**AGRICULTURAL SCIENCE SS 1**

**FIRST TERM**

## SCHEME OF WORK

1. Introduction to Agriculture: Meaning, Branches and Importance of Agriculture.
2. Types of Agriculture: Subsistence and Commercial Agriculture.
3. Problems of Agricultural Development in Nigeria and their Possible Solutions.
4. Roles of Government and Non-governmental Organization in Agricultural Development.
5. Roles of Science and Technology in Agricultural Development
6. Agro-Allied Industry and Relationship between Agriculture and Industry.
7. Land and its Uses: Agricultural and Non-Agricultural Uses.
8. Agricultural Laws and Reforms.
9. Environmental Factors Affecting Agricultural Production.
10. Classification of Crops:Based on Life Cycle, Morphology and Uses.
11. Revision of the Term’s Work.
12. Examination.

**WEEK 1**

# INTRODUCTION TO AGRICULTURE: MEANING, BRANCHES AND IMPORTANCE OF AGRICULTURE

## CONTENT

Meaning of Agriculture

Branches of Agriculture

Importance of Agriculture

## Agriculture, as a discipline, encompasses both the art and science of cultivating crops and raising animals for human consumption and use. This field includes a wide range of activities, from soil cultivation for crop production to the management of livestock, as well as the distribution and marketing of agricultural products.

## The term "agriculture" finds its roots in two Latin words: "Ager," which signifies field, farm, or land, and "Culture," which pertains to cultivation. Therefore, agriculture can be defined as the practice of cultivating fields and managing animals, although it is not limited solely to crop cultivation.

## Branches of agriculture encompass various specialized areas, each contributing to the advancement and sustainability of agricultural practices:

## 1. Animal Science/Animal Husbandry/Animal Production: This branch focuses on efficient animal management to enhance productivity.

## 2. Veterinary Medicine/Animal Health: Veterinary medicine ensures the health and well-being of farm animals by controlling pests, parasites, and diseases.

## 3. Soil Science: Soil science plays a pivotal role in maintaining soil fertility, proper soil classification, erosion control, soil moisture conservation, and the application of appropriate fertilizers for different soil types.

## 4. Crop Production/Crop Science: Crop production involves the effective management of crops, including the development of superior planting materials and proper crop spacing. Subfields include Agronomy, Crop Pathology, and Entomology.

## 5. Agricultural Economics and Farm Management: This area focuses on the efficient management of agricultural resources, agricultural marketing, and sound farm accounting.

## 6. Agricultural Engineering: Agricultural engineering promotes the mechanization of farming operations, the development of processing and storage equipment, and the maintenance of farm tools and machinery.

## 7. Agricultural Extension and Education: It facilitates the training and dissemination of agricultural knowledge to farmers and bridges the gap between farmers and researchers.

## 8. Forestry and Wildlife Conservation: This branch emphasizes the conservation of forest products and wildlife, as well as the creation of microclimates.

## 9. Fishery: It is dedicated to the production, management, processing, and other aspects of fishing practices.

## 10. Apiculture/Bee Farming: This branch specializes in the production of honey for both local consumption and various uses.

## 11. Heliculture/Snailry: It involves the production of snails for consumption, as a source of protein and minerals.

## Agriculture's significance is vast and encompasses several vital aspects:

## 1. Provision of Food: Agriculture provides an array of fresh and processed food items, such as grains, vegetables, fruits, meat, and dairy products, to meet human and animal nutritional needs.

## 2. Source of Materials for Clothing: Agriculture supplies materials like cotton and hides for textile production, used in making clothing, shoes, belts, caps, and bags.

## 3. Provision of Materials for Shelter and Furniture: Agriculture contributes timber for building materials, including doors, windows, roofs, and furniture such as shelves, cabinets, tables, and chairs.

## 4. Provision of Income: Farming generates income for farmers and laborers through the sale of agricultural products and wages.

## 5. Employment for the Working Population: Agriculture and related industries provide employment opportunities for farmers, farm workers, and those involved in agricultural finance and marketing.

## 6. Provision of Raw Materials for Industries: Agriculture supplies raw materials for agro-based industries, such as textiles, beverages, rubber, and more.

## 7. Sources of Foreign Exchange: Agriculture significantly contributes to foreign exchange earnings through the export of various agricultural products to other countries.

## 8. Provision of Market for Industrial Goods: The agricultural sector provides a market for products like fertilizers, pesticides, herbicides, machinery, and storage facilities produced by agro-allied industries.

## 9. Development of Rural Areas: Commercial agriculture leads to rural development by providing essential amenities like roads, electricity, water supply, schools, and healthcare facilities.

## 10. Provision of Facilities for Recreation and Tourism: Agriculture contributes to the establishment of game reserves and provides opportunities for activities like horse racing and polo.

## Agriculture is an intricate field with a multitude of branches, each contributing to the betterment of farming practices and addressing various aspects of human life, from food and clothing to income and rural development. Its far-reaching importance is not only in economic terms but also in the sustenance of livelihoods and ecosystems.

## WEEKEND ASSIGNMENT

1. The two Latin words: “Ager” and “Cultura” means \_\_\_ and \_\_\_ respectively.

A. animal/rearing B. cultivation/field C. field/cultivation D. water/cultivation

1. The study of insect pests is known as\_\_ A. Agronomy B. Entomology C. Pathology D. Zoology
2. The study of diseases attacking crops and animals is known as\_\_ A. Agronomy

B. Entomology C. Pathology D. Zoology

4. Which of these is the most important reason for practicing agriculture? A. Clothing

B. Food C. Shelter D. Income

5. All these are agro-based industries except….. industry A. soap B. textile C. electronics

D. paper

THEORY

1. (a) Define Agriculture

(b) State ten importance of agriculture

1. List and define ten branches of agriculture.

**WEEK 2**

# TYPES OF AGRICULTURE:SUBSISTENCE AND COMMERCIAL AGRICULTURE

**CONTENT:**

Subsistence Agriculture

Commercial Agriculture

## SUBSISTENCE AGRICULTURE

Subsistence agriculture is defined as the type of agriculture which is concerned with the production of food (cultivation of crops and rearing of animals) by the farmer to feed himself and his family only. It is also known as peasant farming because it is practiced by poor farmers. It is done on a small scale and involves the use of crude tools (e.g. cutlass, hoe, axe, etc.) only.

## COMMERCIAL AGRICULTURE

Commercial agriculture is the type of agriculture which is concerned with the production of food and cash crops in large quantities for sale.It is done on a large scale because commercial farmers are rich farmers. Complex farm machines like tractors, bulldozers, planters, harvesters, etcare used.

EVALUATION QUESTIONS

1. Define the two types of agriculture.
2. Who is a peasant farmer?
3. State ten examples of simple farm tools used by subsistence farmers.
4. State ten examples of complex farm machines used by commercial farmers.

