station and in furnaces for making bricks. The coalfield in the Sindh province has huge coal resources of about 175 billion metric tons. About 80 percent of the coal found in our country is used in bricks and lime burning kilns and some quantity is used for Railway and for domestic purpose. Now a day’s approximately 80 percent of cement industry has also switched over to indigenous coal from furnace oil that has saved considerable foreign exchange being spent on the import of furnace oil. The conversion of cement industry from furnace oil to coal has generated a demand for 2.5 to 3.0 million metric tons coal per annum. Coal mines are available in Makerwal (Punjab), Mach and Degari (Baluchistan), Thar Lakhra and Jhimpir coal mines (Sindh).

4.2.2 Natural Gas
Natural gas is an important source of energy. It is a great blessing of nature especially for Pakistan which is deficient in the production of mineral oil. Natural gas production is at a high level in Pakistan. Under the barren mountains of Baluchistan are untouched gas reserves that were discovered in 1952 at Sui district Dera Bugti in Baluchistan province and the commercial exploitation of the field began in 1955. Estimated reserves are 885.3 billion cubic meters (as of January 2009).

The Sui gas field is the largest; accounting for 26% of Pakistan’s gas production. Daily production is 19 million cubic meters a day. The main use of gas is that it is used for thermal electricity, in cement industry, fertilizers industry and for commercial and domestic purposes. After the discovery of gas, the Indus gas company laid a pipe line from Sui to Karachi in order to supply gas to industrial and domestic consumers. Another company named Sui northern completed a pipe line from Sui to Multan in 1958.Later on it supplied to the other cities. Major users of natural gas are Karachi, Lahore, Faisalabad, Multan, Rawalpindi and Islamabad.

4.2.3 Mineral Salt
Salt is being mined in the region since 320 BC. Salt in its natural form as a crystalline mineral is known as rock salt. Salt is essential for life in general and saltiness is one of the basic human tastes. The Khewra Salt Mines are among the world's oldest and 2nd biggest salt mines. Khewra Salt Mine is situated in Pind Dadan Khan Tehsil of Jhelum District. The mine is in mountains that are part of a
salt range, a mineral-rich mountain system extending about 200 km from the Jhelum River south of Pothohar Plateau where the Jhelum River joins the Indus River. Khewra salt is also known as Himalayan salt. It is red, pink, off-white or transparent color.

Khewra salt mine has an estimated total of 220 million tons of rock salt deposits. The current production from the mine is 325,000 tons of salt per annum. It is used for cooking, as bath salt, as brine and as a raw material for many industries. Salt from Khewra mine is also used to make decorative items like lamps, vases, ashtrays and statues, which are exported to the United States, India and many European countries. It has great commercial value.

4.2.4 Copper & Gold
Baluchistan deposits of copper and gold are present in Reko Diq. The Reko Diq mine is located near Reko Diq town in Chagai District, Balochistan, Pakistan. Reko Diq represents one of the largest copper reserves in Pakistan and in the world having estimated reserves of 5.9 billion tons of ore grading 0.41% copper. The mine also has gold reserves amounting to 41.5 million metric tons.

Antofagasta the company having possession of Reko Diq field is targeting initial production of 170,000 metric tons of copper and 300,000 ounces of gold per year. The project may produce more than 350,000 tons a year of copper and 900,000 ounces of gold per year. The lease agreement has been terminated with Said Company by the government of Pakistan. There are also presences of copper deposits in Daht -e- Kuhn, Nokundi, located in Chaghi district.

4.2.5 Iron Ore
Iron is another mineral resource of Pakistan. Although iron is the fourth most abundant element in the Earth's crust. Iron ore is the raw material used to make pig iron, which is one of the main raw materials to make steel and 98% of the mined iron ore is used to make steel. 11 February, 2015 the reserves of iron were found in Chiniot, around 160 kilometres northwest of Lahore. 165 million tons of iron ore reserves had been discovered. The extracted iron had been tested in Swiss and Canadian laboratories to find that about60 to 65 percent of iron contents is to be high grade. Iron ore is found in various regions of Pakistan including Nokundi, Chinot and the largest one in Kalabagh (Less than 42% quality), Haripur and other Northern Areas. It is used primarily in structural engineering applications and in maritime purposes, automobiles, and general industrial applications.
4.2.6 Lime Stone
Limestone is made up of calcium carbonate. Pakistan has rich deposits of limestone which are found in different regions. The limestone reserve of Pakistan is huge and therefore its production is increasing rapidly. Limestone production was 13,150,127 tons (2003-04), 14,857,479 tons (2004-05) and 18,427,706 tons (2005-06).

Limestone is used in the manufacturing of lime, bleaching powder, glass, soap, paper, paints etc. The most important ranges of limestone are Trans-Indus salt Range, the Potwar plateau and Margallah hill.

<table>
<thead>
<tr>
<th>Minerals</th>
<th>Unit of Quantity</th>
<th>2013-14</th>
<th>2014-15</th>
<th>2015-16</th>
<th>%Change FY16/FY15</th>
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<td>M.T</td>
<td>3,311,240</td>
<td>3,402,028</td>
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<td>Sulphur</td>
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<td>35,672</td>
<td>19,730</td>
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<td>-37.18</td>
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</tbody>
</table>

4.3 WATER RESOURCES
Water is one of the basic necessities of life. All living things require water to grow and reproduce. 97% of the water on the Earth is salt water and only three percent is fresh water. Ocean carries a great percentage of the world’s water. The
remaining amount is contained by rivers, lakes, ponds and ditches. God has gifted Pakistan with abundant water resources. Water is required for drinking, domestic, irrigation and industrial uses. Agriculture sector is also the major user of water and its consumption will continue to dominate water requirement. Big dams are the main source of hydropower for industrial development. There are two types of major water resources in Pakistan, natural and artificial. Natural resources include rainfall, rivers, glaciers, ponds, lakes, streams etc.

Artificial resources consist of the surface water from rainfall and rivers are stored in dams and reservoirs. The water from these dams and reservoirs is not only used for irrigation and supplying water for daily consumption, but also used for hydroelectric power generation. Sources of water are:

4.3.1 Rainfall
There are two major sources of rainfall in Pakistan i.e. the Monsoons and the Western Disturbances. The rainfall varies as we move from the north and northeast to the south of the country. Rainfall over fields and forest are absorbed by the soil and thus the soil water is used for the cultivation of different crops. Northern areas of Punjab Pakistan appreciable amount of rainfall in summer as Compared & Southern parte.

4.3.2 The Indus Water Treaty
Before independence of Pakistan most of the canals are belong to India. As a result of partition the head-works of these canals remained the part of India and their drained areas became part of Pakistan. In September 1960, an agreement was signed which named as the Indus water treaty. Under this agreement Pakistan has rights over the three western rivers i.e. the Indus, Jhelum and Chenab and India has right on three eastern rivers i.e. the Ravi, Beas and Sutlej. During this period India agree to continue supplying water to Pakistan. After this Pakistan construct different dams and barrages. The estimated cost of two dams, barrages and canals was about one billion dollars. The amount was arranged by the World Bank.

4.3.3 Glaciers
Glaciers are a large body of ice which holds most of the Earth’s fresh water resources. When global warming is on rise the life of these glaciers is not indefinite. The glacier area of Pakistan is about 13,680 sq km. There are more glaciers in Pakistan than any other land, except North and South Poles. Pakistan’s Glaciers Systems consists of numerous large and small size glaciers, found in the northern mountain ranges of Karakoram, Himalaya and Hindukush. The water of these glaciers is a lifeline for the people and economy of Pakistan. Country is heavily depending on regular discharge of these waters for large scale agriculture,
industrial and domestic use. Without these glaciers, Pakistan would be a barren place to support its large population base. Siachen, Batura and Hispar are Karakorum Glacier while Chianter and Tirich Mir are glaciers at Hindukush.

4.3.4 Rivers
Rainfall taking place over hilly and plain areas are form streams and rivers. Pakistan has been blessed with a number of rivers. Jhelum, Chenab, Ravi, Beas and Sutlej are the rivers which join the Indus River from eastern side and number of small rivers which join Indus River from the west side.

4.3.5 Dams
The historical background of dams in Pakistan is relatively short. At the time of independence, there were only three dams in Pakistan. The two dams which are built as a part of Indus water Treaty were at Tarbela and Mangla. The project of dams is designed to store large quantity of water in order to generate electricity. The Mangla Dam is located on the Jhelum and it has storage capacity of 7.4 million acre-feet and generated 1,000 megawatts of electricity. It supplies water to canals that irrigated the mostly Doabs.

Tarbela Dam
Tarbela dam is the largest water reservoir of Pakistan located in KPK on Indus River with 11.0 million acre-feet water storage capacity and 3,478 megawatts electricity generating capacity.
4.3.6 Barrages

Barrages are usually larger than the head works of irrigation and link canals, a barrage is a diversion of dam which consists of a number of large gates that can be opened or closed to control the amount of water passing through them, and thus regulate and stabilize river water upstream for use in irrigation and other systems. A barrage is built for diverting water, and raises the water level only a few feet; they are generally built on flat area across meandering rivers. Chashma Barrage, Guddu Barrage, Sukkur Barrage, Taunsa Barrage etc. are the barrages of Pakistan.

Important barrages of Pakistan
4.3.7 Canals
Canal which brings river water close to the field where it is required? These canals come out of rivers, dams, and barrages. The irrigation system of Pakistan is one of the best in the world due to the largest irrigation system in the world. Canal System of Pakistan consist of three main important types of canals: Perennial Canals, Non-Perennial Canals and Inundation Canals. Perennial canals are the canals that are used to supply water to the field and these are taken either from dams or barrages and these includes Lower and upper Bari Doab, Lower & Upper Chenab canal and Sidhnai. Non-perennial canals include Sutlej, Sidhnai (from Ravi) and Haveli (from Chenab) canals. The Inundation canal is taken from the rivers when there is a rise in the water level due to flood and include canals of Chenab and Indus river. 45 canals have been taken from rivers, dams and barrages to provide water to the fields.

4.3.8 Groundwater in Pakistan
Other important source of water is groundwater which consists 99 percent of fresh water and easily accessible for the world. In Pakistan the volume of ground water is immeasurable. The water is used for irrigation purposes and pumped through tube wells. The irrigation of land has been started though tube wells in early sixties. For the Indus Basin Irrigation System 500,000 tube wells has been installed.

4.3.9 Fishing in Pakistan
Fishery and fishing industry plays a significant part in the national economy of Pakistan. It is one of the great primary industries of the world. Now a day fishing industry is not only meeting the local requirement but also export to the other countries. Pakistan has enough fishery resources that remain to be developed. Most of the population of the coastal areas of Sindh and Baluchistan depends on fisheries for livelihood. It is also a major source of export earnings. Fishing industry is the managed by the Fisheries Development Commissioner (FDC) under the Ministry of Food, Agriculture and Livestock (MFAL) of Government of Pakistan. The office of the FDC is responsible for policy, planning and coordination with provincial fisheries departments and other national and international agencies. Some universities in the country are also involved in basic fisheries research.

Pakistan has many marine and inland fishery resources. There are about 16,000 fishing boats in coastal area of Pakistan which operate in shallow coastal waters as well as in offshore areas. There are 29 fish processing units in Pakistan with storage capacity of 10,000 tons, out of these 25 units are located in Karachi. Through this process, 8 establishments have already improved their conditions and were approve to export seafood to European Union countries. A substantial quantity of fish is consumed locally a remaining is exported. Fish is used as a meal as well as for manufacturing of different products. Fish oil is used for
medicines and for industrial purposes like lubricating, soap making, tanning and tempering of steel.

**Types of fisheries:**
There are three main types of recreational fisheries in Pakistan: billfish and tuna fishing in the EEZ of Karachi; sport fishing (pelagic) in coastal waters; and hand-line fishing (bottom fishing) in inter-tidal and shallow waters. About 1,000 people with 120–150 fishing boats are involved in this sector.

Marine fisheries
Marine fisheries in Pakistan are being carried out on two distinct grounds i.e. coastline covering Mekran (Balochistan) as well as the coast of Karachi (Sindh). Karachi and Mekran being the most important fishing ports are being developed by the Government of Pakistan as a fishing centre. **Inland fisheries** are getting much popularity. Some inland resources include small rivers, dams (Tarbela, Mangla and Chashma), lakes (Haleji, Keenjhar and Manchhar), barrages, reservoirs, ponds and canals.

Pakistan exports reasonable quantity of prawns, shrimp, fish and its products and earns a substantial amount of foreign exchange. Fish and fish products are processed and exported to many countries, European Countries being at the top. Major markets for export are: Canada, USA Denmark, Japan, Holland, Norway, Iceland, Korea, Hong Kong, Taiwan, Singapore Malaysia, and Gulf.

4.4 **NATURAL VEGETATION**

Natural vegetation comprises forests, shrubs and grasses, and it is determined by the climatic conditions and soil types of a country. From all these forests are the most important to humans because these provide timber and firewood to the people. Many geographers emphasize on the importance of trees. For a balanced
economy 20-25 percent of the land should be under forest. The climate of Pakistan is too dry for forests. In Pakistan, only about 5 percent of the total area is forested. Slightly over two-thirds of the forest land is under public ownership, the remainder being privately owned. The natural vegetation of a country is depends upon its temperature, type of soil and amount of rainfall. Areas where there is low rainfall have poor natural vegetation. So the temperature and rainfall in different regions of a country is different and therefore natural vegetation of these regions include into forests and grass lands are also different.

4.4.1 Forests
The total area of forests in Pakistan is 4.224 million Rectors which is 4.8% of the total land area. The forest covered area has been considerably reduced. Punjab cover 17%, Sindh 18%, Baluchistan 8% and KPK covers highest share of forests i.e. 32%. Between 1981 and 1990, forest area of the Tropical Asia and Oceania, which Pakistan is a part of, had been decrease up to 4.3%. During the same period, a 0.6% deforestation had been occurring each year. In Pakistan, subtropical, temperate, Riverain and mangrove forests are being lost because of unfavorable use of land and the ever-increasing demand for timber and firewood. Total Forest Area under the control of the Forest Departments (including Azad Kashmir and the Northern Areas) is 4.26 million hectares. The forestry sector of Pakistan is a main source of lumber, paper, fuel wood, medicine as well as human and animal food. The following forest types are found in Pakistan.

- **Littoral and Swamp forests**: These are forests of low heights which occur in the Arabian Sea around the coast of Karachi and Pasni in Baluchistan. It covers at least 14 million hectares and 257500 hectares. These forests are found in Pakistan and the 7th largest littoral and swamp forests in the world. These forests are evergreen and it is not important from the point of view of timber production. They are natural habitat to a large number of insects, microorganisms, birds, different mammals as well as snakes. These are also known as mangroves.

- **Tropical dry deciduous forests**: These are low or moderate height forests that consist of entirely deciduous species. This type does not occur extensively in Pakistan but there are limited areas in the Rawalpindi foothills carrying this type of vegetation. The spring is hot and dry but there is much rain in late summer up to 37 inches during the year.

- **Tropical thorn forests**: This type of forests is naturally growing over the whole of Indus plain except for the driest areas. In upper Indus plains these forests are known as Rakh forest while in lower Indus plains known as desert forests. They are most widespread in the Punjab plains, but these forests also occupy small areas in southern Sindh and western Baluchistan. Its annual temperature varies from 75 F to 80 F. Annual rainfalls in these areas is 30 inch to 5 inch which changes from year to year. The districts of Sialkot, Gujrat and Jhelum consist of this type of tropical thorn forests.
- **Sub-tropical broad-leaved evergreen forests**: These evergreen forests consist of branchy trees. These forests are small-leafed evergreen species. These trees and shrubs are mostly thorny and evergreen, but some other trees like olive and pomegranate are not thorny. This type occurs on the foothills and lower slopes of the Himalayas, the salt Range and the Sulaiman Range. These forests are found in Gujrat, Margallah hills, Attock and Malakand.

- **Sub-tropical pine forests**: Sub-tropical pine forests which are generally known as Chir pine forests have tree height up to 120 ft. These are open inflammable pine forest sometimes with, but often without a dry evergreen shrub layer and little or no underwood. These types of forests are generally found in Abbottabad, Kashmir, Dir and Swat.

- **Himalayan moist temperate forests**: The evergreen forests of conifers. Their undergrowth is rarely dense, and consists of both evergreen and deciduous species. These forests occur between 1500 m and 3000 m elevation in the Western Himalayas except where the rainfall falls below about 1000 mm. These forests are divided into a lower and an upper zone, in each of which definite species of conifers and oaks dominate. Mainly these are found in Murree, Kaghan, AJK and Nathiagali Shogran.

- **Himalayan dry temperate forests**: These forests are open evergreen forest with open scrub undergrowth. Both coniferous and broad-leaved species are present. The annual total rainfall is less than 30 inches. This type of forests is confined to hilly country and most it on steep rocky slope. Himalayan dry temperate forests occur on the inner ranges throughout their lengths and mainly represented in the north-west.

- **Sub-alpine forests**: Evergreen conifers and mainly evergreen broad-leaved trees occur in relatively low open canopy. Sub-alpine forests zone is topmost tree formation in Himalaya being developed between 11000 to 12000 feet on northern aspects. These forests receive appreciable amount of rainfall and snow. It is found in Kashmir, Dir, Swat, Chitral and Hazar.

- **Alpine scrub**: Under this type are included shrub formations 1 m to 2 m high extending 150 m or more above the sub-alpine forests. Alpine scrub zone consists of limited number of species. The stems are generally, flexible and adapted to snow pressure. These forests are present in Kashmir, Hazara, and Upper Dir.
4.4.2 Grass Lands
Grasslands are environments in which grasses and grass like plants dominate the vegetation. Grasslands develop wherever rainfall is not high neither too light. There are few trees in grasslands because the climate is too dry, or the soils are not of a good quality. Grasslands can therefore support a high density of grazing animals. Temperate grasslands are found where the summers are hot, the winters cold, and rainfall is low throughout the year. Tropical grasslands grow where temperature is relatively high during the year round and rainfall occurs seasonally. Many grass species can grow back quickly. Fire and herds of large grazing animals are the factors which are found in most grassland areas. The animal life is mainly depending upon the grassland.

4.5 AGRICULTURAL RESOURCES
Agriculture is a vital sector of Pakistan's economy. The Economy of Pakistan largely depends on its agricultural resources because it provides livelihood to millions of peoples. Pakistan’s agricultural sector accounts for about 70 percent of rural household income and nearly one-quarter of national GDP. In Pakistan, farm production is dominated by a few crops. The most important crops are wheat, sugarcane, cotton, and rice, which together account for more than 75% of the value of total crop output. Pakistan's largest food crop is wheat. Pakistan exports rice, cotton and fruits to the other countries. The government introduced agriculture assistance policies, including increased support prices for many agricultural commodities and expanded availability of agricultural credit for the farmers in order to get maximum agricultural output. Agricultural reforms, including increased wheat and oilseed production, play a central role in the government's economic reform package. Pakistan depends on one of the world's largest irrigation systems to support its forming.

4.5.1 Oil Seeds
Some seeds like seed of Mustard, Sunflower and Soybean are also very important cash crops but vegetable oil is mostly manufactured from the cotton seeds. These crops are helpful to strengthen the economy and to save a lot of foreign exchange for the country. Sunflower and mustard are the major oilseeds of Pakistan. The production of oilseeds can be greatly increased through government policy measures and technological developments. Oilseeds can also be grown profitably on fallow lands in Barani areas.

4.5.2 Livestock
Livestock is a subsector of Pakistan’s agriculture which contributes approximately 56% of value addition in agriculture and nearly 11% to the gross domestic
product (GDP). Livestock contribution towards agriculture sector is very significant where large scale mechanization has not taken place. Animals pull farming equipment’s and provide peoples with meat, milk and eggs. Cow dung is used as a fuel and fertilizers. Moreover, animals supply skin, wool and leather etc. In the Pakistani livestock sector, milk is the single most important commodity. The share of livestock in the agriculture sector is significant due to its overall contribution. It plays an important role in poverty reduction strategies, and this sector may be developed very quickly as all required inputs for this sector are available in adequate quantities in the country.

**SUMMARY**

This unit explained the natural resources of Pakistan. These resources are important for Pakistan because of its favorable geological environment. Pakistan has a widely geological framework that includes a number of zones hosting several metallic minerals, industrial minerals, precious and semi-precious stones. In the first section of this unit different types of mineral resources and their location has been explained. In the second section of this unit different water resource have been described. After this, Natural vegetation that comprises forests, shrubs and grasses, and also the climatic conditions and soil types of a country have been explained. In the last section of the unit agricultural resources that consist of different crops (wheat, rice, maize, cotton, sugarcane etc.) and livestock have been discussed in detail.

**SELF-ASSESSMENT QUESTIONS**

1. Explain the worldwide production of iron and steel industry.
2. Explain the suitable factors for the growth of natural vegetation.
3. Describe the worldwide production and distribution of iron ore.
4. Describe the worldwide production of coal.
5. Write a detail note on Uranium.
6. Write down the uses of Gold and its world wise production.
AGRICULTURAL RESOURCES OF PAKISTAN

Compiled by: Arifa Asia Batool
Reviewed by: Huss-Nul-Amin
### CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>79</td>
</tr>
<tr>
<td>Objectives</td>
<td>79</td>
</tr>
<tr>
<td>5.1 Evolution of Agriculture</td>
<td>80</td>
</tr>
<tr>
<td>5.2 Introduction to Agricultural Sector</td>
<td>81</td>
</tr>
<tr>
<td>5.3 Factors Affecting Agriculture</td>
<td>83</td>
</tr>
<tr>
<td>5.4 Agricultural Crops of Pakistan</td>
<td>85</td>
</tr>
<tr>
<td>5.5 Fruits and Vegetables</td>
<td>91</td>
</tr>
<tr>
<td>5.6 National Agriculture Research System of Pakistan</td>
<td>95</td>
</tr>
<tr>
<td>Summary</td>
<td>97</td>
</tr>
<tr>
<td>Self-Assessment Questions</td>
<td>98</td>
</tr>
</tbody>
</table>
INTRODUCTION

This unit will start with a brief history of agriculture sector that describes the domestication of plants and animals and the development of new techniques for raising the productivity. After this, the introduction of agriculture sector of Pakistan will be discussed in detail. Factors that not only affect the agricultural output but also the industrial sector will also be explained. Major agriculture crops that are sown in different regions of Pakistan and area, production and yield will be elaborated. Different Fruits and vegetables that are cultivated in Pakistan will be described. In the last section of unit, the National Agriculture Research system of Pakistan will be explained.

