

5. Farm Management



Can you recall?

- At present agriculture is the largest supporting component of Indian economy.
- Majority of the Indian population still depends on agriculture and related enterprises.
- In India farm management is not properly adopted due to small land holdings.
- Farm management, is useful tool for exploring thoughts stimulating farming enterprise and to assess their resources and develop a whole farm plan.

5.1 DEFINITION, OBJECTIVES AND ASPECTS OF FARM MANAGEMENT

5.1.1 Definition of farm management :

Farm management means making and implementing the decisions involved in organizing and operating a farm for maximum production and profit.

Farm management is also defined as organizing and managing one or more enterprises on scientific and business lines for continuously getting maximum net profit from the farm as a whole.

Farm management is a branch of agricultural economics, which deals with investing and earning of money from farm activities by the farmer for securing the maximum possible net income.

5.1.2 Objectives of farm management :

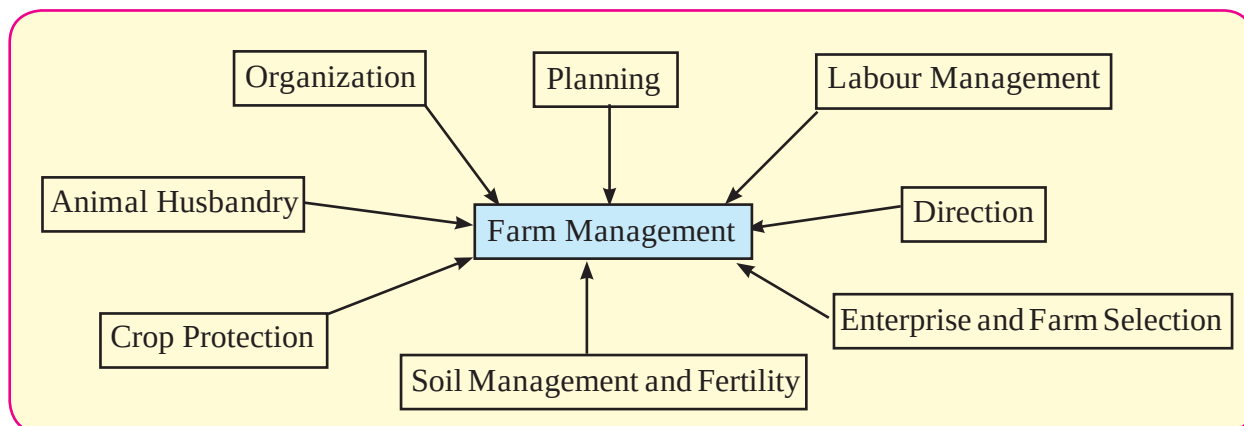
The main objectives of farm management are :

1. To make effective planning regarding land utilization, cropping system, labour and weather.
2. To decide more profitable cropping systems and animal husbandry.
3. To calculate expenditure required per unit area for evaluation of agricultural production.
4. To provide programs and services that develop skills and knowledge in financial management and planning legal issues, tax laws, technical production, leadership, sustainable agriculture, human health and the environment.
5. To increase the agri-business by efficient using sources and resources available.
6. To earn maximum profit from different agricultural enterprises.
7. Have comparative study of economics with other agricultural enterprises.
8. To study effect of different changing technologies on agri business.

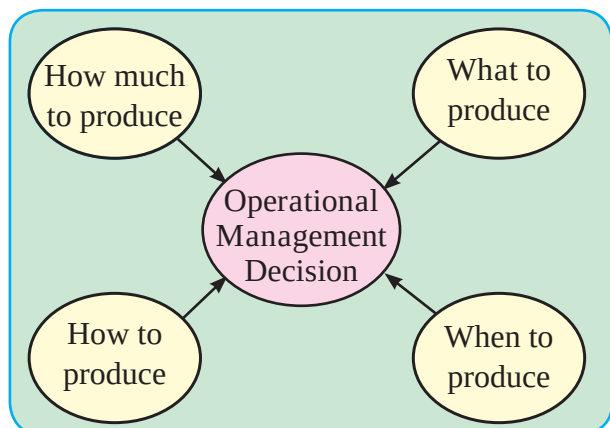
5.1.3 Aspects of farm management :