## CHARACTERISTICS/DIFFERENCES BETWEEN SUBSISTENCE AGRICULTURE AND COMMERCIAL AGRICULTURE

**SUBSISTENCE AGRICULTURE COMMERCIAL AGRICULTURE**

|  |  |
| --- | --- |
| 1.Produce mainly for the family with little or no excess. | Products are principally for sale |
| 2. Practiced on small area of land. | Practiced on large area of land. |
| 3. Family labour is used | Skilled and mechanized labour is employed |
| 4. Traditional management is employed. | Modern or scientific management is employed. |
| 5. Production is on small scale | Production is on large scale |
| 6. Cost of production is low. | Cost of production is high. |
| 7. Does not need organized market for the sales of its products. | Need well organized market for sales of its products. |
| 8. Operation results in low environmental degradation. | Operation results in high environmental degradation. |
| 9. Provide direct employment for many citizens. | Skilled people are employed for different tasks. |
| 10. Engages in mixed-cropping. | Often engages in monocropping. |
| 11. No specialization, since the farmer produces different types of crops and rears different classes of farm animals. | Farmer specializes in the production of fewer crops and animals rearing. |

12. Has no access to credit facilities. Has access to credit facilities.

EVALUATION QUESTIONS

1. Define subsistence and commercial agriculture.
2. State five differences between subsistence and commercial agriculture.

### GENERAL EVALUATION/REVISION QUESTIONS

1. What is agriculture?
2. List and explain five importance of agriculture
3. Mention five agro-based industries and their raw materials.
4. Define subsistence and commercial agriculture.
5. State five characteristics each of subsistence and commercial agriculture.

### WEEKEND ASSIGNMENT

1. The system of agriculture practiced solely for the benefit of the farmer and his family is A. Subsistence B. Commercial C. Family farming D. Agro forestry
2. The agriculture that is practice for the production of food and cash crops in large quantities for sale to make profit is called… A. Subsistence B. Commercial C. Scale farming D. mixed farming.
3. Agro-based industries include the following except A. textile B. beverage C. automobile D. brewery
4. The following are source of foreign exchange earning in Nigeria except A. cotton B.

yam C. cocoa D. palm produce

1. Which of these is not a characteristic of subsistence agriculture? A. Depend on family labourB. Operates small farm size C. Has access to credit facilities D. Use crude tools

THEORY

1. List out five agro-based industries and their raw materials.

1. State five characteristics for each of: (a) subsistence agriculture

(b)commercial agriculture

**WEEK 3**

# TOPIC: PROBLEMS OF AGRICULTURAL DEVELOPMENT IN NIGERIA AND THEIR POSSIBLE SOLUTIONS

## Challenges in Agricultural Development

## 1. Limited Land Availability and Land Tenure System: Agricultural productivity faces constraints due to communal land ownership in Nigeria, where no individual can claim exclusive rights to land. This hampers investments in agriculture.

## Solutions:

## - Review and enforce the Land Use Act of 1978.

## - Encourage the utilization of abandoned lands.

## 2. Inadequate Basic/Social Amenities: Rural areas often lack essential amenities like electricity, clean water, healthcare, and educational facilities, which hinder agricultural development.

## Solutions:

## - Government should provide rural areas with basic amenities.

## - Promote community development initiatives.

## 3. Financial Constraints of Farmers: Farmers struggle to invest significantly in modern agricultural practices due to financial limitations, hindering the adoption of improved seeds, machinery, and inputs.

## Solutions:

## - Encourage farmers to form cooperative societies to pool resources and access loans.

## - Government can subsidize the cost of agricultural inputs.

## - Agricultural and commercial banks should offer low-interest loans.

## - Accept guarantees as collateral for loans.

## 4. High-Interest Rates on Loans: High interest rates on loans from banks discourage farmers from borrowing for investment.

## Solutions: Implement the same solutions as for the financial constraints of farmers.

## 5. Lack of Education Among Farmers: Illiteracy among farmers limits their ability to grasp modern farming techniques and technologies.

## Solutions:

## - Government-led mass literacy programs for farmers.

## - Establish demonstration farms for practical training.

## 6. Transportation Challenges: Poor infrastructure and inadequate transportation networks hinder the efficient movement of agricultural produce from rural areas to urban centers, leading to low prices at local markets.

## Solutions:

## - Construct roads connecting food-producing areas.

## - Develop railways and waterways to link rural regions with urban centers.

## - Regularly supply fuel and spare parts at affordable prices for transportation.

## 7. Inadequate Storage and Processing Facilities: The absence of modern storage facilities results in crop wastage or forced sales at low prices, affecting farmers' income.

## Solutions:

## - Government should provide modern storage facilities at affordable rates.

## - Make processing equipment like millers and threshers available to farmers at subsidized rates.

## - Educate farmers on the use of modern processing and storage facilities.

## - Encourage private individuals and organizations to invest in agricultural processing.

## 8. Inefficient Marketing System: The current marketing system doesn't always ensure that farmers receive fair compensation for their labor.

## Solutions:

## - Stabilize prices through government-operated marketing boards.

## 9. Pest and Disease Management: Pests and diseases significantly reduce agricultural yields and increase production costs.

## Solutions:

## - Provide pesticides and agro-chemicals at subsidized rates.

## - Develop disease-resistant crop varieties through research.

## 10. Limited Access to Agricultural Inputs: The high cost and limited availability of fertilizers, pesticides, herbicides, and machinery reduce farm productivity.

## Solutions:

## - Subsidize the prices of agricultural inputs.

## - Ensure timely availability of improved agricultural inputs.

## 11. Unfavorable Climate: Climate variability negatively impacts crop production.

## Solutions:

## - Provide irrigation facilities.

## - Improve drainage systems.

## - Offer insurance policies for crop loss due to climate-related factors.

## 12. Use of Outdated Farming Tools: The reliance on traditional and outdated farming tools affects production rates.

## Solutions:

## - Encourage farmers to form cooperatives for collective investment in modern machinery.

## - Support the local fabrication of intermediate machinery.

## - Provide credit facilities for farmers to purchase modern equipment.

## 13. Shortage of Extension Workers: A limited number of extension agents hamper the dissemination of improved farming methods to rural farmers.

## Solutions:

## - Increase the training and employment of extension workers.

## - Provide incentives to attract and retain extension workers.

## 14. Inconsistent Government Policies: Inconsistent policies fail to support smallholder farmers, preventing them from accessing necessary resources.

## Solutions:

## - Formulate dynamic agricultural policies and consistently implement them.

## 15. Natural Hazards and Environmental Degradation: Environmental factors like flooding and soil erosion degrade farmland, impacting agricultural output.

