

Course: Commercial Geography (1428)

Semester: Spring, 2022

Assignment No. 1

Q1. What is meant by commercial geography? Explain its scope.

Commercial Geography is the relation between Geographic Structure and Commercial Activities. The Commerce depends on the structure of the Geography and related factors such as Land Structure, Population, Climate, Temperature, Stability and many other things.

“Commercial geography is a form of geography concerned with the production and supply of raw materials including agricultural output and finished goods”

Commercial Geography is mainly concern with the term ‘Geography of transport systems. Transportation is a fundamental factor related to mobility. Mobility is necessary for economic and social activities as well as for communication, manufacturing, or supply of energy from one place to another.

Important attributes of commercial Geography

Types of Commercial resources

Primary Commercial activates: These are Primary Commercial activities which uses Primary Resources.

Secondary Commercial activities: These commercial activities done by using Secondary Resources.

Commercial Resources of Agriculture

Agricultural products and their distribution inland (major cities only) and utilization (abroad)

Major areas of Production are also important in case of Commercial resources from Agricultural area

Commercial Agriculture: The Commercial Agriculture consists of livestock, Fishery trade & Home Culture.

The agro Technology, agro Commercial activities, storage, Communication, The Pattern of Distribution also act as important part here.

Commercial Resources:

Minerals & Powers

Commercial resources such as minerals and powers are required for commercial activities. Important minerals and power resources, their production, distribution and uses for commercial activities

Energy and powers such as Oil, Gas, Electricity and Solar energy, Nuclear Energy

Commercial Resources:

Industrial products acts as an important resource for commercial trade and its geography

Types of industries are the major part of it:

Cottage Industry, Small scale Industry and, large scale

Major industries, their distribution and major problems of industrial development

Means of Transportation and communication

Time, distance and cost are the main factors which effect on the Transportation and Communication of Goods and Services and on other commercial activities.

Means or modes of transportation and means of communication are also important factor affecting on commercial activities

Course: Commercial Geography (1428)

Semester: Spring, 2022

Major Commercial Activities

Financial Institutions such as National and International banks, Insurance companies, Government agencies are the important institutions involved in Commerce and trade.

These can be classified as-

i. National financial institutions

- National Banks
- National Insurance companies
- Government Agencies
- Other National Financial Institutions

ii. International Financial Institutions

- IBRD (International Bank for Reconstruction and Development) –Now it called World Bank
- IMF (International Monetary Fund)
- IFC (International Financial Corporations)
- Other Commercial Activities-
- Imports Exports Activities
- BOP (Balance of payments) and BOT (Balance of trade)
- Foreign Exchange and related Activities
- Major commercial cities and ports
- Major commercial cities and ports of the world and particular regions are crucial for this commercial Geography.

Important attributes of commercial Geography

- Origin
- Intermediate locations
- Destination
- Nature
- Base of Commercial Activities
- Need for Commercial activities
- Demand
- Supply
- Market
- Business and

Trade

Factors promoting market, business and trade, Location, Culture and Transportation are also another important factors related with it.

Course: Commercial Geography (1428)

Semester: Spring, 2022

Other Commercial Activities-

Imports Exports Activities

BOP (Balance of payments) and BOT (Balance of trade)

Foreign Exchange and related Activities

Major commercial cities and ports

Major commercial cities and ports of the world and particular regions are crucial for this commercial Geography.

1. Study of agricultural resources:

For the study of Economic and Commercial Geography it is essential that causes for the production of various agricultural products, are to be studied, and also the factors responsible for the commerce and trade of those products cannot be neglected.

2. STUDY OF MINERALS RESOURCES:

Minerals are also an important factor of commerce and trade, because every country in the world is not self-sufficient in mineral resources. So, in economic and commercial geography we study about the production and distribution of different minerals found in the world.

3. STUDY OF INDUSTRIAL RESOURCES:

Agricultural and minerals resources are mainly responsible for the industrial progress of an area, so industrial progress cannot be studied without the study of other factors.