The important aspects of farm management are:

1. Selection of farm
2. Choice of an enterprise
3. Preparing a suitable layout for the farm
4. Formulation of cropping scheme and calender of operations
5. Equipping the farm with necessary inputs
6. Management of farm labour



- Maintain farm records to work out cost of cultivation of major crops, profit and loss statement of the farm.
- Maintain records for seeking certificates for export.
- Resource conservation



Remember this

Farmer as a businessman should know

- How to produce more.
- How to reduce cost of production.
- How to secure high price for his produce.

5.2 DEFINITION AND FUNCTIONS OF FARM MANAGER

5.2.1 Definition

A farm manager is an employee who is paid to manage a farm or a group of farm.

Or a farm manager is a responsible person employed to manage and carry out duties associated with the day-to-day and long term management of the farm.

5.2.2 Functions of a farm manager

- Directs and coordinates activities such as planting, irrigation, fertilizer application, harvesting, grading, pay-roll, and record keeping.
- Coordinates growing activities with those of engineering, equipment maintenance, packing houses, and other related departments.
- Analyzes market conditions to determine acreage allocations.
- Confers with purchasers and arranges sale of farm produce.

- Records information such as production, farm management practices and parent stock and prepares financial and operational reports.
- Determines procedural changes in drying, grading, storage, and shipment for greater efficiency and accuracy.
- Analyzes soil, determines types and quantity of fertilizer required for maximum production.
- Inspect equipment to ensure proper functioning.
- Determines maturity period of crops and estimates potential crop damage from weather.
- Purchase of machinery, equipment, seed, fertilizer and chemicals.
- Negotiates with banks to obtain credit.
- Evaluation of financial statements and making of budget proposals.

Qualities of Farm Manager

- Command over Basic Facts
- Relevant Professional Knowledge
- Skill and Attributes
- Decision making skills
- Creativity
- Mental Ability
- Self confidence
- Proactivity
- Emotional Resilience

5.3 CHOICE OF AN ENTERPRISE AND SELECTION OF FARM

5.3.1 Choice of enterprise

The important decision which one has to take in farming is the choice of enterprise or the specific line or lines of farming one would like to pursue viz. one crop or diversified farming,

vegetable cultivation, fruit culture or mixed farming. Further development of the farm will depend on this crucial decision.

Sometimes a farmer produces just one major crop viz, sugarcane, cotton or tobacco, when there is a good demand. He can then specialize in that commodity and utilize all his resources to get the maximum production and profit with the minimum of expenses. In crop farming, management is easier and the equipment and other necessities will be minimum.

Sometimes, it may be better to develop diversified farming. The land, labour, equipment and other factors are used efficiently throughout the year. It will also reduce the risk of complete loss of income due to drought, pests and diseases.

When more than one farm enterprise or business is combined e.g. dairying and fodder cultivation with crop production or raising of cattle or poultry with crop production, the enterprise should be complementary to each other and result in saving expenses and increase the profit. Sometimes, it pays to combine a cooperative handling of a few or all farm operations such as plant protection, tractor ploughing etc., or combine a village community crop protection service.

Fruit, vegetable or flower cultivation, poultry keeping or dairying is always a profitable enterprise if the farm is near a town. Each system has its own advantages and disadvantages and in the farm business the farmer has to consider how far it will be beneficial if he takes up one system or another.

5.3.2 Selection of a farm

The selection of farm is important in farm business as the land is the costliest item amongst all the factors of production. Moreover, once the capital is invested in the purchase of farm land, it gets locked up. The selection will depend upon various considerations like the availability of contiguous area, the amount of money that the farmer can invest and the area he can manage himself conveniently. Normally,

bigger the farm, greater are the advantages for such as a farm, capital and labour are most efficiently used and overhead charges are kept low. There is also a scope for mechanization and improved marketing of produce. However, if the farmer has minimum holding, he should produce sufficient for him and his family members with full employment to get sufficient profits to make a good living. Factors normally considered while selecting a farm are classified as Physical, Economic, Socio and personal.