OBJECTIVES

After reading this unit, you will able:
1. to know about the history of agriculture sector.
2. to introduce the agriculture sector of Pakistan.
3. to elaborate the factors that affects agriculture sector.
4. to discuss major agriculture crops of Pakistan.
5. to highlights fruits and vegetables that are cultivated in Pakistan.
6. to explain National Agriculture Research system of Pakistan.
5.1 EVOLUTION OF AGRICULTURE

The history of agriculture records the domestication of plants and animals and the development of new techniques for raising the productivity. Agriculture began independently in different parts of the globe and included a diverse range of taxa. Wild grains were collected and eaten from at least 20,000 BC. From around 9,500 BC, the eight different crops included emmer wheat; einkorn wheat, hulled barley, peas, bitter vetch, chick peas, and flax were cultivated in the Levant (Middle East).

Rice was domesticated in China between 11,500 and 6,200 BC. In 7000 BC, many agricultural products like Sugarcane and some root vegetables were domesticated in New Guinea. Sorghum was domesticated in the Sahel region of Africa by 5,000 BC. The potato was domesticated in South America between 8,000 and 5,000 BC, along with beans, coca, llamas, alpacas, and guinea pigs. Bananas were also cultivated in the same period. Cotton was domesticated in Peru by 3,600 BC.

In the Middle Ages, both in the Islamic world and in Europe, agriculture sector transformed with improved techniques and introduced sugar, rice, cotton and fruit trees. After 1492, the Columbian exchange brought New World crops such as maize, potatoes, sweet potatoes to Europe, and Old World crops such as wheat, barley, rice, and turnips, and livestock including horses, cattle, sheep, and goats to the Americas.

Irrigation, crop rotation, and fertilizers were introduced soon after the Neolithic Revolution and developed much further in the past 200 years, starting with the British Agricultural Revolution. Since 1900, agriculture sector in the developed nations and in the developing world, has seen large rises in production of agricultural output as new innovations has been brought instead of human labour like mechanization, synthetic fertilizers, pesticides, and selective breeding. The
Green Revolution was doing series of research and development projects to introduce technology between the 1940s and the late 1970s. This revolution increased agriculture production around the world. Increased supply of grains has led to cheaper livestock as well. Further, in 20th century there was great increase in global yield when high-yield varieties of common staple grains such as rice, wheat, and corn were introduced as a part of the Green Revolution. The Green Revolution exported the technologies (including pesticides and synthetic nitrogen) to the developing countries. The Green Revolution was significantly increased rice yields in Asia. In the past 15 to 20 years the yield increases have not occurred.

In 1901, Dan Albone constructed the first commercially successful gasoline-powered general-purpose tractor. Later, in 1923, there were replacements of draft animals with machines by introducing International Harvester Farm all tractor. Since that time, self-propelled mechanical harvesters, planters, Tran’s planters and other equipment have been developed for further development of agriculture sector. These inventions allowed the farmers to fulfill all tasks with a speed and on a large scale leading modern farms to output much greater volumes of high-quality produce per land unit.

5.2 INTRODUCTION TO AGRICULTURE SECTOR

Pakistan has rich and vast natural resources that cover different climatic regions. Pakistan has potential for producing all types of food commodities. For economic development and growth agriculture sector play an important role. Agriculture sector is providing food to the consumers and fibers and other raw material to and it is also a source of foreign exchange earnings. Agriculture constitutes the largest sector of our economy. It contributes 24 percent of gross domestic product (GDP).

To make agriculture more effective in supporting higher economic growth and to reduce poverty level in Pakistan, a policy framework is required with favorable socio-political climate and adequate governance. In order to improve farm level practices and to develop links of farmers with markets and industry, government need to barrow new technologies for the farmer in order to sustainable growth of Agro industry. Agriculture sector has traditionally achieved a satisfactory growth level to ensure food security for growing population. Major problem that the farmer has been faced is that of low returns to farmers because of higher cost of production. The total geographical area of Pakistan is 79.6 million hectares. About 27 percent of this area is currently under cultivation. Of this area, 80 percent is irrigated. The cultivable waste land area offers good possibilities for production of crops. Pakistan is classified as arid to semi-arid because rainfall is not enough to grow agricultural crops, forests and fruit plants and pastures. Agriculture is largely dependent on artificial means of irrigation of the total
cultivated area, about 82 percent or around 17.58 million hectares is irrigated, while crop production in the remaining 3.96 million hectares depends mainly upon rainfall. In Pakistan, the best area of agricultural production is Punjab. Its soil is very fertile, and its irrigation system is very fine.

About 50 years ago, agricultural sector was not considered as a commercial sector for economic development in many developing and developed nations. During the last 50 years this sector is realized as a major productive sector of Pakistani economy. 61 percent population is living in more than 50000 villages in Pakistan. The government is currently focusing to develop mechanisms for minimizing cost of production to increase farmer’s interest in agriculture and livestock. As a policy, the government provides infrastructure support to agro-processors in order to provide job opportunities for growing young population. During 2016-17 performance of the agriculture sector remained up to the mark and achieved growth of 3.46 percent against the target of 3.5 percent. This was possible by better harvesting of major crops through greater availability of agriculture inputs like water, agriculture credit and intensive fertilizers.

**Pakistan Economic Survey 2016-17**

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Pakistan has two crop seasons, "Kharif” being the first sowing season starting from April-June and is harvested during October-December. Rice, sugarcane, cotton; maize, moong, mash, bajra and jowar are “Kharif” crops. "Rabi”, the second sowing season, begins in October-December and is harvested in April-May. Wheat, gram, masoor, tobacco, barley and mustard are "Rabi" crops. Pakistan’s agricultural production is closely linked with the availability of irrigation water. During 2016-17, the availability of water for Kharif 2016 stood at 71.4 million-acre feet and During Rabi season the water availability remained at 29.7 million-acre feet.
5.3 FACTOR AFFECTING AGRICULTURE

Agriculture is the support of Pakistan’s economy. It thus plays central role in national development, food security and poverty reduction. The rapid growth of Pakistan’s urban areas indicates that demand for high-value perishable products such as fruits, vegetables, dairy, and meat is rising. Management and control of research resources and information throughout the agricultural research system is weak. It is an activity in which nature and man are involved. The role of man is to sow the seed and nature germinates that seed. In the same way man and nature can affect the agricultural produce. Many other factors can also affect the agriculture which is:

5.3.1 Natural Factors
Agricultural activities are not uniform due to the natural factors. Due to these factors agricultural output can be affected. Natural factors are climate, soil and topography.

5.3.1.1 Climate
The most important factor that controls agriculture is climate. Different types of agricultural output are depending on the climatic condition of a region. Areas where there is a deficiency of heat are also deficient in agricultural produce. Temperature is an element that has significant impact on agricultural output. It can determine the growth of natural vegetation. Every crop required a certain temperature for its growth and development. For example, if temperature exceeds a crop's optimal level, if sufficient water and nutrients are not available, yield increases may be reduced or reversed it the same time rainfall also affects crop productivity.

5.3.1.2 Soil
The second factor that affects agriculture is soil, because there is great difference of various agricultural crops in the world due to change in soil. A rich soil for plantation of different crops is the chief requirement of successful agriculture. Soils that are poor in texture have low productivity. It produces agriculture output of poor quality and variety.

5.3.1.3 Topography
Topography also effects agriculture as it relates to soil erosion and poor transportation facilities. Agricultural crops are mainly depending on the topography of land. On hilly and rough areas, the use of agricultural machinery is not possible. In hilly areas, the barren land can be changed into plain land for cultivation of different crops by using new techniques and methods.
5.3.2 Economic Factor

Agricultural activities are affected by Economic factors which are as follows.

5.3.2.1 Transportation Facilities
Road transport plays an important role in agricultural development. Transport is a crucial that can improve agricultural productivity. It enhances quality of life of the people, creates market for agricultural produce and can facilitate interaction among geographical and economic regions. Through transport agricultural output can be sent to the warehouses and markets so its role in agriculture is very significant.

5.3.2.2 Markets
Markets are the context, both physical and conceptual, where exchange takes place. Market will generally affect the competitive power of the agricultural output. Places near large centers of population generally develop market. Perishable goods can be transported to the market for short distances without much damage. Large bulk of agriculture production can be transported to the markets, where there is large number of buyer.

5.3.2.3 Labour
Agriculture sector requires skilled labour that is efficient for productive activities. A skilled labour can easily judge the suitable season and soil for the cultivation of different crops. Agricultural labour can determines the timely sowing, harvesting and other practices that ensure favorable return. So without labour the agriculture growth cannot be possible.

5.3.2.4 Capital
Capital is main factor that is essential in agriculture. The modern farming technique has become capital-intensive. The farmer has to invest large amount of capital in agriculture, so he can buy agriculture machinery, fertilizers and chemicals which is not possible without money.

Social Factors
Social factors affect farming in a number of ways. The type of farming practiced is always related to regional social structure. Social factors can also affect the type of crops that are grown. Social factors include:

- **Inheritance of land**: In many parts of the world the land of father is divided between his children. This will lead to the breaking of small farms into smaller units which affect the productivity.
- **Lack of agricultural education**: Uneducated farmers affect the agricultural output due to unawareness about newly scientific methods and use of modern technology.
• **Size of holdings:** Size of holdings is the factors that affect the farming system. Small size of holdings affects the efficiency of production and on a large scale, it is impossible for small size of holding to use machinery.

• **Political Factors:** Political factors also play a vital role in agricultural development. The political system, i.e., capitalistic, communist or socialistic system determines the pattern of agriculture.

• **Encouragement from government:** The government policies regarding land, irrigation, marketing and trade, etc., have a direct impact on agriculture. Government facilities can help the farmer for the improvement of agriculture production.

• **Security of farmer’s right:** Government should protect the rights of farmers under law, so that they may work with more interest

### 5.4 AGRICULTURAL CROPS OF PAKISTAN

In Pakistan, farm production is dominated by a few crops which account for almost 60 percent of GDP from agriculture. The most important crops are wheat, sugarcane, cotton, and rice, which together account for more than 75% of the value of total crop output. Cropping systems vary widely because of variations in agro-climatic and soil conditions. Wheat is the major winter crop in all regions of the country. In summer, rice, cotton, and maize are grown in areas suitable for their production. The economic significance of different major crops is briefly described in the following paragraphs.

#### 5.4.1 Wheat

Wheat is the leading food grain of Pakistan. Wheat is a grassy shaped plant and its height between 2.5 feet to 4 feet. When it is cultivated its growth start and the number of grains on a plant depends upon the quality of seed, climatic condition and fertility of soil. Wheat is cultivated almost all regions of Pakistan and it occupies an important position in the crops of moderate regions as compared to other crops. Wheat is cultivated thousands of years ago and in the beginning it was cultivated in the western Asian countries and in Nile, Sindh and Dajla valley. In our country wheat is produced on large scale.

For the cultivation of wheat loamy soil having proper quantity of sand and clay is very suitable. Wheat production requires suitable temperature at the time of plantation of the crop i.e. \(50^\circ\) to \(60^\circ\) F. The temperature rises up to \(70^\circ\) F at the time of plantation which is harmful for the plant and its growth. The areas having 20” to 30” rainfall are more suitable for wheat plantation. Wheat accounts for 9.6 percent of the value added in agriculture and 1.9 percent of GDP of Pakistan. During 2016-17, sown on an area of 9052 thousand hectares that show a decrease of 1.9 percent compared to 9224 thousand hectares during same period last year.
Wheat production was estimated at 25.750 million tons during 2016 showing an increase of 0.5 percent over the last year’s production of 25.633 million tons. The production increased due to better supply of inputs which contributed in enhancing per hectare yield.

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hectares)</th>
<th>% Change</th>
<th>Production (000 Tonnes)</th>
<th>% Change</th>
<th>Yield (Kgs/Hec.)</th>
<th>% Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>8,660</td>
<td>-</td>
<td>24,211</td>
<td>-</td>
<td>2796</td>
<td>-</td>
</tr>
<tr>
<td>2013-14</td>
<td>9,199</td>
<td>6.2</td>
<td>25,979</td>
<td>7.3</td>
<td>2824</td>
<td>1.0</td>
</tr>
<tr>
<td>2014-15</td>
<td>9,204</td>
<td>0.1</td>
<td>25,086</td>
<td>-3.4</td>
<td>2726</td>
<td>-3.5</td>
</tr>
<tr>
<td>2015-16</td>
<td>9,224</td>
<td>0.2</td>
<td>25,633</td>
<td>2.2</td>
<td>2779</td>
<td>1.9</td>
</tr>
<tr>
<td>2016-17(P)</td>
<td>9,052</td>
<td>-1.9</td>
<td>25,750</td>
<td>0.5</td>
<td>2845</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Source: Pakistan Bureau of Statistics

5.4.2 Rice
Rice is also an important element of human diet. Pakistan does not receive enough rainfall for the growth of rice. The areas which receive comparatively more rain are favored for the cultivation of rice. Rice is not grown as widely as wheat in Pakistan. The grassy shaped rice plant is produced mostly in the areas having of hot and moist climate. At the time of sowing, the temperature should not be less than 70°F but at the time of cultivation if the temperature increases from 80°F to 90°F there is no harm at all. Rice is a plant of water, so the areas where annual rainfall is less than 40” cannot be carried out for cultivation without irrigation.
system. As the plant grow the requirement of water increases. For cultivation of rice alluvial clay soil is best and suitable.

Rice share in agriculture sector is 3.0 percent and 0.6 percent of GDP. During 2016-17, rice crop was shown on area of 2724 thousand hectares showing a decrease of 0.6 percent over the last year’s area of 2793 thousand hectares. Production of rice decreased due to decline in domestic prices of rice which reduced the area under the crop and growers shifted to sugarcane and maize crop.

### Area, production and yield of rice

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hectare)</th>
<th>% Change</th>
<th>Production (000 Tonnes)</th>
<th>% Change</th>
<th>Yield (Kg/Hect)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>2,309</td>
<td>-</td>
<td>5,536</td>
<td>-</td>
<td>2,398</td>
<td>-</td>
</tr>
<tr>
<td>2013-14</td>
<td>2,759</td>
<td>20.8</td>
<td>6,798</td>
<td>22.8</td>
<td>2,437</td>
<td>1.6</td>
</tr>
<tr>
<td>2014-15</td>
<td>2,891</td>
<td>3.7</td>
<td>7,003</td>
<td>3.0</td>
<td>2,422</td>
<td>0.6</td>
</tr>
<tr>
<td>2015-16</td>
<td>2,739</td>
<td>-5.3</td>
<td>6,801</td>
<td>-3.9</td>
<td>2,483</td>
<td>2.5</td>
</tr>
<tr>
<td>2016-17</td>
<td>2,724</td>
<td>-0.6</td>
<td>6,849</td>
<td>0.7</td>
<td>2,514</td>
<td>1.2</td>
</tr>
</tbody>
</table>

**Rice production in tons**

5.4.3 Maize  
Maize being the highest yielding cereal crop in the world and it is a plant of tropical regions. In Pakistan maize is third important cereal after wheat and rice. In Pakistan, maize crop is sown mainly in two seasons; spring and the autumn season. Spring maize can be planted in the first week of February up to first week of March while the sowing time for autumn maize starts from the last week of July and ends in mid of August. Maize can be sown on both flat soils as well as on the ridges. Ridge sowing is better for water saving. The most suitable soil for cultivation of maize is fertile soil. Maize has prospective to play major role in nutrition of Pakistani people. It can act as the alternate food source when the
conventional cereal grains are deficient. The maize cultivation does not require abundant rainfall. The areas where the rain is approximately 20” annually are suitable for its cultivation.

Maize contributes 2.7 percent in agriculture sector and 0.5 percent to GDP. During 2016-17, the cultivation of maize has increased to 1334 thousand hectares, showing a significant increase of 12.0 percent over last year’s. The record production has been achieved through the use of critical agricultural inputs (fertilizers) with an increase in area sown.

### Area, production and yield of Maize

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hectares)</th>
<th>% Change</th>
<th>Production (000 Tonnes)</th>
<th>% Change</th>
<th>Yield (Kg/He)</th>
<th>% Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>1,060</td>
<td>-</td>
<td>4,220</td>
<td>-</td>
<td>3,981</td>
<td>-</td>
</tr>
<tr>
<td>2013-14</td>
<td>1,168</td>
<td>10.2</td>
<td>4,944</td>
<td>17.2</td>
<td>4,233</td>
<td>6.3</td>
</tr>
<tr>
<td>2014-15</td>
<td>1,142</td>
<td>-2.2</td>
<td>4,937</td>
<td>-0.1</td>
<td>4,323</td>
<td>2.1</td>
</tr>
<tr>
<td>2015-16</td>
<td>1,191</td>
<td>4.3</td>
<td>5,271</td>
<td>6.8</td>
<td>4,426</td>
<td>2.4</td>
</tr>
<tr>
<td>2016-17(P)</td>
<td>1,334</td>
<td>12.0</td>
<td>6,130</td>
<td>16.3</td>
<td>4,595</td>
<td>3.8</td>
</tr>
</tbody>
</table>

### Maize production in Thousand tons

#### 5.4.4 Sugarcane

Sugarcane is an important cash crop of Pakistan. It is mainly grown for sugar and sugary production. It is an important source of income and employment for the farming community of the country. It is grown in tropical and sub-tropical regions of the world in a range of climates from hot dry environment near sea level to cool and moist environment at higher elevations. Pakistan occupies an important
position in cane producing countries of the world. It ranks at the fifth position in cane acreage and production and almost 15th position in sugar production.

The goal of increasing sugar yield per unit area is difficult, time consuming and needs dedicated efforts of government, millers and the growers. Some of the measures to bring down the cost of cultivation and improve cane productivity include the selection of the right varieties, maintenance of soil health fertility, quality planting material, nutrient management, adoption of cropping systems approach, water management according to the scientists. It also forms essential item for industries like sugar, chip board, paper, barrages, and uses in chemicals, plastics, paints, synthetics, fiber, insecticides and detergents.

During 2016-17, the production of sugarcane reached to historical high of 73.6 million tones showing an increase of 12.4%. Its production accounted for 3.4 percent in agriculture’s value addition and 0.7 percent in overall GDP. The production increased due to increase in area cultivated as it shifted from other competitive crops facing frequent distress.

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hect.)</th>
<th>% Change</th>
<th>Production (000 Tonne)</th>
<th>% Change</th>
<th>Yield (Kg/ Hect.)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>1.129</td>
<td>-</td>
<td>63.750</td>
<td>-</td>
<td>56.466</td>
<td>-</td>
</tr>
<tr>
<td>2013-14</td>
<td>1.173</td>
<td>3.9</td>
<td>67.460</td>
<td>5.8</td>
<td>57.511</td>
<td>1.8</td>
</tr>
<tr>
<td>2014-15</td>
<td>1.141</td>
<td>-2.7</td>
<td>62.826</td>
<td>-4.9</td>
<td>55.062</td>
<td>-4.3</td>
</tr>
<tr>
<td>2015-16</td>
<td>1.131</td>
<td>-0.9</td>
<td>65.482</td>
<td>4.2</td>
<td>57.897</td>
<td>5.1</td>
</tr>
<tr>
<td>2016-17(P)</td>
<td>1.217</td>
<td>7.6</td>
<td>73.607</td>
<td>12.4</td>
<td>60.428</td>
<td>4.4</td>
</tr>
</tbody>
</table>
5.4.5 Cotton
Cotton is called the plant of warm temperate regions. Cotton is known as a king of all the natural fibers. It is said, the man uses cotton cloth from his birth to death. Cotton is known as silver fiber. Mostly the color of cotton fiber is white. The cultivation of cotton requires sufficient quantity of lime, potash and nitrogen in the soil while in desert areas its plantation is impossible. The areas where there is 30 to 40 inches annually rainfall are suitable for its cultivation. Cotton crop is sown in the month of April or May and the temperature required range from 77°F to 90°F. Frost, moist and snow falling is not suitable for a good crop. Cotton cultivated in Pakistan is divided into Desi and American kind. The government has set up two research centers at Multan and Tando Jam to increase the production of cotton. These centers made recommendations to use different kinds of cotton after analysis and experimentation. Government has persuaded the farmers to plant new varieties of cotton seed.

During 2016-17, Cotton production was estimated at 10.671 million bales, 7.6 percent increase over the production of 9.917 million bales during 2015-16. Cotton crop has 1.0 percent share in GDP and contributes 5.2 percent in agriculture sector.

### Area, production and Yield of Cotton

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (000 Hectare)</th>
<th>% Change</th>
<th>Production (000 Bales)</th>
<th>% Change</th>
<th>Yield (Kgs/He)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>2,879</td>
<td>-</td>
<td>13,031</td>
<td>-</td>
<td>769</td>
<td>-</td>
</tr>
<tr>
<td>2013-14</td>
<td>2,806</td>
<td>-2.5</td>
<td>12,769</td>
<td>-2.0</td>
<td>774</td>
<td>0.6</td>
</tr>
<tr>
<td>2014-15</td>
<td>2,961</td>
<td>5.5</td>
<td>13,960</td>
<td>9.3</td>
<td>802</td>
<td>3.6</td>
</tr>
<tr>
<td>2013-16</td>
<td>2,502</td>
<td>-2.0</td>
<td>9,917</td>
<td>-29.0</td>
<td>582</td>
<td>-27.4</td>
</tr>
<tr>
<td>2016-17(P)</td>
<td>2,489</td>
<td>-14.2</td>
<td>10,671</td>
<td>7.6</td>
<td>730</td>
<td>25.4</td>
</tr>
</tbody>
</table>

Cotton production in thousand bales
5.5 FRUITS AND VEGETABLES

Fruits and vegetables constitute important items of food. In farming system, every farmer desires to be self-sufficient in food, including fruits and vegetables. Punjab is the producer of most of its fruits. Punjab producing 54 percent, Sindh 16 percent, Baluchistan 22 percent and KPK 8 percent fruits. Pakistan produces tropical fruits named citrus fruits, mangoes, bananas and dates etc.

