

Lecture Series 2. Frontier Integrated Dairy Farming Systems

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Agenda

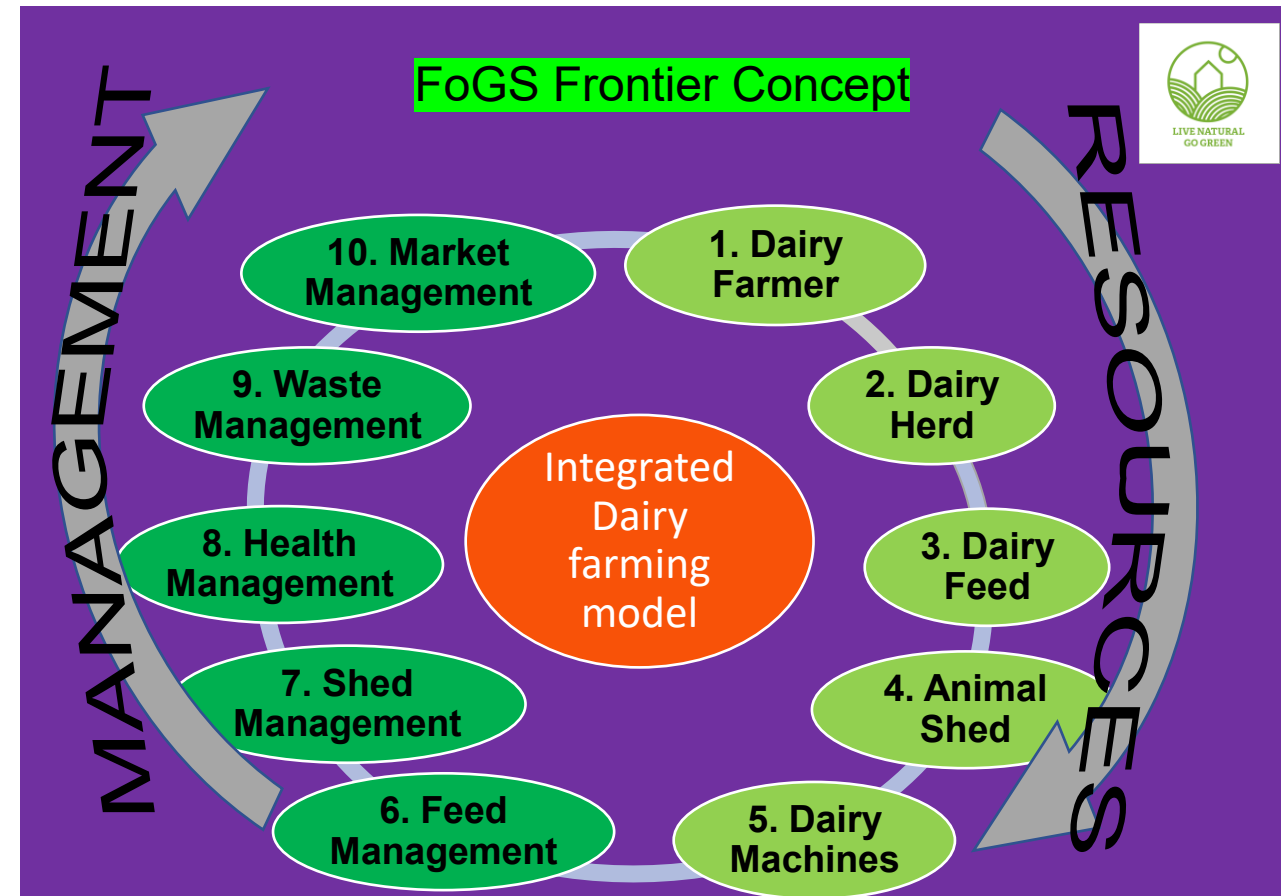
- Introduction
- The Integrated Dairy Farm- Frontier Concept
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- Status Dairy Farmer India
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Introduction

- Integrated Dairy Farms involve the whole dairy supply chain from production to consumption.
- This is in line with present needs to shorten the supply chain for efficiency, food safety and consumer needs.
- The FoGS Global Network has developed the Frontier Concept of Integrated Farm Development.
- This concept will enable to ensure the development of a sustainable future food system capturing the interlinkages between food, health and livelihoods.
- The presentation covers the component – Dairy farmer and the farming systems that define his resources and its management.

The Integrated Dairy Farm- Frontier Concept

- The FoGS Frontier Concept of an Integrated Dairy Farm is designed to conceptualise, develop and sustain future dairy farms.
- It has 10 interlinked pivotal dimensions that are core to ensure sustainability.
- The first 5 dimensions refers to the resources access to the farming system
- The next 5 dimensions are the management of the resources to ensure their sustainability.



