



The term 'agriculture' is derived from a Latin word ager or agri meaning soil and culture meaning cultivation. Thus, the term refers to 'cultivation on soil'. It includes growing crops, fruits, vegetables, flowers and rearing of livestock for milk, meat, wool and hides. Thus, two main divisions of the agriculture are crops and livestock. **Crops** are cultivated plant species and **livestock** are domesticated animal species. Both are raised primarily for human use. Therefore, agriculture is an **economic activity**. Economics is the study of the way in which goods and money are produced and used.



World Distribution of Arable Land

When bread and biscuits are made in a factory, it needs wheat flour, sugar and milk which all come from agricultural products and/or their processed form. The transformation of natural resource(s) to a finished product and its sale to the consumer involves **three stages/types of economic activities**. These are primary, secondary and tertiary activities. Production and extraction of natural resources like wheat, sugarcane and milk are examples of **primary activities**.

Processing of these resources— wheat into flour and sugarcane to sugar are **secondary activities**. However, baking of bread and biscuits from wheat flour, sugar and milk is also a secondary activity. Transport, trade, banking, insurance and advertising at any step are examples of **tertiary activities**. They are support services to the primary and secondary activities. In this way **agriculture is a primary activity**.

50% of the world's population is engaged in agriculture. Two-thirds of India's people still depend on agriculture. Suitable factors for the growing of crops are climate, soil and relief of a place. Climate includes sunshine and rainfall, i.e. temperature and moisture. The land suitable

for growing crops is known as arable land. World distribution of **arable land** is shown in.

Agriculture as a System

Agriculture or farming is a system of inputs, processes and outputs. Inputs are seeds, fertilisers, machinery and labour. Processes are the operations of ploughing, sowing, irrigation, weeding and harvesting. Outputs are crops.

Farmers also raise livestock to supplement their income. Similarly, the inputs for the livestock are animals, processes are their rearing with fodder, drinking water, cleaning, providing safety, etc. and the outputs are dairy products, wool, etc.



The farm system of an arable land

Types of Farming

The ways of farming vary across the world depending upon the climate, fertility of the soil, availability of ground water, size of farm, demand of produce, labour, tools and techniques. Broadly, farming can be divided into two types – subsistence farming and commercial farming.

Subsistence Farming

When the farmer produces just enough to meet the needs of his family and sells or exchanges the surplus, if any, with the members of the local community, it is called subsistence farming. It can be intensive or primitive.

Intensive Subsistence Agriculture : Farming which produces a lot of food from a small area of land with a lot of effort in a short period of time is called **intensive farming**. A large number of people depend on a limited (small) area of land, so the land is cultivated **intensely** mainly with human labour, high quality seeds, plenty of fertilisers and regulated supply of water from irrigation. A variety of crops is grown in rotation to retain soil fertility. Most of the produce is retained by the farmers for their own consumption. Two or three crops are grown in a year on the same stretch of land to get more produce. Climate with large number of days with sunshine and fertile soil, permits doing so. Among the crops grown are rice, wheat, maize, pulses and oilseeds. This type of practice prevails in the thickly populated areas of the monsoon regions of south and south-east Asia including India.

Primitive Subsistence Agriculture includes shifting cultivation and nomadic herding.

Shifting Cultivation : A plot of land is cleared by felling the trees and burning them. The ashes are then mixed with the soil. Crops like maize, yam, potatoes and cassava are grown. In a few years the soil loses its

fertility. The cultivators move out to clear a part of the forest again. Shifting cultivation is also known as 'slash and burn' farming. It is practised in the thickly forested areas of Amazon basin, tropical Africa, parts of southeast Asia and Northeast India. These are the areas of heavy rainfall.