## Solutions:

## - Promote afforestation.

## - Encourage the use of cover crops.

## - Implement terracing and strip cropping.

## - Provide insurance policies against natural disasters.

## General Evaluation/Revision Questions

## 1. State five challenges in agricultural development in Nigeria and suggest two possible solutions to each.

## 2. Define the role of extension agents in agriculture.

## 3. Discuss the significance of agricultural extension in the development of agriculture in Nigeria.

## 4. Outline four potential solutions to the problem of natural hazards in agricultural development.

## 5. List five essential agricultural inputs.

## WEEKEND ASSIGNMENT

1. Artificial supply of water to farmland is known as… A. irrigation B. drainage C. conservation D. assimilation
2. The following are farm machineries except A. tractor B. bulldozer C. ridger

D. hoe

1. The following activities can make soil fertility to be degraded except A. erosion B.flooding C. leaching D. crop rotation
2. The chemical used to destroy weeds on farms is called A. herbicide B.pesticide C weedicide D. insecticide
3. Farmers can collect credit facilities from any of the following except A.commercialbank B.agricultural bank C.thrift and saving society D. mortgage

## THEORY

1. List out five problems of agricultural development in Nigeria.
2. Suggest two possible solutions to each of the problems listed above

**WEEK 4**

# TOPIC: THE ROLE OF GOVERNMENT AND NON-GOVERNMENTAL ORGANIZATION IN AGRICULTURAL DEVELOPMENT

Roles of Government in Agricultural Development

Agricultural development in Nigeria is influenced and directed by the government through its various ministries of agriculture. The government plays a vital role in shaping agricultural policies, offering financial support, providing essential services, and creating a conducive environment for agricultural growth. Here are the key roles of the government in agricultural development:

1. Establishment of Agricultural Policies:

- Governments formulate agricultural policies with various objectives, including:

- Increasing the production of essential food crops.

- Adapting to the changing dietary preferences of the growing population.

- Enhancing the quality and efficiency of producing major export crops.

- Creating employment opportunities through large farm establishments.

- Supplying crucial raw materials for local industries.

- Boosting livestock production to meet the demand for animal proteins in diets.

2. Establishment of Agricultural Programmes and Planning:

- After setting agricultural policies, governments develop comprehensive programs for their implementation. These programs encompass initiatives such as extension services, farm settlement schemes, agricultural loan schemes, credit facilities, river basins development authorities, national agricultural insurance schemes, subsidies, agricultural education and research, quarantine and vaccines, and various projects like Operation Feed the Nation, Green Revolution, Agricultural Development Project, DFRRI, and the National Agricultural Land Development Agency.

3. Provision of Farm Inputs:

- Governments supply or subsidize essential farm inputs, ensuring that smallholder farmers can afford and access the materials needed for their agricultural activities.

4. Provision of Basic Amenities:

- Governments focus on providing basic amenities in rural areas to deter the migration of able-bodied individuals to urban centers, encouraging them to engage in farming activities.

5. Provision of Storage and Processing Facilities:

- Government initiatives aim to establish storage and processing facilities throughout the country to reduce food wastage and ensure a stable food supply, especially during periods of scarcity.

6. Provision of Extension Services:

- The government employs qualified extension officers to disseminate new agricultural ideas and innovations to rural farmers, helping them adopt modern farming techniques and practices.

7. Provision of Agricultural Education:

- Recognizing that many Nigerian farmers are illiterate, the government promotes adult education to improve farmers' literacy. This enables them to better comprehend and utilize new and improved agricultural methods.

8. Provision of Quarantine Services:

- Governments implement plant quarantine regulations to prevent the introduction and spread of foreign plant diseases and pests, safeguarding local agriculture.

9. Support for Research Work:

- Governments establish research institutes to enhance local crop varieties and animal breeds, finding solutions to agricultural challenges and improving production. Examples of such institutes include the Cocoa Research Institute of Nigeria (CRIN) in Ibadan, the Nigeria Institute for Oil Palm Research (NIFOR) in Benin, the International Institute for Tropical Agriculture (IITA) in Ibadan, the National Horticultural Research Institutes (NIHORT) in Ibadan, the Rubber Research Institute of Nigeria (RRIN) in Benin, the Forestry Research Institute of Nigeria (FRIN) in Ibadan, and the Leather Research Institute of Nigeria (LRIN) in Zaria.

Roles of Non-Governmental Organizations (NGOs) in Agricultural Development

Non-governmental organizations (NGOs) play a crucial role in advancing agricultural development, focusing on finding solutions to the challenges facing humanity. These organizations, both local and international, actively contribute to the agricultural sector, bringing about positive changes. Notable examples of NGOs include the International Institute of Tropical Agriculture, the West African Rice Development Agency, the Food and Agricultural Organization, the Hunger Project (Ghana), and the Catholic Relief Service (Gambia). The roles of NGOs in agricultural development include:

1. Research:

- NGOs conduct research to develop solutions for agricultural development and create new crop varieties and animal breeds to enhance productivity.

2. Finance:

- These organizations provide funding for various agricultural projects, supporting the growth of the sector.

3. Provision of Inputs:

- NGOs supply agricultural inputs such as fertilizers, herbicides, and pesticides, ensuring that these essential materials are available to rural farmers.

4. Extension Services:

- NGOs actively engage in creating awareness and improving farmers' knowledge about modern agricultural practices through extension services.

5. Rural Development:

- Many NGOs are involved in rural development projects that aim to provide basic amenities like roads and water supply to support agricultural activities.

6. Irrigation and Drainage:

- NGOs invest in facilities like irrigation systems and drainage networks to enable year-round agricultural production.

These organizations, both locally and internationally, have a significant impact on agricultural development, making vital contributions to food security, sustainable agriculture, and rural livelihoods.

General Evaluation/Revision Questions

1. State five research institutes in Nigeria that contribute to the improvement of crops and animals.

2. Provide five examples of non-governmental organizations that contribute to the development of agriculture.

3. Outline five roles of the government in agricultural development in Nigeria.

4. Discuss briefly the key roles of NGOs in agricultural development.

Weekend Assignment

1. Which of the following agricultural programs was designed to attract young, educated people to take up farming?

- A. Operation Feed the Nation

- B. Farm Settlement Scheme

- C. Green Revolution Program

- D. Agricultural Insurance Scheme

2. Which of the following is not a method of controlling pests?

- A. Quarantine

- B. Crop Rotation

- C. Fumigation

- D. Mulching

3. The roles of government in the development of agriculture in Nigeria include all of the following except:

- A. Provision of credit facilities for farmers

- B. Education of farmers

- C. Formulation of agricultural policies

- D. Increasing the cultivation of export crops

4. Government's agricultural policies include all the following except:

- A. Increasing the production of food crops and animals

- B. Increasing the efficiency of production of export crops

- C. Supplying raw materials for local industries

- D. Increasing the number of peasant farmers

5. The following are non-governmental organizations except:

- A. Hunger Projects in Ghana

- B. IITA

- C. Agricultural Development Authority

- D. West Africa Rice Development Agency

Theory Questions

1. List five agricultural programs introduced by the government of Nigeria.

2. State two major objectives of each of the agricultural programs listed in (1) above.

**WEEK 5**

# TOPIC: ROLES OF SCIENCE AND TECHNOLOGY IN AGRICULTURAL DEVELOPMENT – LESSON NOTE

Science and Technology has played significant roles in the development of agriculture in