Try this

Visit a near by modern farm to study different aspects.

1. Physical factors : The physical factors are as follows:

a. Climate : It should be suitable for the enterprise and the crops intended to be grown and allow maximum number of working days. It should be congenial to one's health.

b. Topography : Topography is important from the point of view of soil erosion, drainage, water logging conditions, irrigation and use of machinery, etc. The farm should be levelled and not undulating. A farmer can change the topography or the general lay out of the land to some extent but that may involve very heavy expenditure.

c. Soil It should be studied in respect of structure, texture, soil depth, nature of lower strata of soil, types of natural vegetation growing on it, etc. For ascertaining the soil fertility, it may be necessary to take soil samples from different depths for soil testing and also to dig pits for examining the soil profile.

d. Distribution of farm area : Before selection of farm proportion of cultivable land, waste land, pastures, rivulets, etc. should be studied.

e. Layout and arrangement of the existing fields : If there are any intervening fields belonging to other farmers, they may have to be purchased to have a compact area. It will save expenditure on equipment and improve efficiency in management.



Fig. 5.1 Farm enterprises or business

f. Study of existing structures : Condition of the fencing, drainage system, bunds and farmstead, if any.

g. Water supply : Sources of water supply and depth of water table in different seasons.

h. Location : Proximity to a town, market, town approach road, railway station, airport etc.

2. Information on the following items may be helpful in making a proper selection of the farm and striking a bargain.

- a. Current prices of land in the locality.
- b. The amount of money the farmer can invest. The availability of loan and the rate of interest to be paid.
- c. Taxes to be paid.
- d. Labour, their availability, wages, types, usual working hours in the area, etc.



Do you know ?

Economic Factors : The economic factors are concerned with i. the capital to be invested in purchasing the farm, ii. the annual expenditure for running the farm efficiently and iii. expected returns.

3. Social and personal factors :

a. Social : It includes type of neighbours and their attitudes towards a new comer should be studied.

b. Personal : These factors consists of facilities such as schooling, medical, transport and banking should be available.

5.4 FARM LAYOUT, FARM PLANNING, FARM BUDGETING AND INPUTS

5.4.1 Farm Layout :

A farm layout includes

- a. Farmstead or farm buildings
- b. Number, size, shape and arrangement of fields and
- c. Other structures including threshing floor, farm roads, bunds, manure pits irrigation and drainage channels, farm fencing, etc.

a. Farmstead or Farm Building : A farmer can manage his farm better, if he has a home-stead on the farm. There is a growing tendency among the new generation of farmers to live on the farm itself. For this purpose, a small home is to be constructed where he can stay during the season and supervise the labour and all the farm operations.

A farmstead consists of many types of buildings, viz, residential buildings for the farmer and his labourers, cattle shed, implements shed, grain godown, fodder shed etc. As a general practice, about 2 % of the farm area is devoted for the construction of farmstead.

The size of various farm structures should be according to the need of the farmer and the farming business. Future expansion programme should also be taken into account. On an average, a room of 4x3 meters along with a *varandah* will be sufficient for a labourer's accommodation whereas 3x1.75 meters space may be required by an adult animal. A godown of 15x7 meters may be sufficient for a farm of about 20 hectares.

b. Number, size, shape and arrangement of farm field On the farm, it is better to have fields equal to or multiple of the number of crops in different rotations planned for the farm. This will facilitate in operating properly the cropping programme in different years.



Remember this

The following considerations should be made while constructing various farmstead buildings:

- i. The farmstead should be located on high ground and should have easy approach. If on the hill, it should be so located that it receives sunlight and is sheltered from winds. As far as possible it should be at the center of the farm. Trees should be planted at suitable places to provide shade, green leaf manure, fuel and timber.
- ii. Buildings should be near the source of water and those having some relationship with each other should be so located that the various farm operations can be done efficiently and without any wastage of time and labour. Viz, Cattle shed, fodder storage and manure pits should be adjacent to one another. Similarly, grain godown and threshing floor should be near to each other.

