

PRIMARY SECTOR

The primary sector involves activities that obtain basic (or primary) resources directly from nature. It consists of: agriculture, livestock farming, forestry and fishing.

The importance of the primary sector today

The percentage of the active population employed in the primary sector is decreasing. Today about 40% of the world's active population work in the primary sector. However, there are great differences between countries:

-In **developed** countries, between 1% and 5% of the active population work in the primary sector. Productivity is high due to mechanisation and technological progress.

-In **emerging** and **less developed** countries, about half of the active population work in the primary sector. In the poorest countries, about 80% of the active population work in agriculture. However, they have low productivity because they still use traditional farming methods.

Physical elements of the agrarian landscapes

The agrarian landscape is the one that results from the practice of the activities of the primary sector. The main physical elements that condition the agrarian landscape are:

-**Relief** influences the agrarian landscapes because it determines the type of activity which can be carried out:

- Land at an altitude of less than 200 metres is usually the most suitable for agriculture. So, at higher altitudes, temperatures fall and this restricts the growth of some species.
- Most agriculture is carried out on plains and in valleys because it is difficult to cultivate land at a steep gradient of more than 10°.

-**Soil** gives nutrients to the plants to grow. So, each plant requires a particular type of soil:

- Clay soil is rich in nutrients. However, it may absorb too much water and need good drainage.
- Sandy soil doesn't have nutrients or water. It needs fertilisers and frequent watering.
- Humus soil is rich in nutrients because it contains a large amount of organic matter.

-There are mainly four **climatic** factors that limit agricultural activity:

- Freezing cold weather. In general, plants can't grow at temperatures below 10°C.
- Boiling hot weather. Temperatures above 45°C aren't right for agriculture.
- Humidity. Heavy and frequent rainfall favour the growth of weeds and contributes to soil erosion.
- Dry conditions. Agriculture is more difficult in places where there is scarce and irregular rainfall.

For these reasons it is almost impossible to practise agriculture at the Poles, in deserts or in tropical rainforests without the use of modern technology.

Human elements of the agrarian landscape

-**Human settlements** are distributed in the countryside in two main ways:

- Dispersed settlement: houses are spread out across the countryside and they have cultivated land around them.
- Nucleated settlement: buildings are together to form a village. The village is surrounded by farmland.

-**Agricultural holdings** are units of agricultural production with a single proprietor. A holding consists of one or more **plots**, or pieces of land. The shape, size and borders of the plots influence the landscape.

- The plots can be small (less than 1 hectare), medium (between 1 and 10 hectares) or large (more than 10 hectares).
- They may also be regular or irregular in shape.
- When the plots are not surrounded by fences, they form **open-fields**. It's very common on the southern sub-plateau of Spain. When the plots are separated by fences, hedges or walls, they form **closed-fields**. It's very common in the north of Spain.

-**Cultivation systems** are the degree of use of the plots:

- **Intensive farming** uses the land to the maximum of its capacity. Modern techniques are used in developed countries, which achieve a high level of productivity. A large number of farmworkers are used in less developed countries, so productivity is much lower.
- **Extensive farming** is the cultivation of crops like wheat and barley on large areas of land. It is possible to grow considerable quantities of crops by using farm machinery in large flat fields.

- **Watering system** refers to the origin of the water:

- **Irrigation crops:** water is taken from artificial sources such as irrigation channels, flooding and sprinkling.
- **Rain-fed crops:** this system depends on rainfall, but it is often supplemented by modern irrigation techniques in times of drought.

-**Variety of crops** refers to the existence of one or several species grown on an agricultural holding.

- **Monoculture:** a single type of crop is grown. This type of large scale mechanised agriculture produces large quantities of a product at a competitive cost.
- **Polyculture:** several types of crops are grown. It is practiced in small plots whose production is destined to the consumption of rural families or in zones full of orchards.

Agriculture in developed regions

Developed countries have commercial agriculture. It has the following features:

- Specialisation. Only one product is usually cultivated on a holding. This simplifies the use of machinery and labour and increases productivity.
- Mechanisation. Machines partly replace human labour. This speeds up production and reduces labour costs.
- Modern agricultural methods such as fertilisers, greenhouses, irrigation systems like drip irrigation and genetically modified crops.
- Storage, transport and commercialisation. Today, products can be carried over long distances at a low cost.

