

Systems and types of farming

System approach is applied to agriculture for efficient utilization of all resources maintaining stability in production and obtaining higher net returns.

System:

A system is defined as a set of elements or components that are inter-related and interacting among themselves.

Farm: A piece of land used for earning profit.

Farming system consists of several enterprises like dairying, piggery, poultry, fishery, bee keeping etc.

Farming systems represents as appropriate combination of farm enterprises.

System and types of farming

The combination of products on a given farm and the methods and practices which are followed in the production of those products is known as system of farming on that particular farm.

When farms in a group are quite similar in the kinds and proportions of crops, like vegetables, gardening, live stock etc. and these are also similar in methods and practices followed in their production__ that group is described as type of farming.

- **Farming system:** It is an agricultural ecosystem by simultaneous consideration of intensity of inputs, efficiency of resource use, degree of environmental control and overall type of agricultural production.
- **Faming type:** it is an agricultural ecosystem identified and labeled on the basis of their efficiency of resource use, intensity of inputs/management, degree of environmental control or type of agricultural production.

Factors affecting choice of farming system/type

1. Climate
2. Soil
3. Genetic potential of plants and animals
4. Socio-political and economic factors
5. Biological factors
6. Resources
7. Technology
8. Miscellaneous-Agro based industry etc.

Factors determining type of farming

A. Physical

Factors that cause the type of farming to vary from area to area, and results into a comparative advantage of producing a product in one region over the other. They don't change from year to year.

1. Climate
2. Soil
3. Topography

B. Economic

Climate

Single most important factor affecting scope of type of farming

- Rainfall---60cm for most crops and 100cm for crops like paddy and cane, crops like pulses can't withstand over 60cm rainfall
- Length of growing season
- Temperature
- ✓ Cardinal temperatures
- ✓ Low temperature injury (a. chilling, b. freezing)
- ✓ High temperature injury

- Sunshine
- Frost
- Storm
- Strong winds

Soil

- a. Soil depth
- b. Soil texture
- c. Soil fertility
- d. Soil reaction
- e. Soil productivity

Topography

It refers to the slope or height of the place where the farm is situated. e.g. different crops may be cultivated at different elevations in *hill areas*.

Temperature and growing season are generally shorter at higher elevations and thus are most suitable for orchards, tea plantations, potato cultivation etc.

As the level land in such areas is scarce, and too scattered, the farms are generally small in comparison to those of plains.

The soil is rocky with different levels of fertility.

Heavy machinery can't be used at higher elevations because of rough and sloppy surface of the fields which are small and scattered thus affecting the type of farming.

B. Economic

These are concerned with profitability

- Change erratically
- What to produce and how much to produce

Factors of profitability

1. Comparative and not absolute advantage

2. Marketing cost:

- Distance from the farm to consumer
- Nature of product
- Bulk of product

e.g. vegetable and milk produced near cities

3. Location of the processing plants:

- Sugarcane produced near the sugar mills

4. Availability of capital

- Capital is needed for adoption of changing technologies
so affects the type of farming

e.g. high level of nutrients

adequate plant protection cover

High cost of hybrid seed

5. Availability of labour

- Some enterprises are labour intensive
e.g. vegetable farming
 picking mentha leave

6. Relative profitability of enterprises

- Change in relative profitability can shift the farmers from one type of farming to another
- This may be due to change in prices or yields
e.g. Increase in cane price will result in increased area under cane

Types of farming

- A. Specialized and diversified farming
- B. Mixed farming
- C. Dry and irrigated farming
- D. Ranching

A. Specialized farming

1. Major resources are diverted to or income (more than 50%) is derived from a single enterprise.
2. E.g. cane farm, poultry farm, wheat farm etc.
3. A particular enterprise is dominant.
4. It implies 2 or 3 crops or relatively less number of crops.
5. It is drawn more extensively into commercial and business relationship.

Diversified farming

1. Farm resources are diverted to or income is derived equally from a number of enterprises.
2. E.g. a) cane-cum-cotton-cum-rice. b) poultry-cum-dairy-cum-fish farming.
3. No single enterprise is dominant
4. It implies 5 or 6 or even more i.e. relatively large number of crops.
5. It is drawn more extensively into subsistence farming.