Dairy Farming Systems and the Farmer-1

- This refers to the dimension 1 of the integrated farm concept.
- Farming systems can be classified on the basis of the following dimensions:
 - Location
 - Type of land utilization
 - Intensity of input use and goal
 - Resource ownership and structure
 - Type of farming activities and operations
- Farmer, normally qualifies to one or a mix of these classification criteria.
- The social, economic, political, environmental and demographic features define the farming system adoption by a dairy farmer.
- Possibilities to optimize farming systems towards sustainability depends on the conditions existing with the farmer environment on technology, policy, environmental, social and cultural backdrop.

Dairy Farming Systems and the Farmer-2

- **Dairy Farming Systems by Location**

Farming Systems in India are strategically utilized, according to the locations where they are most suitable.

Regions throughout India differ in types of farming they use; some are based on horticulture, ley farming, agroforestry, and many more.

Due to India's geographical location, certain parts experience different climates, thus affecting each region's agricultural productivity differently. India is very dependent on its monsoon cycle for large crop yields.

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Dairy Farming Systems and the Farmer-3

- **Dairy Farming Systems by Land Utilization**

Normally of 3 types:

Pastoral farming : Grazing systems

Arable farming : Drylot systems with arable, feed, fodder crops

Mixed farming : Arable and Livestock systems (Drylot and/or pasture)

Land use based systems are largely defined by soil, climatic, environmental conditions, market demand, demographic features, social, economic and political considerations

Dairy Farming Systems and the Farmer-4

- **Dairy Farming Systems by Input Use Intensity and goal**

Normally of 3 types:

Subsistence farming : Farm production to meet own consumption needs

Extensive farming : Low input low output systems with large area coverage

Intensive farming : High input high output Industrial farming with high mechanization and productivity for commercial use

Normally, as economy progresses, food systems move from subsistence and extensive to intensive.

Dairy Farming Systems and the Farmer-5

- **Dairy Farming Systems by Resource Ownership and Structure**

Normally of 3 types:

Household farms: Farm production to meet own consumption needs

Family farms: Farms run by family as primary income source

Business farms: Corporate farms with investment goals and has a professional legal framework and organization structure

Cooperatives / Contract farming: Based on an agreement between buyer and producers. Variant is nucleus estate model where government is also involved as estate owner.

Normally, as economy progresses, food systems move from household farms to family / business / contract farming.

Dairy Farming Systems and the Farmer-6

- **Dairy Farming Systems by farming activities and operations**

Normally specialized or niche farming developed as outliers or specific need based:

Organic farming: Farming using organic inputs as opposed to commercial input use by chemicals

Terrace farming: Way of farming in steep slopes

Vertical farming: Growing crops in vertically stacked layers

Peri-urban farming: Mostly drylot farms around urban marketing centres

Home gardens: Intensively cultivated agroforestry systems with perennial herbs and livestock.

Integrated farming: Farming with the goal of recycling of nutrients for optimisation

Agroforests farming: Farming of forest trees, crops and livestock

Tourism farming, aqua culture, vegetable gardens, etc.

Though seen in low numbers, increasing demands of such produce is increasing its popularity with farming as a leisure, hobby or for healthy disruptors.

Status Dairy Farmer in India

- Dairy Farming India is more of a way of living very much interlinked with the common farmer resources, food and the environment.
- The farming systems that significantly contribute to the agriculture of India are subsistence farming, mixed farming, contract farming.
- Herd size is largely small with 1-2 in-milk animals and mixed farming system
- Significant share of milk is for home consumption and unorganised markets about more than 70%
- Dairy provides cash income regularly and acts as an insurance against urgent needs
- Dairying is more equitable in distribution than crop farming in terms of animal ownership vs land
- Dairy markets are highly fragmented and depends on the processor agencies holding lead in the markets for providing assured prices and services

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Challenges for Indian dairy farm

- Small and marginal holdings
- Huge mismatch in demand and supply of feed and fodder
- Low yield and lack of adequate breedable sires
- Lack of resources
- Infrastructure not adequate
- High share of unorganized sector
- Quality awareness and markets not integrated
- Incidence of diseases and health of animals

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Opportunities for Indian dairy farm

- Cooperatives have a greater role to play to ensure milk supply growth
- Great demand for organic milk, A2 milk in a disruptive market environment
- Contract farming with linkage of stakeholders in dairy value chain could be winner
- Large scope to explore adoption of technologies for sustainable development by investor farmers and communities
- Very potential climatic conditions and resources to develop next generation dairies for the demanding customers
- Good potential to explore export opportunities through proper policies

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Summary

- The 10 point FoGS Frontier Concept of Integrated Dairy Farm Development could be the basis for sustainable dairy development
- Dairy farming systems can be classified to various types based on five modes of looking at ways of farming for future development strategies
- Indian dairy farming is predominantly smallholder subsistence farming
- There is great potential to explore contract farming avenues as there is growing market demand and future potential resources for exploring supply growth
- The future dairy farmer in India is bright provided suitable policy framework supports its development to be globally competitive and locally efficient

Contact information

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