4. STUDY OF MEANS OF TRANSPORTATION:

Means of transportation also plays an important role for the progress of agricultural, minerals and industrial resources, so without the study of means of transportation study of other factors is not possible.

5. STUDY OF TRADE CENTERS:

Trade Centers also play an important role for the trade or commerce of certain areas, because without the study of various trade centers progress in trade and commerce is not possible.

Commercial geography investigates the spatial characteristics of trade and transactions in terms of their nature, causes, and consequences. It leans on the analysis of transactions, from a simple commercial transaction involving an individual purchasing a product at a store, to the complex network of transactions maintained between a multinational corporation and its suppliers. The scale and scope of commercial geography vary significantly.

Course: Commercial Geography (1428)

Semester: Spring, 2022

Availability. Commodities, from coal to computer chips, must be available for trade, and there must be a demand for these commodities. In other terms, a surplus must exist at one location and a demand in another, which implies reciprocity. A surplus can often be a simple matter of investment in production capabilities, such as building an assembly plant, or can be constrained by complex geological and environmental factors like the availability of resources such as fossil fuels, minerals, and agricultural products.

Transferability. Transport infrastructures, in allowing goods to be moved from their origins to their destinations, support the transferability of goods. There are three major impediments to transferability, namely regulatory barriers (tariffs, custom inspections, quotas), geographical barriers (time, distance), and transportation barriers (the simple capacity to move the outcome of a transaction). Distance often plays an important role in trade, as does the capacity of infrastructures to route and transship goods.

Transactional capacity. It must be legally possible to make a transaction. This implies the recognition of currency for trading and legislation that defines the environment in which commercial transactions occur, such as taxation and litigation. In the context of a global economy, the transactional environment is very complex but is important in facilitating trade at the regional, national, and international levels. The fundamental elements of a commercial transaction involving the transportation of a good are the letter of credit and the bill of lading. The transport terms have been regulated since 1936 by international commercial terms, which define the respective responsibilities and risks of the actors involved. Such terms are regularly updated and revised to reflect commercial and regulatory changes in global markets.

Once these conditions are met, trade is possible, and the outcome of a transaction results in mobility (or interaction). Three issues are related to the concept of flow:

Value. Flows have a negotiated value and are settled in a common currency. The American dollar, which has become the main global currency, is used to settle and measure many international transactions. Further, nations must maintain reserves of foreign currencies to settle their transactions. The relationship between the inbound and outbound flows of capital is known as the balance of payments. Although nations try to maintain a stable balance of payments, this is rarely the case; flows are commonly imbalanced.

Volume. Flows have a physical characteristic, mainly involving a mass. The weight of flows is a significant variable when the trade involves raw materials such as petroleum or minerals. However, in the case of consumption goods, the weight has little significance relative to the value of the commodities being traded. With containerization, a new unit of volume has been introduced; the TEU (Twenty-Foot Equivalent Unit), which can be used to assess trade flows.

Scale. Flows have a range that varies significantly based on the nature of a transaction. While retailing transactions tend to occur at a local scale, transactions related to the operations of a multinational corporation are global in scale.

Q2. Define forest and describe the commercial importance of forest.

Forest is the house to many living organisms. It is a precious resource provided by nature. The organisms living in forests are interdependent on each other. Life in forests is governed by factors like air, water and sunlight. There are a variety of plants available in most forests: herbs, shrubs and trees depending upon the climate of the region. Plants make their own food by the process of photosynthesis and animals depend on plants and other animals for their food. Sometimes plants also depend on animals for processes like pollination and seed dispersal. There are many forests spread over large areas across the globe. Forest can be classified as: tropical, evergreen, partly evergreen, deciduous and dry forests based on the climatic conditions and types of trees present. Forests also comprise non-living components such as lakes, ponds, soil, rocks, etc. A forest is defined as an area forming an ecosystem.

