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Dr. Ahmad Fahim has completed his B.V.Sc & A.H. in the year 2009 from Govind Ballabh Pant University of Agriculture and Technology, Pantnagr, Uttarakhand, India. He got admission in a master's degree program in the subject of Livestock Production Management at Indian Council of Agricultural Research-Indian Veterinary Research Institute, Bareilly, Uttar Pradesh, India after securing 29th rank in All India ICAR-JRF examination. He has completed his Masters degree in the year 2011 and carried out research work on "Phenotypic Characterization of Rohilkhand Local Goats". He has completed his Ph.D. degree in the year 2016 from the ICAR-National Dairy Research Institute, Karnal. His PhD dissertation work was on "Parlour Performance, Udder Health and Milk Quality of Crossbred Dairy Cows in Automated Herringbone Milking Parlour". He was selected as Assistant Professor in the Department of Livestock Production Management, College of Veterinary and Animal Science, Sardar Vallhbhai, Patel University of Agriculture & Technology, Meerut, Uttar Pradesh, India in the year 2014. He has in his credit more than 40 research papers, 3 books and other publications. He is a member of Indian society of Animal Production Management and actively participates in conferences/ symposiums/ workshops held during the year. He is on panel of experts for framing question papers for various Universities.

Description

This lecture note was prepared and delivered to B.V.Sc.& A.H. students studying the course of Livestock Production Management. The course is offered during the first professional of the academic year at College of Veterinary & Animal Sciences, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, Uttar Pradesh, India. This lecture provides an over view of system of livestock production, especially in tropical and sub-tropical countries. I had tried my level best to extract the contents simplify the facts in easy to memories in very short time. Further constructive suggestions to improve this lecture note are always welcome its users on my email and WhatsApp.

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Livestock Production System

System:

- ✓ An assembly of all small but important parts that are again constituted by single or more inputs

Production system:

- ✓ Is form of producing with the help of given resource situation
- ✓ Evolved as a result of agro-ecological practices
- ✓ Relative availability of land, labour and capital and demand for product

Livestock production system:

- ✓ Form of raising livestock
- ✓ Evolved as holistic requirement to input situation
- ✓ An approach to produce livestock food and food product
- ✓ System of rearing various livestock species.
- ✓ Subset of the farming system

Classification: Basis

1. Level/ intensity of production

a. Low input- low output (Grazing based)

This system reduces the usage of production inputs, or off-farm resources, while optimizing the management and utilization of internal production inputs and resources, which could practically reduce the cost of production. Grassland systems, organic farming, integrated farming, large-scale mixed farming, silvi-pastoralism, and family holdings are all included in LIFS.

b. High input- high output (Intensive production)

Intensive production system involves maximizing agricultural output by using high inputs of labor, capital, and technology on a relatively small land area. This approach aims to achieve high yields and efficiency, often utilizing advanced techniques, machinery, and synthetic inputs.

2. Farming system

a. Specialized

A farm is considered to be specialised if one activity accounts for 50% or more of the total revenue generated by the production. Increasing revenue is the primary

goal of specialised farming. Particular soil types, climates, topographies, and other physical parameters, such market types, are ideal for specialised farming. Examples: paddy farming, sugarcane farming, tobacco farming, poultry farmers sheep farming etc.

b. Diversified

Diversified farming involves multiple production activities or revenue sources, but none of them accounts for more than half of the total revenue. It is also termed as general farming. The advantages of diversified farming is that there is better use of land, labour, and capital. Diversified farming results in better land use efficiency through the adoption of crop rotations, round the year farm activities, lower chances of crop failure and product. As cattle, poultry, fowl, and other animals are raised alongside crop production, the farm's byproducts can be used appropriately. A consistent and expeditious return is acquired from multiple businesses.

c. Mixed

In developing tropical countries, the farming system is mainly mixed crop-cattle systems which cultivate both crops and livestock on the same farm and are the mainstay of smallholder agriculture. In order to serve and satisfy the needs of the farmer in as many ways as possible, a "mixed farming" system combines agricultural production with cattle, poultry, fisheries, beekeeping, and other enterprises on a single farm. The income generated from livestock component is 10-15 % of the total income derived.

3. Category of land holding

- a. Landless
- b. Marginal
- c. Small
- d. Semi-medium
- e. Medium
- f. Large

S.No.	Category	Size of farm
1	Landless	--
2	Marginal	Less than 1 hectare
3	Small	1-2 hectare
4	Semi-medium	2-4 hectare
5	Medium	4-10 hectare

6	Large	More than 10 hectare
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4. Species combination

a. Single

Rearing of single species of livestock.

b. Multiple

Multiple species are reared under mixed farming or integrated farming model.

5. Mobility

a. Sedentary

A method of agriculture in which the same land is farmed every year is known as sedentary cultivation. Agricultural activity is carried on in one place. It is the most primitive form of cultivation. Due to sedentary cultivation, the soil becomes less nutrient-rich.

b. Mobile

Transhumance is a type of pastoralism or nomadism, a seasonal movement of livestock between fixed summer and winter pastures. In montane regions (vertical transhumance), it implies movement between higher pastures in summer and lower valleys in winter.

6. Sustainability

a. Conventional

Conventional farming requires a substantial input of energy and chemicals in order to yield the maximum number of crops. As per USDA, this method typically destroys biodiversity, deteriorates soil quality, and alters the natural environment. The development of conventional agriculture was intended to increase farming productivity, but the environment suffers greatly in the process.

b. Organic

Organic farming, also known as ecological farming or biological farming, is an agricultural system that uses fertilizers of organic origin such as compost manure, green manure, and bone meal and places emphasis on techniques such as crop rotation and companion planting.

7. Type of irrigation

a. Rainfed

Rainfed agriculture is complex, highly diverse and risk prone. It is characterized by low levels of productivity and input usage coupled with vagaries of monsoon emanating from climate change; resulting in wide variation and instability in crop yields.

b. Irrigated

Irrigated agricultural area refers to area equipped to provide water (via artificial means of irrigation such as by diverting streams, flooding, or spraying) to the crops.