9. Agriculture

Can you tell ?

Figure 9.1 : A house in a village

See fig. 9.1, and discuss the following questions :

- What all do you see in the picture?
- Why has the family kept goats and hens?
- Which implements are seen in the picture?
- How are these implements used?
- In which major occupation type will the activities shown here be included?
- What could be the main occupation of these people?
- Who could be the owner of the house?
- Which products shown in the above picture do you use daily?

Geographical explanation

In the picture shown above we see a standing crop, a ploughshare, etc. From this, it becomes obvious that this is a farmer's house. A farmer keeps hens, sheep, goats and cattle. They are also seen in the picture. He gets milk, eggs, etc from them. He sells hens, goats to earn money. He does all this for his subsistence. All these occupations depend on natural factors. All these fall under agriculture. These occupations are supplementary to the cultivation of crops.

Agriculture has a wide scope. For our basic needs of food and clothing we make use of plants and animals. Besides the cultivation of different crops, rearing cattle, sheep and goats, maintaining poultry farms, keeping bees, sericulture, horticulture, orchardry, pisciculture, pig farming, emu farming, etc. are included in agriculture.

In agricultural occupation, resources like manpower, animals, implements, etc. are used. Advanced technology is employed. In agriculture, cultivation of crops is considered to be the main and the most important occupation.

Give it a try.

Figure 9.2 : Traditional and modern agricultural activities

- Observe the pictures given above. What differences do you observe through these pictures?
- What changes have taken place in traditional agricultural practices?

Geographical explanation

In the above pictures, we see the changes in agricultural practices. In the past, primitive man had to wander in the forest to sustain himself on the collected forest produce. Later he learnt the art of cultivation and started getting greater production from the land. Through this, he could provide for the whole year's need for foodgrains. He also started obtaining a number of products through floriculture, horticulture, rearing animals, pisciculture, etc. Abandoning nomadic life, he undertook different occupations related to agriculture at the same place.

Now let us get introduced to the different occupations that come under the scope of agriculture. We use the products of these occupations in our everyday life. These traditional occupations are allied activities in agriculture.

Animal husbandry:

Rearing different animals and obtaining various products from them for subsistence is the core of animal husbandry.

Dairy farming :

Cows, oxen, buffaloes, etc. are reared for agriculture related work. Rearing milch animals and animals which can be employed in farming is also an occupation. It is considered to be an inseparable part of mixed farming. It has become quite commercial in recent times. In India, it has started changing recently. Commercial dairy farming is mainly undertaken for meat and milk.

Sheep and goat rearing:

This is also a traditional occupation. That is generally carried out in hilly tracts and semi-arid regions with dry climate. Sheep and goats survive on short grasses, shrubs and acacia

which grow in remote hilly rural areas away from urban settlements. In India, it is mainly undertaken for meat. Sheep rearing is carried out to obtain wool.

Poultry:

Keeping hens and other fowl is a common practice in all parts of the world. It is a traditional occupation. Today, it is carried out as a household occupation and also on a commercial basis. Running a poultry on a commercial basis requires a lot of care. For this, scientific methods are employed. In India, this occupation is generally located in the areas close to big cities as they provide a ready market for this occupation.

In some areas, rabbit, pig and emu rearing is also undertaken.

Beekeeping:

This occupation is undertaken to obtain honey and wax. Bees, in order to collect honey, hover around the plants that bear flowers. This promotes the process of pollination. As a result, the trees bear large number of fruits and the crop yields increase. Bee keeping is an important occupation with respect to agriculture.

Pisciculture (Fish farming):

Farm ponds are dug out for this purpose. Water is stored in such ponds. Fish seeds are released in the ponds. For this, seeds of freshwater species are used. In order to achieve the best growth of fish, scientific methods are employed.

Fishing in open seas has a number of risk factors. Different types of fish and other aquatic organisms get caught in the fishing nets. Separating them becomes a major task. All organisms do not fetch the same price. All these factors led to the rearing of specific type of fish species separately. Pisciculture developed out of these efforts. Wam, Roha, Rawas (Indian Salman), Kolambi (Prawns), etc. are reared in fish farms.

