

*IMPORTANT CHAPTERS FROM SOCIAL SCIENCE AND SCIENCE (FROM NCERT CLASS 8<sup>TH</sup>)*

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*NCERT CLASS-VIII-SOCIAL SCIENCE, RESOURCES AND DEVELOPMENT-CHAPTER-2 & 4*

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## CLASS-VIII-SOCIAL SCIENCE-RESOURCES AND DEVELOPMENT

### CHAPTER-2- Land, Soil, Water, Natural Vegetation and Wildlife Resources

#### Landslides

- the mass movement of rock, debris or earth down a slope.
- take place in conjunction with earthquakes, floods and volcanoes.
- A prolonged spell of rainfall can cause heavy landslide that can block the flow of river for quite some time.
- The formation of river blocks can cause havoc to the settlements downstream on its bursting.
- In the hilly terrain landslides have been a major and widely spread natural disaster that often strike life and property and occupy a position of major concern.
- Hazard mapping locate areas prone to landslides.

#### SOIL

- The thin layer of grainy substance covering the surface of the earth is called soil.
- made up of organic matter, minerals and weathered rocks found on the earth.
- happens through the process of weathering.
- The right mix of minerals and organic matter make the soil fertile.
- Top soil with humus and vegetation
- Sub soil with sand, silt and clay Weathered rock material
- Parent rock**-Determines colour, texture, chemical properties mineral, content, permeability

Some methods of soil conservation are

- Mulching:** The bare ground between plants is covered with a layer of organic matter like straw.
- It helps to retain soil moisture.
- Contour barriers:** Stones, grass, soil are used to build barriers along contours.
- Trenches are made in front of the barriers to collect water.
- Rock dam:** Rocks are piled up to slow down the flow of water.
- This prevents gullies and further soil loss.
- Terrace farming:** These are made on the steep slopes so that flat surfaces are available to grow crops.
- They can reduce surface run-off and soil erosion.
- Intercropping:** Different crops are grown in alternate rows and are sown at different times to protect the soil from rain wash.
- Contour ploughing:** Ploughing parallel to the contours of a hill slope to form a natural barrier for water to flow down the slope.
- Shelter belts:** In the coastal and dry regions, rows of trees are planted to check the wind movement to protect soil cover.
- Discharge of untreated or partially treated sewage, agricultural chemicals and industrial effluents in water bodies are major contaminants
- pollute water with nitrates, metals and pesticides

## NATURAL VEGETATION AND WILDLIFE

- Rain water harvesting is the process of collecting rain water from roof tops and directing it to an appropriate location and storing it for future use.
- On an average, one spell of rain for two hours is enough to save 8,000 litres of water.
- Natural vegetation and wildlife exist only in the narrow zone of contact between the lithosphere, hydrosphere and atmosphere that we call biosphere.
- In the biosphere living beings are inter-related and interdependent on each other for survival. This life supporting system is known as the ecosystem.
- Vulture** due to its ability to feed on dead livestock is a scavenger and considered a vital cleanser of the environment.
- Vultures** in the Indian subcontinent were dying of kidney failure shortly after scavenging livestock treated with diclofenac, a painkiller that is similar to aspirin or ibuprofen.
- Efforts are on to ban the drug for livestock use and breed vultures in captivity.

## DISTRIBUTION OF NATURAL VEGETATION

- The major vegetation types of the world are grouped as forests, grasslands, scrubs and tundra.
- Forests are broadly classified as evergreen and deciduous depending on when they shed their leaves.
- Evergreen forests** do not shed their leaves simultaneously in any season of the year.
- Deciduous forests** shed their leaves in a particular season to conserve loss of moisture through transpiration.
- These forests are further classified as tropical or temperate based on their location in different latitudes.
- Biosphere reserves**: Series of protected areas linked through a global network, intended to demonstrate the relationship between conservation and development.
- An international convention CITES has been established that lists several species of animals and birds in which trade is prohibited.
- Conservation of plants and animals is an ethical duty of every citizen.
- CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora)** is an international agreement between governments.
- It aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

## CHAPTER-4-AGRICULTURE

- Favorable topography of soil and climate are vital for agricultural activity.
- The land on which the crops are grown is known as arable land.
- Agriculture The science and art of cultivation on the soil, raising crops and rearing livestock. It is also called farming Sericulture Commercial rearing of silk worms.
- It may supplement the income of the farmer.
- Pisciculture Breeding of fish in specially constructed tanks and ponds.
- Viticulture Cultivation of grapes.
- Horticulture Growing vegetables, flowers and fruits for commercial use.