Different vegetables are also cultivated in different regions of Pakistan. Furthermore, climatic and soil condition do not permit every farmer to cultivate a piece of land for vegetables. About 85 percent of potato grown in Punjab province and Tomato is another important vegetable. About 15 percent of tomatoes come from Punjab, 40 percent from KPK, 25 percent from Sindh and 20 percent from Baluchistan. Other vegetables include lady fingers, bitter gourd, pumpkin, beans, radish, spinach, cabbage, sweet potatoes etc. are cultivated in different areas of Pakistan.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mango</td>
<td>1503213</td>
<td>1304223</td>
<td>1280211</td>
<td>1251967</td>
<td>1313612</td>
</tr>
<tr>
<td>Banana</td>
<td>8217</td>
<td>4500</td>
<td>3568</td>
<td>2128</td>
<td>1673</td>
</tr>
<tr>
<td>Apple</td>
<td>3534</td>
<td>3541</td>
<td>3545</td>
<td>3545</td>
<td>3506</td>
</tr>
<tr>
<td>Pomegranate</td>
<td>13304</td>
<td>11859</td>
<td>11038</td>
<td>10325</td>
<td>9762</td>
</tr>
<tr>
<td>Guava</td>
<td>420091</td>
<td>377555</td>
<td>379389</td>
<td>375080</td>
<td>373007</td>
</tr>
<tr>
<td>Apricot</td>
<td>227</td>
<td>253</td>
<td>241</td>
<td>246</td>
<td>247</td>
</tr>
<tr>
<td>Peach</td>
<td>363</td>
<td>220</td>
<td>188</td>
<td>202</td>
<td>192</td>
</tr>
<tr>
<td>Plums</td>
<td>262</td>
<td>202</td>
<td>202</td>
<td>196</td>
<td>172</td>
</tr>
<tr>
<td>Dates</td>
<td>42533</td>
<td>44170</td>
<td>43634</td>
<td>43850</td>
<td>44041</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ladyfinger</td>
<td>107453</td>
<td>102577</td>
<td>110114</td>
<td>108426</td>
<td>112983</td>
</tr>
<tr>
<td>Brinjal</td>
<td>84707</td>
<td>85965</td>
<td>91126</td>
<td>84149</td>
<td>82999</td>
</tr>
<tr>
<td>Bitter gourd</td>
<td>53728</td>
<td>55729</td>
<td>58730</td>
<td>57190</td>
<td>56949</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>41458</td>
<td>44530</td>
<td>47925</td>
<td>41973</td>
<td>40292</td>
</tr>
<tr>
<td>Beans</td>
<td>1507</td>
<td>1571</td>
<td>1803</td>
<td>2494</td>
<td>2274</td>
</tr>
<tr>
<td>Radish</td>
<td>172326</td>
<td>174089</td>
<td>170366</td>
<td>168257</td>
<td>160265</td>
</tr>
<tr>
<td>Carrot</td>
<td>241580</td>
<td>235935</td>
<td>90998</td>
<td>251054</td>
<td>227075</td>
</tr>
<tr>
<td>Cabbage</td>
<td>74282</td>
<td>73137</td>
<td>76778</td>
<td>77159</td>
<td>77233</td>
</tr>
<tr>
<td>Sweet potato</td>
<td>13459</td>
<td>13658</td>
<td>13076</td>
<td>12130</td>
<td>11102</td>
</tr>
<tr>
<td>Peas</td>
<td>98171</td>
<td>104995</td>
<td>113067</td>
<td>114925</td>
<td>139233</td>
</tr>
</tbody>
</table>
5.5.1 Vegetables
Vegetables offer good value in terms of nutrients. Varied agro-climatic conditions prevailing in different provinces of the country also contribute to year round production of different kinds of vegetables with many overlaps of supply. The major vegetable grown in the country are potato, onion, chilies, tomato, turnip, okra carrot, cauliflower peas and tinda gourd covering 75% of the total area under vegetables accounting for 74% of the total production. The major share in the production is of Punjab (63%) followed by Sindh (14%), Baluchistan (12%) and KPK (11%).

Potato: Potato is grown under diverse seasons in various provinces. The autumn-sown potato is the major crop and contributes 60% to the total production in the county. It is sown in September-October and harvested in December-January. The autumn and spring crops are grown in Punjab and KPK only, whereas the hill crop is sown in Punjab, KPK and Baluchistan. The diversity in growing season of potato in different agro-ecological regions makes it possible to ensure supplies to the domestic consumers throughout the year. The spring and summer crops each contribute 20% to the total production.

Onion: Onions are grown over a number of seasons in the country. Pakistan annually produces about 1.5 million tons of onions, with an increasing trend during the past 6 years. In Sindh planting of onion starts in autumn and ends up to mid of January. About 30% of the total crop is planted in autumn and remaining 70% in winter. Onion is the most valuable crop for Malakand division. Within this region 50% comes from Swat, 28% from Dir and 4% from Malakand Agency.

Tomato: Tomato is widely used in various dishes and as salad. Out of its production, 38% is contributed by each of KPK and Baluchistan provinces, and 15% and 9% by Punjab and Sindh, respectively. Tomato is grown most of the year in some parts of the county. In the hot-wet season, production shifts from lowlands to the relatively cooler and dryer highlands. Because high land production areas are limited, tomato supply dwindles in the wet season resulting in drastic price increases.

Cauliflower: Cauliflower has a seasonal supply pattern. Summer supplies come from Abbottabad, prior to the autumn crop from Punjab and Peshawar. There is very little supply during May to July period. The opportunity for increased cauliflower production during early summer should be exploited. In Sindh seedlings of early varieties of cauliflower are raised during May to August and are transplanted from early July to September. Seedlings of imported varieties are raised in the months of September to October and transplanting is done in October and November.
**Chillies:** The production of chilies has resulted in the raising of 85% of total production from Sindh. Punjab produces 12% and Baluchistan 3%. There is a lack of taste for chilies in KPK, so there is little interest in its production in the northwestern region. About 80% of the production comes in autumn and 20% in spring.

**Turnip:** Turnip trade is dominated by large winter supplies with smaller volumes supplied during summer. In Punjab and KPK plains, it is extensively cultivated in Swat, mainly Kalam and to a lesser extent Malam supplies alone during the early part of the summer. In the late summer the crop comes from other hill areas particularly Mansehra and Parachinar. Turnips receive relatively good prices in the mid-summer period and continue till the start of the regular supply season.

**5.5.2 Fruits**

**Orange:** Pakistan is the sixth largest producer of Kinow (mandarin) and oranges in the world, with 2.1 million tons. Pakistan world mandarin and oranges market share during the year 1997 was 0.9 percent and 3.6 percent in terms of value and volume respectively. Pakistan is also the largest producer of ‘Citrus Reticula’ variety (Kinow), this unique variety of citrus is indigenous to this part of the world. According to an estimate approx. 95 percent of the total Kinow produced all over the world is grown in Pakistan.

The soil and climatic conditions in Pakistan have given the Kinow a unique flavor which distinguishes it from other comparable mandarins grown in the world. An ideal condition for growing kinow includes abundance of water, rich nitrogen content in the soil and relatively cool weather. Winter in the plains of Punjab province provides an excellent atmosphere for this fruit and the resulting fruit is sweet and has a very distinct taste.

**Mango:** Pakistan produces over 150 varieties of mango. Mango is the fruit par excellence of Subcontinent. Pakistan is an important mango growing country in the world. The soil and climatic conditions of Pakistan are highly suitable for mango cultivation. According to FAO production year book of 2001, Pakistan stands 5th among mango growing countries of the World. Mango enjoys second position after citrus in Pakistan.

It is grown in the province of Punjab over an area of 48413 hectares out of 94121 hectares in the country (MINFAL 99- 2000). Most of the remaining acreage is planted in Sindh. At present, (2015-16) the total annual production of fruits in Pakistan is 6.57 million tons, of which only 674 thousand tones were exported in 2015-16. Even if all of this production reaches to the consumers, per head per day
availability of fruit is meagre 114 grams. Fresh and processed fruits and vegetables export make up less than 1 percent of Pakistan’s total export. That is a matter of concern when the need for diversification of export is badly felt. The mango from Pakistan is well known for its taste and quality abroad. More than 53,000 tons of mangos is exported to neighboring and European countries, i.e. Afghanistan, Bahrain, Dubai, Kuwait, Saudi Arabia, United Kingdom, France, Malaysia and Singapore etc. fetching foreign exchange. Langra, Dusehri, Samar Behisht, Chaunsia, Anwar Ratol are important varieties grown in Punjab. Sindhri, Bagan Pali, Suwarneka, Neelum and Gulab Khas are leading ones from Sindh.

**Watermelon:** It is all time favorite fruit for most Pakistanis especially because of its sweet and refreshing quality to combat the deadly heat. And the feeling one gets if given the middle part, without the seeds, is quite invigorating.

**Falsay:** The fruit is low in sodium, fat and rich in Vitamin C and plays role in curing some fatal diseases and are said to be good for heart. It is a shrub or small tree growing to 8 m tall. The leaves are broadly rounded, 5–18 cm long and broad. The fruit is an edible drupe 5–12 mm diameter, purple to black when ripe.

**Peaches:** Peaches are believed to be the "Queen" of fruits and have the very next position after the apples in popularity. Fresh peach is comprised of very healthy nutrient. It has a rich source of vitamins A and C and also contains potassium and fiber. The Peach season usually starts in May and continues till the first week of September. In Pakistan the environment is quite favorable for Peach production.

Peach is a traditional crop of Khyber Pakhtunkhwa province. Peach is regarded as one of the most admired fruit grown in Khyber Pakhtunkhwa, Swat, Balochistan and the northern areas of Pakistan including Peshawar, Parachinar, Chitral, Hazara, Quetta, Pashin, Ziarat, Mastung, Skardu, Hunza and Murree hills. Due to its delicious flavor and high demand, farmers not only meet the local requirement but also aimed at foreign markets for export.

**Jamun:** Native to the Subcontinent, Jamun, when sprinkled and shaken up in black salt are so delectable that they’re hard to put down until the whole bowl is finished. The fruit has a combination of sweet, mildly sour and astringent flavor and tends to color the tongue purple. The seed is also used in various alternative healing systems like Ayurveda (to control diabetes, Unani and Chinese medicine for digestive ailments.
The pulp of the fruit extracts from the bark and seeds is of great benefit when it comes to lowering of blood glucose level. Taking dried extract of the seeds orally, greatly reduces the blood sugar and glucosuria. The leaves and bark are used for controlling blood pressure and gingivitis. Wine and vinegar are also made from the fruit. It has a high source in vitamin A and vitamin C.

5.6 NATIONAL AGRICULTURE RESEARCH SYSTEM OF PAKISTAN

At present, Pakistan’s agricultural research system is organized and managed at a level where research is required for maintenance of agriculture sector and to increase crops yields and livestock production in future. In economy of Pakistan, the production and productivity growth of agriculture sector are not keeping pace with the past growing rates. For the growth of Pakistan agriculture research system, the gap between food and fiber supply and that of food and fiber demand in the future should be good.

In 1991 with the assistance of World Bank, the agriculture research (ARP-II) project was launched to improve the research planning and coordination in Pakistan agriculture research system. The principal goal of this project was to prepare a National Master Agricultural Research Plan (NMARP). National Master Agricultural Research Plan was completed in 1997 that embodies the Pakistan Agricultural Research Council (PARC) institutional long-term plans along with provincial research master plans (PRMPs) which were completed by each province. The objective of this project was to:

(i) Review the reasons why Pakistan’s agricultural research systems needs to be revitalized.
(ii) Review the present status of the Pakistan agricultural research system.
(iii) To find out the problems that Pakistan agriculture research system has faced.
(iv) To conclude future agenda for Pakistan’s agricultural research system that is based on the findings of the National Master Agricultural Research Plan.

Pakistan agricultural research system is organized at both the federal and provincial levels. There were 74 research establishments at the federal level and 106 research institutions at the provincial level in 1990. Many agricultural universities also conduct research in Pakistan. Pakistan agriculture Research Corporation is the body that conduct, coordinates and promote research. The research conducted at the federal level has been both applied and adaptive with some long-term priority research.
Expenditure on agricultural and livestock research was reported to be Rs 742 million in 1988-89. In 1992-93 these expenditures was rose up to Rs 1,099 million. The latest budget allocations for agricultural research in Pakistan for 1996-97 and the current funding environment for agricultural research in Pakistan indicate that it may be difficult to keep future funding levels, in real terms, from decreasing.

The **Pakistan Agricultural Research Council** (PARC) is in Islamabad, Pakistan. Pakistan Agricultural Research Council is an agricultural research organization at the national level. Its main objective is to strengthen Pakistan's agricultural research system, comprising the federal and provincial components.

PARC has seven major research establishments in Pakistan conducting research according to the agro-ecological needs of the regions.

- National Agricultural Research Centre (NARC)
- Southern Zone Agricultural Research Centre (SARC)
- Arid Zone Research Centre (AZRC)
- National Tea Research Institute (NTRI)
- Sugar Crops Research Institute (SRI)
- Himalayan Agricultural Research Institute (HARI)
- Mountain Agricultural Research Center (MARC)
SUMMARY

Agriculture constitutes the largest sector of our economy. Majority of the population directly or indirectly involved and dependent on this sector. It contributes about 24 percent of Gross Domestic Product (GDP) and accounts for half of employed labor force and is the largest source of foreign exchange earnings. The first section of this unit discusses, evolution of agriculture sector that includes plantation of different crops, introduce technological advancement and domestication of animals etc.

In the second section a brief introduction to agriculture sector has been given. Pakistan is the sixth largest producer of Kinow (mandarin) and oranges in the world, with 2.1 million tons. Pakistan world mandarin and oranges market share during the year 2019 was 2.48% and 4.6% in terms of value and volume respectively. After this, the factor that affects agriculture sector has been explained. Major agriculture crops which are cultivated in different climatic regions of Pakistan have been explained. Fruits and vegetables that are sown in different weather conditions have also been elaborated. In the last section of the unit, the National Agriculture Research System of Pakistan has been explained.
SELF-ASSESSMENT QUESTIONS

1. Define agriculture and explain the suitable physical and nonphysical factors for the growth of agriculture.

2. What are the affecting factors of agriculture in Pakistan?

3. Describe the suitable factors for the cultivation of wheat crop and explain the worldwide production?

4. Explain the National Agriculture Research System of Pakistan.

5. Write a detail note on Fruits and Vegetables.

6. Describe the suitable factors for the vegetative growth of rice crop and explain its production in Pakistan.
TRANSPORTATION AND COMMUNICATION CHANNELS

Compiled by: Arifa
Asia Batool

Reviewed by: Huss-Nul-Amin

99
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>101</td>
</tr>
<tr>
<td>Objectives</td>
<td>101</td>
</tr>
<tr>
<td>6.1 Introduction to Transportation</td>
<td>102</td>
</tr>
<tr>
<td>6.2 Means of Transportation</td>
<td>102</td>
</tr>
<tr>
<td>6.2.1 Land Transportation</td>
<td>103</td>
</tr>
<tr>
<td>6.2.2 Water Transportation</td>
<td>108</td>
</tr>
<tr>
<td>6.2.3 Air Transportation</td>
<td>112</td>
</tr>
<tr>
<td>6.3 Importance of Transportation</td>
<td>115</td>
</tr>
<tr>
<td>6.4 Introduction to Communication</td>
<td>116</td>
</tr>
<tr>
<td>6.5 Means of Communication</td>
<td>117</td>
</tr>
<tr>
<td>6.6 Role of Telecommunication in Economic Development</td>
<td>119</td>
</tr>
<tr>
<td>6.7 Logistics</td>
<td>119</td>
</tr>
<tr>
<td>Summary</td>
<td>122</td>
</tr>
<tr>
<td>Self-Assessment Questions</td>
<td>122</td>
</tr>
</tbody>
</table>
INTRODUCTION

In the previous unit the natural resources of Pakistan have been discussed and in this unit transportation and communication will be described in detail. Transportation is the movement of goods and people from one part of a country to another. Transport is important because it enables trade between people, which is essential for the economic development of a country. This unit will explain the concept of transportation and its role in flourishing economic conditions of the country. The various modes of transportation (land, water and air) will be elaborated in detail. Similarly, the communication plays an important role in the economic and social development of a country. This unit will also explain the critical role of communication networks in the development of trade in Pakistan.

OBJECTIVES

After reading this unit, you will be able

1. to understand the concept of transportation and telecommunication.
2. to know the means of transportation
3. to know the importance of transportation
4. to know the modern electronic media and its role in the development and progress of a country.


6.1 INTRODUCTION TO TRANSPORTATION

Transportation is the movement of humans, animals and goods from one part of a country to another. Transport is important, because it enables trade between people, which is essential for the economic development of a country. The Transportation network is directly linked with country’s economic development because trade is possible through modern transportation.

The Transport infrastructure consists of roads, railways, airways, waterways, canals and terminals such as airports, railway stations, bus stations, warehouses, and seaports. The Transport acts as a bridge between producer and consumers, the distance between goods and market decreases due to transportation. Due to undeveloped means of transportation, the prices of commodities increased in local market. Transportation does not affect only the economic field but also affects the political, social and historical spheres of life.

Humans' first means of transport involved walking, running and swimming. Inventions such as the wheel and the sled helped make animal transport more efficient through the introduction of vehicles. The water transport, including rowed and sailed vessels, dates back to time immoral and was the only efficient way to transport large quantities or over large distances prior to the Industrial Revolution.

The Industrial Revolution in the 17th century saw a number of inventions fundamentally change transport. With telegraphy, communication became instant and independent of the transport of physical objects. The invention of the steam engine, closely followed by its application in rail transport, made land transport independent of human or animal muscles. Both speed and capacity increased rapidly, allowing specialization through manufacturing being located independently of natural resources. The 19th century also saw the development of the steam ship, which sped up global transport. With the development of the combustion engine and the automobile around 1900, road transport became more competitive again, and mechanical private transport originated. The first "modern" highways were constructed during the 19th century.

6.2 MEANS OF TRANSPORTATION

The various modes used for a movement. For each mode, there are several means of transport.
They are:
1. Land transportation (rail, and road)
2. Water transport (coastal and ocean)
3. Air transportation
6.2.1. Land Transportation
Land transport is divided into two major categories.
1. Roads
2. Railways

1. Roads
Road transport is most popular, and it carries about 90% of the total passenger traffic. The country has about 248,340 kilometers of roads. Road traffic is increasing to nearly overwhelming proportions, with mixtures of animal carts, high-speed cars, buses, and trucks. Roads are considered very important in our country, because different cities are connected through roads. Goods may be transferred as early as possible through roads at their destination. In Pakistan initially roads served as feeder to the railways. Now roads are competing railways for all types of passengers, including long-distance.
(a) Estimated Length of Roads in Provinces (Kms)
The development of infrastructure pertaining to roads is crucial to economy and socio-economic development of the country. It is not an exaggeration to suggest that growth of several other economic sub-sector sectors depends on better roads network for timely availability of inputs and disposal of goods and services. During July-March FY 2017, total length of roads in Pakistan including GB and AJK is 264,401 kilometers as compared to 263,356 kilometers over corresponding period of last year, the table given below represents the total length of both in low and high type in the country as given below:

<table>
<thead>
<tr>
<th>Years</th>
<th>Punjab</th>
<th>Sindh</th>
<th>Khyber Pakhtunkhwa</th>
<th>Balochistan</th>
<th>GB &amp; AJK</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>107,805</td>
<td>81,358</td>
<td>42,980</td>
<td>29,655</td>
<td>1,590</td>
<td>263,415</td>
</tr>
<tr>
<td>2013-14</td>
<td>107,973</td>
<td>81,493</td>
<td>43,035</td>
<td>29,692</td>
<td>1,592</td>
<td>263,755</td>
</tr>
<tr>
<td>2014-15</td>
<td>107,992</td>
<td>81,543</td>
<td>43,072</td>
<td>29,742</td>
<td>1,593</td>
<td>263,942</td>
</tr>
<tr>
<td>2015-16</td>
<td>108,085</td>
<td>81,630</td>
<td>43,117</td>
<td>29,785</td>
<td>1,595</td>
<td>264,212</td>
</tr>
<tr>
<td>2016-17</td>
<td>108,155</td>
<td>81,681</td>
<td>43,151</td>
<td>29,817</td>
<td>1,597</td>
<td>264,401</td>
</tr>
</tbody>
</table>

Source: National Transport Research Centre (NTRC)

(b) National Highways
During the 1990s, Pakistan began an ongoing project to rebuild all National Highways of Pakistan throughout the country to important financial, cargo and textile centers. The National Highway Authority (NHA) is responsible for the maintenance of all national highways in Pakistan.

1. The Makran Coastal Highway follows the coast of Sindh and Balochistan provinces. It links the port cities of Karachi and Gwadar. Journey time has been reduced to six or seven hours with the construction of the new Coastal Highway. The highway was built as part of a plan to improve transport facilities in southern Balochistan.

2. The Karakoram Highway is the highest paved international road in the world. It connects China with Pakistan across the Karakoram mountain range, through the Khunjerab Pass.

3. The Grand Trunk Road (commonly abbreviated to GT Road) is one of South Asia's oldest and longest major roads. For several centuries, it has linked the eastern and western regions of South Asia. It runs from western Bengal, across north India, into Peshawar in Pakistan.
(c) Motorways
The construction of motorways began in the early 1990s. The idea was to build a world class road network and to reduce the load off the heavily used national highways throughout the country. The M2 motorway was the first motorway completed in 1998. It links the cities of Islamabad and Lahore. Many new motorways have opened up including the M1 motorway and M3 motorway. The NHA has already completed three segments of Pakistan Motorway networks viz M-1 (Peshawar-Islamabad), M-2 (Islamabad-Lahore) and M-3 (Pindi Bhattian-Faisalabad) on a virgin corridor bringing remote areas on mainline and boosting economic activities.

NHA is now constructing M-4 (Faisalabad-Khanewal-Multan) and Karachi-Hyderabad Motorway (M-9) on build-operate-transfer (BOT) basis. Details of NHA Motorways networks is presented in table given below
### Motorways/Expressways Projects in Pakistan

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Motorways/Expressways</th>
<th>Length</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M-1 (Peshawar-Islamabad)</td>
<td>156Km</td>
<td>Completed</td>
</tr>
<tr>
<td>2</td>
<td>M-2 (Islamabad-Lahore)</td>
<td>376Km</td>
<td>Completed</td>
</tr>
<tr>
<td>3</td>
<td>Havelian-Thakot</td>
<td>120Km</td>
<td>Ongoing</td>
</tr>
<tr>
<td>4</td>
<td>Hazara Motorway (E-35)</td>
<td>59Km</td>
<td>Ongoing</td>
</tr>
<tr>
<td>5</td>
<td>Hakla D.I Khan</td>
<td>285Km</td>
<td>Ongoing</td>
</tr>
<tr>
<td>6</td>
<td>Sialkot-Lahore</td>
<td>88Km</td>
<td>Ongoing</td>
</tr>
<tr>
<td>7</td>
<td>Lahore-Multan (M-3)</td>
<td>230Km</td>
<td>Ongoing</td>
</tr>
<tr>
<td>8</td>
<td>Faisalabad-Gojra (M-4)</td>
<td>58Km</td>
<td>Completed</td>
</tr>
<tr>
<td>9</td>
<td>Gojra-Shorkot (M-4)</td>
<td>62Km</td>
<td>Ongoing</td>
</tr>
<tr>
<td>10</td>
<td>Shorkot-Khanewal (M-4)</td>
<td>64Km</td>
<td>Ongoing</td>
</tr>
<tr>
<td>11</td>
<td>Khanewal-Multan (M-4 Ext)</td>
<td>56Km</td>
<td>Completed</td>
</tr>
<tr>
<td>12</td>
<td>Sukkur-Multan (M-4)</td>
<td>392Km</td>
<td>Ongoing</td>
</tr>
<tr>
<td>13</td>
<td>Hyderabad-Sukkur (M-6)</td>
<td>296Km</td>
<td>Procurement under process</td>
</tr>
<tr>
<td>14</td>
<td>Karachi-Hyderabad (M-9)</td>
<td>136Km</td>
<td>Ongoing</td>
</tr>
<tr>
<td>15</td>
<td>Pindi Bhattian-Faisalabad (M-3)</td>
<td>53Km</td>
<td>Completed</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2412Km</td>
<td></td>
</tr>
</tbody>
</table>

Source: Pakistan Economic Survey 2016-17

### (d) Railways

The Pakistan Railways has a definite edge over road transport for long haul and mass scale traffic movement both for passenger and freight in addition to providing a safe, economical and environment friendly mode of transport. An effective railway system of the country facilitates commerce and trade, reduces transportation costs and promotes rural development and national integration. The network of Pakistan Railways comprises of 7,791 route kilometers, 451 Locomotives (DL439 + Steam 12), 1,732 passengers coaches and 15,948 freight wagons.