Sericulture:

Silk thread is obtained from the cocoon of the silk moth. These threads are very fine and strong and from these one can weave soft silk cloth. Getting silk thread form cocoons and manufacturing silk cloth are independent occupations. They are not included in agriculture. Different organizations supply silk moth eggs to the farmers. Leaves of mulberry trees are the main food for these silk worms. Once planted, the Mulberry trees survive for a minimum period of 15 years. Hence, the expenditure of planting the trees every year is saved.

Nursery:

In the last few years, the area under floriculture, cultivation of medicinal and aromatic plants and horticulture has increased. These plantations require a high standard of seedlings, cuttings, bulbs and seeds. This has led to the development of nurseries. Nurseries give good returns.

Figure 9.3 : Nursery

Do you know ?

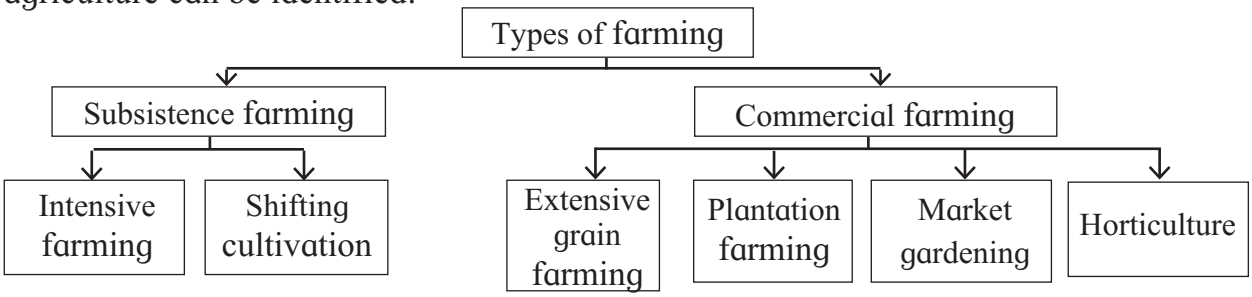
Greenhouse farming: Greenhouse farming facilitates getting maximum product from the land. It can have a total control on natural factors like climate, heat, atmospheric moisture as well as soil moisture. It assists in getting maximum economic benefits. Greenhouse farming is highly specialized type of farming of the modern era. For erecting a green house

galvanized iron pipes and plastic sheets are used. Its main aim is to control the pest attack by controlling water, light and temperature. Green houses are used on larger scales for growing flowers like lily and gerbera to give maximum economic returns.

Figure 9.4 : Greenhouse farming

Types of farming :

Different types of agriculture have evolved due to geographical and cultural diversity, and technological differences in different regions. The type of farming depends upon the purpose and aims of methods of farming, the crops being cultivated, the techniques used, land use etc. Broadly, the following types of agriculture can be identified:



Subsistence farming:

Intensive farming and shifting cultivation are the two types in traditional farming. Intensive farming is carried out in one and the same farm for years together. In shifting cultivation, every year a new area is chosen for cultivation. After a specific period of time, old areas are again used for cultivation.

Intensive farming:

Getting maximum production from a minimum area is the characteristic of intensive farming.

- Due to large population or limited availability of land, per head holding is small.
- This type of farming is mostly seen in developing regions.
- Farm production is sufficient only for the requirement of the family.
- In this type of farming, the cultivator and his family are totally dependent on farming. As farm production is low, the economic condition of the cultivator is also poor.

Figure 9.5 : Terrace farming

- In this type of farming mostly animate energy is used.
- Besides the cereals, vegetables are also grown to some extent.

Shifting cultivation:

Shifting cultivation is a primitive type of cultivation. This type of cultivation is practised in the tropics in densely forested

areas or hilly tracts. The farmer initially selects a piece of land in the forest. In order to make it cultivable, he clears the land by cutting down the trees, plants, removing the shrubs and grass. Once the cut trees dry out, he burns them. The left over ash gets mixed in the soil and acts as manure. Sowing and harvesting is done before the rainy season (See fig 9.6). The production obtained from this is not sufficient to fulfil the food requirement. Hence people undertake hunting, fishing and gathering of bulbs and roots from forests. In this type of farming, the fallow period is longer than the crop period. After the productivity of the land depletes in two to three years, a different piece of land is selected for cultivation.