The field boundaries should preferably be regular, to avoid any wastage of land. Large fields save labour, particularly when large scale farm machinery is to be used. The field should be preferably, rectangular in shape with the length to breadth ratio of about 2 or 2.5:1. The size of farm fields is also governed by factors viz, a. topography of the farm to avoid erosion, b. source of irrigation e.g. well or canal c. the nature of the farm enterprise e.g. cotton, sugarcane or dairying.

The field should be arranged in relation to the farmstead, and should be easily approachable and not in a random manner.

c. Other structures : These include farm roads, manure pits, threshing floor, irrigation and drainage channels and farm fencing.

i. Farm roads : The farm road should be of sufficient width to allow easy transport of carts, trucks and or tractors as the case may be. One main road, about 5 meters width may be constructed at the centre of the farm. It should be joined by secondary roads of 3 meters wide in sufficient numbers, at right angles. Mainly boulders are used for construction. There should be shallow channels on both sides of the road for facilitating drainage of rain water.

ii. Manure pits : The manure pits should be near to the cattle shed and their sizes may be 7x1.5x1 meters or 5x1.2x1 meters. Two pits of the former size or three pits of the latter size are sufficient for 4 to 5 heads of cattle on the farm. They should be dug in a row, keeping a distance of about one meter in between two pits with sufficient area on one side for the movement of a cart or a truck to be used for removing the manure.

iii. Irrigation and drainage channels These should be constructed by considering the topography of the land. Field bunds should be constructed not only to demarcate the fields but also to check erosion. These bunds may be planted with grasses like blue panic, dwarf castor, green manuring crops, which will provide some economic returns and also help in stabilising bunds

iv. Fencing : Generally fields growing cash crops like vegetables, fruit trees, etc., are only protected by constructing a fence around them. The cost of fencing will be proportionately low in case of big sized field. Fencing may be of many types viz.

- a. Dead stumps of thorny bushes,
- b. Wooden posts matted with bamboo poles,
- c. Mud or stone walls,
- d. Live fencing,
- e. Barbed wire fencing
- f. Wooden pole cement pole wire fencing and
- g. Electric wire fencing
- h. Solar fencing.



Fig. 5.2 Types of farm fencing

Certain quick growing live hedges serve the purpose of fencing viz. *karwand*, *mehendi*, *ingadulcis* *chichbillai*, *babhol*, *ketki*. These plants are thorny and their leaves withstand drought conditions; propagated easily and put up a rapid growth.

Barbed wire fencing or solar fencing is most effective against stray cattle and wild animals like jackals, wild boar, etc. but it is very costly. These wires are supported by either wooden, iron, cement concrete or stone posts fixed at a distance of about 3 to 5 meters. The total number of parallel wires may be 4 to 6 or more depending upon the type of protection needed. Vertical distance between these parallel

wires may be 15 cm towards the ground and about 25 to 30 cm at the top.

5.4.2 Farm planning

A. Meaning :

Farm planning is a deliberate and conscious effort on the part of the farmer to think about the farm programmes, technological developments, changes in physical and economic situation, price structure, etc. It is the major economic content in the to farming business.

B. Advantages of farm planning :

1. **Income improvement** Farm planning approach is an integrated, co-ordinated and advance programme of action which provides an opportunity to cultivators to improve their income level with maximization of the profit.
2. **Educational process** Knowledge of the latest technological advances in agriculture is a pre requisite for better farm planning. It helps to keep the information up to date. This acts as a self educating tool for farmers.
3. **Desirable organizational changes** This approach introduces desirable changes in farm organization and operations and make the farm a valuable unit. It may include farm business or any change in the method or practices followed on the farm.
4. **Planning minimizes uncertainty** Planning helps in reducing the uncertainties of future events.
5. **Planning facilitates co-ordination** There is an integrated effort throughout the enterprise in various departments and groups.

C. Objectives of good farm plan

- Efficient use of farm resources such as labour power and equipment.
- Balanced combinations of various enterprises.
- Avoidance of excessive risk and provision of flexibility.
- Use of farmer's knowledge, training and experience.
- Use of efficient marketing facilities.