We depend on forests for our survival, from the air we breathe to the wood we use. Besides providing habitats for animals and livelihoods for humans, forests also offer watershed protection, prevent soil erosion and mitigate climate change. Yet, despite our dependence on forests, we are still allowing them to disappear.

They help keep our climate stable, absorbing carbon dioxide and releasing oxygen, and they regulate our water supply and improves its quality. They also provide a home to more than half of all species found on land – a rich variety of life that keeps so many natural systems running. Over 1 billion people live in and around forests, depending on them for fuel, food, medicines and building materials. And all of us use wood in our daily lives: in fact, global demand for timber products is expected to more than triple over the next three decades.

But human impacts have already led to the loss of around 40% of the world's forests. And today, an area the size of a football pitch is still being destroyed every second. Protecting and restoring forests has never been more urgent. When forests are destroyed, they release large quantities of carbon dioxide into the atmosphere, which contributes to climate change.

Forests are the largest storehouse of carbon after the oceans. However, when forests are destroyed by activities such as logging and land conversion for agriculture, they release large quantities of carbon dioxide. Reducing deforestation and forest degradation must be part of the solution to the global climate change problem.

Forests have a critical role to play in combating climate change, and WWF is implementing a strategy around the world to win that battle.

This includes:

Ensuring that the new climate change deal provides incentives to reduce emissions from deforestation and land degradation

Assisting countries, especially developing countries, to develop national and regional approaches that tackle forest-based emissions and benefit local communities. Forests cover one-third of Earth and breathe life into our world, with tropical forests alone producing more than 40 per cent of the world's oxygen. Forests are

also the largest storehouses of carbon after oceans. So, it is no surprise that when we cut down or damage our forests, we release huge amounts of carbon emissions that contribute to devastating climate change.

But it is not just our planet that suffers when forests are destroyed. As forests are home to over eighty per cent of terrestrial biodiversity, deforestation of key tropical forests could lead to the loss of as many as 100 species a day. And, with more than 1 billion people directly dependent on forests for fuel, housing and nourishment, the fate of our forests may determine our own fate as well.

WWF is committed to realizing the conservation and livelihood benefits of REDD+ through their work on forest and climate issues.

REDD+ should not only be recognized at the global level, but should also be defined and owned at the national level by tropical forest countries, and at the local level by the very communities that will most directly experience its impact.

WWF Forest and Climate:

Makes REDD+ work for indigenous peoples and local communities

Develops models of zero net deforestation and degradation (ZNDD) landscapes

Influences international REDD+ policy and funding

Provides capacity building and learning support

Forests are one of the most mismanaged resources in many countries. This is partly because forests are seriously undervalued and many of their environmental benefits are not captured by market values. Uncoordinated policies (for example agriculture, energy, mining and transportation policies) also affect forest cover. And poor governance has fueled corruption, rent-seeking and illegal activities.

At the same time, forests have a critical role to play in green growth. Forests can help meet the growing demands for food, fiber, biofuel, shelter, and other bio-products as the world population increases to 9 billion people by 2050. Because forest resources are solar-powered, renewable, and store carbon as they grow, they also have the potential to reduce greenhouse gas emissions and mitigate climate change by taking the place of nonrenewable materials and substituting for fossil fuels. The forest sector is also an important source of both formal and informal jobs, particularly in remote areas where there are few economic alternatives.

The World Bank and the Program on Forests, housed at the Bank, help governments steer economic policy in a “forest-friendly” way. Improving the governance of the forest sector so that it is more transparent and accountable is also a priority. Because private sector investment in the forest sector in developing countries is seven times greater than the total official development assistance (about \$US1.5 billion) for the forest sector, it is essential to engage the private sector – including small and medium forest enterprises – to achieve inclusive green growth.