Figure 9.6 : Shifting cultivation

Commercial farming:

Extensive grain farming and plantation agriculture are the two major types covered under commercial farming.

Extensive grain farming:

- Farm size is greater than 200 hectares.
- Due to large farm size and sparse population in the region, this type of farming is carried out with the help of machines like tractors and crushers. Pesticides are sprayed with the help of helicopters or planes.
- Monocrop (a single crop) cultivation is the striking characteristic of this type of farming. The crops are wheat or corn. Besides these, barley, oats, soyabean are also cultivated to some extent.

Figure 9.7 : Mechanisation in extensive farming

- Heavy capital investment is necessary for this type of farming. Since huge expenditures are needed for the purchase of machinery, fertilizers, pesticides, godowns, transport cost etc.
- The problems in extensive grain farming are droughts, attack by pests, locusts, etc. and market fluctuations.
- This type of farming is carried out in the temperate grassland regions.

Plantation farming:

- Farm size in plantation agriculture is 40 hectares or above.
- As plantation agriculture is practised in hilly tracts, use of machines is not possible, and hence local manpower becomes important.
- The crop for which the geographical conditions are favourable is planted. This is a single crop-cultivation practice too.
- This type of agriculture does not produce food grains. Only commercial crops like tea, rubber, coffee, coconut, cocoa, spices, etc. are planted.
- This type of farming began and spread mostly during the colonial period. It is practised in the tropics.
- This type of farming requires large scale capital investment due to the long duration of crops, use of scientific methods, exportable production, processing etc.
- Climate, manpower, deterioration of environment, economic and managerial problems are the major issues faced by this type of agriculture.
- This type of agriculture is practised in India and other South Asian countries, Africa, South and Central America, etc.

Use your brain power!

- Why does extensive commercial farming need more capital?
- Why does plantation farming need skilled and experienced labour?

Market gardening:

Market gardening is a type of cultivation developed in modern times. This has developed mainly as a result of urbanization and the ready markets available in urban centres. Farmers cultivate vegetables and other item in the vicinity of urban centres to cater to the demands of city dwellers. This type of cultivation works on a principle of economics – demand and supply. The landholding is small. Use of irrigation, organic and chemical fertilizers, low investment, use of manpower, demand of

Figure 9.8 : Market gardening

markets, use of science and technology etc. are the characteristics of market gardening. It is dependent on good transport network.The quality and price of the product is determined by rapid transport. Hence, this type of farming is also known as 'truck farming'.

Horticulture/Floriculture:

Cultivation of flowers and fruits is a subtype of market gardening. Fruits and flowers are the major products of this type of farming. In this type of farming modern as well as traditional methods are used. The size of farms is small and every plant is cared for properly.

Figure 9.9 : Floriculture

In recent times, use of irrigation, chemical fertilizers, green houses etc. is being made for getting more profit (See fig. 9.9). Major products of horticulture are flowers like lily, gerbera, tulip, dahlia, chrysanthemum, marigold, etc. These fetch a good price in the market.

Different native and exotic fruits like mangoes, custard apples, grapes, bananas, pomegranates, dragon fruits, cherries, oranges, raspberries, strawberries, mulberries etc. are cultivated in fruit farming (See fig. 9.10) at places like Mahabaleshwar, Panchgani, Pune, Nagpur, Jalgaon, Nashik etc. Countries having Mediterranean climate, France and Italy are famous for horticulture.

Figure 9.10 : Orchardry

Do you know?

Organic farming:

The nutrient requirements of the crops is fulfiled by soil and therefore, replenishment of used up nutrients is necessary. Nutrients are also used abundantly to increase the yield. Organic fertilizers are prepared for this purpose.

- The litter should be decomposed in the ground.
- Grasses like sesbania or jute are also buried in the soil for making manures.
- Cowdung and compost manures are used.
- Vermicompost is obtained from organic waste.

When farming is done using all vegetal matter mixed in the soil it is called organic farming (See fig. 9.11).

For controlling pests, organic pesticide like neem can be used. The crop obtained from organic farming is high in quality. Chemical fertilizers and pesticides are not used in such a type of farming.

Figure 9.11 : Preparing organic fertilizers

Can you tell?