Commercial agriculture requires large investments. However, the increase in productivity offsets the cost and leads to greater profits.

BENEFITS AND PROBLEMS OF COMMERCIAL AGRICULTURE
BENEFITS
<ul style="list-style-type: none"> • Lower prices. Thanks to high productivity and subsidies in wealthy countries. • Specialised transportation. Large quantities of agricultural production are carried over long distances. • Efficient distribution. Wholesalers travel to the places where the produce is grown.
PROBLEMS
<ul style="list-style-type: none"> • Pollution. Pesticides and chemical fertilisers pollute the soil and the water of the aquifers. Their recovery is very slow. This contamination affects our food and health. • Water use. Modern irrigation systems use a lot of water and reduce the reserves held in aquifers.

- Rural exodus. The increasing use of machinery has led to a decline in the number of jobs in rural areas. Many young people have left to live in cities.

Agriculture in less developed regions

Less developed countries have two types of agriculture: subsistence agriculture and plantation agriculture.

Subsistence agriculture

It is practised on small plots of land. Families farm the land to obtain food for themselves. It has the following features:

- Polyculture. Farmers cultivate different crops at the same time.
- Manual labour. Families often provide most of the workforce, using old-fashioned farming techniques and implements. As a result, productivity is low.
- Physical factors. Crops are only abundant when the weather is good.

Types of subsistence agriculture

- Shifting cultivation. Trees are cut down and burned in the forest, and the ash is used to fertilise the soil. After a few years, the soil is no longer fertile and the farmers move on to new areas.
- Sedentary rainfed cultivation. Cereals are grown in one area; products such as nuts and tubers are grown in another; and the third part is left fallow and is used to graze livestock.

Plantation agriculture

The earliest plantations were established by European colonists between the 16th and the 19th centuries. Crops that did not grow in Europe, such as cocoa, coffee and cotton could be obtained.

Today it has the following features:

- It is practiced in large farms controlled by foreign multinationals (especially European and American) or by local producers who sell their crops to these large companies.
- They use abundant local labour which is often hired on a temporary basis. The wages of these workers are low.
- It requires a large investment both to buy and exploit the land and to transport, conserve and market the products over long distances.
- Monoculture is usually practiced.

BENEFITS AND DISADVANTAGES OF PLANTATION AGRICULTURE

BENEFITS (FOR MULTINATIONAL COMPANIES)
<ul style="list-style-type: none"> • Production costs are low because workers in less developed countries are paid low wages.
BENEFITS (FOR LESS DEVELOPED COUNTRIES)
<ul style="list-style-type: none"> • Jobs are created, which stimulates local economies. • Transport and infrastructures are improved. • Modern farming techniques are introduced.
DISAVANTAGES (FOR LESS DEVELOPED COUNTRIES)
<ul style="list-style-type: none"> • Plantation crops are exported. Most of the profits go to foreign companies, while local workers have a low standard of living. • Many small farmers must leave their land and work on plantations because they cannot compete. • Companies aim for maximum output so exploitation becomes very intensive. This causes severe environmental impact. • Decisions are made based on the sale price of products. If prices drop, wages drop too, and operations sometimes end. This causes unemployment and poverty.

Livestock farming

Livestock farming consists of raising animals for food (such as meat, milk and eggs) or other economic purposes (like leather). Some animals are raised as a source of labour, or for breeding.

Some farms concentrate exclusively on stock-breeding. Others, however, combine crops and stock-breeding. New technologies have helped to increase production significantly. Scientific research in the last century has led to selective breeding, which improves productivity and develops the resistance of livestock to disease. New systems for cooling and freezing enable farmers to transport products for long distances in perfect condition. However, mechanisation and modern technology are not used to the same extent in all types of livestock farming.

Extensive livestock farming

Extensive livestock farming is practised in both developed and developing countries.

- It is typical of large farms, where animals graze in natural pastures.
- It requires little investment in labour or in facilities or foodstuff for animals, but productivity is low.
- Typical livestock includes cattle and sheep. In developed countries, products are intended for sale; in less developed countries, they are for family consumption.