Gross earning along with passenger traffic, freight carried and freight tones has improved by 14.6 percent, 4.5 percent, 38.9 percent and 44.6 percent respectively in FY 2016 over last Year.
Earning of Pakistan Railways

<table>
<thead>
<tr>
<th>Fiscal Years</th>
<th>Earnings (Rs. Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>15,444</td>
</tr>
<tr>
<td>2012-13</td>
<td>18,071</td>
</tr>
<tr>
<td>2013-14</td>
<td>22,800</td>
</tr>
<tr>
<td>2014-15</td>
<td>31,924</td>
</tr>
<tr>
<td>2015-16</td>
<td>36,581</td>
</tr>
<tr>
<td>(July-March)</td>
<td></td>
</tr>
<tr>
<td>2015-16</td>
<td>26,436</td>
</tr>
<tr>
<td>2016-17</td>
<td>26,268</td>
</tr>
</tbody>
</table>

Source: Pakistan Economic Survey 2016-17

Pakistan has allocated Rs. 41 billion in federal PSPD for the financial year 2016-17 for the development interventions in Pakistan Railways.

Passenger and Freight traffic

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number of passengers carried(Million)</td>
<td>41.100</td>
<td>41.957</td>
<td>47.690</td>
<td>52.951</td>
<td>520192</td>
<td>39.55</td>
</tr>
<tr>
<td>2</td>
<td>Passenger traffic Kms (Million)</td>
<td>16,093</td>
<td>17,388</td>
<td>19,778.560</td>
<td>20,288</td>
<td>21,201</td>
<td>16,333.18</td>
</tr>
<tr>
<td>3</td>
<td>Freight carried tones(Million)</td>
<td>1.323</td>
<td>1.016</td>
<td>1.610</td>
<td>3.600</td>
<td>5.001</td>
<td>3.65</td>
</tr>
<tr>
<td>4</td>
<td>Freight tones Kms(Million)</td>
<td>402</td>
<td>419</td>
<td>1,090.330</td>
<td>3,301.438</td>
<td>4,773.548</td>
<td>3,797.19</td>
</tr>
<tr>
<td>5</td>
<td>Gross Earning (Rs. Million)</td>
<td>15,444</td>
<td>18,070</td>
<td>22,800.217</td>
<td>31,924.757</td>
<td>36,581.865</td>
<td>26,436.00</td>
</tr>
</tbody>
</table>

Source: Pakistan Railway

Major Railways Route

1. **Karachi- Peshawar Railway Line**
   It is the main railway line in Pakistan. It is operated by Pakistan railway. It begins from Kiamari station Karachi and ends at cantonment station Peshawar. The total length of railway line is 1683 kilometers (1048 miles). There are 184 railway stations between Kiamari stations to Cantonment station. Approximately 75% of the country’s cargo and passenger traffic uses this line. Following are the important routes situated on this route are: Karachi cantt, Landhi junction, Kotri junction, Hyderabad junction, Tando Adam junction, Nawabshah, Rohri junction, sadikabad, khanpur junction, Multan cantt,
Khanewal junction, Okara, Pattoki, Raiwind junction, Lahore, Lala Musa, Jhelum, Rawalpindi, Taxilla cantt, Nowshera junction and Peshawar cantt.

2. **Karachi to Quetta Railway line**
   It is also important railway line of Pakistan; it connects the port of Karachi with various cities of Balochistan.

3. **Rohri to Chaman Railway Line**
   The line begins from Rohri junction station and ends at Chaman station. Length of this line is 522 kilometers (320 miles). There are 35 stations between Chaman and Rohri station.

6.2.2 **Water Transport**
At the time of independence Pakistan only got three ships which were in very bad condition, and we rely on foreign companies for imports and exports and have to pay huge amount of foreign exchange to them. For the development of shipping sector government decided to set up **Pakistan National Shipping Corporation (PNSC)**. In the beginning 31 ships were there, but with the passage of time number of ships decrease as in 2004 there was only 13 ships are left to the PNSC.
At present, PNSC fleet comprises of 09 vessels of various type / size (05 bulk Carriers and 04 Aramex tankers) with a total deadweight capacity of 681,806 metric tons being the highest ever carrying capacity since its inception.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2015-16</td>
</tr>
<tr>
<td>Revenues</td>
<td>12.3</td>
<td>15.7</td>
<td>15.5</td>
<td>12.5</td>
<td>9.6</td>
</tr>
<tr>
<td>Expenditures</td>
<td>8.9</td>
<td>12.3</td>
<td>12.5</td>
<td>9.00</td>
<td>6.7</td>
</tr>
<tr>
<td>Profit before Taxation</td>
<td>3.4</td>
<td>3.4</td>
<td>3.2</td>
<td>2.5</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Source: Pakistan Economic Survey 2016-17

Water transportation is important for handling large quantity of goods and passengers. The inland waterways along rivers are not as developed as seaports. Seaport handle major portion of international trade. At present there are three major ports in Pakistan

1. Karachi Port
2. Port Muhammad Bin Qasim
3. Port of Gwadar

1. Karachi Port

Karachi port is one of the South Asia’s largest seaports. It is located at Indus delta on the Arabian Sea coast. The port presently handles 60 percent of the country’s trade through its operations within the port limits defined by the federal government. The geographic position of port places it in close proximity to major shipping routes such as the Strait of Hormus. The administration of the port is carried out by the Karachi Port Trust. The port comprises a deep natural Harbour with an 11-Kilometer-long approach channel which provides safe navigation for vessels up to 75000 tonnes deadweight.

The main areas of port activity are two wharves: East Wharf with seventeen vessel berths and West Wharf with thirteen vessel berths. The depth alongside the berths is currently 11.3 meters.

Karachi international Container Terminal opened in 1996 at West Wharf berths 28-30. It has a handling capacity of 300,000 TEUs per annum.

Pakistan international Container Terminal in 2002 at East Wharf berths 6-9. It has a handling capacity of 350,000 TEUs per annum.
<table>
<thead>
<tr>
<th>Period</th>
<th>Exports</th>
<th>Imports</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>11,674</td>
<td>26,201</td>
<td>37,875</td>
</tr>
<tr>
<td>2012-13</td>
<td>12,150</td>
<td>26,700</td>
<td>38,850</td>
</tr>
<tr>
<td>2013-14</td>
<td>11,007</td>
<td>30,343</td>
<td>41,350</td>
</tr>
<tr>
<td>2014-15</td>
<td>10,422</td>
<td>33,000</td>
<td>43,422</td>
</tr>
<tr>
<td>2015-16</td>
<td>9,786</td>
<td>40,259</td>
<td>50,045</td>
</tr>
<tr>
<td>2016-17</td>
<td>7,462</td>
<td>31,560</td>
<td>39,022</td>
</tr>
</tbody>
</table>

Source: Karachi Port Trust Website

2. **Port Muhammad Bin Qasim**

Port Qasim Authority was established in 1973 and develops a new port that serves industrial sector as well general cargo. It is also known as port Qasim. The Qasim port is located in Karachi Sindh on the coastline of the Arabian Sea. It handles 35% of the nation’s cargo. The port encompasses a total area of 12,000 acres where in most of industrial zones operate.

<table>
<thead>
<tr>
<th>Period</th>
<th>Imports</th>
<th>Exports</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>17.754</td>
<td>7.047</td>
<td>24.801</td>
</tr>
<tr>
<td>2013-14</td>
<td>18.076</td>
<td>7.699</td>
<td>25.775</td>
</tr>
<tr>
<td>2014-15</td>
<td>21.608</td>
<td>8.405</td>
<td>30.014</td>
</tr>
<tr>
<td>2015-16</td>
<td>25.857</td>
<td>7.464</td>
<td>33.321</td>
</tr>
<tr>
<td>2016-17</td>
<td>21.604</td>
<td>5.072</td>
<td>26.676</td>
</tr>
</tbody>
</table>

3. **Port of Gwadar**

Gwadar is the first port on the south western Arabian Sea coastline in Baluchistan, about 635 km from Karachi and 120 km from the Iranian border by road. Gwadar Port is located just outside the Strait of Hormuz, near the key shipping routes from Arabian Gulf to Far East and Europe. Gwadar Port is strategic warm water. Deep-sea port and phase-1 of the port has been developed jointly by Government of Pakistan and the Government of the Peoples Republic of China with a total cost of US$ 288.0 million, the port was inaugurated in March 2007.
1. **Port Ormara**
Ormara is a town in Gwadar District in Balochistan province of Pakistan. It is a port city located in Makran coastal region. However, after construction of Makran Coastal Highway and Jinnah Naval base life has taken a positive change for the locals with many local industries and the resultant increase in jobs for locals. Ormara has a port and fish harbour. The Jinnah Naval base of the Pakistan Navy is located at Ormara.

2. **Port Pasni**
The Port Pasni is located in Pasni City in the Balochistan Province of Pakistan. The facilities include modern fish harbour, port and naval base for the Pakistan Navy.

Dry Ports
A dry Port is an inland intermodal terminal directly connected by road or rail to a Seaport and operating as a center for the transshipment of sea cargo to inland destinations. In addition to their role in cargo transshipments, dry ports may also include facilities for storage of goods, maintenance for roads and rail cargo carriers and custom clearance services. A dry port can speed the flow of cargo between ships and major land transportation. Dry port can also improve the
movement of imports and exports. There are numbers of dry ports in Pakistan which are as:

**List of Dry ports in Pakistan**

At present there are six dry ports running under the management of Pakistan Railways.

7. Islamabad Dry Port – H-9

In addition to the above, there are four Dry ports established and running under the management of private sector.

1) Sialkot Dry Port Established in 1986.
2) Faisalabad Dry Port Established in 1994.
3) Pak-China Sust Dry Port.
4) NLC Dry Port at Thokar Niaz Beg Lahore.
5) NLC Dry Port at Quetta.

**6.2.3 Air Transportation**

Pakistan has air link with many countries the world. It relates to most Middle East countries through air. It has air services with USA, European countries, Nepal, Sri Lanka, Bangladesh, Malaysia, Singapore, Thailand, China, Hong Kong and Japan. In 1947, there was only three small air companies working in Pakistan, but these were too small to meet the growing needs of country. In 1955 Government set up Pakistan International Airline (PIA) to meets the needs. In 1990 government changed its policy and allows private sector airlines. The private airlines did very well to compete with the well-established flag carrier, PIA which was controlled by the government.

PIA fleet consists of the following type of aircraft

- Boeing 777
- Boeing 747
- Airbus A310
- Airbus A320
- ATR42 & ATR72
Other private Airlines operating in Pakistan are as Air Blue, Shaheen Air, Pearl Air, Askari Aviation, Vision Air International.

Airports in Pakistan

1. **Jinnah International Air Port Karachi**
   Jinnah international airport is the Pakistan’s largest and busiest international and domestic airport. It is located in Karachi, Capital of Sindh Province. It is named after Muhammad Ali Jinnah, the founder of Pakistan. It is run by Civil Aviation Authority (CAA). The airport is equipped with aircraft engineering and overhauling facilities. In 2015-2016, 6,196,903 passengers used the airport and there were 55,461 aircraft movements.

2. **Allama Iqbal International Airport Lahore**
   Allama Iqbal international airport is the second largest airport in Pakistan serving Lahore, capital of province of Punjab and also large portion of travelers from the Punjab. It was originally named as Lahore international airport but renamed after Allama Iqbal one of the pioneers that led to the creation of Pakistan. A total of 4,724,629 passengers travelled in 2016.
3. **Benazir Bhutto International Airport Islamabad**

Benazir Bhutto international airport is the third-largest airport in Pakistan, serving the capital Islamabad and its twin city Rawalpindi in the province of Punjab. Previously known as the Islamabad international Airport, it is renamed after the late Pakistani leader Benazir Bhutto on 21 June 2008. The airport is located outside Islamabad, in the area of Chaklala Rawalpindi. Being the main airport for the Pakistan capital it often hosts officials and citizens from other nations. The airfield is shared with the transport and liaison squadrons of the Pakistan Air force. In 2018, the airport was shifted near Islamabad Motorways interchange, 20 km west from the zero point, Islamabad.

4. **Bacha Khan International Airport Peshawar**

Bacha Khan International Airport is the fourth busiest airport which was previously known as Peshawar International Airport. It is in Peshawar, the Capital City of Khyber Pakhtunkhwa. A total of 1,578,319 passengers travelled in the year 2017-18 and about 7,646 metric tons cargo was handled through the Air Port. It was reconstructed and renovated in 2016 to 2018.

5. **Faisalabad International Airport**

Faisalabad international airport is an international airport and stand by Pakistan air force, Military base situated on Jhang road 10km south west from the city of Faisalabad in the province of Punjab. It serves the population of Faisalabad and other local cities. With the new policy agreement with the UAE it is expected that the airport will handle more traffic in future.

6. **Quetta International Airport**

It is located in Quetta the province of Baluchistan. The airport is also operating International flights. Average scheduled flights 1332, non-scheduled flights are 247 in a year.

7. **Sialkot International Airport**

Sialkot International Airport is situated 14 Km west of Sialkot in the Sialkot District of Pakistan. It has the distinctions of being the first privately owned public Airport in Pakistan and South Asia. Sialkot is a major export hub of Pakistan. The airport is being upgraded to make it compatible to carry the load of ten Boeing 747s or A340s.
6.3 IMPORTANCE OF TRANSPORTATION

Transportation helps in creation of new markets. Transportation plays very vital role in economic development of country. Importance of transportation is as follows:

1. **Growth of industries.** Due to transportation product requires quick marketing are timely arrived in market for consumer. These include fishes, perishable goods and vegetables etc, which leads to growth in that industry.

2. **Creation of place utility.** Transport creates place utility. Due to geographical and climatic factors industries are located at places which are far away from customer, but due to transport goods are available for customer at near market.

3. **Creation of time utility.** Transport creates time utility, because goods are reached to ultimate customers at time due to speedy transport.

4. **Stable prices.** Transport helps in stabilization of prices. Transportation influence prices of goods by moving goods from surplus to deficit areas; it helps to balance the supply and demand factors.

5. **Globalization.** Transport enables the customer to enjoy the benefits of goods that are not produced locally, which leads to improve the standard of living.

6. **Competition increased.** Due to transport level of competition increases. Goods are available and prices reduce. Advantages of large scale-production are only possible through transportation.
7. **Mobility of factors of production.** Transport enables the mobility of Labour and capital. People move from one place to other in search of job. Capital (Machinery) is transported from other countries for production purpose through transport.

8. **Bring countries closer.** No country is self-sufficient. Every country has to depend upon other country. Transportation brings countries closer. Goods are easily imported and exported according to requirements.

9. **Employment opportunities.** Transport contributes to economic development through creation of employment opportunities for people. It creates both direct and indirect jobs.

10. **Agriculture development.** Transport has helped in the development of agriculture sector. The business of agricultural products has grown to such a large extent only due to the efficient means of transport.

11. **Industrial Development.** Transport facilitates the industrial development of a country. It helps the growth of industries by making available various factors of production. Mobility of factors of production is only possible through transport.

### 6.4 INTRODUCTION TO COMMUNICATION

The Communication plays an important role in the economic and cultural development of a country. The **Telecommunication** is the transmission of signals, words, writings, images and sounds or information of any nature by wire, radio, optical or other electromagnetic systems. Telecommunication occurs when the exchange of information includes the use of technology. It is transmitted either electrically over physical media, such as cables, or via electromagnetic radiation.

Early means of communicating over a distance included visual signals, such as beacons, smoke signals, semaphore telegraphs, signal flags, and optical heliographs. A revolution in wireless communication began in the first decade of the 20th century with the pioneering developments in radio communications by Guglielmo Marconi. At present television and radio are considered as modern electronic media, because they are major mass media. On the other hand, they also form group of advertising commercial media. Pakistan enjoyed services of telephone, cable, telegram and radio etc. from its beginning.

**Communications in Pakistan** describes the overall environment for the growing mobile telecommunications, telephone, and Internet markets in Pakistan. In 2008 Pakistan was the world's third-fastest growing telecommunications market.
Telecommunication and the Government of Pakistan
The government of Pakistan controls the telecommunications through number of departments. In the beginning Telegraph and telephone was done that working. In 1990 Pakistan Telecommunication Corporation was established and replaces Telegraph and telephone.

Pakistan Telecommunication Corporation department was transformed into
i. Pakistan Telecommunication Company limited (PTCL)
ii. Pakistan Telecommunication Authority (PTA)
iii. National Telecommunication Corporation (NTC)

Pakistan Telecommunication Corporation limited (PTCL): Pakistan Telecommunication Corporation is a company established to provide telecommunication services to customers on commercial basis.

Pakistan Telecommunication Authority (PTA): Pakistan Telecommunication Authority is a regulatory body responsible for monitoring the telecommunication business in Pakistan; it controls mobile phone companies, and internet service providers.

National Telecommunication Corporation (NTC): National Telecommunication Corporation is responsible to control and provides telecommunication services to the departments of government.

6.5 MEANS OF COMMUNICATION

The dynamically evolving Information and Communication Technologies (ICTs) hold crucial importance globally as one of the key sectors in terms of powering economies, acting as a catalyst of change and enablement across all other sectors. Communication plays an important role in the economic and cultural development of a country. Pakistan has following means of communication:

1. Postal Service
2. Television
3. Radio
4. Information Technology (IT)
5. Telecommunication

1. Postal Service
Pakistan post office is one of the oldest government departments in the sub-continent. In 1947 it began functioning as the department of Post & Telegraph. In 1962 it was separated from Telegraph & Telephone and started working as an independent attached department.
Pakistan Post is providing postal services in every nook and corner of the country through the network of around 13000 post offices. Pakistan post providing delivery services to about 20 Million households and businesses without any cost. It also provides the facility of postal life insurance, collection of electricity, Gas and telephone bills, collection of taxes and saving bank. Other private companies engaged in postal services are TCS, Leopards Courier, OCS Pakistan PVT LTD, FedEx Express, DHL EASYSHIP, and Skynet Worldwide Express.

2. **Television**
The First television station was introduced in Pakistan by a private television company, in November 26, 1964. On June 27, 1967, it was converted in to public limited company and named as Pakistan Television Corporation Limited. The main objectives to establish a Television Network in Pakistan is for the provision of broadcasting news, education, entertainment and documentaries. There are five channels in the country owned by government namely PTV Home and PTV Global, PTV National, PTV News, and PTV World. There are also operating many private TV channels across the country which are as

**Urdu General Entertainment**
ARY Digital, ATV, Geo Entertainment, Hum TV, A-Plus Entertainment, Aaj Entertainment, Express Entertainment, See TV, TV one and Urdu 1 etc.

**Religious Channels**
ARY QTV, Haq TV, and Madani Channel etc.

**News Channels**

**Sports Channels**
Geo Super, PTV Sports and Ten Sports Pakistan

3. **Radio**
Pakistan Broadcasting Corporation also known as Radio Pakistan is a public radio broadcasting network. PBC provides a wide range of radio and news services within and outside Pakistan in 10 different languages with the objectives to entertain people, educating the overseas audience about Pakistan.

1. **Information Technology (IT)**
IT has assumed unprecedented importance in the global economy. Government has accorded a very high priority to this sector. IT is one of the key determinants of competitiveness and growth of economic development. In Pakistan the IT industry is regarded as a successful sector of economy. As of 2011, Pakistan has over 20 million internet users and is ranked as one of the top countries that have
registered a high growth rate in internet penetration. Pakistan enjoys good international telecommunications links via satellite.

Internet is a giant network of thousands of regional computer networks spread around the globe and each computer network is again the collection of individually controlled geographically scattered but interconnected computers. With the emergence of Internet, the people of the world have come closer to each other and world becomes global village where distance does not matters.

2. **Telecommunication**
   The government of Pakistan controls the telecommunications through a number of departments. In the beginning Telegraph and telephone was done that working. In 1990 Pakistan Telecommunication Corporation was established and replaces Telegraph and telephone.

   On 1st January 1996, the corporation was recognized by establishing the Pakistan Telecommunication Authority (PTA), the National Telecommunication Operation (NTC) and Pakistan Telecommunication Company Limited (PTCL). PTCL has issued 65,000 telephone connections to its customers. Four Mobile companies are operating their network in Pakistan under PTA.

6.6 **ROLE OF TELECOMMUNICATION IN ECONOMIC DEVELOPMENT**

1. **National income increase** Telecom sector has been contributing to the national income in terms of taxes, regulatory fee and activation tax etc.

2. **Economic importance** It promotes the internal and external trade, utilization of available natural resources, mobility of factors of production, reduction in unemployment, increase in agricultural production, increase in industrial development, reduction in population pressure and elimination of starvation and hunger etc.

3. **Political importance** It creates the political awareness in people, maintenance of law and order in society etc. It also helps bringing out the opinion of the masses.

4. **Social importance** Linkage of people develops brotherhood and sense of unity, and this can stimulate economic activity within the country. It promotes the education across the country and provides the modern information by TV, Internet, radio etc.

6.7 **LOGISTICS**

Logistics is generally the detailed organization and implementation of a complex operation. In a general, logistics is the management of the flow of goods between
the point of production and the point of consumption in order to meet needs of customers or corporations. The resources managed in logistics can include physical items such as food, materials, animals, equipment, and liquids; as well as abstract items, such as time and information. The logistics of physical items usually involves the integration of information flow, material handling, production, packaging, inventory, transportation, and often security.

In simple terms, "logistics" means having the right amount of a good at the right time, getting it to the appropriate location in proper condition and delivering it to the correct customer. Logistics is a web that links to businesses in every sector. The goal is to manage the fulfillment of each customer, moving quickly and efficiently from one section of the supply chain to the next.