Fact File

Shifting cultivation is known by different names in different parts of the world :

<i>Jhumming North- East India</i>	
<i>Ladang</i>	<i>Malaysia</i>
<i>Milpa</i>	<i>Mexico</i>
<i>Roca</i>	<i>Brazil</i>



Banana Plantation

Nomadic Herding : Herders move from place to place with their animals for fodder and water, along defined routes. Sheep, camel, yak and goat are most commonly reared for milk, meat, wool and hides. This type of farming is practised in the semi-arid and arid regions of Sahara desert, east and south-west Africa, parts of west central Asia and northern Europe. In deserts, the herders carry their belongings on donkeys, horses and camels. In mountainous Tibet and Andes, yak and Llama are reared. Reindeer are the livestock in Arctic and sub-arctic area. In Jammu and Kashmir, nomads called Bakarwals still move in search of fodder and water for their animals (goats).

Commercial Farming

In commercial farming crops are grown and animals are reared mainly for sale in the market. Crops are raised on huge farms and most of the work is done by machines. It requires a large amount of money. Under this system of agriculture, commercial grain farming in mid latitudes and plantation agriculture in tropical regions are significant.

Commercial Grain Farming : Wheat and maize are common commercially grown grains. This type of farming prevails in most parts of mid latitudes (in North America, Europe and Asia) in the temperate grassland regions which have been turned into agricultural lands. These areas are sparsely populated with large farms spreading over hundreds of hectares. Therefore, this farming is also called extensive farming. Most of the farming work is done with the help of machines like tractors, combine harvesters, seed drills, levellers and the like. Severe winters restrict the growing season and only a single crop can be grown.

Mixed Farming : At many places in the USA, Canada, Argentina and Europe along with crops, livestock are also raised, i.e., a mixture of agriculture activities are done. It is also practised in south-east Australia, New Zealand and South Africa.

Plantation Agriculture : In plantations, a single crop of tea, coffee, sugarcane, cashew, rubber, banana or cotton is grown. The produce may be processed on the farm itself or in nearby factories. It requires a large amount of labour and a network of transport. Major plantations are found in the tropical regions of the world. For example, coffee in Brazil, rubber in Malaysia, tea in India and Sri Lanka.

Major Crops

There are three types of crops– food crops, fibre crops and beverage crops. Major food crops are rice, wheat, maize and millets. Fibre crops are cotton and jute. Important beverage crops are tea and coffee.

Rice : Rice is the staple food of about 50 per cent of world's people especially of the tropical and sub-tropical regions. Rice needs high temperature, high humidity and rainfall. Irrigation is necessary where rainfall is less. Water is kept standing stationary in rice fields. It grows best in alluvial clayey soil, which can retain water. Rice requires lots of labour. Almost all the operations like preparation of seedling bed, transplanting, weeding and harvesting are done manually. China leads in the production of rice followed by India, Japan, Sri Lanka and Egypt.



Rice Cultivation



Wheat Harvesting

Wheat : Wheat requires moderate temperature and rainfall during growing season and bright sunshine at the time of harvest. It is grown in winter in India and USA and in spring in Canada. It thrives best in well drained loamy soil (having equal amounts of sand and clay). Wheat is grown extensively in USA, Canada, Argentina, Russia, Ukraine, Australia and India. Wheat is the staple food of temperate regions.

Maize : It is known as corn in the American continent. Maize requires moderate temperature, rainfall and lots of sunshine. It needs well drained fertile soils. Maize is grown in North America, Canada, Brazil, Mexico, Russia, China and India.



Maize Cultivation

Millets : Four crops – jowar, bajra, ragi and sorghum are as a group known as millets. They are also known as coarse grains. Millets need high to moderate temperature and adequate rainfall. They can be grown on less fertile and sandy soils. Major producing countries are India, Nigeria, Niger and China. India is the largest producer of millets in the world.



Bajra Cultivation

Cotton : Cotton grows best on black and alluvial soils. It requires high temperature, light rainfall, two hundred and ten frost free days in a year and bright sunshine. China, USA, India, Pakistan, Brazil and Egypt are the leading producers of cotton. Cotton fibres are obtained from cotton bolls around the seed. The bolls are generally white. The fibres may be of short staple and long staple. The long staple variety is considered best for strong quality cloth.