Nigeria and many other countries of the world. These roles include

1. **Modern farm machinery**: – The development of modern farm implement such as tractor, plough, planter, harvester, sheller to replace old simple tools such As hoe and cutlass has been made possible by science and technology. This has greatly increase productivity (commercial farming) and farm work becomes easier, faster and attractive.
2. **Agro-climatology**: – Science has been able to explain the ideal climatic conditions for plants and animals. Farmers are equally helped to understand the weather and climate of their area and are able to determine the type of crops to grow and animals to rear.
3. **Pests and disease control**: – Chemicals inform of pesticides, fungicides, nematicides, fumigants has been developed by science and technology to combat the problems caused by pests and disease.
4. **Crops and animals improvement**: – Through genetics and breeding, improved crop varieties and animal breeds which possess desirable qualities such as disease resistance, fast growth, early maturity, high yield has been developed.

5 **Soil fertility**: – The development and application of organic manure and inorganic fertilizers by science and technology has been able to solve the problem of soil infertility and also increase crop yield. Farmers can also test the soil; determine the nutrient deficiencies and the type of crop to plant on a farm land.

1. **Animal health management**: – Feeds are formulated to meet the nutritional needs of farm animals, other factors such as ventilation, sanitation, immunization and medication has been put in place by science and technology to ensure good health and productivity of farm animals.
2. **Storage and processing facilities**: – In order to preserve excess farm produce and to avoid wastage, modern storage facilities such as silos, cold rooms and processing facilities such as millers, shellers has been developed by science and technology.
3. **Transportation network**: – Science and technology has been able to develop roads, railways and water ways linking food producing areas to urban centres.
4. **Soil and water conservation**: – Through irrigation, drainage and erosion control, the soil is preserved from losing its fertility and water is made available at optimum level required for plant growth.
5. **Land surveying:** – Surveying equipmentis made available by science and technology and with these equipment, the physical feature and size of a farmland can be determined. This help to determine the suitability of a farm location for various uses and input requirement of a given farmland.
6. **Agricultural system**: – Improved farm management system such as crop rotation, mixed farming, rotational grazing has been put in place by science and technology to maintain soil fertility, increase yield and maximize land use.

## EVALUATION

1. State ten roles of Science and Technology in Agricultural Development
2. Discuss ways through which Science and Technology has contributed to the development of Agriculture in Nigeria.

## GENERAL EVALUATION

1. What is technology?

1. Describe how science and technology has been able to bring about crop and animal improvement

1. Outline five improved farm management system

1. List five modern storage facilities

1. What is the importance of agro-climatology to farmers?

## WEEKEND ASSIGNMENT

1 The following are improved system of agriculture except A. crop rotation B. bush fallowing C. mixed farming D. rotational grazing

1. The aspect of science and technology that aids the development of new crop varieties and breeds of animals is known as A. Genetic engineering B.

Reproduction engineering C. Animal health D. Breeding engineering

1. Land surveying in agriculture helps the farmer to determine the following except A. the size of a farm land B. physical relief of the farm land C. labour requirement D.

fertility of the soil

1. Which of these is not a method of conserving soil and water in agriculture? A. irrigation B. erosion control C. land surveying D. drainage
2. Which of these is not an advantage of modern storage and processing facilities? A. avoid wastage B. scarcity of agricultural produce C. convert agricultural produce to desired form D. make produce available throughout the year

THEORY

1. Outline five roles of Science and Technology in Agriculture
2. State five importance of agro-climatology to farmers

**WEEK 6**

# TOPIC: AGRO-ALLIED INDUSTRIES – LESSON NOTE

**CONTENT:**

**Meaning of Agro-allied Industries/Agro-based Industries.**

**Examples of Agro-allied Industries and Raw Materials Used. Relationship between Agriculture and Industries.**

# MEANING OF AGRO-ALLIED INDUSRIES

Agro-allied industries/Agro-based industries are industries which depend on agriculture for their raw materials in order to operate successfully. In other words, agro-based industries require the supply of agricultural raw materials in order to provide some finished products that are essential for human and animal consumption.

## EXAMPLES OF AGRO-ALLIED INDUSTRIES AND RAW MATERIALS USED

The table below shows the examplesof agro-allied industries and the raw materials used in each industry:

### S/N Agro-based Industries Raw Materials Used

|  |  |
| --- | --- |
| 1. Oil mill | Oil seeds |
| 2. Soap industries | Oil seeds/oil |
| 3. Cigarette/Tobacco | Tobacco leaves |
| 4. Textile/Ginnery | Cotton |
| 5. Breweries | Cereals |
| 6. Fruit canning | Fruits |
| 7. Paper industry | Pulpwood |
| 8. Sugar industry | Sugar cane |
| 9. Plywood/saw mill | Wood |
| 10. Flour mill | Cereal/grains |
| 11. Starch | Cassava, maize |
| 12. Tyre | Rubber latex |
| 13. Feed mill | Groundnut, maize, etc |

14. Beverage Cocoa, coffee, tea

EVALUATION QUESTIONS

1. What are Agro-based industries?
2. State ten examples of agro-allied industries and the raw materials used.
3. State five examples of cereals.

## RELATIONSHIP BETWEEN AGRICULTURE AND INDUSTRIES

There is a positive and wide range of relationshipsbetween agriculture and industries. These relationships include the following:

1. **Provision of Market:**Agriculture provides market for industrial products such as farm machinery, chemicals and fertilizer
2. **Provision of Food**: Agriculturealso provides food for industrial workers.
3. **Provision of Raw Materials**: Agriculture provides raw materials such as cocoa, cotton, palm produce and groundnut for industries.
4. **Competition for Labour**: Both agriculture and industry compete for labour.
5. **Provision of Essential Goods**: Industries provide a large range of desirablegoods that farmers want to buy.
6. **Provision of Agro-chemicals**: Industries produce agro-chemicals for agricultural uses. Examples are pesticides, fertilizers, vaccines and herbicides.
7. **Provision of Storage Facilities**: Industries provide storage facilities for agricultural produce e.g. grains, milk, fruits, vegetables, meat, fish, etc.
8. **Provision of Processing Facilities:**Industries also provide processing facilities such as grinders, millers, etc for agriculture.
9. **Provision of Agricultural Tools and Machinery**: Industries produce machinery and equipment for agricultural uses. Examples include tractors, ploughs, cutlasses and hoes.
10. **Development of Industrial Sector**: Rise in agricultural income due to efficient and economic factor combination brings about development of industrial sector of the economy.