Economic development in World Bank forest projects:

In Gabon, a country richly endowed with forest resources, the government considers forests a strategic economic resource. Reforms supported by the World Bank have helped make the award processes for

concessions increasingly competitive and transparent. Forest taxation recovery has been strengthened, rising from a 40 percent to an 80 percent tax collection rate from 2005 to 2010. About 85 percent of productive forest areas now engage in sustainable forest management. As a result of these reforms, the contribution of the forestry sector to Gabon's GDP grew from 2.5 percent in 2004 to 4.7 percent in 2009.

In India's Andhra Pradesh, support for small and medium forest based enterprises increased real cash income amongst forest users groups by 53 percent over the project period. Seasonal outmigration declined by 23 percent, and the quality of dense forest cover in these areas increased as well.

Q3. Explain the worldwide production of iron and steel industry.

Iron and steel industries have been concerned with emissions from their furnaces and cupolas since the industry started. In recent decades, most of the companies controlling these operations have opened new, controlled plants to replace older, higher-emitting plants.

Iron and steel industries are generally grouped as steel mills, which produce steel sheets or shapes, and foundries, which produce iron or steel castings. The iron and steel industry is perhaps the most important element of a nation's industrial economic infrastructure, and the consumption of steel per capita of population is an indicative index of industrialization and progress. Major European industrial powers of the nineteenth century, and the first half of the twentieth century, owed their position to domination of reserves of iron ore and coal. In fact, the industrial revolution in Europe started with coal mining in the United Kingdom, and the iron and steel industry prospered paralleling the growth of the coal industry; coking coal being an essential input to steel metallurgy. The superpowers of today, the USA, China, and Russia, have immense reserves of both iron ore and coal. Over 70% of global steel produced today from iron ore is largely dependent on coal.

In India the volume of good-quality iron ore is satisfactory, but metallurgical coal reserves are comparatively meager, necessitating the import of prime coking coal. The choicest Indian coking coals, which only occur in the Jharia coal belt of the state of Jharkhand, were wantonly wasted in steam production in both stationary boilers and steam engine boilers in the decades both before and after independence. A critical condition, therefore, prevails in India. Despite all the efforts to exploit coal reserves, with due regard being paid to conservation by India's nationalized coal industry, it has not been possible to supply enough metallurgical coke, of the required grade, to meet the needs of India's growing steel industry.

The government of India has raised concerns about the rapid depletion of the country's coking coal reserves, and wide-ranging conservation programs have been undertaken as part of the exploration, exploitation, beneficiation, and end use of coking coal. These programs include detailed exploration for new and deeper deposits and other deposits hitherto considered lost; planning for maximizing extraction using advanced technology; blending lower grade coals with superior coals; improving coal beneficiation techniques; examining the possibility of replacing coking coal with noncoking coals; and improvement, or modification of, conventional steel metallurgy.

The increasingly high ash content of Indian coals currently being mined, or planned for future mining, poses serious problems linked to beneficiation by conventional methods. In the steel sector a concomitant effort is being made to explore the possibilities of using newer technologies to develop the conservation of metallurgical grade coals.

Coke making: Coke is produced from blended coals by either the nonrecovery beehive process or the by-product process. The by-product process produces the majority of the coke. Air pollutants from the coke-making process vary according to the point of release from the process and the time the process has been in operation

Sintering: It consists of mixing moist iron ore fines with a solid fuel, usually coke, and then firing the mixture to eliminate undesirable elements and produce a product of relatively uniform size, physically and chemically stable, for charging the blast furnace.