Cotton Cultivation

Jute : Jute plant gives long soft shiny fibre resistant to stretching. It is used for making carpets, ropes, mats, bags and packing material. It grows well in alluvial soils of delta regions. It requires high temperature, heavy rainfall and humid climate. Jute is grown in tropical area. India and Bangladesh are the leading producers of jute. It was called 'golden fibre'.

Tea : Tea requires cool climate and well distributed high rainfall throughout the year. It needs well drained, specially on gentle hill slopes, loamy soils. The tea plant yields tea leaves during its life span of about 40 to 50 years. Large number of human labour is required to pick the leaves. Kenya, India, China, Sri Lanka produce the best quality tea in the world. However, the Chinese tea plant has small leaves and the Assam (in India) tea plant has large leaves which is more popular.



Tea Plantation



Coffee Plantation



FACT FILE

Kaldi, an Arab goat herder in 'Kefa' (Ethiopia), in about AD 850 found that his goats after eating the berries of an evergreen bush were behaving strangely, sometimes funny and silly and sometimes annoying. He tasted these berries too. He experienced a sense of exhilaration (feeling of being happy, excited and full of energy). He told his fellowmen. From Eastern Africa where the plant came to be known as Coffee Arabica, it spread to South Africa and South and the Central American continent. The coffee plant was introduced in India by the British.



A farmer ploughing a field



Mechanised Harvesting in the USA

Coffee : Coffee requires warm and wet climate and well-drained (hill slopes), loamy soil. Brazil is the leading producer followed by Columbia and India. Coffee beans are roasted and made into powder to further process it into instant coffee (readily soluble in water). Some people like to boil the coffee beans in water. The stimulating (exciting) element of coffee is caffeine. Cola drinks like Coca Cola, Pepsi also contain a certain quantity of caffeine usually obtained from 'Cola' plant of Africa and America. Some people consider coffee a drink of the elite, others denounce it as an intoxicating drink on religious grounds.

Agricultural Development

Agricultural development simply means to increase farm production so that the growing demand of the ever increasing population may be satisfied. Ways of agricultural development are :

- (i) increasing the cropped area,
- (ii) use of high yielding variety of seeds,
- (iii) use of fertilisers,
- (iv) improving irrigation facilities,
- (v) mechanisation of agriculture, and
- (vi) increasing the number of crops grown.

But will the system be able to ensure the food security for every one –access to sufficient, safe and nutritious food to meet their dietary needs and food preferences ?

Most of the farmers in developing countries with large populations grow crops on small holdings (average 1.5 hectares) by intensive agriculture mostly for subsistence as in India. Farmers in developed countries grow crops on larger holdings (average farm size 250 hectares) by commercial agriculture as in USA, Canada and Australia. These farmers work like a businessman.

A comparative study of Farms in USA, and India shows that the farmers in developing countries are trying to follow the norms of the farmers in developed countries—high yielding varieties of seeds, soil testing, tube wells, fertilisers, pesticides, modern implements, storage and credit from a bank for these facilities. The government also provides them subsidy for the same. But overall the follow up is not fast. A small number of farmers have their own tractors, harvesters, threshers and tube wells. Some farmers take a tractor to plough their fields or take a tube well in the nearby field to irrigate their fields on rent. Most of the farmers throughout the whole India depend on their traditional ploughs, bullocks, household labour, traditional way of irrigation or rainfall. They take loans from private money lenders or government banks but could hardly repay them. Many of the farmers go to the nearby cities for earning wages through labour in the off season. Government agricultural officers in India are going village to village to advise the farmers on every aspect related to agriculture including rearing of livestock.