EVALUATION QUESTIONS

1. State seven relationships between agriculture and industries.
2. State five essential industrial goods that farmers may want to buy.
3. State any three agricultural storage structures produced by industry.

### GENERAL EVALUATION/REVISION QUESTIONS

1. What are Agro-based industries?
2. State five examples of agro-allied industries and the raw materials used.
3. State five examples of cereals.
4. List out five agro-chemicals being used by farmers.
5. State any three agricultural storage structures produced by industry and the producebeing stored by them.
6. List out five roles of Science and Technology in agricultural development.

### WEEKEND ASSIGNMENT

1. Which of these is not a farm machine? A. planter B. incubator C. sowing machine D.plough
2. Brewery industry needs …… as a raw material for its production. A. groundnut B. pulp

wood

C.cotton D. cereal

1. All these are agro-based industries except….. industry A. soap B. textile C.electronics

D. paper

1. ….is not a storage structure. A. freezer B. silo C. crib D. grinder
2. Which of these is a processing structure? A. freezer B. silo C. crib D. grinder

THEORY

1. (a) What are Agro-based industries?

(b) State five examples of agro-allied industries and the raw materials used.

1. State any three agricultural storage structures produced by industry and the producebeing stored by them.

**WEEK 7**

# TOPIC: LAND AND ITS USES – LESSON NOTE

## CONTENT

Definition of Land

General Characteristics of Land

Agricultural Use of Land

Non Agricultural Use of Land

Factors Affecting Availability of Land for Agricultural Purposes

## LAND

Land is man’s natural endowment (the gift of nature). It is the solid part of earth’s surface

(the soil and its mineral resources) where production like farming and livestock management takes place.

### GENERAL CHARACTERISTICS OF LAND

1. It is fixed in supply and its value rise steadily in response to increasing demand for it.
2. The supply of land is limited and cannot be easily increased.
3. Land is mobile i.e. cannot be moved from a place of plenty to a place of scarcity.

EVALUATION QUESTIONS

1. What is a land?
2. Mention three characteristics of land

# USES OF LAND

Land use is sub-divided into agricultural and non-agricultural uses.

## AGRICULTURAL USES OF LAND

1. **Crop Production: –** Land is used for the production of food crops such as yam cassava rice etc and cash crops such as cocoa, kola nut, coffee etc.

1. **Grazing: –** Large areas of land set aside where there are abundant grasses for grazing by livestock is called a pasture land.

1. **Fishery:** – It involves the area of land set aside for the production of fish through fish farming. It involves the establishment of fishponds where fishes are reared artificially to provide necessary source of protein and income for the people.

1. **Forestry: –** This involves the management of forests land and their resources to produce food and services that are valuable to man. It is established in areas where there is no great pressure for cultivation or where the land is too poor and not suitable for crop production. Economic trees are cultivated on forest land to provide raw materials for wood and paper industries. Medicinal herbs, ropes, fibres, resins etc are also obtained from the forest.

1. **Wildlife Conservation: –** Wild life refers to animals and birds found in the bush. Wild life is conserved in game reserves. The forest provides cover and food for large number of wild life. These animals and birds provide good recreation facilities and good centres of tourist attraction. Land not suitable for farming may be used for game reserves. They generate revenue to the government. Examples of game reserves and where they are located in Nigeria are

1. Kanji national park in Niger state

1. Borgu game reserve in Kwara state

1. Zurguma game reserve in Niger state

1. Yankari game reserve in Bauchi state.

EVALUATION QUESTIONS

1. Outline four agricultural uses of land

2.Mention five game reserves and their locations in Nigeria.

## NON-AGRICULTURAL USES OF LAND

1. **Housing**;-This involves the use of land for the construction of residential houses and buildings
2. **Industrial building**: – For building of industrial, individual estates.
3. **Transport**;- Land is used for the construction of many forms of roads, railway line, bridges airports etc.
4. **Social**–**economic activities**: – Stadia, amusement parks, markets, hospitals cemeteries etc that are used for various socio-economic activities are constructed on land centres
5. **Religious centres: –** Construction of churches, mosques and shrines
6. **Mining**: – Land where minerals like petroleum, tin, coal, gold etc are found are used for mining purposes.

## FACTORS AFFECTING LAND AVAILABILITY FOR AGRICULTURAL PRODUCTION

1. **Population pressure**: – Increase in population lowers the area of available land. Social life and demand on life increases with population growth.
2. **Land tenure system**: – Leads to land fragmentation which rarely gives enough land for effective agricultural venture. Communal land tenure system leads to land deterioration.
3. **Topography:** – Land in mountainous and hilly areas with rocks are not suitable for agriculture. Steepness of the slope of the hill or mountain encourages rapid run off and erosion. Depressed part of the land is easily waterlogged.
4. **Soil type**: – A land with predominantly sandy soil is not suitable for agriculture. A land that is mainly clay is difficult to till and heavy to work on.
5. **Government laws**: – Government laws on land use of decree 1978 prevent individuals from owning land.
6. **Environmental pollution and oil spillage**: – This renders a land unsuitable for agriculture or cultivation.
7. **Climatic factors**: – Restricts the use of land for agricultural purposes. Rainfall is the major determinant in crops and animals distribution. Areas with heavy rainfall favours tree crops while areas with moderate rainfall favour food crops.
8. **Cultural practices**: – Cultural practices like bush burning, shifting cultivation, deforestation etc make land unsuitable for agriculture.
9. **Socio**–**economic factors:** – Use of land for residential buildings, markets, schools, roads etc does make land available for agricultural use.

EVALUATION QUESTIONS

1. Outline five non-agricultural uses of land
2. State five factors that can affect availability of land for agricultural purposes.

### GENERAL EVALUATION/REVISION QUESTIONS

1. What is land?
2. List three general characteristics of land.
3. Outline four uses of land for agricultural purposes.
4. State five game reserves in Nigeria.
5. Outline five non-agricultural uses of land.
6. List five socio-economic factors affecting land use.

### WEEKEND ASSIGNMENT

1. Which of the following is not a factor affecting land availability for agriculture in Nigeria?A. rainfall B. topography C. soil type D. soil micro organism
2. The climatic factors affecting land use for agriculture include the following exceptA. pests B. rainfall C. temperature D. light
3. Which of the following farm practice does not have a harmful effect on soil? A. crop rotation B. land clearing C. over grazing D. flooding
4. Agricultural lands should not be used for the establishment of A. game reserve B.

pastures C. horticultural crops D. arable crops

1. The use of land for agriculture is not influenced by A. Labour B. Climate C. topography D. population

### THEORY

1. State three major uses of land for agricultural purposes
2. Outline five factors affecting land availability for agricultural purposes.