Iron making: It is the term used to describe how iron is produced in large, refractory-lined structures called blast furnaces. The iron ore, limestone, and coke are charged, heated, and then reacted to form a reducing gas, which reduces the iron oxide to metallic iron. The iron is tapped from the furnace along with the slag, which contains the impurities. A modern alternative to the blast furnace is continuous casting of iron instead of intermittent tapping. The blast furnace gas is exhausted from the top of the furnace, cooled, and cleaned of dust before it is used to fire the regenerative stoves for heating the blast furnace

Steelmaking: The open-hearth steelmaking process produced 80–90% of the steel in the United States until the 1960s, when the basic oxygen process came into wide use. By 1990 less than 5% of US steel was produced by the open-hearth process. Particulate emissions are highest during oxygen lancing with a hot metal charge in the furnace. Particulate matter loadings are reported to be in the range of 6–11 kg per metric ton of steel. Most of the particulate matter is iron or iron oxide. Control of the open-hearth particulate matter emissions is accomplished by ESPs or high-energy scrubbers.

Ferrous foundry operations: It produce castings of iron or steel. Many foundry air pollution problems are similar to those of steel mills but on a smaller scale.

Ferroalloy production: Ferroalloys are used to add various elements to iron or steel for specific purposes. Examples are chromium (in the form of ferrochrome) and manganese (in the form of ferromanganese) added to steel to improve its strength or hardness, or nickel and chromium added to steel to increase its corrosion resistance. In the electrolytic production of nickel, iron is not removed from nickel because nickel will be used for the production of stainless steel. The product is marketed as “ferronickel” rather than nickel.

Although the evolution of the Mao era of economic transformation had been neither smooth nor trouble free, it set the structural direction for the modern economic transformation in China which focused on rapid heavy industrialization. This included the promotion of energy-intensive industries such as steel and iron manufacturing, the automobile industry, and coal mining. The Maoist growth ideology also had far-reaching

implications for the Post-Mao development trends in China which placed great emphasis on GDP growth above every other factor, and the environmental factor was especially ignored.

To begin with, the First Five-Year Plan which had led to rapid growth in iron and steel output, coal production and other goods and services continued to generate growth in heavy industry even after the Great Leap Forward collapsed in 1960. Heavy industry had largely recovered from its collapse by 1965 and plants built during 1958–60 were producing at near full capacity for the first time since 1960 (Perkins, 1967).

The efficient use of coke and anthracite in producing iron was accelerated by the use of steam-driven equipment, the invention of equipment to preheat air entering the blast furnace, and the design of the tuyeres and the tuyere composition [34]. The evolution of both coke and anthracite iron-making paralleled each other in the United States during the 1800s, and by 1856 there were 121 anthracite furnaces in operation.

Q4. Explain the role of forest in the economic development of Pakistan.

Forests play an important role in the economic development of a country. They provide several goods which serve as raw materials for many industries. Wood grown in forests serves as a source of energy for rural households.

Most of the world's paper is made from wood and one rather reliable index to the degree of economic development of a country is its per capita consumption of paper. As an economy develops economically, paper is used as packaging material, in communications and in scores of other uses. No really satisfactory substitute for paper exists for many of its uses.

While it has long been recognized that forests play many roles in the economic development of a country in addition to providing wood fiber for many uses, the non-wood outputs of forests are coming increasingly to be recognized and valued everywhere in the world. Forests have watershed values especially in areas with fragile and easily eroded soils; tree cover may be highly valuable simply as protection to the watershed.

Forests are valued as a place for outdoor recreation. The kinds of forests most valuable for outdoor recreation are not always the same as the kinds most valuable for wood production and vice versa. The dense forest with trees closely spaced to take full advantage of the sunlight, moisture and fertility to grow wood, is often less attractive to the recreationist than a more open forest.

Forests are the home for many species of wildlife including mammals, reptiles and birds. Some of these forms of wildlife are clearly valuable to man. Ecologists have been much disturbed at the reduction in wildlife numbers, sometimes to the point of extinction, as tropical forests are cleared.

Some important services provided by forests are as follows:

(a) Water:

Forests absorb rainwater and release it gradually into streams. It prevents floods.

(b) Watershed:

Forests keep soil from eroding into rivers.

(c) Climate:

Forests stabilize our ecological stability.