In military science, logistics is concerned with maintaining army supply lines while disrupting those of the enemy, since an armed force without resources and transportation is defenseless. Military logistics was already practiced in the ancient world and as modern military have a significant need for logistics solutions, advanced implementations have been developed. In military logistics, logistics officers manage how and when to move resources to the places they are needed.

**Logistics Management** is the part of supply chain management that plans, implements, and controls the efficient, effective forward, and reverses flow and storage of goods, services, and related information between the point of production and the point of consumption in order to meet customer's needs. The complexity of logistics can be modeled, analyzed, visualized, and optimized by dedicated simulation software. The minimization of the use of resources is a common motivation in all logistics fields. A professional working in the field of logistics management is called a logistician.

**Inbound Logistics** is one of the primary processes of logistics concentrating on purchasing and arranging the inbound movement of materials, parts, or finished inventory from suppliers to manufacturing or assembly plants, warehouses, or retail stores.

Inbound logistics is an integral element of business operations for a manufacturing firm, involving the processes of receiving, storing and distributing raw materials for use in production.

**Outbound Logistics** is the process related to the storage and movement of the final product and the related information flows from the end of the production line to the end user.
Given the services performed by logisticians, the main fields of logistics can be broken down as follows:

**Procurement Logistics** consists of activities such as market research, requirements planning, make-or-buy decisions, supplier management, ordering, and order controlling.

**Advance Logistics** consists of the activities required to set up or establish a plan for logistics activities to occur.

**Distribution Logistics** has, as main tasks, the delivery of the finished products to the customer. It includes order processing, warehousing, and transportation.

**Disposal Logistics** has as its main function to reduce logistics cost(s) and enhance service(s) related to the disposal of waste produced during the operation of a business.

**Reverse Logistics** denotes all those operations related to the reuse of products and materials. The reverse logistics process includes the management and the sale of surpluses, as well as products being returned to vendors from buyers.

**Green Logistics** describes all attempts to measure and minimize the ecological impact of logistics activities. This includes all activities of the forward and reverse flows.

**RAM Logistics** It combines both business logistics and military logistics since it is concerned with highly complicated technological systems for which Reliability, Availability and Maintainability are essential, e.g. weapon systems and military supercomputers.

**Asset Control Logistics**: companies in the retail channels, both organized retailers and suppliers, often deploy assets required for the display, preservation, promotion of their products. Some examples are refrigerators, stands, display monitors, seasonal equipment, poster stands & frames.

**Emergency Logistics** is a term used by the logistics, supply chain, and manufacturing industries to denote specific time-critical modes of transport used to move goods or objects rapidly in the event of an emergency.

**Production Logistics** describes logistic processes within a value adding system. Production logistics aims to ensure that each machine and workstation receives the right product in the right quantity and quality at the right time. Production logistics can operate in existing as well as new plants: since manufacturing in an existing plant is a constantly changing process, machines are exchanged and new ones added, which gives the opportunity to improve the production logistics system accordingly.
**Construction Logistics** is known to mankind since ancient times. The various human civilizations tried to build the best possible works of construction for living and protection. Now the construction logistics emerged as vital part of construction industry.

**Digital Logistics** is driven by a new generation of web-based, enterprise logistics applications that enable collaboration and optimization, leveraging a central logistics information backbone that provides visibility across the enterprise and extended supply chain.

**SUMMARY**

Transport infrastructure consists of roads, railways, airways, waterways, canals and terminals such as airports, railway stations, bus stations, warehouses, and seaports. The Industrial Revolution in the 17th century saw a number of inventions fundamentally change transport. With telegraphy, communication became instant and independent of the transport of physical objects. The various modes used for the movement are land, water and air transportation. Whether it is to purchase and bring raw materials or it is to distribute finished goods, one or the other means of transport is necessary. Transportation helps in creation of new markets.

In the second part of unit, the importance of communication and its critical role in economic and cultural development of Pakistan has been discussed. Similarly, the dynamically evolving Information and communication Technologies (ICTs) hold crucial importance globally as one of the key sectors in terms of powering economies, acting as a catalyst of change and enablement across all other sectors. Means of communication includes Postal Services, Television, Radio, Information Technology (IT) and Telecommunication.

**SELF-ASSESSMENT QUESTIONS**

1. Describe the importance of means of Transportation and Communication?
2. Write a note on means of transport in Pakistan.
3. Define Communication and discuss the role of telecommunication in economic development.
4. Write down importance of Highway, motorways and railways of Pakistan.
5. Write a detail note on logistics.
INDUSTRIES AND MANUFACTURING

Compiled by: Arifa
Asia Batool

Reviewed by: Huss-Nul-Amin
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>125</td>
</tr>
<tr>
<td>Objectives</td>
<td>125</td>
</tr>
<tr>
<td>7.1 Evolution of Industries</td>
<td>126</td>
</tr>
<tr>
<td>7.2 Factors Influencing Industrial Location</td>
<td>126</td>
</tr>
<tr>
<td>7.3 Classification / Types of Industries</td>
<td>129</td>
</tr>
<tr>
<td>7.4 Heavy Industries of Pakistan</td>
<td>130</td>
</tr>
<tr>
<td>7.5 Major Economic Zones of Pakistan</td>
<td>134</td>
</tr>
<tr>
<td>Summery</td>
<td>138</td>
</tr>
<tr>
<td>Self-Assessment Questions</td>
<td>138</td>
</tr>
</tbody>
</table>
INTRODUCTION

Industry is the production of goods or related services within an economy. Industrial Sector is of great importance for economic development of a country. It is historical fact that countries with strong industrial sector have showed more economic growth and improvement in national income and promote living standard of population. This unit will introduce the evolution of industrial sector in Pakistan. Factors Influencing Industrial location and with the passage of time Pakistan utilized the available domestic resources as well as external for rapid development of industrial sector. Availability of Raw material is the most dominant factors in localization of industries. Heavy industries of Pakistan and major economic processing zones and their importance will be elaborated.

OBJECTIVES

After reading this unit, you will able:

1. to know the factors for localization of industries
2. to list down the types of Industries
3. to understand the heavy industries of Pakistan
4. to know the concept of special economic zones/industrial zones/export processing zones
7.1 EVOLUTION OF INDUSTRIES

In 1947 at the time of partition Pakistan had negligible industrial base. Out of 950 industries in British India Pakistan only got 35 industries which are 3.86% of the total industries established in Subcontinent. The rest were located in India. The industries which came into Pakistan’s share were comparatively small, these industries included small sugar mills, cotton gaining factories, flour mills and rice husking.

In 1947 industrial conference of Pakistan suggested setting up more industries, which use locally produced raw material. Industrial Finance Corporation and an industrial investment and credit corporation were set up in 1948 by Pakistani government. The contribution of industrial sector was 6% to Gross domestic product (GDP) in 1950.

In 1952 the Government established Pakistan industrial Development Corporation (PIDC) purpose of this institution was to invest in those industries which required heavy initial investments. PIDC had completed 59 industries by 1971. A large number of new industries were established, and production of existing industries also expanded, due to export bonus scheme in 1958 exports were also boost up.

In 1960’s there was shift in the establishment of consumer goods to heavy industries. The share of Industries to Gross National Product (GNP) went up to 11.8%. The industrial performance of industrial sector during 1971 to 1977 was disappointing in terms of exports and production. One wing of the country was forcibly separated due to suspension of foreign Aid and exports the annual growth rate fell to 2.8% in the industrial sector.

From 1977 to 1980, the Government initiated a large number of measures to reform industrial sector. The private sector was encouraged to invest in large scale industries. Growth rate was 8.9% in 1990. Industry is the second largest and important sector in the economy accounting for 25% of the GDP. It comprises of large to middle scale manufacturing, mining & quarrying construction, electricity & Gas distribution.

7.2 FACTORS INFLUENCING INDUSTRIAL LOCATION

Generally, location of industries is influenced by economic and geographical factors. Cost minimization of cost and maximization of profit is ultimate goal in the selection of location for industries. There are several factors which pulls the
industry to setup in particular place/location. Some major factors influencing industrial location are as follows.

1. Raw Materials
Availability of Raw material is most dominant factors in localization of industries. No industry can develop without timely supply of raw material. The establishment of industry in particular area is more profitable if it is located in raw material producing area. Nearness to the sources of raw materials would reduce the cost of production of the industry. The industry situated far away from raw material production area cost will be higher and it is not possible to compete with other industries. Raw materials include gold, tin, oil, uranium, bauxite, etc. When they are present, they attract industries at that place. Iron smelting, brick making, cement manufacturing are best examples.

2. Labor
Adequate supply of cheap and skilled labor is necessary for the running of industry. Labor in a region is an important factor influencing the localization of industries. If skilled labor is not available within country, then skilled labor is imported from foreign countries which lead to increase in production cost. Now industries are tending to concentrate in those areas where supply of labor is available.

3. Market Access
Access to markets is an important factor influencing the localization of industries, which the entrepreneur must take into consideration. Industries deals in perishable goods which cannot be transported over long distance required near markets to time sold out in market. Industries situated near the markets could be able to reduce the cost of transportation. If the market is quiet far away from the place of production transport costs will be high which will lead to raise the selling price of product in market. It will be difficult to compete with other products and to attract customers.

4. Capital
Development of industries requires a large capital investment. It may come from any source, local or foreign. Finance is the lifeblood of any industrial venture. Availability of adequate funds at low rates of interest is a dominant factor influencing localization of industries. Capital is required for settling of new industries and also for expansion of already running industry. Industry requires enough capital for its establishment, that’s why many countries are not able to establish industry for transforming their own minerals.
5. **Climate**
Climate also plays a part in the location of industries. Climate determines the laborer’s power of work, efficiency and economy of the products. It influences the manufacturing e.g. Moist/Humid climate is suitable for cotton, textile industry while dry weather is suitable for flour mills industries. The stimulating cool temperate climate is more suitable for the development of industries.

6. **Power**
Another factor influencing the location of an industry is the availability of cheap power. Water, wind, coal, gas, oil and electricity are the chief sources of power. Concentration of iron and steel industry near the coalfield to lower the production cost. An adequate supply of power and fuel is an important factor for the uninterrupted operations of any enterprise.

7. **Transport Facilities**
Transport facilities influence the location of industry. The modes of transportation (Road, Water and Air) collectively plays very important role. So, the junctions’ point of these major modes becomes the centers of industrial activity. Industries depend upon efficient and cheap transportation system, which is essential for the movement of raw material as well as the finished products to their ultimate customers timely.

8. **Personal Preferences**
In deciding location of industrial units, sometimes an entrepreneur may have personal preferences and prejudices in the setting up of an industry in particular area. In a democratic set up, sometimes political matters also initiate the establishment of certain heavy industries in certain regions. Mr. Ford started manufacturing motor cars in Detroit because it was his hometown.

9. **Government’s Incentive**
Industry develops from an area where the assistance of the local government can be found. In order to give boost to industries in the country, the government gives incentives to industrialists, i.e. Low rate of interest, tax exemptions, banking facilities, electricity at concessional rates, subsidies, rail link etc.

10. **Site Requirements**
Some modern industries require particular types of site. The government has classified some areas as backward areas where the entrepreneurs would be granted various incentives like subsidies, or provision of finance at concessional rate, or supply of power a cheaper rate etc. For example, an integrated steelwork
needs a large area of flat land, while a chemical plant may need a site where it is possible to dispose easily of dangerous waste.

11. **Miscellaneous Factors**

Miscellaneous factors like historical incidents and attitude of the community plays a dominant role in location of industries. Further, the size of and industrial unit would also have much influence in choosing location, because the size of industrial units depends upon the circle within which they can profitably distribute their goods within circle.

7.3 **CLASSIFICATION / TYPES OF INDUSTRIES**

1. **Primary Industry**

An industry involved in extraction and collection of natural resources, such as Agriculture, farming, forestry, fishing, horticulture, etc. A company in a primary industry can also be involved in turning natural resources in to final products.

2. **Genetic Industry**

The word ‘genetic’ means hereditary. Genetic industries are engaged in reproduction, multiplication and breeding of certain spices of plants and animals with the object of earning profit from their sale e.g. plant nurseries, forestry, cattle rearing, poultry, cattle breeding, etc.

3. **Extractive Industry**

Extractive industry is concerned with extraction of material from the Earth Sea and air. It includes raising and collection of natural products of the soil for the subsistence of human beings. Generally, products of extractive industries come in raw form and they are used by manufacturing and construction industries for producing finished products. E.g. mining industry, coal mineral, oil industry, iron ore, extraction of timber and rubber etc.

4. **Manufacturing Industry**

Manufacturing industries are engaged in transforming raw material and semi-finished goods into finished product. Manufacturing process converted extracted articles from soil, air and water into goods that are useful for consumers e.g. Textiles, Engineering, Chemicals, Sugar industry, and paper industry etc. Manufacturing industry may be sub-divided into following:

i. Analytical Industry
ii. Synthetically Industry
iii. Processing Industry
iv. Assembling Industry
5. **Construction Industry**

Construction industries take up the work of construction of buildings, bridges, roads, tunnel, dams, canals, etc. This industry is different from all other types of industry because in case of other industries goods can be produced at one place and sold at another place. But goods produced and sold by constructive industry are erected at one place.

6. **Service Industry**

The industry that earns profit through gave services. In modern times service sector plays an important role in the development of the nation. The main industries, which fall under this category, include hotel industry, tourism industry, entertainment industry, etc.

7.4 **HEAVY INDUSTRIES OF PAKISTAN**

Industry refers to that sector which is involved in manufacturing and production. Heavy Industry includes following:

1. **Textile Industry**

Pakistan has an inherent advantage of being 4th largest producer of cotton in the world with a huge potential to further increase crop yield. For success of any export led industry, local availability of basic raw material is an added advantage being a key factor in reducing cost of doing business. The textile value chain consists of multiple industrial sub-sectors. The value chain is quite long starting from cotton picking to finished garments of the latest fashion. The end product of one sub-sector is the raw material for the other. Each sub-sector in the value chain contributes to value addition and employment generation. As the change moves downstream, each link creates larger number of jobs with relatively lower investments.

Textile is the most important manufacturing sector of Pakistan and has the longest production chain, with inherent potential for value addition at each stage of processing, from cotton to ginning, spinning, fabric, dyeing and finishing, made-ups and garments. The sector contributes nearly one-fourth of industrial value-added and provides employment to about 40 percent of industrial labor force.
Export of Pakistan Textiles (US$ Millions)

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</thead>
<tbody>
<tr>
<td>Cotton &amp; Cotton textiles</td>
<td>13348</td>
<td>13139</td>
<td>12168</td>
<td>9112</td>
</tr>
<tr>
<td>Synthetic textiles</td>
<td>383</td>
<td>331</td>
<td>288</td>
<td>167</td>
</tr>
<tr>
<td>Sub Total textiles</td>
<td>13731</td>
<td>13470</td>
<td>12456</td>
<td>9279</td>
</tr>
<tr>
<td>Wool &amp; woolen textiles</td>
<td>125</td>
<td>119</td>
<td>98</td>
<td>61</td>
</tr>
<tr>
<td>Total textiles</td>
<td>13856</td>
<td>13589</td>
<td>12553</td>
<td>9340</td>
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<tr>
<td>Total exports</td>
<td>25131</td>
<td>23885</td>
<td>20802</td>
<td>15119</td>
</tr>
<tr>
<td>Textile as % of Exports</td>
<td>55</td>
<td>57</td>
<td>60</td>
<td>62</td>
</tr>
</tbody>
</table>

Ancillary Textile Industry
i. Cotton Spinning Sector
ii. Cloth Sector
iii. Textile Made-Up Sector
a) Hosiery Industry
b) Readymade Garment Industry
c) Towel Industry
d) Canvas
iv. Synthetic textile fabrics
v. Woolen industry
vi. Jute industry

Sugar Industry
The sugar industry plays an important role in the economy of the country. It is the second largest industry after textiles. The output of sugar as well as the production of sugarcane increased at an average rate 24 percent and 11.7 percent. At the time of independence in 1947, there were only two sugar factories in Pakistan. The output of these factories was not sufficient for meeting the domestic requirements. The country started to import sugar from other countries and huge foreign exchange was spent on this item. So, to meet the requirements of sugar the Government setup a commission in 1957 to frame a scheme for the development of sugar industry. At present there are 76 sugar mills operating in Pakistan.

Cement Industry
The main raw material for cement industry is lime stones, followed by a substantial quantity of gypsum. Fortunately, Pakistan has large quantity of both and also large domestic market. At the time of independence only few industries were fell in Pakistan share. The requirements/ Demand for Cement were increasing day by day due to developing projects. In order to meet the requirements, cement industry have
been set up in public and private sector. Few years back we were self-sufficient in cement production and also exported it to other countries. Before 1972 all cement industries were under private control but after nationalization all industries were given under the control of a Corporation named Pakistan State Cement Corporation. The following are the cement factories situated in Pakistan.

- D.G Khan Cement Company
- Luck Cement Company
- Askari Cement Limited
- Maple Leaf Cement
- Attock Cement Limited
- Pioneer Cement
- Kohat Cement Company
- Thatta Cement Company Limited
- Dewan Cement
- Fauji Cement

Cement dispatches reached historic heights in March 2017 touching almost 4 million tons as the factories utilized their full production capacity to meet robust demand in the local market. The ever-increasing domestic market has vindicated the manufacturers thrust on adding new capacities. The cement industry is playing its due role to get the momentum going and in April 2017 the industry dispatched 3.576 million tons of cement against 3.551 million tons dispatched during the corresponding month of last year.

### Cement Production Capacity & Dispatches (Million Tonnes)

<table>
<thead>
<tr>
<th>Years</th>
<th>Production Capacity</th>
<th>Capacity Utilization (%)</th>
<th>Local Dispatches</th>
<th>Exports</th>
<th>Total Dispatches</th>
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<td>2103-14</td>
<td>44.64</td>
<td>76.79</td>
<td>26.15</td>
<td>8.14</td>
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<td>2014-15</td>
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<td>7.20</td>
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<td>85.21</td>
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<td>46.39</td>
<td>87.64</td>
<td>29.87</td>
<td>4.01</td>
<td>33.88</td>
</tr>
</tbody>
</table>

Source: All Pakistan Cement Manufacturers Association (APCMA)
2. Chemical Fertilizer Industry
Because Pakistan has an agriculture based economy, the chemical fertilizer industry is very vital for the survival. The fertilizer industry is an integral part of Pakistan’s economy. The Pakistan fertilizer industry produces imports and distributes various types of fertilizers. The government has pursued a policy of supporting the industry in the form of feed gas subsidies, GST relaxation and increasing support prices for commodities. There are ten urea manufacturing plant, one DAP, three NP, three SSP, two CAN and one plant of blended NPKs having a total production capacity of 8,983 thousand metric tons per annum.

Although, the installed production capacity for all products has attained the level of 8,983 thousand tons per annum, the actual production for all products remained at 8,015 and 8,065 (estimated) thousand product tones for 2015-16 and 2016-17 respectively. The entire fertilizer products are manufactured by the private sector. At present, the installed production capacity (6,323 thousand tones) of urea fertilizer is more than the national demand of about 6,000 thousand tons per annum. The annual production of urea for 2016-17 is estimated as 5,900 thousand tones, which is less by 6.7 percent of installed capacity of urea fertilizer. Major chemical and fertilizer industries are as follows:
- Dawood Hercules
- Fauji Fertilizer
- Pak Arab Fertilizer Company
- Fatima fertilizers private limited
- Engro Chemical Fertilizer Company Limited

3. Sports Industry
Pakistan is one of the greatest exporters of sports items. Almost all the goods of sports are exported outside the Pakistan because there is a very high demand of Pakistan’s goods of sports in every country of the world. In Pakistan almost all sports related items are produced but the famous products are soccer ball, cricket bat, cricket ball, tennis ball etc. Sports industry of Pakistan has even manufactured the soccer ball for the FIFA World cup of the year 1994.

The sports industry of Pakistan lies in the city of Sialkot which is a part of the province of Punjab. All the items of sports of the best quality are manufactured in the city of Sialkot and sports industry in Sialkot is the main factor of Sialkot’s economy as it earns great profit from it due to the high demand of sports good in international market. All other goods related to the sports are also produced in the sports industry of Pakistan like sports bags, sports jackets, sports cap etc.
7.5 MAJOR ECONOMIC ZONES OF PAKISTAN

Since independence, Pakistan has been focusing on its industrial development. In 1952, Pakistan Industrial Development Corporation (PIDC) was established to encourage industrial growth that work successfully till 1970.

Special Economic Zone
A Special Economic Zone (SEZ) is a specific area of the land used to promote industrial growth in a country by providing moderate economic and tax policies. Government of Pakistan has promoted five industrial estates such as Khairpur Special Economic Zone, Rashkai Economic Zone, Marden and Hattar Economic Zone.

i. Khairpur Special Economic Zone
Khairpur special economic zone has been established by the government of Sindh at 140 Acres of land, to facilitate industrialization in Pakistan. The KSEZ is envisioned to provide best in class infrastructure and facilities & services to local and foreign entrepreneurs. The project is ideally located near Tando Nazar Ali on National highway new Khairpur Town and is set to emerge as splendor of opportunity in the province of Sindh.

Key Areas of Investment
- Non-food processing.
- Agro-food processing.
- Light Engineering/ Manufacturing.

ii. Rashakai Economic Zone Mardan
Rashakai Economic Zone (REZ), the flagship project of KPK Economic Zone Development and Management Company (KPEZDMC) is spread over an area of 1000 acres. Rashakai Economic Zone is strategically located on M1 Motorway at intersection and links to CPEC through Burhan interchange. REZ also serves as a bridging post to Northern Areas of Khyber Pakhtunkhwa and has close proximity to Afghan border. Due to this central position of the economic zone in the province, the company foresees it to be the imminent trade hub of Khyber Pakhtunkhwa.

Rashakai Economic Zone will have infrastructure of international standards including the facility of one window operation to support the industrialists. The zone enterprises will have access to all amenities like water treatment plants, vocational training facilities, state of the art IT systems, security, uninterrupted water and energy supply. Based on the strengths of the connected districts and resource pool, the economic zone has predominant investment feasibility for industries in fruit & food packaging, textile and auto manufacturing. The central location also provides opportunities for industrial set ups involving marble processing, furniture, electrical products, pharmaceuticals, matchbox manufacturing, sugar mills, tobacco and juices.
iii. Hathar Economic Zone

Khyber Pakhtunkhwa Economic Zones Development & Management Company has undertaken a project on undeveloped land owned by Government of Khyber Pakhtunkhwa at Hattar Phase 7, Haripur. Hattar Economic Zone is strategically located at Haripur area adjacent to the existing Old Hattar Industrial Estate. Haripur District also has joining boundaries with four other districts of Khyber Pakhtunkhwa and two districts of Punjab province. The economic zone is located at a short distance of 39 km from Islamabad, the capital territory of the country.