- Use of latest agricultural methods and practices.

D. Characteristics of good farm plan

1. Plan should aim at efficient utilization of all available resources on the farm.
2. It should be flexible as per changing environment.
3. It should be simple and easily understood.
4. It should ensure balanced production programme.
5. It should aim at maintaining and improving soil fertility.
6. It should facilitate efficient marketing of farm products.
7. It should take into account up-to-date technology.
8. It should avoid too risky enterprise.
9. It should consider the goals, knowledge, training and experience of the farmers.

5.4.3 Farm budgeting and inputs :

A. Meaning :

Farm budgeting is a process of estimating costs, returns and net profit of a farm or a particular enterprise.

B. Types of farm budgeting :

There are three types of farm budgeting:

1. **Partial budgeting :** It refers to estimating the outcome or returns from a part of the business. Partial budgeting analysis is a simple, quick and easy method for deciding how far expense and yield of a particular enterprise should be increased. It does not allow substitution between resources. This is short duration budget. It is easy for specific work and management.
2. **Complete budgeting :** It refers to preparing out a plan for the farm as whole for all decisions about an enterprise. It considers all the crops and livestock producing methods and estimates cost and returns from the farm as a whole. It brings progressive change in the income. It draws attention to a variety of factors contributing to the farm income the total enterprise and activities are included in this budget.

3. **Enterprise budgeting :** It is to estimate inputs required, costs involved and expected returns from a particular business. The purpose of budgeting enterprise is to aid in selection of inputs and enterprise consistent with the resources available and to show combinations that helps to increase farm income.

C. Farm Inputs

Successful farm management depends upon how the various inputs required to run the farm are properly organized.

Types of inputs :

Recurring inputs :

There are certain inputs which are oftenly required known as recurring inputs. These are

- a. Manures and Fertilizers
- b. Seed
- c. Insecticides and Pesticides
- d. Labours

The requirement of these will depend upon the size and kind of farming and cropping scheme.

Non-recurring inputs :

These are capital in nature and purchased once in a while. They are,

- a. Farm bullocks
- b. Implements and machinery
- c. Plant protection appliances
- d. Electric motor/oil engine, pump set
- e. Hand tools
- f. Live stock
- g. Bullock cart
- h. Bins/Basket/Chains/ropes etc.



Remember this

The cropping scheme is not only a systematic crop rotation but something more than that. It also makes the best possible use of all the resources of production available with the farmer.



Fig. 5.3 Various farm operations

5.5 CROPPING SCHEMES AND CALENDER OF OPERATIONS

5.5.1 Cropping scheme: It is the basis on which the farm budgetting is framed and farm management practices are decided or it is a plan according to which crops are grown on an individual plot of the farm with an object of getting maximum returns from each crop without impairing the soil fertility.

5.5.2 Characteristics of good cropping scheme

1. It should satisfy food requirements of farmer and his family and the fodder requirements of his cattle.
2. It should give the good cash returns from cash crops. It should have sufficient area under most profitable cash crops.
3. It should maintain or even increase the productivity of the farm by proper crop rotation.
4. It should engage the farm labours properly throughout the year.
5. It should comprise green manuring crops, which will help in maintaining the condition of soil.
6. It should reduce the cost of cultivation of succeeding crop.
7. It should be helpful in improving the standard of living of the farmer.

5.5.3 Considerations for selecting crop and area under cropping scheme

1. The availability of labour throughout the year and whether there are any period of acute shortage of labour which can be avoided.
2. How far the period of peak load of labour for different crops can be avoided and crops which will allow more even spread of labour can be selected.
3. The relative cost of production and expected market prices of crop to be cultivated.
4. The capital required for growing of cash crops.
5. Requirement for other farm enterprises like dairy, poultry, etc.
6. Availability of storage, transport and market facilities for perishable produce.
7. The cropping plans adopted on the neighbouring farms.
8. Utililse land, 70-75% of farm for *kharif* crop and remaining 25-30% area is to be utilized for *rabi* crops under rainfed region.
9. Shallow soils used for raising minor crops or grasses and under heavy soils follow double cropping.