(d) Recreation:

Forests serve people directly for recreation. National parks and biosphere reserves sanctuaries are a great attraction for tourists. Biosphere reserves are multipurpose protected areas created to deal with conservation of bio-diversity and its sustainable use. In biosphere reserves local area resources are developed. Agricultural activities are allowed to the local communities and employment is provided to the people. Tourism in parks, sanctuaries and biosphere reserves brings revenue to the authorities that manage them.

(e) Maintenance of the Pool of Genetic Resources:

Forests contain a diversity of species, habitats, and genes that are probably their most valuable assets. They provide the gene pool that can protect commercial plant strain against changing conditions of climate.

(f) Some Goods:

Some goods provided by forests are food, biomass, pulp and paper, rayon, fibers, lac, wooden articles and medicine plants.

According to the World Bank's Report Forests for Green Pakistan, Pakistan's Forests' economic contribution stands at 0.43 per cent to the GDP which is the lowest in the region.

Forest Area of Pakistan

According to the latest estimates, Pakistan contains 4.47 million hectares of total forest area or 5.1 per cent of the total land area by 2011 but it is estimated to have fallen to 4% by now. The total number of forest (timber or non-timber decreased to 2,237 by end of 2015 from 2,648 in 1995.

Distribution of Forests

Distribution of forests varies by province and other administrative areas. It is highest in Khyber Pakhtunkhwa followed by Sindh, Punjab, and FATA. The share of forests stands lower in Balochistan, Azad Jammu and Kashmir, and Gilgit-Baltistan.

Forestry Sector and Economic Development

There is no denying the fact that Forests play a very important role. The forestry sector contributes to Pakistan's national economy by creating employment opportunities and generating taxes and revenues.

According to the Food and Agriculture Organization (FAO 2009), 68 per cent of the country's population depends on firewood as a major source of household energy and about 100,000 people are involved in the fuelwood trade, generating about Rs. 11.3 billion (\$113 million) annually.

In addition to it, more than 500,000 workers are employed by forest-products industries such as furniture, village carpentry, matches, particleboard, plywood, fiberboard, boats, crates, boxes, paper, pulp, and chipboard. Besides official employment in forest departments, a large number of labors are engaged in either year-round or seasonal forest management activities like raising and maintaining nurseries, preparing sites for planting, protecting planted stocks, weeding, cleaning, thinning, firefighting, and harvesting.

In addition, a large number of people draw their livelihoods from farm forestry, processing of forest-based products, and ecotourism.

Forestry Sector and Industries:

As per the World Bank's report, the major forest-based industries include paper, furniture, construction material, matches, sports goods, packing cases, and wooden articles.

The full potential of small and medium forest-based enterprises has not been realized due to the unavailability of sufficient and quality raw materials.

The limited and depleting forest resources have been insufficient to meet the demand for forest products in the country, which far exceeds the current level of sustainable domestic supplies

Rate of Deforestation in Pakistan

Data shows that Pakistan's forest resources have been decreasing and degrading over the last few decades due to unsustainable management and exploitation of available forest resources. Deforestation in natural forests is taking place at the rate of 0.75 per cent, or 27,000 hectares per year.

Pakistan should make concerted efforts to increase its forest areas through natural regeneration, the reversal of land and forest degradation, agro-forestry, afforestation, and reforestation.

Such activities may include establishing more nurseries in each province; making high-quality seedlings available; and introducing improved techniques and sustainable business models for seed collection, planting, and maintenance. The afforestation should focus not only on timber production but also on the resilience of landscapes and infrastructures, including roads, railways, and irrigation canals.

Historically, the forestry sector has been a low development priority and has received limited investments. Budget allocations for this important sector are normally less than one per cent of most provincial budgets.

Long-term forest investments are required to harness the huge potential of forest contributions to resilient ecosystems, rural livelihoods, the national economy, and the global environment.

In recent years the government has augmented its attention to forests, as demonstrated by the nationally determined contribution, the Green Pakistan Program, and the Billion Tree Tsunami Afforestation Program.