**WEEK 8**

# TOPIC: AGRICULTURAL LAWS AND REFORMS – LESSON NOTE

**CONTENT:**

## LAND TENURE SYSTEM IN NIGERIA

Land ownership ranges from individual ownership to communal ownership. In the individual ownership system, land is held by the family who can farm on it, build on it, pledge it for money or sell it.

In communal ownership system, the land belongs to the community which may be an extended family, a village or a town and no member of the community can use the land against the wishes of the rulers of the community. Only annual crops can be planted on this piece of land.

## LAND TENURE SYSTEM

Land tenure is defined as the system of land ownership or acquisition either by individual, family, and community or government agency either for temporary or permanent use.It is also the body of right and relationship established among men to control and use land.

## TYPES OF LAND TENURE SYSTEM

1. COMMUNAL LAND TENURE: This is a traditional ownership of land whereby land is generally regarded as the property of the community. Every member of the community has the right to use the land for agriculture but cannot sell any part of it since it is regarded as a legacy that should not be sold.

## Advantages of land Ternure System

1. Each member of the community has the opportunity to request for farm land to provide food and earn some money for his family.
2. Co-operative farming is possible since the land is extensive.
3. Large scale farming is possible due to its large size if only community members cooperate.
4. It is easier to transfer the land to a prospective farmer since individual attachment is almost absent.

## *Disadvantages* of land Ternure System

1. Inadequate maintenance of soil fertility.
2. Non-members of the community cannot have access to the land for farming.
3. There is usually lack of co-operation among community members if the land is to be used for large scale farming.
4. It leads to fragmentation of land into small and scattered units.
5. Perennial crops cannot be planted because of possible re-allocation of land to another person.
6. Mechanization is difficult to introduce because farm lands are scattered and small. vii. It cannot be used as security to obtain loans from banks.

### EVALUATION

2. TENURE BASED ON INHERITANCE: This is the type of land tenure in which land is inherited from one’s parents or from one generation to another.

#### Advantages

1. The land can be used as security to obtain loans from bank.
2. The owner prefers to invest on the land to improve its fertility for agricultural production.
3. Mechanized farming can be practiced if the land is large enough. iv. Perennial crops can be planted.

#### Disadvantages

1. It leads to land fragmentation since the land is divided among many children.
2. Mechanized farming cannot be practiced on small plots of land. iii. Sharing of land can bring about dispute among family members.

iv. Land may belong to people who have no interest in land development or in making the fullest use of the land.

EVALUATION QUESTIONS

1. What is land tenure system?
2. State the types of land tenure system we have in Nigeria.

# Types of Land Tenure

3. LEASE HOLD TENURE: This is a situation in which the farmer is allowed by the land owner to work on a piece of land for a fixed length of time under stipulated conditions. Certain amount of money is paid as rent for the use of the land. At the expiration of the period of tenancy, the land reverts to the landowner or the agreement may be reviewed if the landlord so desires.

## *Advantages*

1. The land is efficiently used.
2. Easy accessibility of land is possible compared to land in communal ownership. iii. There is no time wasting to acquire or leave the piece of land. iv. The owner of the piece of land can earn more money.

## *Disadvantages*

1. It cannot be used as security to obtain loans from banks.
2. The user may not be encouraged to plant perennial crops on a piece of land.
3. It can bring disputes between the tenant and the owner. iv. It affects long term planning.

4. TENURE BASED ON FREE GIFT: This is the type of land tenure in which land is donated or given out on good will or free of charge in appreciation or as an incentive.

## *Advantages*

1. It ensures the maximum use of the land for increased production.
2. Large scale farming can be practiced depending on the size of the land. iii. It can be used as security to obtain loans.

## *Disadvantages*

i. The ownership of land can be challenged at anytime. ii. There may be disagreement over such gifts among family members.

5. STATE OR GOVERNMENT OWNERSHIP OF LAND: In this system, land belongs to the state or government and persons working or living on the land are tenants of the government. This system makes for effective government control of land and use but it may be subject to excessive bureaucratic control which may hinder individual initiative and give room to political abuses.

## *Advantages*

1. There is effective government control of land ownership in this system.
2. The government can earn more money leasing out the land. iii. It encourages government investment on the land.

## *Disadvantages*

1. The system encourages bureaucratic control which may hinder individual initiative and lead to political abuses.
2. There is monopolistic power over the land as the tenant may not be able to use the land according to their wish.
3. Tenants may tend to lease the piece of land to other people in order to make some money which may hinder development of agriculture.

## CONCLUSION

We have learnt that land tenure is the body of rights and relationships established among men to control and use land. Types of land tenure include communal, inheritance, free gift, leasehold tenure, and state or government ownership of land.

## GENERAL EVALUATION/REVISION QUESTION

1. Define land tenure system.
2. State the types of land tenure system in Nigeria.
3. List out three advantages and three disadvantages of communal land tenure.
4. Which land tenure system is most prominent in Nigeria and why?
5. Which land tenure system promotes perennial crop cultivation and why?

**WEEKEND ASSIGNMENT.**

1. A major disadvantage of land tenure by inheritance is that the land is. A. veryinfertile for crop and animal production. B. usuallysmall for commercial farming C. too large for commercial farming D. available for large scale mechanization
2. Which of the following factors largely determines the amount of land available foragriculture in an area? A. cash crop tenancies B.climatic and physical factor C. biotic factors D. religion and tradition.
3. The commonest method of land tenure in Nigeria is ………….. A.

inheritance B. lease C. outright purchase D. state allocation.

1. A piece of land is said to be on lease to a farmer when the land is A. inheritedfrom his father B. given to him as a gift C. given as compensation D. given for a specified period on a rental basis.
2. Land tenure system is a process of ……………… A. conserving soil types B.

determining the suitability of soil for agriculture C. acquiring land for agricultural purpose D. developing land for building industries.

## THEORY

1. State five land ownership systems in Nigeria.

2 .Explain four ways in which agricultural production is affected by communal ownership of land in Nigeria.

**WEEK 9**

# ENVIRONMENTAL FACTORS AFFECTING AGRICULTURAL PRODUCTION (CROPAND ANIMAL DISTRIBUTION AND PRODUCTION)

## CONTENT

Environmental factors affecting agricultural production can be grouped into:

Climate factors

Biotic factors

Edaphic factors.

**CLIMATE**: This is defined as the average weather condition of a place measured over a long period of time.

***FACTORS OF CLIMATE*:** It includes rainfall, relative humidity, temperature, light, wind, pressure.

Each of the factors has its own influence on agriculture. This is shown by the distribution of vegetation and crops in the climatic zones. The result is that when the soil condition is favourable, thick evergreen forest develops.