## TYPES OF FARMING

- farming can be classified into two main types.
- These are subsistence farming and commercial farming.
- Organic Farming** In this type of farming, organic manure and natural pesticides are used instead of chemicals.
- No genetic modification is done to increase the yield of the crop.
- **Subsistence Farming** This type of farming is practised to meet the needs of the farmer's family.
  - Traditionally, low levels of technology and household labour are used to produce on small output.
  - Subsistence farming can be further classified as intensive subsistence and primitive subsistence farming.
  - In intensive subsistence agriculture the farmer cultivates a small plot of land using simple tools and more labour.
  - Climate with large number of days with sunshine and fertile soils permit growing of more than one crop annually on the same plot.
  - Rice is the main crop.
  - Other crops include wheat, maize, pulses and oilseeds.
  - Intensive subsistence agriculture is prevalent in the thickly populated areas of the monsoon regions of south, southeast and east Asia.
  - Shifting cultivation is known by different names in different parts of the world Jhumming North-East India Milpa-Mexico Roca- Brazil. Ladang- Malaysia**
  - Primitive subsistence agriculture includes shifting cultivation and nomadic herding.
  - Shifting cultivation 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 and quick regeneration of vegetation.
  - A plot of land is cleared by felling the trees and burning them.
  - The ashes are then mixed with the soil and crops like maize, yam, potatoes and cassava are grown.
- After the soil loses its fertility, the land is abandoned and the cultivator moves to a new plot. Shifting cultivation is also known as 'slash and burn' agriculture.
  - Nomadic herding** is practised in the semi-arid and arid regions of Sahara, Central Asia and some parts of India, like Rajasthan and Jammu and Kashmir. In this type of farming, herdsman move from place to place with their animals for fodder and water, along defined routes.
  - This type of movement arises in response to climatic constraints and terrain. Sheep, camel, yak and goats are most commonly reared.
  - They provide milk, meat, wool, hides and other products to the herders and their families.
- Commercial Farming:** In commercial farming crops are grown and animals are reared for sale in market. The area cultivated and the amount of capital used is large.
  - Most of the work is done by machines. Commercial farming includes commercial grain farming, mixed farming and plantation agriculture.
  - In commercial grain farming crops are grown for commercial purpose.
  - Wheat and maize are common commercially grown grains.
  - Major areas where commercial grain farming is practised are temperate grasslands of North America, Europe and Asia.
  - These areas are sparsely populated with large farms spreading over hundreds of hectares.
  - Severe winters restrict the growing season and only a single crop can be grown.

- In mixed farming the land is used for growing food and fodder crops and rearing livestock.
- Plantations are a type of commercial farming where single crop of tea, coffee, sugarcane, cashew, rubber, banana or cotton are grown.
- Large amount of labour and capital are required.
- The produce may be processed on the farm itself or in nearby factories.
- The development of a transport network is thus essential for such farming.
- Major plantations are found in the tropical regions of the world. Rubber in Malaysia, coffee in Brazil, tea in India and Sri Lanka are some examples.

### **Major Crops**

- Crops also supply raw materials for agro based industries. Major food crops are wheat, rice, maize and millets.
- Jute and cotton are fibre crops. Important beverage crops are tea and coffee.

### **Rice:**

- major food crop of the world.
- staple diet of the tropical and sub-tropical regions.
- needs high temperature, high humidity and rainfall.
- grows best in alluvial clayey soil, which can retain water.
- China leads in the production of rice followed by India, Japan, Sri Lanka and Egypt
- In favourable climatic conditions as in West Bengal and Bangladesh two to three crops are grown in a year.

### **Wheat:**

- requires moderate temperature and rainfall during growing season and bright sunshine at the time of harvest.
- thrives best in well drained loamy soil.
- grown extensively in USA, Canada, Argentina, Russia, Ukraine, Australia and India.
- In India it is grown in winter.

### **Millets:**

- also known as coarse grains and can be grown on less fertile and sandy soils.
- a hardy crop that needs low rainfall and high to moderate temperature and adequate rainfall.
- Jowar, bajra and ragi are grown in India. Other countries are Nigeria, China and Niger. Maize:

### **Maize:**

- requires moderate temperature, rainfall and lots of sunshine.
- needs well-drained fertile soils.
- grown in North America, Brazil, China, Russia, Canada, India, and Mexico.

### **Cotton:**

- requires high temperature, light rainfall, two hundred and ten frost-free days and bright sunshine for its growth.
- grows best on black and alluvial soils.
- China, USA, India, Pakistan, Brazil and Egypt are the leading producers of cotton.
- one of the main raw materials for the cotton textile industry.