The launching of the ambitious Billion Tree Tsunami Afforestation Program in Khyber Pakhtunkhwa and the Green Pakistan Program however, show the government's recognition of the importance of the forestry sector. This is also hopefully the beginning of needed policy shifts for the sector.

Future support is needed to enhance and scale up these new and important initiatives in order to strengthen landscape management, reduce poverty and improve livelihoods, and foster private sector development.

Q5. Describe the suitable factors for the cultivation of wheat crop and explain the Pakistan production.

Climate change and its impact on agricultural production is being debated in economic literature in context of different regions. The geographical location of Pakistan is assumed to be vulnerable to climate change. Concentration of greenhouse gases (GHGs) like carbon dioxide, methane and nitrous oxide through human activities has altered the composition of climate. These gases have increased temperature on earth by trapping

sun light. This higher temperature in tropical regions may negatively affect the growth process and productivity of wheat. This study aims to look at the impact of climate change on wheat production in Pakistan. The study uses Autoregressive Distributed Lag (ARDL) model to evaluate the impact of global climate change on the production of wheat in Pakistan. The study considers annual data from 1960 to 2009. On the basis of this historical data the study tries to capture the impact of climate change on wheat production up to now. The results of estimation reveal that global climate change doesn't influence the wheat production in Pakistan. However, on the basis of the results some appropriate adaptive measures are proposed to confront any adverse shock to wheat production in Pakistan.

Wheat is the most widely grown crop in the world. Wheat (*Triticum aestivum*.) is one of the first Domesticated food crops and has been the basic staple food of the major civilizations of Europe, West Asia and North Africa for last 8000 years. Approximately one sixth of the total arable land in the world is under wheat. It is most demanded food grain and its production leads all crops, including rice, maize and potatoes.

Although the crop is well adapted to climate between the latitudes of 30° and 60°N and 27° and 40°S, however, it is grown under wide range of climatic conditions from within the Arctic Circle to higher elevations near the equator. Research by the International Maize and Wheat

Improvement Center (CIMMYT) during the past two decades has shown that wheat production in much warmer areas is technologically feasible. The optimum growing temperature is about 25°C, with minimum and maximum growth temperatures of 3° to

4°C and 30° to 32°C, respectively. Wheat is adapted to a broad range of moisture conditions and can be grown in most locations where precipitation ranges from 250 to 1750 mm. Classification into spring or winter wheat is common and traditionally refers to the season during which the crop is grown. For winter wheat, heading is delayed until the plant experiences a period of cold winter temperatures (0° to 5°C), Spring wheat, as the name implies, is usually planted in the spring (can be sown in autumn in countries like Pakistan that experience mild winters) and matures during summer.

Wheat, as a human food is prized for its taste and as source of calories, protein, and certain vitamins and minerals, is the world most important crop. Its importance is derived from the properties of its gluten, a cohesive network of tough endosperm, proteins that stretch with the expansion of fermenting dough, yet hold together to produce risen loaf of bread. Only the grain of wheat, and to lesser extent the grain of rye, has this property. In addition to its utilization for bread large quantities of wheat are utilized for unleavened bread such as "Chapatti" in

Pakistan and India, for pastry products, and for semolina products. These uses, combined with its nutritive value and storage quality, have made wheat a staple food for more than one-third of the world's population. In general, hard wheat varieties are used for bread flour and pasta, and soft varieties for cake flour. Low grades of wheat,

and by-products of the flour-milling, and distilling industries, are used as feed for livestock. A minor amount of wheat is used as a coffee substitute, and wheat starch is employed as a sizing for textile fabrics.