**1). RAINFALL:** Is defined as the amount and distribution of water precipitation within a given time in a given area.

**RAINFALL DISTRIBUTION AND PATTERN:** West Africa is known for its high temperature throughout the year. It is brought about by the south- west monsoon trade wind blowing from the Atlantic Ocean.

The wind blowing from the ocean to the inland drops some water. A narrow part of the coast has rainfall throughout the year against the rest of the region. As we move from the coast, the amount of rainfall decreases. By the time the wind get to the northern part of the country, there is little or no moisture left in it. Here, less rainfall is experienced per year. In the coastal area, the raining season ranges from 8 months to the all year round while in the north, raining season lasts only 3 to 4 months. The moisture required affects crop and livestock production. In the coastal areas more of the southern parts, crops adapted to heavy rainfall predominantly trees, yam, maize, rice, fruit, banana, etc. Much animal rearing does not take place here due to high humidity rate which exposes the animals to tsetse fly infection.

Only animals which can resist the attack of trypanosomiasis can be seen in this area.

Examples are N’dama and Muturu breeds of cattle, dwarf sheep and goat, poultry. Those crops that can thrive well in the northern part with little rainfall or resistance to drought are guinea corn, millet, groundnut, cowpeas, cotton etc.

## EVALUATION

1. What is rainfall?
2. List those crops that perform well in the Northern part and Southern part ofNigeria

## IMPORTANCE/EFFECT OF RAINFALL

1. It determines the distribution of crops and animals.
2. It helps to dissolve nutrients in the soil making it available for plant use
3. It is necessary for seed germination.
4. Excessive rainfall leads to leaching of nutrients and causes soil erosion.
5. It determines the type of vegetation of an area.
6. Insufficient rainfall causes crop failure and poor yield.

**2). TEMPERATURE:** Is defined as a measure of the heat energy which a body contains or the degree of hotness or coolness of a place, at a point in time. Temperature varies from the coastal areas to extreme north. In the dry season, temperature is not high in the coaster area as against the north which is extremely high.

## IMPORTANCE/EFFECTS OF TEMPERATURE

1 It affects the distribution of crops and animals.

1. Necessary for germination of seed.
2. Unfavorable temperature may result in seed dormancy
3. High temperature may cause premature dropping of fruits and sudden death oflivestock in heat stress.
4. High temperature reduces the performance of livestock.

### 3). SUNLIGHT

#### IMPORTANCE/INFLUENCE

1. It is necessary for photosynthesis.
2. It affects the rate of production in poultry.
3. It affects evapo- transpiration.

### 4). WIND

#### INFLUENCE/IMPORTANCE

1. High wind may cause wind erosion.
2. It aids seed and fruit dispersal
3. It can aid pollination and spread of disease.
4. It helps in the distribution of rainfall and changes in seasons e.g. rainy and dryseason
5. High wind velocity causes damages to crops.

### 5). RELATIVE HUMIDITY

#### INFLUENCE

1. It results in the formation of rain**.**
2. It affects the performance of crops and animals
3. High humidity in poultry causes moldiness of feed and litters.
4. Low humidity leads to heat stress in animals.
5. Relative humidity determines the type of pests prevalent in an area.
6. High relative humidity forms the re-growth of disease pathogen.

### GENERAL EVALUATION

1. What is climate?
2. Discuss the importance of rainfall in agriculture.
3. What is temperature?
4. What is the difference between a farm and a farmstead?
5. Outline five principles of farmstead layout.

### WEEKEND ASSIGNMENT(WK 9A)

1. The climatic factors affecting the production of animals and plants include the following except A. rainfall B. temperature C. pests and disease D. sunlight
2. Factors of climate include the following except A. Rainfall B. temperature C. light

D.vapour (cloud)

1. Which of the following is not a function of the forestry department ?

A. Routine vaccination of wild animal B. conservation of forest resources C. specification of size of tree to be felled D. grading of timbers for export

1. The taungya system of farming… A. integrates arable crops with forestry B. gives priority of land use to arable crops C. gives priority of land use to forestry D. encourages establishment of game reserves
2. Which of the following is not an edaphic factor affecting agricultural production? A. Soil pH B. Soil texture C. Soil organism D. soil type

### THEORY

1 (a) Define forest

(b) Outline eight uses of the forest and its resources.

2 Write brief notes on the following.

(a) Forest regulation (b) Selective exploration (c) Afforestation (d) Reforestation

# BIOTIC FACTORS OR BIOLOGICAL FACTORS AFFECTING CROPS AND ANIMAL PRODUCTION

**1. PREDATORS:** These are living organisms that prey or feed on other organisms. Examples are birds, rodents, insects, etc. Some are beneficial and some destructive. Some control harmful pests of crop and animals, others feed on other animals e.g. hawk etc.

**2.PARASITES (PARASITISM)**: A parasite is an organism which lives on or in another living organism known as the host. It obtains its food from the body of its living host.

Often, a parasite harms its host by causing diseases or death.

## *TYPES OF PARASITES*

1. **ENDOPARASITE: – T**hese are parasites which live inside or within the body of other animals. e.g. liver fluke, tapeworm, roundworm or ascaris.
2. **ECTOPARASITE: –** Parasites that live outside or on the host. Example tick, lice, mites, insect bugs, fleas, etc.
3. **SOIL ORGANISM:** Soil organism can be classified into micro organism or macro organism.

Microorganisms are bacteria, virus etc, while macro organisms are rodents, termite, centipedes etc. Some like bacteria and fungi can cause disease, some aid aeration in soil, hence improving soil fertility. Some like root nodule bacteria can fix nutrients directly to plant and soils. Some help in the decomposition of plant and animal material to form humus.

1. **PESTS**: These organisms cause damage or destroy crops either in the field or in stores. They include insect, rodents, birds and some animal e.g. monkeys. They reduce the yield of crops and animals thereby reducing the farmer’s income. Some are vectors or carriers of diseases .The cost of their control increases the cost of production.

### EVALUATION QUESTIONS

1. What are pests?
2. State five examples of pest.

#### 5. DISEASES

Disease is a situation in plants or animals in which there is a deviation of the plant or animal from normal state of health. Disease can be caused by pathogens which are virus, bacteria, fungi, protozoa etc. They cause reduction in the yield of crops and animals. They can cause loss or death of plants and animals. The cost of control increases the cost of production which affects the income of the farmers.

#### 6. MUTUALISM (SYMBIOSIS)

In mutualism, two organisms live together for the mutual benefit of each other. Termites and the protozoa living in their guts are mutualistic. The protozoa receive protection from termites; it helps in the breakdown of food in termites. The protozoa help them to digest it.

**7. WEEDS**: They compete with crops for space, water, nutrients and sunlight. Some may harbour diseases and pest. They reduce the yield of crops. The control increases the cost of production.