### **Jute:**

- also known as the 'Golden Fibre'.
- grows well on alluvial soil and requires high temperature, heavy rainfall and humid climate.
- grown in the tropical areas.
- India and Bangladesh are the leading producers of jute.
- Coffee requires warm and wet climate and well drained loamy soil.
- Hill slopes are more suitable for growth of this crop.
- Brazil is the leading producer followed by Columbia and India.

### **Tea:**

- a beverage crop grown on plantations.
- requires cool climate and well distributed high rainfall throughout the year for the growth of its tender leaves.

## **SCIENCE-CLASS-VIII**

### **CHAPTER-1-NUTRITION IN PLANTS**

- carbohydrates, proteins, fats, vitamins and minerals are components of food.
- These components of food are necessary for our body and are called nutrients.
- Nutrition is the mode of taking food by an organism and its utilisation by the body.
- The mode of nutrition in which organisms make food themselves from simple substances is called autotrophic (auto = self; trophos = nourishment) nutrition. plants are called autotrophs.
- Animals and most other organisms take in readymade food prepared by the plants. They are called heterotrophs (heteros =other).
- the bodies of living organisms are made of tiny units called cells.
- Cells can be seen only under the microscope.
- Some organisms are made of only one cell.
- The cell is enclosed by a thin outer boundary, called the cell membrane cell membrane.
- Most cells have a distinct, centrally located spherical structure called the nucleus.
- The nucleus is surrounded by a jelly-like substance called cytoplasm.
- Carbon dioxide from air is taken in through the tiny pores present on the surface of the leaves.
- These pores are surrounded by 'guard cells'. Such pores are called stomata.
- The leaves have a green pigment called chlorophyll. It helps leaves to capture the energy of the sunlight. This energy is used to synthesise (prepare) food from carbon dioxide and water.

- Since the synthesis of food occurs in the presence of sunlight, it is called photosynthesis (Photo: light; synthesis : to combine).
- So we find that chlorophyll, sunlight, carbon dioxide and water are necessary to carry out the process of photosynthesis.
- During photosynthesis, chlorophyll containing cells of leaves in the presence of sunlight, use carbon dioxide and water to synthesize carbohydrates.
- During the process oxygen is released.
- The carbohydrates ultimately get converted into starch. The presence of starch in leaves indicates the occurrence of photosynthesis.
- The starch is also a carbohydrate. You often see slimy, green patches in ponds or in other stagnant water bodies.
- These are generally formed by the growth of organisms called algae.
- They contain chlorophyll which gives them the green colour.
- Algae can also prepare their own food by photosynthesis.
- The carbohydrates are made of carbon, hydrogen and oxygen.
- These are used to synthesise other components of food.
- But proteins are nitrogenous substances which contain nitrogen.
- Soil has certain bacteria that convert gaseous nitrogen into a usable form and release it into the soil.
- These soluble forms are absorbed by the plants along with water.
- Also, you might have seen farmers adding fertilisers rich in nitrogen to the soil.
- In this way the plants fulfill their requirements of nitrogen along with the other constituents.
- Plants can then synthesise components of food other than carbohydrates such as proteins and fats.
- humans and animals such plants depend on the food produced by other plants.
- They use the heterotrophic mode of nutrition.
- yellow tubular structures twining around the stem and branches of a tree? This is a plant called Cuscuta (Amarbel).
- It does not have chlorophyll.
- It takes readymade food from the plant
- The plant on which it climbs is called a host.
- Since it deprives the host of valuable nutrients, it is called a parasite.
- Pitcher plant showing lid and pitcher
- The apex of the leaf forms a lid which can open and close the mouth of the pitcher.
- Inside the pitcher there are hairs which are directed downwards.
- When an insect lands in the pitcher, the lid closes and the trapped insect gets entangled into the hair.
- The insect is digested by the digestive juices secreted in the pitcher. Such insect-eating plants are called insectivorous plants

### **SAPROTROPHS**

- cotton-like threads spread on the piece of bread
- These organisms are called fungi.
- They have a different mode of nutrition.
- They secrete digestive juices on the dead and decaying matter and convert it into a solution.

- Then they absorb the nutrients from it.
- This mode of nutrition in which organisms take in nutrients in solution form from dead and decaying matter is called saprotrophic nutrition.
- Plants which use saprotrophic mode of nutrition are called saprotrophs
- Fungi also grow on pickles, leather, clothes and other articles that are left in hot and humid weather for long time. Some organisms live together and share shelter and nutrients. This is called symbiotic relationship.
- For example, certain fungi live in the roots of trees.
- The tree provides nutrients to the fungus and, in return, receives help from it to take up water and nutrients from the soil.
- This association is very important for the tree.
- In organisms called lichens, a chlorophyll-containing partner, which is an alga, and a fungus live together.
- The bacterium called Rhizobium can take atmospheric nitrogen and convert it into a soluble form.
- But Rhizobium cannot make its own food.
- So it lives in the roots of gram, peas, moong beans and other legumes and provides them with nitrogen.
- Most of the pulses (dals) are obtained from leguminous plants.