The project of Hattar Economic Zone envisages developing of an industrial area on 1424 acres of land out of which 103 acres is earmarked for infrastructure including roads, drainage, tube wells, overhead tanks, power plants, water supply system, accommodation for necessary staff etc. 317 acres of plots are reserved for allotment to industrialists. The main idea of developing economic zone in Hattar is to provide quality infrastructure for accelerated industrialization in an organized and scientific manner, to attract investment and to generate economic activities, employment and income generation.

1. Export processing zones

Export Processing Zones Authority is a Pakistan Government venture conceived and designed to increase and improve the exports of the country. Export Processing Zones Authority (EPZA) is a Pakistan Government venture conceived and designed to increase and improve the exports of the country. EPZA is one of the fast-growing projects undertaken by the government and carries a great appeal for both local and overseas investors.

The reason for our success in this venture is simple: we provide service with a mission. And this success would not have come about without active cooperation and participation of some other sectors which worked closely with us and helped us stand where we are today. Following are the export processing units of Pakistan.

- Karachi Export Processing Zones

Karachi Export Processing Zone or KEPZ is located adjacent to the Landhi Industrial Area in Karachi, Sindh, Pakistan. KEPZ is located within a distance of 18 km from the Quaid-e-Azam International Airport, 20 km from Port Qasim and 35 km from Karachi Seaport. The Zone is linked with the National Highway network.

Incentives

i. Developed land on competitive rates for 30 years
ii. Duty-free import of machinery, equipment and materials
iii. Freedom from national import regulations
iv. Exchange control regulations of Pakistan not applicable
v. Repatriation of capital and profits
vi. No sales tax on input goods including electricity/gas bills
vii. Duty-free vehicles allowed under certain conditions
viii. Domestic market available to the extent of 20%. Exceptions may be available
ix. Only EPZA is authorized to collect Presumptive Tax at the time of export of goods which would be final tax liability
x. Obsolete/old machines can be sold in domestic market of Pakistan after payment of applicable duties & taxes
xi. Defective goods/waste can be sold in domestic market after payment of applicable duties, maximum up-to 3% of total value
xii. EPZ units allowed to supply goods to Custom manufacturing bonds

• Risalpur Export Processing Zones
Risalpur is a city in Khyber-Pakhtunkhwa province of Pakistan. The city is mainly known for its Marble industries and rich mineral resources in the nearby areas.

• Sialkot Export Processing Zones
Sialkot is the world’s largest producer of hand sewn footballs, with local factories manufacturing 40 to 50 million football per year, amounting 70% of world production. Sialkot is also providing all sorts of hospital equipment’s. Other important industries in Sialkot include Leather tanneries, Leather garments, musical instrument, Surgical and dental instruments. These are all export oriented business and earn billions of dollars every year.

• Gujranwala Export Processing Zones
Gujranwala is a commercial and industrial center, playing major role in the Pakistan economy. It has number of textile mills, and large agriculture processing plants. Major exports include rice, sanitary, fittings, textiles, plastic, furniture, pots, heaters, gas stoves, metal utensils, auto parts, military machinery, motorcycles, food products and industrial motors.

2. Industrial Estates
Industrial estates are the zones that are used to carry industrial activities. Activities such as roads, power, and other utility services are provided to facilitate the growth of industries and to minimize impacts on the environment. Selection of industrial sites should depend on social, environmental and economic factors. Industrial estates should maintain safe distances from residential areas. Industrial estates units monitor data, review it at regular intervals, and compare it with the operating standards so that any necessary corrective actions can be taken. These include:
• Multan Industrial Estate phase
In 1960’s approval was obtained by the Provincial Government to establish an Industrial Estate in the south of Punjab and 1410 acres of land was acquired for this purpose. However, Government of Punjab decided to develop it into two phases. Phase-I comprising of 743 acres was developed & completed in 1980’s whereas, 667 acres were planned to be developed subsequently as phase-II. All
plots in phase-I were leased out for a period of 99 years to industrialists and some Govt. Institutions.

In 2004, the Government of Punjab (GOP) formally handed over MIE to Punjab Industrial Estates in order to revive industrial activity. An amount of Rs. 100 million was allocated by the GOP for upgradation of the infrastructure and the same amounts were contributed by PIEDMC expended form.

Multan Industrial Estate Phase-II
Encouraged by the response of upgradation work in Phase-I, PIEDMC was assigned task of development of infrastructure work for Phase-II in September 2006. It is located adjacent to Phase-I at a distance of approximately 17 km south west of Multan City. Phase-II spreads over an area of 667 Acres having 349 plots. Multan Industrial Estate is led by a Board of Management belonging to private sector representing various industrial segments of the estate and the rest representing the Government.

- Rahim Yar Industrial Estate
  Rahimyar Khan Industrial Estate is an ongoing project of PIEDMC aiming to bring the district of Rahimyar Khan into the main stream of economic growth. Rahimyar Khan Industrial Estate has been developed over 450 Acre of land providing state of the art industrial infrastructure to industrialists from all over Pakistan. Big names like Suncrop (Pvt.) Ltd., Big Bird Group; Sunrise Plastic Industries (Pvt.) Ltd. has already become part of Rahimyar Khan Industrial Estate. Plots starting from 0.5 acre onwards are currently available for sale in Rahimyar Khan Industrial Estate.

  District Rahimyar Khan is rich in wheat, cotton and sugarcane, mangoes, citrus, dates and has abundant livestock resources.

  Hence it is a good opportunity for industrialists operating in the field of Cotton ginning, leather, meat/poultry processing, Textile, vegetable ghee, fruit juices, fertilizers to invest in Rahimyar Khan Industrial Estate and make use of available resources plus generate employment for local residents.

- Bhalwal Industrial Estate
  Bhalwal Industrial Estate is located on a prime location just 15 km from M-2 Motorway between Salam & Bhera Interchange. Bhalwal Industrial Estate spans over 450 acres and is located in the best citrus producing area of the world in District Sargodha. Plots starting from 0.5 Acre are available for sale in Bhalwal Industrial estate and many renowned names of Pakistani Industry including Dawn Bread, National Foods, Kemya Pharma, Nutra Allied etc. are already a part of this industrial estate.
District Sargodha is famous all over the world for its citrus producing ability. 52% of national production of oranges is from Sargodha District that has a high export value. Along with citrus, its produce is sugarcane, rice, wheat, potato and tomato. Bhalwal Industrial Estate is planned to cater food processing units including juices, jams jellies and snacks, citrus grading, cold storage. It also has a potential for sugar mills, flour mills, rice husking units’ other trades include leather, paper board, PVC, chip board, nutraceutical etc.

**SUMMARY**

Industry refers to that sector which is involved in manufacturing and production. Industries can be classified into three major categories based on raw material, size and ownership. Industrialization leads to development and growth of underdeveloped regions of a country. Generally, location of industries is influenced by economic and geographical factors. Cost minimization and maximization of profit is goal in their selection of location for industries. There are several factors which pulls the industry to setup place/location. Some major factors influencing industrial location have been discussed.

There are number of heavy industries in Pakistan namely Sugar, Cement, Fertilizers and sports Industry which contribute major share in foreign exchange earnings. Major Economic Zones of Pakistan has been explained as A Special Economic Zone (SEZ) is a specific area of the land used to promote industrial growth in a country by providing moderate economic and tax policies. Export Processing Zones Authority is a Pakistan Government venture conceived and designed to increase and improve the exports of the country. Industrial estates are the zone that are used to carry out industrial activities. Activities such as roads, power and other utility services are provided to facilitate the growth of industries and to minimize impacts on the environment.

**SELF-ASSESSMENT QUESTIONS**

1. Describe the suitable physical and non-physical for the growth of industrial development.

2. Explain the worldwide production of cotton textile industry.

3. Explain the worldwide production of woolen textile industry.

4. Discuss in detail the special economic zones/industrial zones.

5. Write a detail note on heavy industries of Pakistan.
DOMESTIC TRADE

Compiled by: Arifa
Asia Batool

Reviewed by: Huss-Nul-Amin

139
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>141</td>
</tr>
<tr>
<td>Objectives</td>
<td>141</td>
</tr>
<tr>
<td>8.1 Trade</td>
<td>142</td>
</tr>
<tr>
<td>8.1.1 Parties Involved in the Process of Trade</td>
<td>142</td>
</tr>
<tr>
<td>8.1.2 Classification of Trade</td>
<td>142</td>
</tr>
<tr>
<td>8.2 Home Trade/Domestic Trade</td>
<td>143</td>
</tr>
<tr>
<td>8.2.1 Wholesale Trade</td>
<td>143</td>
</tr>
<tr>
<td>8.2.2 Retail Trade</td>
<td>143</td>
</tr>
<tr>
<td>8.2.3 Key Features of Home Trade</td>
<td>143</td>
</tr>
<tr>
<td>8.2.4 Advantages of Home Trade</td>
<td>144</td>
</tr>
<tr>
<td>8.2.5 Procedure and Documents of Home Trade</td>
<td>146</td>
</tr>
<tr>
<td>8.3 Aids-To-Trade</td>
<td>149</td>
</tr>
<tr>
<td>8.3.1 Transport</td>
<td>149</td>
</tr>
<tr>
<td>8.3.2 Communication</td>
<td>150</td>
</tr>
<tr>
<td>8.3.3 Warehouse</td>
<td>150</td>
</tr>
<tr>
<td>8.3.4 Insurance</td>
<td>150</td>
</tr>
<tr>
<td>8.3.5 Banking and Finance</td>
<td>151</td>
</tr>
<tr>
<td>8.3.6 Advertising</td>
<td>151</td>
</tr>
<tr>
<td>8.3.7 Middlemen</td>
<td>151</td>
</tr>
<tr>
<td>8.3.8 Trade Promotion Organizations</td>
<td>152</td>
</tr>
<tr>
<td>8.3.9 Packing</td>
<td>152</td>
</tr>
<tr>
<td>Summery</td>
<td>152</td>
</tr>
<tr>
<td>Self-Assessment Questions</td>
<td>154</td>
</tr>
</tbody>
</table>
INTRODUCTION

Trade has a major role in the development of a country. A country produces some of the goods needed by the people but cannot produce everything. Trade is the process of transferring goods and rendering services from one person/organization to another and from one place to another place in exchange of money or goods. Usually a country trades the goods it has in abundance or shortage. In this way the demand of countries is fulfilled with the help of trade and prosperity and economic development of countries is gained. In modern business world, the importance of trade intermediaries is unquestioned. Aids-to-trade include all activities, functions and institutions which are involved in the exchange of goods produced in various industries to the ultimate users. Trade intermediaries such as banking, transportation, insurance, warehousing, advertisement and communication channels are integral parts of trade process without which trade process in not possible. The unique properties of these intermediaries allow businesses to set higher trade goals and meet them more effectively. These intermediaries reduce supply chain costs, increase volume and efficiency of trade and tighten customer relationships.

OBJECTIVES

After reading this unit, the student will able:

1. to understand the concept of trade
2. to know the Procedure and Documents of Home/Domestic Trade
3. to know the importance of domestic trade
4. to list down the Aids-to-trade
8.1 TRADE

Trade is the exchange of commodities between individuals or groups either directly through barter systems or indirectly through any medium such as money. It includes all the selling and buying activities within a country or across the boundaries. It is the entire procedure of distributing the goods produced by different industries to their ultimate consumers. Hence, it removes the personal hindrance in the exchange of commodities.

Trade plays an important role in the production of goods and consumption of goods. Trade provides goods which are produced at some particular place to their end users according to their needs. The prime purpose of trade is to remove the hindrance of persons by bringing together producers and consumers who are widely scattered.

8.1.1 Parties Involved in the Process of Trade
The role of following parties in trade is very important:

i. Producer

ii. Trader

iii. Consumer

i) Producer
Producer is a person who produces goods for selling them to the end users. He makes necessary arrangements to convert raw materials into finished or semi-finished goods. He generally sells his products through wholesalers and retailers in local and foreign markets and makes profit on them.

ii) Trader
Trader is a person who buys goods from producers or other traders and sells these goods to the end users or other merchants. His role of middleman serves as a bridge between producers and end users of goods.

iii) Consumer/Customer
Consumer/Customer is a person who buys commodities or services for his personal use. He does not further sell commodities to other persons rather he satisfies his own desires and needs. This is the person for whom the whole process of trade is taken place.

8.1.2 Classification of Trade
Trade is classified in two broader categories according to the market in the following way:

(i) Home Trade/Domestic

(ii) Foreign Trade
Details of these types of trade are given in the next section of the unit.

8.2 HOME/DOMESTIC TRADE

The exchange of commodities within the geographical boundaries of a country is called domestic or home trade. In this type of trade, the seller and buyer both are resident of same country. For example, a trader of Karachi sells goods to another trader in Rawalpindi is the type of home trade. In home trade, services or commodities produced are sold to all over the country which improve the living standards of general public, create employment opportunities and facilitate economic development of a country. Home trade is further divided into the following two categories.

8.2.1 Wholesale Trade

In wholesale trade, a wholesaler buys commodities in the large quantities from procedure and then sells them to retailers in small quantities. A wholesaler acts as an intermediary between producers and retailers who can be a merchant or a commission agent. He creates a bridge between the producer and retailer. In this way, he makes his role very important for both the producers and retailers.

8.2.2 Retail Trade

In retail trade, a retailer buys large quantities from wholesalers and sells in units to the end users. Retailer is considered the last link in the channel of distribution. A retailer acts as an intermediary between wholesalers and the end users. A retailer can be a small scale retailer such as hawker and general shop or large scale such as superstore. Practically, producers and wholesalers are also functioning as retailers in way of distributing commodities the end users in order to bypass the intermediaries and reduce prices.

8.2.3 Key Features of Home Trade

Following are key features of home trade:

i. All trade transactions are taken within the geographical boundaries of a particular country
ii. It covers only local or domestic markets
iii. Local currency is used in receipts and payments
iv. Normally, home trade involves the exchange of local goods. However, foreign goods may also be traded
v. Facilities, problems and business environment are same for all traders
vi. Goods are handed over to buyers immediately
vii. Transportation charges are relatively lesser
8.2.4 Advantages of Home Trade

i. Home trade creates the demand of locally produced goods, which leads to increase in production.

ii. It enables manufacturers to concentrate on production activities rather than to go in search of consumers.

iii. It provides goods to consumers who can concentrate on their own occupations rather than to go in search of producers.

iv. Expansion in home trade provides employment opportunities to the masses and reduces the problem of unemployment.

v. There are no legal formalities and restrictions to conduct home trade.

vi. There is no need of foreign exchange as local currency is used for receipts and payments.

vii. The growth of home trade provides better opportunities for industrial development. Industries are facilitated by consumption of their products, providing raw materials, machinery etc.

viii. In agricultural countries, domestic trade plays a vital role in agricultural development. Agricultural development is based on the availability of latest technology, seeds, fertilizers and pesticides etc. All these requirements are easily available in the whole county due to home trade.

ix. Since goods are transferred from one place to another within the boundaries of a particular country, so local transport can be easily availed for this purpose.

x. With the help of domestic trade, various commodities can be made available in different areas of the country. Due to this the people do not face any problem to get their required goods.

xi. In domestic trade the government charges only nominal taxes like sales tax etc. and the traders do not pay import and export duty.

xii. There is no restriction on the movement of goods within the country, so the goods can be sent freely anywhere in the country which makes home trade easy.

xiii. With the help of domestic trade, shortage of goods can remove by transferring them from the area having surplus to the area with shortage. With the smooth flow of supply of goods prices remain stable and equal throughout the country.

xiv. All the facilities provided, and restrictions imposed by the government are the same for each trader in domestic trade. None can have favorable advantage or undue disadvantage.

xv. Due to home trade, the supply or availability of medicines is easy to make and maintain. For example, the easy availability of medicine on clinics,
health clubs, medical stores and even on small shop is possible with the help of home trade.

xvi. In home trade, a producer can purchase raw material and other factors of production at low prices from that area where these are available at cheaper rates. Having cheap raw materials and other means of production, the goods can be produced at lower cost to compete in the market.

xvii. Living standards can be improved with the help home trade. Because more trade leads to more business that create more employment opportunities to the masses and resultantly increasing income level of people and making goods easily available. All the above, elements lead to high standard of living.

xviii. In home trade, the buyer gets immediate possession of goods; he can use according to his need which extends trade activities.

xix. Due to home trade, the best possible utilization of available resources of country is possible in the best interests of general public.

xx. The importance and demand for workers increase with the expansion of home trade and they can go to those places, where employment opportunities arise.

xxi. Due to development in home trade, the local and foreign investors find viable investment opportunities to earn huge profit.

xxii. The goods can be bought or sold on credit basis without any hesitation. Due to this, the exchange of goods and services is possible with less capital or without capital.

**Hindrances in Home Trade**

vii. Sometimes heavy taxes and restrictions are imposed by provincial or federal government on transferring goods at national or district level, which results in reduction of the trade volume.

viii. Cheap and quick means of transportation and communication contribute a lot in the development of domestic trade. But their inferiority may prove an ample problem for home trade.

ix. Generally, the goods having better quality are exported and substandard goods are sold locally in domestic trade.

x. Due to bad conditions of peace and stability in some parts of the country, free trade becomes impossible. Due to this, home trade is affected adversely.

xi. Rapid change in governments and political crises create instability in home trade and disturb its continuity. So, backward areas do not make progress in trade and business.

xii. People living in different areas of the same country have different languages. A trader may face this problem in order to sell his goods.
xiii. Poor rail-road conditions and lack of infrastructure are the big hindrances in the way of domestic trade especially in developing countries like Pakistan.

8.2.5 Procedure and Documents of Home Trade

i. Enquiry Letter
In this letter a person/trader seeks necessary information about the goods he wants to buy. Following are major parts of an enquiry letter:

(a) Availability of goods
(b) Quality of goods
(c) Price and Discount
(d) Packing of goods
(e) Terms of sale
(f) Time required for delivering and transporting goods
(g) Mode of Payment

ii. Quotations/Tender
Quotation is the reply of an enquiry letter. It includes all necessary information, terms and conditions regarding the sale of goods required by the buyer. In government buying, it is called tender. Usually, it contains the following information:

(a) Quality of goods
(b) Price and discounts
(c) Details of delivery expenses
(d) Time required for such delivery
(e) Mode of payment

iii. Order Letter
If terms and conditions are considered favorable after receiving quotation/tender from the seller, the buyer may place the purchase order with the help of the order letter. The buyer also retains a copy of the order letter for his future needs.

iv. Acknowledgement of Order Letter
The seller then sends an acknowledgement of the order letter to buyer with thanks stating that your order has been received.

v. Sales Agreement
After receiving the order in proper form, an agreement of sale of goods is made between buyer and seller. The agreement is called sale agreement and it may be oral or written.
vi. **Execution of Order**  
The seller adopts the following procedure for execution of purchase order.  
(a) Order is recorded in the order book  
(b) A copy of order is sent to the storekeeper to confirm the availability of goods  
(c) If required stock is available, then goods are sent for packing

vii. **Delivery of Goods**  
The seller decides to deliver the goods to buyer according to the provisions of sale agreement.

viii. **Delivery Note**  
After dispatching the goods, a delivery note is sent to buyer. This document contains information like means of sending goods and time etc. A Performa invoice is also sent to buyer along with delivery of goods.

ix. **Performa Invoice**  
It can be said "Rough Invoice" to show the purchaser that how an actual invoice will be prepared if he decides to buy goods. However, it cannot be used in place of original invoice.

x. **Debit Note**  
If goods bought on credit are returned to seller due to any reason, the buyer debits the sellers account and informs the seller through a note. This note is called "Debit Note".

xi. **Credit Note**  
If goods sold on credit are returned by the buyer due to any reason, the seller credits the buyer account and informs the buyer through a note. This note is called "Credit Note".

xii. **Invoice**  
It is an important document of internal trade, which includes quantity, price and total value of the goods sold. It is sent to the buyer and payment is made according to the amount written on it.

Following are the contents of an invoice:  
(a) Name & address of the sender  
(b) Name & address of the buyer  
(c) Date  
(d) Serial number of invoice
(e) Quality or brand of goods
(f) Weight or quantity of goods
(g) Rate and total value of the goods
(h) Other expenses if any (transportation and packing etc.)
(i) Terms of payment and discount
(j) Signature of seller

xiii. Statement of Account
Both parties (seller and buyer) record the transactions (sale, purchase, receipt or payment) in their respective books regularly. This statement shows the transactions, which have been taken place during to the period. It enables the buyer and seller to compare the entries in their books and settle the accounts accordingly.

xiv. Cash Discount
It is a concession or allowance granted to the buyer for early and prompt payment in case of credit sales. This facility can be availed if the payment is made before maturity.

xv. Payment
After receiving the goods and statement of accounts, the payment is made by the purchaser. A payment can be made by using the following methods within the country:
(a) Cash
(b) Cheque
(c) Bank transfer
(d) Bank draft
(e) Money order
(f) Postal order etc.

xvi. Payment Slip/Receipt
It is an acknowledgement, which shows that a person has made the payment of a certain amount on a date. With the use of this receipt, future misunderstandings regarding the payments can be avoided.

xvii. End of Deal
After settlement of accounts and completion of all the formalities between parties, the process of a local trade comes to an end.
8.3 AIDS-TO-TRADE

Trade or exchange of goods involves several difficulties, which are removed by auxiliaries known as aids to trade. It is the collection of all such activities which deal with the buying and selling of goods, the exchange of commodities or distribution of the finished goods. Transportation of goods, role of trader, insurance companies, financial institutions, advertisement of goods, storage and all such activities, which are directly or indirectly help the exchange of goods are included in this range. For example, the production of the products is taken place somewhere else and the products are consumed somewhere else.

Transport helps in removing this problem of place. Generally, goods are produced in anticipation of demand and if the people do not purchase them immediately, warehouses keep these goods safe. Hence, the role of these aids-to-trade in exchange of goods and services becomes very crucial in smooth trade. Aids-to-trade include all the activities, which directly or indirectly facilitates smooth exchange of goods and services. These activities facilitate trade by removing various barriers in the buying and selling of goods. Aids-to-trade includes transportation, warehousing, banking and finance, insurance, advertising, communication, middlemen/mercantile agents, packaging, and trade promotion organizations. Auxiliaries ensure smooth flow of goods from producers to the consumers.

It is the framework of attaining certain objectives. The objectives of commerce are to provide series of service or activities, which can facilitate the exchange of goods until they are reached in the hands of ultimate and proper consumer. Thus, the consumers can satisfy their wants and the producers can sell their goods to get profit. In organizing the activities in commerce, we go through the following elements, which are also known as aids or auxiliaries to trade.