Observe the pictures in fig. 9.12 and briefly describe the type of agriculture shown in the picture. Use the space below the picture.

Figure 9.12 :

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Agrotourism:

Agrotourism is a new field in tourism. In the tropics, various types of agricultural products are cultivated. Hence there is greater scope for agrotourism. In agrarian countries the rural life, local customs and culture are utilized for agrotourism (See fig. 9.13).

City dwellers are curious about the farmer's life and environment. Many of them visit rural areas just to see this. Agrotourism is financially beneficial for the farmer and his village.

Figure 9.13 : Agrotourism

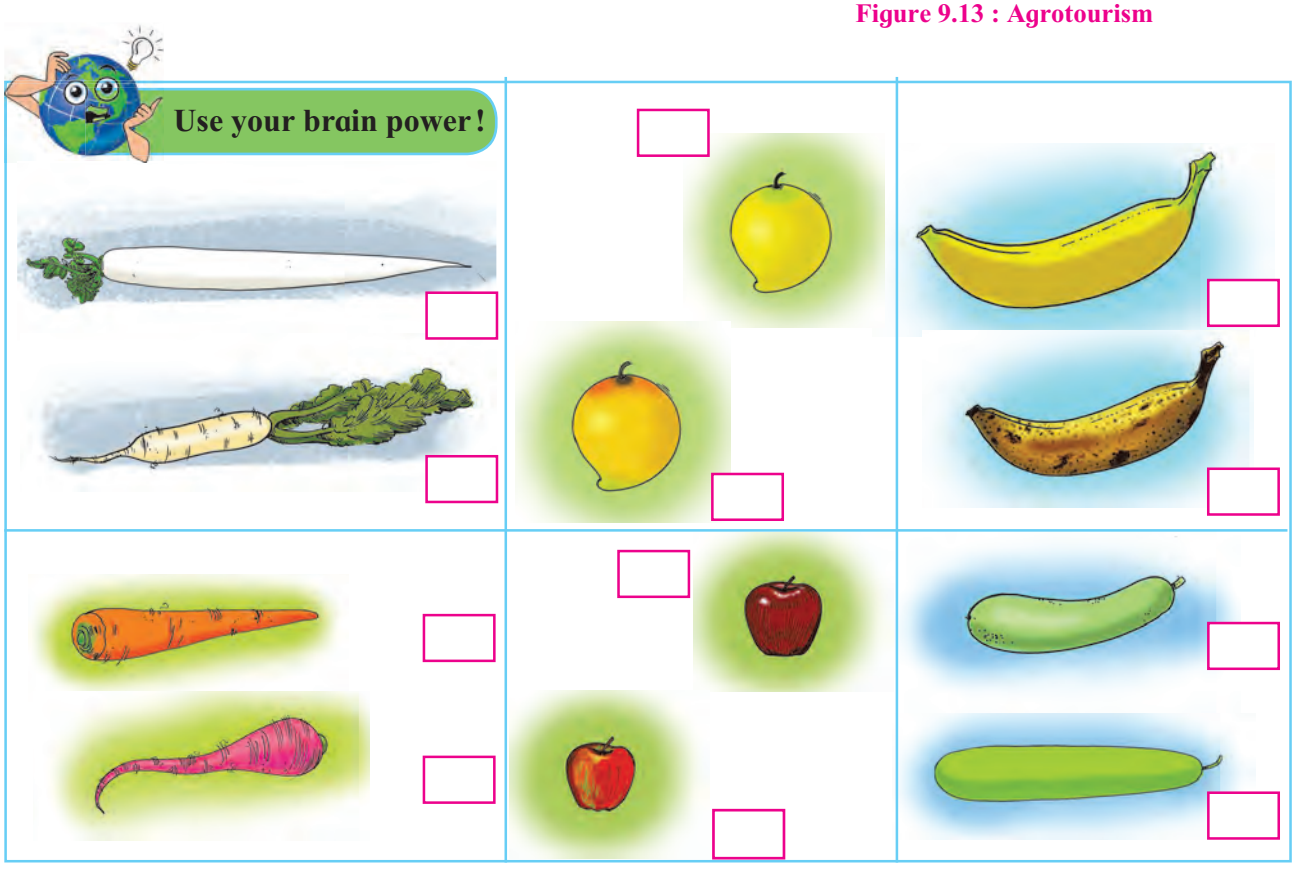

Figure 9.14 : Choose one in each pair.