B. Mixed farming

It is a combination of many enterprises which are of independent nature and result, to a certain extent in diversification. Mixed farming generally means arable farming mixed with livestock raising. In mixed farming more than 50% of its gross income must be contributed by arable farming and 10-49% by the livestock farming.

Advantages of mixed farming

1. Crops provide fodder livestock which give FYM for crops ultimately to enhance productivity of each other.
2. Provides draft animals to the farm.
3. Better utilization of labor
4. Greater chances of intensive cultivation and higher profit per unit resource.

C. Dry and Irrigated farming

- | | |
|--|---|
| 1. It refers to an area which receives less than 50cm of annual rainfall. Areas with 75cm rainfall but high temperature and greater wind velocity are also considered under dry farming. | 1. It refers to the harnessing of artificial resources of water for crop raising in areas where rainfall is insufficient or not well distributed over a period of time. |
| 2. Less productive. | 2. More productive. |
| 3. Crops/varieties with low water requirements. | 3. Crops/varieties with high water requirements |
| 4. Less income | 4. More income |
| 5. More emphasis on soil moisture conservation | 5. Less emphasis on soil moisture conservation. |

D. Ranching

It means practice of grazing animals, specially sheep and goat, and is always on public land. Sometimes, such land is utilized for raising dairy stock. It is then know as Dairy ranching. Common in Australia and not in Pakistan.

Systems of farming

- A. Peasant farming
- B. State farming
- C. Capitalistic farming or Estate farming
- D. Collective farming
- E. Cooperative farming

A. Peasant farming

An individual cultivator is the owner, manager and organizer of the farm.

Advantage:

- Freedom of decision
- Personal interest in improvement of the farm

Disadvantages:

- Meager resources
- Division of land

B. State farming

Farm is managed by government.

Advantages:

- No dearth of resources

Disadvantages:

- Farms are not paying
- Delay in decision making
- Lack of at spot decision
- Sometimes, resources are not available in time

C. Capitalistic farming or Estate farming

- Ownership under rich persons or capitalistic.
- Size of farm is large and management is efficient.
- Farms are owned by individuals or group of individuals.
- Resources are in plenty, latest technical know-how.
- Sugar mills farms, rubber, coffee and tea plantation are examples.
- Management is paid and decisions are made by board of directors.
- Common in USA, Australia, Canada etc.

Advantages:

- Good supervision
- Strong organizational set up
- Sufficient resources
- Latest technical know-how
- Efficient management

Disadvantages:

- Socio-economic imbalance

D. Collective farming

It implies collective management of land wherein large number of families or villagers living in the same village pool their resources e.g. land, livestock, machinery etc.

- General body with highest powers is formed.
- Resources then don't belong to an individual or family.
- The one who wants to dissociate is given his share in form of money and not the resource.
- Large scale and mechanized farming.

Disadvantage: Individual has no voice.

E. Cooperative farming

- A cooperative farming society is one in which members pool their land voluntarily and manage it jointly under a democratic constitution.
- Member surrender their individual rights and capacity to take major decisions in respect of farming enterprise(s) to a common body constituted by them and accept its decision.

Cooperative farming society

A voluntary association of cultivators for better utilization of resources including manpower and land pooled and in which majority of the members participate in farm operations with the view to increase agricultural production, employment and income.

Types of cooperative farming

- i. Cooperative better farming:
farmers with small holdings and limited resources join to form a society for some specific purpose e.g. use of heavy machinery, sale of products etc.
- ii. Cooperative joint farming:
It means pooling of land and other resources. The members form a general body which formulates the schemes and does the duties of administration. A member receives daily wages for his work and profit in the end is distributed according to his share in land.

iii. Cooperative tenant farming:

In this system land belongs to the society. Tenants have no right on land but they carry on their business independently. A tenant (member) gets all the income after deducting the rent of land and charges for other services provided by the society.

iv. Cooperative collective farming:

members don't have rights on land and they can't take farming decisions independently but are guided by a general body which is supreme. Profit is distributed according to the labor and capital invested by the members.

Ownership and operation in different cooperative farming societies

Type of farming	Ownership	Operation
Cooperative better farming	Individual	Individual
Cooperative joint farming	Individual	Collective or joint
Cooperative tenant farming	Collective	Individual
Cooperative collective farming	Collective	Collective

Factors affecting the system of farming

- A. Size of land holdings
- B. Volume of business
- C. Availability of resources
- D. Capability of using the resources properly
- E. Availability of facilities