8.3.1 Transport
Transport is the source or conveyance used for transferring goods and passengers from one place to another. It facilitates trade by transferring and distributing goods. Transport brings the goods from the place of production to all the far and distant places of consumption. It helps the consumers in getting a wide variety of goods at reasonable prices. It overcomes the barrier of distance and creates place utility. Transport widens the market and helps to equalize and stabilize prices at different places. It results in the equitable distribution of goods in the remote areas.
Transport helps in increasing the size and scale of business. Well-developed facilities of transport help industrial units to locate at the most economical places and grow to their optimum size. There are several kinds of transport such as air, water and land transport. The geographical distance between producers and consumers is removed with the help of transport. Fast and economical means of transport such as railways, roadways, airways and shipping widen the scope of trade.

8.3.2 Communication
Communication means the exchange of information from one person to another. It can be oral or in writing. It is necessary to communicate information from one party of trade to another to finalize and settle the terms of sales such as prices of goods, discount allowed, facility of credit, etc. Means of communication provide or convey commercial information to individuals, firms and companies. These consist of people, institutions and processes engaged in spreading the necessary business information between producers and consumers. Radio and television are general communication services but other channels of communications such as telephones, fax, telegrams, E-mail, Internet also play an important role in establishing contact between businessman, producers and consumers.

8.3.3 Warehousing
Usually, goods are produced in anticipation of consumers’ demand. It is, therefore, necessary to store the goods until they are sold. The activity related to warehousing consists of storage of goods in enough quantities so that they can be supplied as and when there is demand. Thus, the hindrance of time is removed by warehousing. Many products such as wheat, sugar, rice, etc. are produced in a season but they are needed throughout the year. Proper storage arrangements must be made in order to make the goods available throughout the year. Besides, it is necessary to store commodities such as woolen garments and umbrellas to meet the desired seasonal demand. Warehousing also helps in stabilizing prices through equal distribution of surpluses over different time periods. Warehousing removes the hindrance of time and thereby creates time utility.

8.3.4 Insurance
Business involves several types of risks such as possibilities of theft, price fluctuations, dishonesty of employees, bad debts, exchange rate fluctuations, loss of goods in transit, fire, floods, burglary deterioration, accident and breakage etc. The activity of bearing possibilities of such type of risk to goods is linked with insurance. With the help of insurance, a businessman can protect himself from almost all types of risks. Insurance companies try to reduce these types of risks by spreading them out over a greater number of people called "pooling of risks".
Many people who are subject to a particular risk contribute to a common fund, out of which compensation is paid to those few who suffer the loss. In this way the amount of risk borne by an individual businessman is reduced by distributing the burden of loss over many persons. The rate of premium depends upon the type of risks and the period for which the risk is covered. Insurance creates a sense of security and freedom from anxiety for businessmen. Businessmen can carry on their business with confidence and peace of mind which results in development and progress of trade.

8.3.5 Banking and Finance
There is usually a time gap between production/purchase and sale of goods. During this period businessman need funds to carry on their business. Usually, business transactions involve large amounts of payments and receipts which involve the risks of theft and burglary. Banks and other financial institutions provide required credit in various forms. The activity of providing funds is linked with banking and finance sector. Banks and other financial institutions provide loans for business transactions, collect money on behalf of customers, discount bills of exchange and provide safe and quick means for the remittance of money to businessmen who ultimately remove the hindrance of risk and finance.

8.3.6 Advertising
Advertising/publicity is the procedure of informing potential consumers/customers about the availability, features and price of various products and services. Advertising is the most important media of mass communication for a business. The main purpose of advertising is to create and sustain demand. Advertising removes the hindrance of knowledge. It fills the knowledge gap and it solves the difficulty of information exchange among producers and consumers. There are various forms of advertising such as the print media, electronic media, outdoor displays, radio, television, letters to customers, fairs, social media, exhibitions and cinema, etc. Good marketing research can help the businessmen to know and understand the requirements of consumers.

8.3.7 Middlemen
Middlemen perform the role of bridge between producers and consumers. They do not carry on business in their own name. Middleman may be a distributor, trader, salesmanship, mercantile agents, brokers, commission agents, auctioneers, underwriters, insurers or of some other status like transporter or salesman etc. Some middlemen are specialized in bringing buyers and sellers together for a transaction and they play active and prominent role in the negotiations leading to purchase and sale. Middlemen receive their reward in the form of commission. It removes the hindrance of person and place.
8.3.8 Trade Promotion Organizations
Sometimes, national and international trade promotion organizations help in promoting and developing business activities. Main objective of these organizations is to facilitate the promotion and development of trade. These organizations are established by the business community to protect and promote the interest of their members. They conduct market research work, act as clearing house of information, put their grievances before the government, make representations, and help business community in many ways. The examples include Chambers of Commerce, Export Promotion Councils, World Bank, IMF, WTO, etc.

8.3.9 Packing
Packing means putting goods in wrappers, containers, etc. Packing helps to protect the goods from damage during transport and warehousing. It also makes the goods attractive. Packing helps in the conveyance and handling of goods. It removes the hindrance of risk by keeping goods safe and free from spoilage. Trade and transport of goods have become easier and safer due to improvements in the art and methods of packaging.

SUMMARY

All the economic activities which are undertaken to earn profit are included in business. You have also studied two main categories of business; (i) Industry, (ii) Commerce. The prime purpose of commerce is to facilitate the distribution of goods through trade and aids-to-trade. Trade has a major role in the development of a country. A country produces some of the goods needed by the people but cannot produce everything. Trade is the process of transferring goods and rendering services from one person/organization to another and from one place to another place in exchange of money or goods.

Usually a country trades the goods it has in abundance or shortage. In case of abundance of goods, a country sells goods to other countries which are having shortage of those goods and earns money or other kind of wealth. In case of shortage of goods, a country buys goods from other countries having abundance of goods. In this way the demand of countries is fulfilled with the help of trade and prosperity and economic development of countries is gained. In modern business world, the importance of trade intermediaries is unquestioned.
Trade intermediaries have a strong impact on trade. Trade intermediaries or aids-to-trade are necessary for trade which facilitate trade and play a vital role in the successful completion of trade process. Aids-to-trade include all activities, functions and institutions which are involved in the exchange of goods produced in various industries to the ultimate users. Trade intermediaries such as banking, transportation, insurance, warehousing, advertisement and communication channels are integral parts of trade process without which trade process is not possible.

Banking and financial sector provide loans and financial services to traders, transportation helps in dispatching goods from one place to another, insurance saves traders from various types of trade losses, communication channels provide facility of sending and receiving business messages quickly and accurately, warehousing keeps the goods for a long period of time and saves goods from deteriorations and advertisement creates awareness about the products and explains the attributes of goods to the public for inducing them to buy those goods that resultantly creates better-informed users. The unique properties of these intermediaries allow businesses to set higher trade goals and meet them more effectively. These intermediaries reduce supply chain costs, increase volume and efficiency of trade and tighten customer relationships.
SELF-ASSESSMENT QUESTIONS

1. Explain the Domestic Trade and discuss the classification of trade.

2. Discuss the Key Features and advantages of Home Trade.

3. What are the main Procedures and Documents of home trade?

4. Describe the major domestic markets of Pakistan.

5. Write detail note on each point of the following:
   a. Advertising
   b. Middlemen
   c. Packing
FOREIGN TRADE OF PAKISTAN

Compiled by: Arifa
Asia Batool

Reviewed by: Huss-Nul-Amin

155
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>157</td>
</tr>
<tr>
<td>Objectives</td>
<td>157</td>
</tr>
<tr>
<td>9.1 Introduction to Foreign Trade of Pakistan</td>
<td>158</td>
</tr>
<tr>
<td>9.1.1 Foreign Trade</td>
<td>158</td>
</tr>
<tr>
<td>9.2 Role of Trade Development Authority of Pakistan</td>
<td>159</td>
</tr>
<tr>
<td>9.2.1 Export Facilitation Efforts by TDAP</td>
<td>161</td>
</tr>
<tr>
<td>9.2.2 New Markets</td>
<td>161</td>
</tr>
<tr>
<td>9.3 Free Trade Agreements (FTAs)</td>
<td>162</td>
</tr>
<tr>
<td>9.3.1 South Asian Free Trade Area (SAFTA)</td>
<td>163</td>
</tr>
<tr>
<td>9.3.2 Impact of TLP on Pakistan’s Trade with SAARC Region</td>
<td>163</td>
</tr>
<tr>
<td>9.4 Role of Foreign Trade</td>
<td>163</td>
</tr>
<tr>
<td>9.5 Producer and Documents of Foreign Trade</td>
<td>165</td>
</tr>
<tr>
<td>9.6 Exports of Pakistan</td>
<td>168</td>
</tr>
<tr>
<td>9.7 Imports of Pakistan</td>
<td>171</td>
</tr>
<tr>
<td>Summary</td>
<td>173</td>
</tr>
<tr>
<td>Self-Assessment Questions</td>
<td>174</td>
</tr>
</tbody>
</table>
INTRODUCTION

This unit will introduce the foreign trade of Pakistan. Foreign trades are the exchange of capital, goods and services across international borders or territories. International trade is the exchange of goods and services across international boundaries of countries. It is exchange of goods and services among different nations. In various countries it represents significant share of the GDP. Free Trade Agreements (FTAs) will be explained. Pakistan is a member of World Trade Organization (WTO), part of the South Asian Free Trade Area agreement and the China-Pakistan Free Trade Agreement. Fluctuating world demand for its exports. Foreign trade plays very important role in the economic development of any country. There are number of dry ports inland intermodal terminal directly connected by road or rail to a seaport. The imports and exports of Pakistan will be discussed.

OBJECTIVES

After reading this unit, you will able:

1. to know the concept of foreign trade of Pakistan
2. to know Role of foreign trade
3. to list down the exports of Pakistan
4. to list down the imports of Pakistan
INTRODUCTION TO FOREIGN TRADE OF PAKISTAN

The International trade is the exchange of goods and services across international boundaries of countries. It is exchange of goods and services among different nations. In various countries, it represents significant share of the GDP. Economic and social importance of international trade has been increased in recent years in various countries. Trading globally gives consumer and countries the opportunity to purchase any product what they want. Almost every kind of products like food, clothes, machinery and services are available in international markets.

A product sold in international market is called export, and a product that is purchased from global market is called imports. Imports and exports are accounted for in the balance of payment of a country. Industrialization, advance technology including transportation, globalization and outsourcing are all having major impact on the international trade. Without international trade, nations would be bounded to consume the goods & services produced in their own country. Instead of importing the factors of production countries prefer to Import finished products that required fulfilling the needs of people.

We live in global marketplace. The food on your table might include fresh fruits from chille, Toys you give to your child may become from china, the car you might drive come from Japan. The crude oil might be from Saudi Arabia, and the salary you receive may come from the exports sales. The first wave of globalization was started in the 19th century. The share of exports in GDP was increased from 1% to 9% from 1820 to 1913. Globalization is the process by which world is isolated through technological distance, becomes increasingly interconnected, it increases the interaction between people around the world that involves the sharing of ideas, goods and services.

9.1.1 Foreign Trade of Pakistan

Pakistan has bilateral and multilateral trade agreements with many nations and international organizations. Pakistan is a member of World Trade Organization (WTO), part of the South Asian Free Trade Area agreement and the China-Pakistan Free Trade Agreement. Fluctuating world demand for its exports, domestic political uncertainty, and the impact of occasional droughts on its agricultural production have all contributed to variability in Pakistan's trade deficit. The trade deficit for the fiscal year 2016-17 is $32.578 billion.

Pakistan's exports continue to be dominated by cotton textiles and apparel. Imports include petroleum and petroleum products, edible oil, chemicals, fertilizer, capital goods, machinery, out mobile industrial raw materials, and consumer products. On 12 December 2013, the European Union granted GSP Plus status to Pakistan until 2017, which enabled it to export 20% of its good with 0 tariff and 70 percent at preferential rates to the EU market.
Pakistan exports rice, kinnow, mangoes, furniture, cotton fiber, cement, tiles, marble, textiles, clothing, leather goods, sports goods, cutlery, surgical instruments, electrical appliances, software, carpets, rugs, ice cream, livestock meat, chicken, powdered milk, wheat, seafood (especially shrimp/prawns), vegetables, processed food items, Pakistani-assembled Suzuki’s (to Afghanistan and other countries), salt, onyx, engineering goods, and many other items. Pakistan exports cements to Asia and the Middle Eastern countries.

9.2 ROLE OF TRADE DEVELOPMENT AUTHORITY OF PAKISTAN (TDAP)

1. To recommend to the TDAP Board, a national policy for maximizing exports of goods and services from Pakistan and after approval of the Federal Government to develop strategy and plans within the policy framework given by the Board.

2. To develop a consistent, sustainable and result oriented, holistic export development plan, outlining vision, objectives, strategies and plan as approved by the Board.

3. To achieve synergy in development of exports at a national level by forging effective liaison with private and public stakeholders and avoiding duplication of efforts.

4. To encourage and promote research in trade and policy related studies that may facilitate in formulating an effective export policy and plans.

5. To plan, organize exhibitions, delegations to and from Pakistan;

6. To plan and organize local, international and inter-provincial export promotional conferences, workshops, seminars etc.

7. To plan and organize foreign trade promotion through advertising in local and international print electronic and other appropriate media.

8. To liaise with trade bodies abroad.

9. To promote export sectors where separate sectored boards / bodies currently exist or will be formed in the future, notwithstanding anything contained in any other law for the time being in force.

10. To examine supply chains of strategic export sectors and develops plans and initiatives for strengthening supply base including exporters’ capabilities and capacities.

11. To monitor progress against these plans for information of the Board.

12. To coordinate through Ministry of Commerce, with the Federal and Provincial Governments and related organizations for a concerted supply chain initiative; to provide visa assistance to outgoing or incoming businessmen whether Pakistani or foreign nationals, in co-ordination with
the Ministry of Foreign Affairs and foreign Missions in Pakistan; to encourage, establish and manage where appropriate export development centers, business support units, display centers and facilities, and information centers, and exporters training institutes etc.

13. To promote exporters and stakeholders’ education and training of intermediaries of export related supply chain.

14. To encourage the organized development of the export business and the related corporate and commercial sectors in Pakistan.

15. To facilitate the availability of finance to exporters, export oriented small and medium enterprises, risk management of exporters and international buyers, energy and infrastructure needs of exporters and related industrial areas and zones, quality management, social, environmental and security needs and generally all aspects of export facilitation etc.

16. To encourage and promote human resource development in the export sectors.

17. To encourage and promote and train new exporters.

18. To provide advisory support to stakeholders.

19. To be responsible for all matters related to trade development and promotion by Commercial Officers posted in Pakistani Missions abroad. This shall include the training, trade targets, monitoring, and performance evaluation against these trade targets. The Chief Executive of the Authority shall be a member of the committee for selection of the Commercial Officers to be posted abroad.

20. To manage funds available to the Authority in accordance with rules and regulations approved by the Board; to make rules for the conduct of the Authority with approval of the Board.

21. To have the administrative control of warehouses and other trade development entities owned by the Authority in Pakistan and abroad.

22. To set up National, Provincial and Sectoral trade committees.

23. To implement directives of the Federal Government and the Board relating to export development and promotion.


25. To include a quality assured ethic in exporters while encouraging value addition of exports.

26. To take, initiatives for maintaining facilities etc. to improve the performance of exporters in the interest of generating economic activity, reducing cost of doing business and enhancing supply chain efficiency.

27. To maintain the confidence of exporters by appropriate communications.

28. To promote the establishment and development of professional, educational and training organizations connected with exports with a view to improving the management of export business.
29. To promote awareness among exporters and buyers and all relevant stakeholders with respect to the benefits of exports and services of the Authority and general policies of the Federal Government.

9.2.1 Export Facilitation Efforts by TDAP
1. The new strategy is based on a two-pronged approach, namely:
   i. Products/Services.
   ii. Markets.
2. Achieving value-addition through
   i. Investment + Research & Development + Technology + Skill Development.
3. Assist SME’s to cross over the threshold.
4. Prioritize and provide opportunities for better use of resources.
5. Create opportunities for increased market share through incoming/outgoing delegations focusing on bringing buyers to Pakistan.
6. Broaden the present narrow export base.
7. Moving on thirteen (13) new product development projects, i.e. Marble, Mango, Agro Food, Dates, Carpets, Leather, Gem & Jeweler, etc.
8. Research & Development activities pertaining to market & product development.
9. New products & services with greatest export potential identified; besides these, TDAP will continue the efforts to increase the traditional exports of Pakistan e.g. Textile, Clothing, Carpets, Surgical goods, Sports goods, etc.

9.2.2 New Markets
There is slow growth in demand in traditional markets of US & EU. Hence, TDAP’s increased focus on increasing market share of Pakistan exports in new Asian Markets especially Russia, China, India, and in Africa. To carry forward this mission successfully, implementation of the New Export Strategy was imperative. The first agenda item was thus the re-organization of TDAP, whose principle features are:
   i. Product divisions to develop export potential of Pakistani products through four divisions namely,
      ▪ Agro Food
      ▪ Textile and Cloth
      ▪ Mineral and Metals
      ▪ Engineering & Manufacturing
   ii. Services Division: To develop exports of Services Sector.
   iii. Marketing Divisions: To develop strategy for increasing market share for better understanding of major markets, through market analysis, competitor
analysis, and seeking best business practices, the following divisions were created:
1. Asia Pacific Division
2. Europe Division
3. America Division
4. Africa Division.

9.3 FREE TRADE AGREEMENTS (FTAs)

Free trade is a policy followed by some international markets in which countries' governments do not restrict imports from, or exports to, other countries. Pakistan has free trade agreement with many countries to flourish its exports as well as imports to meet its local requirements. Following are the free trade agreement of Pakistan with other countries.

i. China Pakistan FTA (CPFTA):
China-Pakistan Free Trade Agreement (CPFTA) on trade in goods was signed on 24th November 2006 and implemented from 1st July 2007. FTA on Trade in Services was signed on 21st February 2009 and is operational from 10th October 2009. The FTA covers more than 7000 tariff lines at the 8-digit level of HS code.

Pakistan-China volume of trade, which was in the region of US$ 4 billion in the year 2006-07, reached an all-time high at US$ 13.77 billion in 2015-16. Pakistan’s exports have increased by almost 200 percent (US$ 575 million in FY2007 to 1690 million in FY2016). China’s exports to Pakistan have increased to almost 250 percent (US$ 3.5million in FY2007 to 12.1 billion in FY2016).

ii. Malaysia-Pakistan FTA (MPCEPA)
A Comprehensive Free Trade Agreement (FTA) for Closer Economic Partnership between Pakistan and Malaysia was signed on 08-11-2007 at Kuala Lumpur. It is operational from 1st January 2008. The tariff reduction commitments involved elimination of tariffs on 43.2% of Pakistan’s imports from Malaysia and 78% of Malaysia’s imports from Pakistan. In 2007-08, Pakistan-Malaysia bilateral trade was US$ 1238.808 million with Pakistan’s exports amounting to US$ 81.323 million. In the same year Pakistan’s imports from Malaysia were US$ 1157 million. After the implementation of the Agreement, Pakistan’s exports to Malaysia have increased to US$ 188 million and imports decreased to US$ 814 million.

iii. Pakistan-Sri Lanka FTA (PSFTA)
Pakistan and Sri Lanka signed a Free Trade Agreement in 2002 which became operational in June 2005. Under the FTA, concessions that are granted, list of Pakistan contains 206 items of 100% concession. The Sri Lanka has granted
access to the Pakistani rice and potatoes subject to a Tariff Rate Quota. Under this FTA, tariff preferences offered to Pakistan are, though less in number, have resulted in an increase of Pakistan’s exports. After signing of FTA, Pakistan’s bilateral trade with Sri Lanka increased from US$ 200 million in 2004-05 to US$321.71 million in 2015-16. Pakistan’s exports in the corresponding period have also increased from US$ 155.83 million to US$ 247.11 million.

9.3.1 South Asian Free Trade Area (SAFTA)
The SAARC Preferential Trading Arrangement (SAPTA) was signed in April, 1993. Subsequently, the 16th Session of the Council of Ministers of SAARC (at New Delhi, in December 1995) agreed to establish a South Asian Free Trade Area. The Agreement on South Asian Free Trade Area (SAFTA) was signed during the 12th SAARC Summit held at Islamabad on 6th January 2004. The Tariff Liberalization Programme (TLP) on the under SAFTA was finalized during the first meeting of SAFTA Committee of Experts (COE) held in Dhaka, in April 2006. The first two phases of the TLP under SAFTA have been implemented by all countries.

9.3.2 Impact of TLP on Pakistan’s Trade with SAARC Region
Pakistan’s trade in the SAARC region has increased substantially due to TLP. In FY 2003-04, Pakistan’s total export to the SAARC region was US$ 886 million which increased to US$ 1,564 million in FY 2006-07 (in the first year of SAFTA’s implementation). During FY 2015-16, Pakistan’s exports to the SAARC region were US$ 2690.23 Million. Pakistan’s total imports from the SAARC region have increased from US$ 527 million in 2003-04 to US$ 2318.49 million in 2015-16.
(Source: Ministry of Commerce)

9.4 ROLE OF FOREIGN TRADE
The role of foreign trade in economic development is as follows,

1. Foreign Trade and Economic Development:
Foreign trade plays very important role in the economic development of any country. Pakistan also exports a lot of agricultural product to other countries and imports the capital goods from other countries. Therefore, it is not wrong to say that economic development of a country is directly depends on foreign trade.

- Foreign exchange earnings
Foreign trade earning plays a vital role in economic development of a country. Foreign trade leads to foreign exchange earning which can be used to remove the poverty and other productive purposes.
2. **Quality goods at lower rates:**
If a country cannot produce a specific commodity, then it can import that commodity at lower rates from international market in the presence of foreign trade which improve living standards of people.

3. **Removal of shortage of goods:**
Foreign trade is helpful for the removal of shortage of goods. If there is shortage of any commodity, then that commodity can be imported from the international market which will eliminate shortage of good in market.

4. **Removal of the monopolies:**
Foreign trade discourages the formation of local monopolies. The local producers cannot exploit the consumers because of fear of cheap imports. In the absence of imports, some local firms may create monopoly and charge very high prices and due to which level of inflation increase.

5. **Stable prices:**
Foreign trade helps in the price stability of a country. If the price level of any commodity is high, then that commodity can be imported which will keep prices stable.

6. **Increase in national income:**
In the presence of international trade, the resources are properly utilized which increase exports of the country which leads to increase in Per capita income and national income.

7. **Specialization in production:**
Foreign trade leads to specialization in the production of those goods which a country can produce at lower cost. This situation improves the overall welfare of the people of any country.