This type of livestock farming is found in areas with abundant pastures, such as the central and western United States, the Pampa of Argentina, eastern Brazil, Australia, and the Republic of South Africa.

Intensive livestock farming

Intensive livestock farming is typical of developed countries. It has the following characteristics:

- Farms specialise in a single animal species.
- Large investments in technology and animal food are required, but productivity is high.
- Sometimes the animals are raised in stables where diet, health and fattening are controlled.
- Typical livestock include cattle, pigs and poultry.

This type of livestock farming has led to increased food production. However, it also damages the environment. Animal manure pollutes the soil and water. Large amounts of land are needed to produce food for so many animals. The methane gas released by large herbivores causes air pollution. Intensive livestock farming is practised mostly in the eastern United States and Canada, Western Europe, south-eastern Australia and New Zealand.

In other cases, animals are semi-stabled: they eat forage plants in pastures or they eat animal food when there is not enough grass.

Fishing

Fishing is the catching of fish and other animals from seas, rivers or lakes. The world fishing industry has expanded in recent decades, and today 85% of fish captures are for human consumption, and the rest is used to make oil and fishmeal.

Much of the fish consumed in developed countries is imported from emerging and less developed countries. China has both the highest fish production and the highest consumption of fish products.

Types of fishing

There are three main kinds of fishing:

- **Coastal fishing** takes place very near the coast in small boats using traditional methods. The catches are for home consumption and the local market. This type of fishing is an important source of food in developing countries.

- **Inshore fishing** is carried out near the coast in small or medium-size boats. Their equipment depends on the fish they capture, they put it in compartments with ice to preserve the fish, and deliver their catch each day.
- **Off shore fishing** is practised out at sea. It uses large ships equipped with modern technical instruments which can detect the shoals of fish. Many ships have installations where the fish is cleaned, cut up, packaged and frozen. They are factory ships, and they can be at sea for several weeks.

Fishing grounds

Fish is caught in fishing grounds, areas in which fish concentrate naturally. The best fishing grounds are along continental shelves. Sunlight and the nutrients deposited there by rivers favour the growth of plankton, which is food for many fish.

There are restrictions on where fishing can take place, which is controlled by international legislation allowing coastal countries the right to fish up to 370 kilometres from their shores. International treaties must be signed for fishing to take place outside this area

At present, fishing catches are excessive in relation to the amount of fish available. This leads to overfishing and the danger of different species disappearing. Governments have adopted different measures to encourage sustainable fishing. For example, they ban certain fishing techniques (such as trawling), limit the number of catches or establish periods when no fishing is allowed.

Many countries practise aquaculture, which is the breeding of fish in controlled environments. Most of the salmon and mussels consumed today come from fish farms. Aquaculture increases the supply of fish and seafood and prevents species from becoming extinct.

The primary sector in Spain

The importance of the primary sector in Spain has declined since the mid-20th century. Today 4.2% of the active population work in this sector. However, the value of production grows each year and the sector is still important.

Agriculture in Spain

Agriculture has a leading role in Spanish primary sector. Agricultural products represent more than 60% of total agrarian production.

After France, Spain is the EU country with the greatest percentage of land used for agriculture (34.4%). About 20% of this land is irrigated, and the rest is rainfed.

Spanish agriculture is characterised by the diversity of products. It includes fruit and vegetables, vines, olives and cereals.

Most agricultural trade (both exports and imports) is with the rest of the EU.

Livestock farming in Spain

Stabled intensive livestock production predominates in Spain. Holdings are characterised by strong investment, mechanisation and high output. They are located near the cities where their products are sold.

Livestock farming contributes 35% of the value of total agrarian production. Spain has the second highest number of sheep, pigs and goats in the EU.

Pigs make up a third of animal production. Almost half of this production is in Catalonia and Aragón.

Cattle represent 28% of total production and are found in large numbers in Castile and León, Galicia and Extremadura.

Fishing in Spain

Spain has the largest fleet in the EU and the volume of its catch is the second largest. It is also the world's second largest consumer of fish.

Spanish fishing industry was modernised after Spain joined the EU. However, many fishermen lost their jobs during this transition. Today, traditional and commercial fishing co-exist.

The continental shelf of Spain is narrow and does not provide enough fish to meet the country's needs. Fishing treaties have therefore been agreed with other countries.