## EDAPHIC FACTORS OR PHYSICAL FACTORS

1. ***SOIL pH***: This is the degree of acidity or alkalinity of a soil.
   1. It affects the growth of plant.
   2. It affects the availability of soil nutrients to plant.
   3. It affects the presence of soil micro-organisms
2. **SOIL TEXTURE:** This is the measure of fineness or coarseness of soil samples.
   1. It determines the type of soil in an area.
   2. It determines the level of soil fertility.
   3. It determines the type of crops to be grown.
   4. It affects the level of leaching and erosion of the soil.
3. **SOIL STRUCTURE:** This is the physical appearance of the soil according to the way individual particles are packed or arranged**.**
   1. It determines the fertility of the soil.
   2. It determines the water retaining capacity of the soil
   3. It determines the level of aeration.
   4. It determines the level of micro-organism

### GENERAL EVALUATION/REVISION QUESTIONS

1. What is soil structure?
2. Define soil texture.
3. What is soil pH?
4. State three features of soil texture
5. List out any five soil organisms

### WEEKEND ASSIGNMENT(WK 9B)

1. Which of the following is not an edaphic factor affecting agricultural production? A. Soil pH B. soil texture C. soil organic D. soil type
2. Plant and animal remains allowed to decay in the heap is referred to as. A.

Farmyard manure B. compost C. green manure D. inorganic manure

1. Which of the following is a primary product of forest trees? A. Pulp B. timber C. paper D. cardboard.

Which of the following practices can prevent excessive evaporation from soil surfaces? A. mulching B. weeding C. harrowing D.ploughing The appearance of the soil according to the way individual particles are packed or arranged is called A. soil structure B. soil texture C. soil pH D. soil profile

The following are endo-parasites of livestock except A. roundworm B. tapeworm

C. liver fluke D. earthworm.

### THEORY

1. Discuss briefly five biotic factors that affect crops and animals distribution.
2. State three edaphic factors affecting crops and animals distribution.

**WEEK 10**

# TOPIC: CLASSIFICATION OF CROPS

**CONTENT:**

## Classification Based on Life Cycle Classification Based on Morphology Classification Based on Uses

A crop is a plant which is cultivated by man for some beneficial purposes. Crops can be classified based on (i) life cycle (ii)morphology (iii) uses.

## CLASSIFICATION BASED ON LIFE CYCLE

The life cycle of a crop is the period from planting of seed to maturity of the crop. Based on life cycle, crops can be grouped into three: –

1. ANNUAL CROPS: – These are crops which grow and complete their life cycle within a year e. g. cotton, cowpea, yam, rice etc.
2. BIENNIAL CROPS: – These are crops which grow and complete their life cycle within as year e. g. cassava, pepper, onions, carrot, ginger etc.
3. PERENNIAL CROPS: – These are crops which grow and complete their life cycle in more than two years e. g. banana, orange, cocoa, coconut etc.

EVALUATION QUESTIONS

1. What is a crop?
2. Classify crops based on life cycle.

## CLASSIFICATION BASED ON MORPHOLOGY

On the basis of morphology i.e. structure (form and shape of a plant), crops are classified as:

1. MONOCOTYLEDONOUS CROPS: These are crops which bear seeds that have onlyone seed leaf (cotyledon). Their leaves have parallel veins and they have fibrous root system. Examples include:maize, rice, millet, wheat,oil palm, grasses, etc.
2. DICOTYLEDONOUS CROPS: These are crops which bear seeds that have two seedleaves or cotyledons. They possess leaves with net veins and tap root system. Example include: mango, orange, cowpea, groundnut, kola nut, pepper, etc.

EVALUATION QUESTIONS

1. State five characteristics of monocot crops and three examples.
2. State five characteristics of dicot crops and three examples.

# CLASSIFICATION BASED ON USES

1. CEREALS: – Crops grown for their grains or seeds which are rich in carbohydrates. They belong to the grass family e. g. maize, millet, rice, wheat, oat, barley, guinea corn etc.
2. LEGUMES (PULSES): – These are crops grown for their seeds or grains which are rich in proteins e. g. cowpea, groundnut, soya beans, pigeon peas etc.
3. ROOTS AND TUBERS: – These crops produce tubers under the ground that are rich in carbohydrates e. g. cassava, yam, potato, carrot, etc.
4. VEGETABLES: These are crops grown for their leaves, fruits, or roots which are rich in vitamins and minerals e. g. tomato, lettuce, okro, amaranthus, cabbage etc.
5. SPICES: – These crops are also rich in vitamins and minerals and are rich in food flavours e. g. pepper, ginger, garlic, onions, curry etc.
6. BEVERAGE CROPS: – They are used in making food drinks e. g. cocoa, coffee, tea, kola nut etc.
7. FRUIT CROPS: – These are plants which bears edible fruits that are rich in vitamins and minerals e. g. oranges, cashew, guava, water melon etc.
8. OIL CROPS: – These are crops which produce edible oil when processed e. g.

cotton seed, coconut, oil palm, groundnut, shear butter etc.

1. LATEX CROPS: – They produce fluid called latex which when processed served as raw materials for making tyres, plastics, foam etc. Example is rubber tree.
2. FIBRE CROPS: – They produce fibres used for making clothes, ropes, sacs etc.

Examples include cotton, sisal, jute, hemp, kenaf etc.

1. DRUG PLANTS: – Crops grown for medicinal purposes e. g. tobacco, neem, Indian hemp etc.
2. FORAGE CROPS: – Crops grown to feed ruminant farm animals e. g. stylo, cowpea, guinea grass etc.
3. ORNAMENTAL CROPS: – Crops grown to beautify our environment e. g. hibiscus, morning glory etc.

EVALUATION

1. What are a) forage crops b) ornamental crops?
2. Give three examples each of: a) fibre crops b) beverage crops c) drug plants

## GENERAL EVALUATION/REVISION QUESTIONS

1.What are crops?

1. Classify crops based on life cycle.
2. Classify crops based on morphology.
3. Classify crops based on uses.
4. List out three examples of spice crops.
5. State five biotic factors affecting agricultural production.

## WEEKEND ASSIGNMENT

1. Cocoa and coffee are examples of …… crops. A. spice B. stimulant C. beverage D.cereal
2. All these are annual crops except A. cotton B. cowpea C. yam D. pepper
3. Coconut is a/an… crop. A. annual B. biennial C. perennial D.ephemeral
4. Monocot crops have… A. two seed leaves B. three seed leaves C. tap root system

D. fibrous root system

5. Dicot crops have… … A. one seed leaves B. three seed leaves C. tap root system D. fibrous root system

THEORY

1. (a) Classify crops based on life cycle.

(b) Classify crops based on morphology.

1. In a tabular form, state seven differences between monocot crops and dicot crops.