Observe the pictures of some fruits and vegetables given in figure 9.14. Tick the ones you like. Later, discuss your choices.

*(**For teachers:** Brief the students about artificially ripened items and naturally ripened items.)*

Geographical explanation

After the discussion, you may have realized that those fruits and vegetable that look fresh and attractive may not have been ripened using proper methods. At times, in

order to get the produce earlier, artificial chemicals, pesticides are employed profusely. These facilitate quicker production and the produce appears fresh and attractive. However, such products are harmful to health. Also they do not last long after purchase.

Give it a try.

Write a paragraph on the basis of the following questions:

- Which improper practices arising out of man's greed are observed in agriculture?
- What means of irrigation are available in your area?
- Have you observed the wastage of water in agriculture? If yes, describe it.
- Which steps can easily be taken to avoid improper practices in agriculture?

Geographical explanation

Marketing systems:

Marketing systems are necessary for making the goods produced by the farmers available to the consumer at a fair price and in time. The importance of marketing system in countries like India will become clear from the following points.

- Agriculture in India is scattered over vast areas.
- All farmers are not organized.
- Most of the farmers are economically weak and cannot market their production on their own. That is why, the system of Agricultural Produce Market Committees is established at the taluka level. At these places, farmers bring their produce and sell to the traders.
- As farm produce is perishable, there has to be a proper arrangement for its sale. Institutes like farmer's organizations, consumer societies, etc. help in this task and try to protect farmers from the exploitation by agents, mediators and others.

Some of the farm produce is directly used by industries as raw material. International markets are now becoming easily available for farm produce due to globalization. Many progressive farmers are using the modern technology in their farms. Also, they sell the produce with proper packaging. Hotels and malls also require agricultural produce on a large scale. By advertising on the internet, their products get sold in local as well as international markets.

Do you know ?

Figure 9.15 : Farming in Israel

Israel is a major exporter of fresh farm produce. It is the most advanced country as far as agricultural technology is concerned. It has adverse climate, severe scarcity of water and more than half its land is occupied by hot deserts. But, overcoming all these unfavorable conditions and persistently following the path of modernization of agriculture it has taken a giant leap in the field of agriculture.

Use your brain power !

☞ In what different ways is ground water obtained for agriculture ?

Look for me elsewhere !

☞ Class 4 Environmental Studies (Part One) 'The Value of Food' chapter.

☞ Class 5 Environmental Studies (Part One) 'Food for All' chapter.

Exercises

Q. 1. Select the proper option for the following statements.

(1) In which of the following type of farming are the crops rotated?
(a) Intensive (c) Commercial
(b) Plantation (d) All of these

(2) Agriculture requires the following:
(a) Only ploughing
(b) Use of animals, implements, machines and manpower
(c) Use of only manpower
(d) Just cultivate the crop

(3) In India, agriculture has developed because....
(a) There are two seasons of agriculture in India.
(b) Majority of the people depend on agriculture.
(c) Traditional agriculture is practised in India.
(d) In India factors like climate, soils, water, etc. are conducive.

(4) It is necessary that modern methods and technology be used in agriculture in India because....
(a) There are factories producing improved seeds.
(b) There are industries producing fertilizers.
(c) Population is growing and there are agro-based industries.
(d) Modern means and machines are available.

Q. 2. Give short answers for the following questions.

(1) Describe the importance of irrigation for agriculture.

(2) Give a comparative account of any two methods of irrigation.

(3) Mention the major types of farming and give information about intensive farming and extensive grain farming.

(4) Describe the characteristics of plantation farming.

(5) Which are the crops cultivated in your area? What are the geographical reasons for that?

(6) Why is the agriculture in India seasonal in nature? What are the difficulties for perennial agriculture?

Activity:

Visit a farm where modern technology is used for agriculture. Collect information about it.

Use of ICT

(1) Collect the pictures of improved seeds and means of irrigation from the internet.

(2) Collect information regarding agricultural in Israel from the internet. and present it.

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