### CHAPTER-2-NUTRITION IN ANIMALS

- Animal nutrition includes nutrient requirement, mode of intake of food and its utilisation in the body.
- The components of food such as carbohydrates are complex substances.
- These complex substances cannot be utilised as such.
- So they are broken down into simpler substances.
- The breakdown of complex components of food into simpler substances is called digestion.
- Starfish feeds on animals covered by hard shells of calcium carbonate.

### DIGESTION IN HUMANS

- The food passes through a continuous canal which begins at the buccal cavity and ends at the anus.
- The canal can be divided into various compartments: (1) the buccal cavity, (2) food pipe oesophagus, (3) stomach, (4) small intestine, (5) large intestine ending in the rectum and (6) the anus.
- These parts together form the alimentary canal (digestive tract).
- The digestive tract and the associated glands together constitute the digestive system.
- The saliva breaks down the starch into sugars.
- The swallowed food passes into the food pipe or oesophagus.
- The stomach-widest part of the alimentary canal
- The inner lining of the stomach secretes mucous, hydrochloric acid and digestive juices.
- The mucous protects the lining of the stomach.
- The acid kills many bacteria that enter along with the food and makes the medium in the stomach acidic.
- The digestive juices break down the proteins into simpler substances
- The small intestine-The small intestine is highly coiled and is about 7.5 metres long.
- It receives secretions from the liver and the pancreas. Besides, its wall also secretes juices.

- The liver is a reddish brown gland situated in the upper part of the abdomen on the right side.
- It is the largest gland in the body.
- It secretes bile juice that is stored in a sac called the gall bladder (Fig. 2.2). The bile plays an important role in the digestion of fats.
- The pancreas is a large cream coloured gland located just below the stomach (Fig. 2.2).
- The pancreatic juice acts on carbohydrates and proteins and changes them into simpler forms.
- The digested food can now pass into the blood vessels in the wall of the intestine. This process is called absorption.
- The inner walls of the small intestine have thousands of finger-like outgrowths. These are called villi (singular villus).
- Large intestine
- The large intestine is wider and shorter than small intestine.
- It is about 1.5 metre in length. Its function is to absorb water and some salts from the undigested food material. The remaining waste passes into the rectum and remains there as semi-solid faeces.
- The faecal matter is removed through the anus from time-to-time. This is called egestion.

### **DIGESTION IN GRASS-EATING ANIMALS**

- Actually, they quickly swallow the grass and store it in a separate part of the stomach called rumen.

### **Diarrhoea**

- Sometime you may have experienced the need to pass watery stool frequently. This condition is known as diarrhoea.
- It may be caused by an infection, food poisoning or indigestion.
- It is very common in India, particularly among children.
- Under severe conditions it can be fatal.
- This is because of the excessive loss of water and salts from the body.
- Diarrhoea should not be neglected.
- Even before a doctor is consulted the patient should be given plenty of boiled and cooled water with a pinch of salt and sugar dissolved in it. This is called Oral Rehydration Solution (ORS).
- Food partially digested and is called cud.
- But later the cud returns to the mouth in small lumps and the animal chews it.
- This process is called rumination and these animals are called ruminants.
- The grass is rich in cellulose, a type of carbohydrate.
- Many animals, including humans, cannot digest cellulose.
- Ruminants have a large sac-like structure between the small intestine and large intestine.

### **FEEDING AND DIGESTION IN AMOEBA**

- Amoeba is a microscopic single-celled organism found in pond water.
- Amoeba has a cell membrane, a rounded, dense nucleus and many small bubble-like vacuoles in its cytoplasm.
- Amoeba constantly changes its shape and position.

- It pushes out one, or more finger-like projections, called pseudopodia or false feet for movement and capture of food.
- Amoeba feeds on some microscopic organisms.
- When it senses food, it pushes out pseudopodia around the food particle and engulfs it.
- The food becomes trapped in a food vacuole.
- Digestive juices are secreted into the food vacuole.
- They act on the food and break it down into simpler substances.
- Gradually the digested food is absorbed.
- The absorbed substances are used for growth, maintenance and multiplication.
- The undigested residue of the food is expelled outside by the vacuole.
- The basic process of digestion of food and release of energy is the same in all animals.
- In a later chapter you will learn about the transport of food absorbed by the intestine to the various parts of the body.