8. **Productive factors**
Through foreign trade the productivity of factors of production increases. Mobility of factors of production is increase due to their demands in market which helps underdeveloped countries to develop and maintain a high level of growth of developed countries.
9. **Import of capital goods and technology**
The inflow of capital goods and technology in the less developed countries has increased the rate of economic development, and this is only possible through due to foreign trade.

10. **World peace**
Today all the countries are tied in trade relations with each other through foreign trade. Foreign trade contributes to peace and prosperity of the world.

11. **External economics**
External economics can also be achieved through foreign trade. The industries producing foods on large scale in Pakistan and other countries are enjoying the external economics due to international trade.

12. **Import of consumer goods**
Pakistan imports the various consumer goods from other countries, which are not produced inside the country. Today the shortage of any commodity can be removed through international trade.

13. **Agricultural development**
Agricultural development is the backbone in our economy. Foreign trade has played very important role for the development of our agriculture sector. Every year we export rice, cotton, fruits and vegetables to other countries. The export of goods makes our farmer more prosperous.

14. **Decrease in unemployment**
With the rise in the demand of goods domestic resources are fully utilized and it increases the rate of development in the country and reduces unemployment in the world and creates employment opportunities.

**9.5 PROCEDURE AND DOCUMENTS OF FOREIGN TRADE**

1. **Bill of Lading**
When the goods are dispatched by ship from one place to another, the receipt issued by shipping company is called bill of lading. Bill of lading represents the title to the goods. Goods cannot be received from shipping company unless bill of lading is presented to shipping company. Exporter or his forwarding agent fills the form for bill of lading. The bill of lading is usually issued in sets of three and is accompanied by other documents such as the invoice and insurance policy.
Bill of lading contains all the data pertaining to the shipped merchandise as under:
(a) Name of exporter
(b) Name of importer
(c) Name of ship
(d) Type of goods
(e) Quantity of goods
(f) Mark of packing
(g) Name of the port where the goods have to be unloaded

A bill of lading may be clean or foul. A clean bill of lading is issued when the captain of vessel is satisfied with the packing of goods and he signs bill of lading without writing any comment on it.

2. Mate’s Receipt
A mate’s receipt is a document issued by mate of the ship. Mate is the officer responsible for cargo. Tally clerks tally the cargo and report the mate then the mate issues a receipt called "Mate's Receipt".

3. Freight Note
Captain of the ship issues a freight note which contains detail of charges payable to the shipping company. Commonly, it is prepared in quadruplicate (4 copies); one copy for the exporter; two for the importer; and one for the shipping company.

4. Marine Insurance Certificate
It is necessary for the exporter to insure the goods against different types of risks during transit. The exporters contact insurance companies and take up an insurance policy and send the same to the importer. The certificate of insurance contains full description of the goods, marks on the packages, weight, port of origin, destination etc.

5. Invoice
Invoice is an important business document which is made by the seller containing full information about the description of goods, the date of sale, the terms on which the goods are sold and full address of the buyer and seller. Invoice is issued in duplicate, one copy for importer and other for exporter.

6. Consular Invoice
This is a certificate issued by the consular office of exporting country which shows that the value of the exported goods mentioned therein is correct. Custom
officials of importing country require this document if the duty is to be charged according to value of the goods imported.

7. **Bills of Exchange**
The exporter may get the payment by drawing Bills of Exchange on the importer. A bill of exchange is an order to importer for the payment of goods at particular fixed date. This bill is sent to the importer through a bank of an importing country.

8. **Certificate of Origin**
It is necessary for exporter to secure a Certificate of Origin if there is an agreement between the countries for exempting their goods from import duties or imposing less import duty. It is sent to the importer to present it to the custom authorities. It indicates the origin of exporter and it is generally issued and signed by the chamber of commerce of the exporting country.

9. **Letter of Credit**
Letter of credit is a document issued by importer's bank to the exporter's bank, directing that the beneficiary named in the letter should be allowed credit for a specific period according to terms and conditions mentioned in it. Letter of credit is issued in case importers and exporters may not know each other and their exporter is not sure about the importer's credit worthiness and wants to ensure payment from bank through a Letter of Credit.

10. **Bill of Entry**
This is a document on which the importer provides details of imported goods to custom authority in paying custom duty. It may be in three forms; black, blue and white. A black form is used for exempted goods; a blue is used for goods to be sold within the country; and a white form is used for the goods to be re-exported. On the basis of this information, the custom authorities calculate the amount of custom duty payable by the importer.

11. **Bill of Sight**
A bill of sight is a request to custom authorities for checking and preparing a list of the goods in their custody in case an importer had not received the documents regarding the goods imported. In such a case, the custom authorities themselves complete Bill of Entry on the request of an importer and then charge custom duty accordingly.
12. Charter Party
Charter party is a deed of agreement between a ship owner and a trader for the hire of a ship and the delivery of cargo. It contains the name of the ship, names of the parties, class of the charter party, and representation by the ship owner about sea-worthiness of the ship and other terms and conditions. In a charter party agreement, the whole ship or a major part of it is reserved for exporter to carry his goods to a particular place at an agreed freight. A Charter Party may be a Voyage Charter Party for a particular voyage or a Time Charter Party for a specific period.

13. Letter of Hypothecation
If an importer has no money to pay custom duty etc. at the port for goods imported, he may approach his bank for a loan. Letter of hypothecation is a document through which goods are hypothecated with the banker for obtaining loan. If the loan is not returned according to the terms and conditions mentioned therein, the banker might take possession of hypothecated goods and may sell them for compensation.

14. Dock Warrant
It is a transferable document issued by warehouse-keepers to represent the rights of ownership of goods. The holder or presenter of dock warrant can receive the goods from warehouse.

15. Letter of Indemnity:
It is a document in which a person assures another person or firm for the compensation of loss in case of happening of specific events. Sometimes, the goods reach to port before receiving bill of lading. In this case, the importer collects the goods by getting letter of indemnity in the favor of shipping company.

16. Delivery Order:
Delivery order is issued by the owner of goods in the name of port officer to handover goods to the holder of this order. Only the holder of this document has right to receive the goods from port.

9.6 EXPORT OF PAKISTAN

Export efforts have been regarded as one of the major national commitment by the Government and attached great importance to export promotion in order to increase foreign exchange earnings. Number of concession and incentives has been given by government to promote exports, which leads to economic development. Inspire of different measures taken by government to boost up
exports but still our imports are higher than exports and balance of payment is not in our favor. Important exports of Pakistan are given below:

1. **Cotton Yarn**
   Cotton yarn is at the top of exports list. It is considered as important items of our country. Customer of our cotton yarn are UK, USA, Hong Kong, Germany, Sudan.

2. **Cotton Cloth**
   Another important export item is cotton cloth. Its export is increasing every year. Major customers of cotton clothes are Hong Kong, Germany, United Kingdom, and United States of America.

3. **Ready made garments**
   Pakistan is producing various kinds of ready made garments which are very popular in foreign countries. The main customers are United States of America, European, and Middle Eastern Countries.

4. **Rice**
   Rice is the major export of our country. Major buyers of Rice are Middle East Countries, European and some African countries.

5. **Carpet, Rugs, and Mats**
   Pakistan has earning a large amount of foreign exchange through exports of carpet, rugs and mates. The carpets, rugs and mats are exported to Germany, Switzerland, USA, France, UK, Belgium, and Italy etc.

6. **Raw Cotton**
   The main customers of raw cotton are China, Japan, Hong Kong, Singapore, Italy, Indonesia, Belgium and Bangladesh.

7. **Fish & Fish Preparation**
   A large number of fishes are caught from sea in our country and excess amount is exported to Middle East and South Asian Countries.

8. **Petroleum Products**
   Pakistan has two oil refineries at Karachi, where crude petroleum is imported and a number of petroleum products are produced. Surplus petroleum products then exported to Turkey, Singapore, and Sri Lanka etc.

9. **Leather and Hides**
   Pakistan export leather and hides every year. Mostly it is exported to Italy, Spain, Japan, China, and Romania etc.
## Structure of Exports ($ million)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>July-March Values in Dollars</th>
<th>% Change in Values</th>
<th>July-March Quantity</th>
<th>% Change in Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2015-16</td>
<td>2016-17 P</td>
<td>2015-16</td>
<td>2016-17 P</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15,597.5</td>
<td>15,118.6</td>
<td>-3.1</td>
<td></td>
</tr>
<tr>
<td><strong>A. Food Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rice</td>
<td>3,037.8</td>
<td>2,685.9</td>
<td>-11.6</td>
<td></td>
</tr>
<tr>
<td>Basmati</td>
<td>1,376.2</td>
<td>1,170.7</td>
<td>-14.9</td>
<td>3,140,788</td>
</tr>
<tr>
<td>Other Rice</td>
<td>316.9</td>
<td>293.1</td>
<td>-7.5</td>
<td>341,115</td>
</tr>
<tr>
<td>Sugar</td>
<td>1,059.3</td>
<td>877.6</td>
<td>-17.2</td>
<td>2,799,673</td>
</tr>
<tr>
<td>Fish &amp; Fish Preparation</td>
<td>132.3</td>
<td>66.5</td>
<td>-49.7</td>
<td>293,541</td>
</tr>
<tr>
<td>Fruits</td>
<td>240.0</td>
<td>276.3</td>
<td>15.1</td>
<td>92,046</td>
</tr>
<tr>
<td>Vegetables</td>
<td>356.3</td>
<td>325.6</td>
<td>-8.6</td>
<td>590,671</td>
</tr>
<tr>
<td>Spices</td>
<td>150.6</td>
<td>113.2</td>
<td>-24.9</td>
<td>508,355</td>
</tr>
<tr>
<td>Meat &amp; Meat Preparation</td>
<td>56.2</td>
<td>60.3</td>
<td>7.4</td>
<td>15,113</td>
</tr>
<tr>
<td>Other Food items</td>
<td>212.4</td>
<td>163.2</td>
<td>-23.1</td>
<td>61,656</td>
</tr>
<tr>
<td><strong>B. Textile Manufactures</strong></td>
<td>9,362.3</td>
<td>9,278.9</td>
<td>-0.9</td>
<td></td>
</tr>
<tr>
<td>Cotton Yarn</td>
<td>989.0</td>
<td>938.6</td>
<td>-5.1</td>
<td>327,036</td>
</tr>
<tr>
<td>Cotton Cloth</td>
<td>1,685.3</td>
<td>1,581.2</td>
<td>-6.2</td>
<td>1,659,455</td>
</tr>
<tr>
<td>Knitwear</td>
<td>1,746.9</td>
<td>1,745.7</td>
<td>-0.1</td>
<td>85,460</td>
</tr>
<tr>
<td>Bed wear</td>
<td>1,508.6</td>
<td>1,585.7</td>
<td>5.1</td>
<td>244,295</td>
</tr>
<tr>
<td>Towels</td>
<td>597.0</td>
<td>578.0</td>
<td>-3.2</td>
<td>135,646</td>
</tr>
<tr>
<td>Other Textile Manufactures</td>
<td>513.4</td>
<td>510.0</td>
<td>-0.3</td>
<td></td>
</tr>
<tr>
<td><strong>C. Petroleum Group</strong></td>
<td>128.9</td>
<td>139.2</td>
<td>9.6</td>
<td></td>
</tr>
<tr>
<td>Petroleum Crude</td>
<td>88.9</td>
<td>56.3</td>
<td>-36.7</td>
<td>248,692</td>
</tr>
<tr>
<td>Petroleum Products</td>
<td>39.0</td>
<td>50.4</td>
<td>29.4</td>
<td>67,982</td>
</tr>
<tr>
<td>Petroleum Top Naphtha</td>
<td>1.1</td>
<td>32.5</td>
<td>2,955.9</td>
<td>3,080</td>
</tr>
<tr>
<td><strong>D. Other Manufactures</strong></td>
<td>2,386.7</td>
<td>2,274.1</td>
<td>-4.7</td>
<td></td>
</tr>
<tr>
<td>Carpets, Rugs &amp; Mats</td>
<td>74.0</td>
<td>61.2</td>
<td>-17.3</td>
<td>1,372</td>
</tr>
<tr>
<td>Sports Goods</td>
<td>234.6</td>
<td>225.2</td>
<td>-4.0</td>
<td></td>
</tr>
<tr>
<td>Leather Tanned</td>
<td>267.8</td>
<td>252.4</td>
<td>-5.7</td>
<td>12,691</td>
</tr>
<tr>
<td>Leather Manufactures</td>
<td>396.4</td>
<td>371.7</td>
<td>-6.2</td>
<td></td>
</tr>
<tr>
<td>Surgical Goods, Med. Inst</td>
<td>262.7</td>
<td>250.6</td>
<td>-4.6</td>
<td></td>
</tr>
<tr>
<td>Chemical &amp; Pharma. Pro.</td>
<td>588.5</td>
<td>621.5</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>Engineering Goods</td>
<td>134.3</td>
<td>126.0</td>
<td>-6.2</td>
<td></td>
</tr>
<tr>
<td>Cement</td>
<td>248.0</td>
<td>191.5</td>
<td>-22.8</td>
<td>4,555,239</td>
</tr>
<tr>
<td>All Other Manufactures</td>
<td>180.4</td>
<td>174.0</td>
<td>-3.5</td>
<td></td>
</tr>
<tr>
<td><strong>E. All Other items</strong></td>
<td>681.7</td>
<td>740.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: PBS
9.7 IMPORTS OF PAKISTAN

1. Machinery
Pakistan is at developing stage so; we have to import modern machinery to meet the demand of various industries. Machinery is generally imported from USA, Japan and other European countries.

2. Chemicals and Drugs
Pakistan is mainly depending upon agriculture sector for the purpose of higher yield sprays and chemicals are required. For meeting this purpose chemicals and drugs are imported from Japan, Germany, UK, USA, and other European countries.

3. Tea
Pakistan produces very small quantity of tea which is not enough to meet our requirement. Many tea companies imported tea from Bangladesh, Sri Lanka, India, and Kenya.

4. Paper and Paper Products
Papers mills have been set but these are not enough for meeting requirements. Papers products are imported from Canada, Japan, Sweden, and USA.

5. Mineral Oil
Pakistan is not self-sufficient in mineral oil requirements. Our own production only meets approximately 25% of country’s requirement. So to meet our requirements mineral oil is imported from Saudi Arabia, Iran, UAE and other Middle East countries.

6. Transport Equipment’s
Transport equipment’s are imported from Japan, Italy and other countries.

7. Edible Oil
The production of edible oil is not enough to meet the requirements of our Ghee industry. Government of Pakistan takes sufficient measures to boost up the production of oil seeds. For meeting our requirements edible oil has been imported. Soybean oil from USA and Palm oil from Malaysia and Indonesia.

8. Dyes & Colors
Various industries use dyes and colors in their production i.e. textile and printing etc. So to meets the requirements of these industries dyes and colors are imported from USA, UK and Japan.
### Structure of Imports ($Million)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>July-March Values in Dollars</th>
<th>% Change in Value</th>
<th>July-March Quantity</th>
<th>% Change in Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2015-16</td>
<td>2016-17 P</td>
<td>2015-16</td>
<td>2016-17 P</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A. Food Groups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk &amp; Milk food</td>
<td>3.938.6</td>
<td>4.528.7</td>
<td>15.0</td>
<td></td>
</tr>
<tr>
<td>Wheat Unmilled</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Dry Fruits</td>
<td>165.1</td>
<td>130.1</td>
<td>23.8</td>
<td>135.7</td>
</tr>
<tr>
<td>Tea</td>
<td>462.9</td>
<td>411.4</td>
<td>1.6</td>
<td>135.3</td>
</tr>
<tr>
<td>Spices</td>
<td>105.7</td>
<td>102.1</td>
<td>-3.4</td>
<td>111.7</td>
</tr>
<tr>
<td>Edible Oil (Soybeans &amp; Palm)</td>
<td>1.391.8</td>
<td>1.456.9</td>
<td>4.7</td>
<td>2.163.812</td>
</tr>
<tr>
<td>Sugar</td>
<td>3.041.0</td>
<td>3.949.0</td>
<td>-21.7</td>
<td>9.747</td>
</tr>
<tr>
<td>Pulses</td>
<td>444.4</td>
<td>721.8</td>
<td>62.4</td>
<td>695.898</td>
</tr>
<tr>
<td>Other food items</td>
<td>1.289.4</td>
<td>1.516.4</td>
<td>17.6</td>
<td></td>
</tr>
<tr>
<td><strong>B. Machinery Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power generating Machines</td>
<td>4.321.9</td>
<td>6.465.0</td>
<td>49.6</td>
<td></td>
</tr>
<tr>
<td>Office Machines</td>
<td>1.341.1</td>
<td>2.367.0</td>
<td>76.5</td>
<td></td>
</tr>
<tr>
<td>Textile Machinery</td>
<td>332.1</td>
<td>401.1</td>
<td>20.8</td>
<td></td>
</tr>
<tr>
<td>Const. &amp; Mining Machines</td>
<td>223.7</td>
<td>373.2</td>
<td>66.8</td>
<td></td>
</tr>
<tr>
<td>Aircrafts, Ships and Boats</td>
<td>474.1</td>
<td>331.2</td>
<td>-30.1</td>
<td></td>
</tr>
<tr>
<td>Agriculture Machinery</td>
<td>62.1</td>
<td>84.4</td>
<td>35.8</td>
<td></td>
</tr>
<tr>
<td>Other Machinery items</td>
<td>1.657.1</td>
<td>2.536.3</td>
<td>53.1</td>
<td></td>
</tr>
<tr>
<td><strong>C. Petroleum Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petroleum Products</td>
<td>3.750.4</td>
<td>4.846.0</td>
<td>29.2</td>
<td>6,957,006</td>
</tr>
<tr>
<td>Petroleum Crude</td>
<td>1,834.4</td>
<td>1,840.7</td>
<td>0.3</td>
<td>4,284,361</td>
</tr>
<tr>
<td><strong>D. Consumer Durables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road Motor Vehicles</td>
<td>2,727.3</td>
<td>3,470.0</td>
<td>27.2</td>
<td>4,293,361</td>
</tr>
<tr>
<td>Electric Mach &amp; Appliances</td>
<td>1,320.2</td>
<td>1,658.9</td>
<td>25.6</td>
<td></td>
</tr>
<tr>
<td><strong>E. Raw Materials</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Cotton</td>
<td>588.2</td>
<td>485.1</td>
<td>-17.5</td>
<td>325,134</td>
</tr>
<tr>
<td>Synthetic Fiber</td>
<td>368.9</td>
<td>346.1</td>
<td>-6.2</td>
<td>1,811,498</td>
</tr>
<tr>
<td>Silk Yarn (Synth &amp;Art)</td>
<td>468.0</td>
<td>486.4</td>
<td>3.9</td>
<td>2,114,899</td>
</tr>
<tr>
<td>Fertilizer Manufactured</td>
<td>639.7</td>
<td>478.6</td>
<td>-25.2</td>
<td>1,392,391</td>
</tr>
<tr>
<td>Insecticides</td>
<td>116.4</td>
<td>110.9</td>
<td>-4.7</td>
<td>13,769</td>
</tr>
<tr>
<td>Plastic Material</td>
<td>1,314.1</td>
<td>1,406.8</td>
<td>7.1</td>
<td>714,828</td>
</tr>
<tr>
<td>Iron &amp; steel Scrap</td>
<td>776.9</td>
<td>765.9</td>
<td>-1.4</td>
<td>2,861,196</td>
</tr>
<tr>
<td>Iron &amp; steel</td>
<td>1,441.9</td>
<td>1,531.0</td>
<td>6.2</td>
<td>2,493,953</td>
</tr>
<tr>
<td><strong>F. Telecom</strong></td>
<td>1,046.8</td>
<td>1,028.8</td>
<td>-1.7</td>
<td></td>
</tr>
<tr>
<td><strong>G. All other items</strong></td>
<td>2,799.3</td>
<td>3,139.2</td>
<td>12.1</td>
<td></td>
</tr>
</tbody>
</table>

**P**: Provisional  
**Source**: PBS
Major Trade Partners of Pakistan

The following is a list of Pakistan's main trading partners as of July 2017.

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of Imports</th>
<th>Percentage of Exports</th>
<th>Percentage of total Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>81</td>
<td>11</td>
<td>16.9</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>12.2</td>
<td>8.5</td>
<td>9.0</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>12.1</td>
<td>8.5</td>
<td>10.9</td>
</tr>
<tr>
<td>Europe</td>
<td>10.4</td>
<td>18.2</td>
<td>13.0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>9</td>
<td>0.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Kuwait</td>
<td>6.3</td>
<td>0.07</td>
<td>4.4</td>
</tr>
<tr>
<td>Singapore</td>
<td>4.1</td>
<td>0.3</td>
<td>2.8</td>
</tr>
<tr>
<td>India</td>
<td>3.7</td>
<td>2.1</td>
<td>3.2</td>
</tr>
<tr>
<td>United States</td>
<td>3.7</td>
<td>13.6</td>
<td>6.7</td>
</tr>
<tr>
<td>Japan</td>
<td>3.6</td>
<td>1.6</td>
<td>2.9</td>
</tr>
<tr>
<td>Iran</td>
<td>3.4</td>
<td>1.8</td>
<td>2.9</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>0.3</td>
<td>7.6</td>
<td>2.8</td>
</tr>
</tbody>
</table>

**SUMMARY**

The international trade is the exchange of goods and services across international boundaries of countries. It is exchange of goods and services among different nations. Industrialization, including transportation, globalization and outsourcing are all having major impact on the international trade. Without international trade, nations would be bounded to consume the goods & services produced in their own country. Instead of importing the factors of production countries prefer to import Finished Products that required fulfilling the needs their people.

Pakistan has bilateral and multilateral trade agreements with many nations and international organizations. Pakistan is a member of WTO, part of the South Asian Free Trade Area agreement and the China-Pakistan Free Trade agreement. Fluctuating world demand for its exports, domestic political uncertainty, and the impact of occasional droughts on its agricultural production have all contributed to variability in Pakistan's trade deficit. Free Trade Agreements (FTAs) of Pakistan with other countries have been explained.
Role of foreign trade in economic development of Pakistan has been explained in detail. Major imports and exports have listed down in detail.

Logistics is generally the detailed organization and implementation of a complex operation. In a general, logistics is the management of the flow of goods between the point of production and the point of consumption in order to meet needs of customers or corporations.

**SELF-ASSESSMENT QUESTIONS**

1. Explain the foreign trade of Pakistan and discuss the classification of trade.
2. Discuss in detail the role of Trade Development Authority of Pakistan.
3. Define Free Trade Agreements (FTAs) and discuss the role of foreign trade.
4. What are the main producers and documents of foreign trade?
5. Write a detail note on import and export of Pakistan.
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175


18. Karachi Port Trust Website

19. Source: National Transport Research Centre (NTRC)