10. Financial condition of the farmer for meeting the recurrent expenditure on the farm.

5.5.4 Calendar of operations :

Definition :

It is a tabular information indicating the type of work to be done on each crop during its life cycle.

Steps in preparation of calendar of operations

The steps are as follows:

1. Firstly, prepare a list of crops and enterprises on the farm.
2. Prepare a list of all operations to be conducted for each crop and enterprise.
3. Indicate the time limits during which the operations are to be completed.
4. Estimate the labour, bullock power, machine power required for each operation in terms of unit.
5. Finally, prepare a consolidated and comprehensive work schedule.

5.6 LABOUR MANAGEMENT

5.6.1 Definition :

Agricultural labour is the person who undertake physical work at the farm for wages and generally, 50 percent or more of his total income is from such work.

5.6.2 Types of agricultural labourers :

A. According to source :

1. **Farmer family labour :** Family members are quite often engaged on his own farm. The value of this unpaid family labour is known as labour income of the farmer.
2. **Out of family :**
 - a. **Permanent labour :** These are hired permanently for a year on contract.
 - b. **Temporary labour :** These labourers are hired during peak period for work. They are on daily basis and paid as per market rate.
 - c. **Contract labours :** These labours are employed by making fixed contract e.g. digging of pits, construction of bund, particular work, etc.
 - d. **Piece rate labours :** A worker is paid a fixed piece rate for each unit produced

or action performed, regardless of time
eg. Picking of cotton.

B. According to skill :

1. **Skilled labour :** A worker is called as skilled labour when he has a special skill and knowledge, Trained skilled labour gets high wages eg. tractor driving, sowing, etc., need skill.
2. **Unskilled labour :** When a worker does not have any particular skill he is unskilled labour and utilized for carrying easy jobs like digging of pits, preparation of beds, etc.

5.6.3 Measures of improving labour efficiency :

Definition : It is the amount of productive work done on the farm per labour.

The labour efficiency can be improved by adopting the following measures.

- i. **Diversification :** There should be sufficient diversification in farm business so as to keep the labour fully engaged throughout the year.
- ii. **Work Program :** Programme of work should be prepared well in advance to plan proper labour utilization.
- iii. **Size of field :** Field size should be large.
- iv. **Implement and machinery :** Efficient implements and machinery and proper attention to their repairs and servicing is essential.
- v. **Farmstead arrangement :** Arrangement of farmstead should be suitable to avoid wastage of labour in unnecessary movements.
- vi. **Time of work :** Get the work done at proper time e.g. weeding in early stages, or deep ploughing immediately after the harvest of *kharif* crop or when post harvest showers are received.
- vii. **Working hours :** Daily working hours should be according to season e.g. in summer season, start the work very early, while in winter, it may be started late.
- viii. **Facilities for labour :** Provide drinking water and make arrangements for carrying food, etc., at the spot of working.
- ix. **Distribution of work :** Put right type of men on jobs suitable to their capability.

5.7.1 Farm accounts

1. Farm accounts will help farmer to know whether the farm is in profit or loss.
2. It will help to identify the weak points in his farming practices, and thereby show ways of strengthening them.
3. He can plan the future work.
4. He can also work out the cost of cultivation of major crops and judge whether his cropping scheme needs any modification.

1. Diary : It is a useful daily record of operations conducted, equipment used,

2. Cash Register : It is a record of cash received and cash paid.

3. Production Register : It is a record for entering the produce of crops including fodder of a given area.

4. Feed Register : It is a record for entering all the cattle feeds.

5. Wages Register : It is a register for the permanent labour force employed and the casual labour hired.

6. Seed Register : It is a record showing the kind, quantity and value of seed purchased or stocked on the farm.

[illegible]

Fig. 5.4 7/12 extract

7. Yield Register : It is a record for entering details regarding yield obtained from different crops and enterprises on the farm.

8. General Register : It is a record of miscellaneous items of expenditure such as land revenue, water rates, replacements of machines and tools, manures and fertilizers.