Key Words

- » Arable land : the land suitable for growing crops.
- » Subsistence farming : most of the produce is used by the farmer for feeding himself and his family.
- » Commercial farming : most of the produce is sold in the market.
- » Intensive agriculture : small sized farms cultivated with intense use of labour, high quality seeds, crop rotation and irrigation to get higher yields.
- » Extensive agriculture : large sized farms cultivated with machines.
- » Staple food : a crop that forms the chief food of an area.
- » Shifting cultivation : clearing a small part of a forest to get a plot of land, cultivating for a few years and leave when the soil loses its fertility.
- » Nomadic herding : rearing of livestock by the moving herders from place to place with their animals for fodder and water.
- » Livestock : domesticated animal species.

SUMMARY

- ▶ Agriculture means cultivation on soil including growing crops, fruits, vegetables, flowers and rearing of livestock (domesticated animals).
- ▶ Agriculture is a primary activity as it refers to production of natural resources like wheat, sugarcane and milk.
- ▶ Agriculture or farming is a system of inputs, processes and outputs.
- ▶ The ways of farming vary across the world depending upon the climate, fertility of the soil, availability of ground water, size of farm, demand of produce, labour, tools and techniques.
- ▶ In subsistence farming most of the produce is used by the farmer for feeding himself and his family.
- ▶ In commercial farming most of the produce is sold in the market.
- ▶ Major food crops are rice, wheat, maize and millets. Fibre crops are cotton and jute. Important beverage crops are tea and coffee.
- ▶ Agricultural development means to increase farm production so that the growing demand of the ever increasing population may be satisfied.
- ▶ Farmers in developing countries are trying to follow the norms of the farmers in developed countries with the help of their governments.

Exercise Time

A. Tick (✓) the only correct choice amongst the following :

1. In which latitudes agriculture by plantation is practised ?
 - a. Tropical
 - b. Subtropical
 - c. Polar
 - d. None of these
2. Leading producer of coffee in the world is
 - a. Brazil
 - b. India
 - c. Russia
 - d. Columbia
3. The main crop grown extensively under commercial grain farming is
 - a. maize
 - b. rice
 - c. wheat
 - d. millets
4. The areas of temperate grasslands are ideally suited for the growing of
 - a. oil seeds
 - b. wheat
 - c. cotton
 - d. coffee
5. The type of agriculture followed in USA is
 - a. extensive
 - b. intensive
 - c. subsistence
 - d. shifting



B. Fill in the blanks :

1. About _____ population of India depends on agriculture.
2. The method of farming that avoids use of chemical fertilisers and pesticides is _____.
3. Farmers raise _____ to supplement their income.
4. The average size of a farm in India is _____ hectares.
5. Most of the work of farms in developed countries is done by _____.

C. Write true (T) or False (F) against the following statements in given brackets :

1. Wheat is spring crop in Canada but winter crop in the USA and India.
2. One -fourth of the world's population is engaged in agriculture.
3. Rice is not cultivated on the plateaus.
4. Intensive farming is done on larger holdings of land.
5. Commercial grain farming is mainly practised in mid latitudes.

D. Answer in one word or one phrase :

1. What is the method of shifting cultivation called in the north-east hills in India ?
2. In which latitudes agriculture by plantation is practised ?
3. Which soil is best for wheat ?
4. What type of farming do Bakarwals practise in Jammu and Kashmir ?
5. How much water does rice crop need ?

E. Answer these question briefly :

1. What is agriculture ? Name the factors influencing agriculture.
2. Why are different crops grown in different regions ?
3. What geographical conditions are ideal for the cultivation of rice ?
4. What is shifting cultivation ? What are its disadvantages ?
5. What are the features of plantation agriculture ?

F. Differentiate between :

1. Intensive and Extensive farming
2. Subsistence and Commercial farming
3. Commercial Grain farming and Plantation agriculture
4. Primary activities and Tertiary activities

G. Answer these questions in detail :

1. Explain different types of farming (agriculture) practices.
2. Describe the major food crops including the climate and soil they need.
3. Give a comparative account of farming in developing and developed countries.

PROJECT WORK

1. Collect seeds of the crops about which you studied in this chapter.
2. Find out about plantation farming in India and write a report on tea plantation.