World Wheat Scenario

Wheat is grown on about more than 240 million ha, larger than for any other crop, and world trade is greater than for all other crops combined. FAO now puts world wheat output in 2013 at

704 million tons, an increase of 6.8 percent from the last year, which would imply more than full recovery from the previous year's reduction and bring world production to its highest level in history. By far, the bulk of the increase this year is expected to originate in Europe, as prospects remain favorable overall in the EU and outputs in the major producing CIS countries are forecast to rebound sharply from drought-reduced levels in 2012. The outlook is also positive in Canada, Australia and Argentina - other major exporters - and in most other wheat producing and consuming countries. The main exception is the United States, where wheat crop growth has been hindered by adverse weather conditions drought in particular - this season

Wheat Production in Pakistan

In Pakistan, wheat being the main staple food cultivated on the largest acreages. Pakistan falls in ten major wheat-producing countries of the world in terms of area under wheat cultivation, total production and yield per hectare. Wheat is the essential diet of population as it constitutes 60% of the daily diet of common man in Pakistan and average per capita consumption is about 125 kg and occupies a central position in agricultural policies of the government. The government announced wheat support price of Rs. 1200 which created interest on the part of farming community. Wheat contributes 10.1 percent to the value added in agriculture and 2.2 percent to

GDP. Area under wheat has increased to 8.693 million hectares in 2012-13, from 8.650 million hectares showing an increase of 0.5 percent over last year's area. The production stood at 24.3 million tons during 2012-13, against the target of 25.5 million tonnes which is 5.1

Percent decrease from target while a 3.2 percent increase over the last year production of 23.5 million tons has been witnessed. The yield per hectare in 2012-13 stood at 2797 (Kg/ha) posted a positive growth of 2.7 percent as compared to negative 4.2 percent growth last year. The overall increase in area due to enhancement in support price from Rs 1050 to Rs. 1200. This was further supported by favorable temperature and healthy grain formation. There is around 60% yield gap in wheat, which needs to be narrowed. Because of lower yields, wheat production in the country, however, has been well below potential and variable. The major reasons for low productivity and instability includes: delayed harvesting of kharif crops like cotton, sugarcane and rice, and consequent late planting of wheat, non-availability of inputs like seed, inefficient fertilizer use, weed infestation, shortage of irrigation water, terminal heat, drought in rain fed, soil degradation and weak extension services system.

Non-availability of quality seed

Scientists working in different research institutes of the country have developed new high yielding and disease resistant varieties, which have improved the crop yield over years. The rapid diffusion of modern varieties of rice and wheat in irrigated areas is well documented. New varieties maintain disease resistance to evolving pathogens and enhanced genetic yield potential. Our seed system provides certified seed for 20 percent of wheat sown area and rest of the area is sown through farmer own seed or seed from local merchants. There is need that farmer should be trained for producing their own quality seed that would improve wheat productivity on small farms.

Delayed planting

In Pakistan, farmers generally plant wheat late due to late harvesting of Kharif crops (cotton, rice, sugarcane and summer crop growing areas) which results in low yields because the crop is exposed to heat stress at grain filling period leading to the formation of shriveled grain. Currently, only 30 % of wheat is being planted at optimum planting time (before 15th November). Non-availability of soil moisture in rain fed areas also delays wheat sowing in these areas. A comparison of wheat planted fortnightly from November 10 shows that the loss due to late planting could be as high as 42 Kg / ha / day (1% loss per day). Wheat yield reduction can be up to 35 percent if wheat crop is planted in last week of December.

Inefficient fertilizer use

Soil fertility is continuously depleting due to mining of the essential plant nutrients from the soils under intensive cultivation and imbalanced use of fertilizers. During 2011-12, the off take of nitrogen (N) decreased by 0.1%, while the use of phosphate (P) and potash (K) declined by 19% and 31.3%, respectively compared with 2010-11. With the increase in wheat support price for 2012-13 wheat crop, phosphorus and nitrogen application has witnessed an increase of

25% and 7% in comparison with 2011-12 season. Although farmers have awareness regarding fertilizer benefits but balance fertilizer application is a dream. At present NP ratio is 4:1 for wheat crop that should be at least 1.5:1.