9. Inventory : It is a record of all the property the farmer owns. It shows the number and value of each item such as land, building, water supply, livestock, equipment, machinery, farm produce, feeds, fertilizers and cash in hand and in the bank and the amount to be paid or received.

5.7.2 Farm Records :

1. Revenue records 7/12 extract : The extract consists of two parts i.e., extract no 7 and extract No. 12. The extract 7 consists of survey number of the land, name of the land owner and the area of the land. It also consists of name of tenant, records of

loan extended by government agencies etc. Extract 12 consists details of crops grown on the land, type of cultivation i.e., irrigated or rainfed. It is one of the documents that provides evidence of ownership of land, and is also called as 'Record of Rights or Record of Land Right'.

2. 6-D Extract : It is a record of transferring the title of ownership (record of right) of property or land from one to another person after sale or division.

It can be obtained from the Mahabhilekh of Maharashtra. It is maintained by the Talathi. After purchase of new property the name of owner transferred on 7/12 extract by using this record.

3. 8A Extract : It is called as *Khate Utara* and provides details of total holding of owner. Therefore it is used to calculate the total holding of the present owner.



Exercise



Q.1 Answer the following questions.

A. Select appropriate alternative and complete the following statements.

- Organising and managing one or more enterprises on the farm on scientific and business lines is called as -----
 - Farm management
 - Agro informatics
 - Agro-tourism
 - Farm accounts
- An employee who is paid to manage a farm is known as -----
 - Labour
 - Worker
 - Farm manager
 - Clerk
- Width of the main road at the centre of farm should be ----- meters
 - 1
 - 3
 - 5
 - 7

- Pump set is example of ----- inputs.
 - Recurring
 - Non recurring
 - Partial
 - Complete
- Tabular information indicating type of work to be done on each crop during its life cycle is called as -----.
 - Cropping Scheme
 - Cropping pattern
 - Crop rotation
 - Calender of operations

B. Make the pairs.

Group 'A'

- Climate
- Current price of land
- School facility

Group 'B'

- Chemical factor
- Physical factor
- Economic factor
- Personal factor
- Social factor



C. Find the odd one out.

1. Topography, soil, location, banking facility
2. School, medical facility, transport facility, climate.
3. Labour, taxes to be paid, current price of land, topography.
4. Permanent labour, temporary labour, contract labour, skilled labour

D. Write true or false.

1. Farm steads consist only residential buildings.
2. In diversified farming land, labour, equipments are used efficiently.
3. Seed, manure, pesticides, labours are recurring input.
4. Tractor driver is a skilled labours.
5. 8A extract gives us an idea about total holding of owner.

Q. 2 Answer in brief.

1. Write the definition of farm management.
2. List out non-recurring inputs of farm.
3. What is a cropping scheme ?
4. What types of buildings are required in a farm stead.
5. What are types of agricultural labours.
6. What do you mean by 8 A extract.
7. Why is a diary essential?

Q. 3 Answer the following questions.

1. Explain 7/12 extract.
2. What are the different components of farm management.
3. What are the characteristics of a good cropping scheme.
4. What are the types of fencing? explain in brief
5. Write a short note on manure pit./Describe manure pit in brief.
6. What are the qualities of farm manager.
7. Explain physical factors considered while selecting a farm.

Q. 4 Answer the following questions.

1. What are the objects of farm management.
2. What are the advantages of farm planning.
3. Define calender of operations and give the steps to be considered in preparation of calendar of operations.
4. Define agricultural laboures give their types.
5. What kinds of farm accounts and records are required on a farm.
6. Which points to be considered while selecting crop in a cropping scheme?

Q. 5 Answer the following questions in detail.

1. Define labour efficiency and explain measures of improving labour efficiency.
2. What is farm budgeting ? Explain the types of farm budgeting.

Q. 6 Answer the following questions in detail.

1. What are the functions of a farm manager.
2. List out the factors considered in selecting farm and explain any one.



Activity

- Prepare a farm budget considering all factors for 5 acres land.
- Prepare a cropping scheme and calendar of operations for your own farm.