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IMPORTANCE AND APPLICATION OF FARMING SYSTEMS IN HORTICULTURE

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Abstract:

Farming systems are complex matrix of soil, plants, animals implement, power, labor and capital which is controlled by farm families and influenced by varying degrees of political, economic, institutional and social forces. In India having about 80 % are marginal and small farmers and to fulfill the basic needs like food (cereal, pulses, oilseeds, milk, fruit, honey, meat, etc.), feed, fodder and fiber warrant an attention about agricultural farming. Lot of efforts have been made aiming at increasing the productivity of farming system like crop, dairy, livestock, poultry, piggery, goat keeping, duckery, apiculture, sericulture, horticulture, mushroom cultivation etc. at the ICAR and State Universities level. Advocated benefits of productivity improvement by 30-50% depending upon the number and kind of enterprises and their management are primary research investigations. Farming systems are ways to better productivity, profitability and sustainable production systems that would help to solve the fuel, feed and energy crisis, create more employment avenues, ensure regular income and encourage agricultural oriented industry.

Keywords: Agricultural farming, Encourage agricultural oriented production, Farming systems, Sustainable production.

Introduction:

The Sustainable agriculture is described as a major three aspects with economic viability, environmental soundness, and social acceptability if one of them aspect is weak, the farming system is likely to be unstable. The fruit production has addressed sustainability challenges like post-harvest quality, changing consumer preference and pesticide application in which integrated fruit production and organic fruit production with sustainability goals. Study of farming systems indicate improved sustainability relative to ―conventional‖ systems in many cases. And these systems are not static. Horticulture has emerged as the

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accelerating the growth of economy and also role in the country's nutritional security, poverty alleviation and employment generation programs are becoming increasingly important. Farming systems offers to the farmers for crop diversification and also provides ample scope for sustaining large number of Agroindustry's which generate huge employment opportunities.

Objectives of farming system:

1. To increase production, productivity and increase profitability per unit area from crop
2. To increase potentiality
3. To increase the environmental safety and Balanced food
4. Good income flow round the year
5. Solving timber, fodder and fuel crises
6. Employment generation and scope for establishment of agro- industries
7. Enhancement in input use efficiency

Components of Farming system:

A. Crop production:

- **Elements of crop production:**
  - **a. Environment:** 1. Climate 2. Soil condition 3. Social factors
  - **b. Cropping:** 1. Principles 2. Pattern 3. Crop 4. Economics
  - **c. Farm resources:** 1. Land 2. Power 3. capital 4. National food need and productivity
  - **d. Technology:** 1. Production 2. Managerial 3. Technology transfer

Principles of cropping system:

- Concentration of substances are extracted From the Earth 's crust.
- Concentrations of substances produced by society,
- Degradation by physical means; and in that society,
- People are not subject to conditions that systematically undermine their capacity to meet their needs.

Types of Farming system:

A. Organic farming:

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Organic farming is such type of farming system in which primarily aims to keep the soil alive and in good health by the cultivating the land and raising crops which are only organic in nature to release nutrients to crops such as the use of

- Organic wastes (crop, animal and farm wastes, aquatic wastes)
- Other biological materials, mostly produced in situ, along with beneficial microbes (bio-fertilizer). It is also termed as organic agriculture. In the Indian context it is also termed as _Javik Kheti or Jaivik Krishi'.

1.	Total organic area	> 1,08,650 ha
2.	Total projects	2099
3.	No of Grower groups	919
4.	Total certified production	17.11 lakh t
5.	Number of processors	427
6.	Total certified production	58,408 t
7.	Total organic farmers	548,045
8.	Value of export in Rs.	5254.9 million INR

B. Integrated farming system:

Integrated farming refers to agricultural systems that integrate livestock and crop production which is commonly and broadly used word to explain a more integrated approach to farming as compared to existing monoculture approaches. It is also has revolutionized conventional farming of horticulture, livestock, aquaculture, agro-industry and allied activities like, crop-fish integration, livestock-fish integration, crop-fish-livestock integration or combinations of crop, livestock, fish and other enterprises.

Advantages of integrated farming system:

- Animals play key and multiple roles in the functioning of the farm because they provide livestock products (meat, milk, eggs, wool, and hides) and also converted into prompt cash in times of need.
- The waste products are major components of integrated farming which serve as a resource for the other energy circulation and help in environmental protection.

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- The mixed farming system, which exists in many forms and represents the largest category of livestock systems in the world in terms of animal numbers, productivity and the number of people it serves.
- Integration of allied activities will result in the availability of nutritious food enriched with protein, carbohydrate, fat, minerals and vitamins.

C. Rainfed farming system:

- Rainfed Agriculture plays an important role in the economy and food security of Indiafor improving productivity profitability and thereby removing hunger and poverty.
- However, climate change, aberrant behavior of monsoon rainfall, soil degradation with multiple nutrient and water deficiencies, declining the ground water table and poor resource base of the farmers are principal constraints for low and unstable yields in rainfed areas.
- Horticulture crops fruit and vegetable trees and Arable crops like cereals, oilseeds, pulses are to maintain nutritional security of the farm family besides earning some income to meet felt needs/food requirement of the farm family.
- Fodder crops on degraded lands and field boundaries to meet feed needs of the cattle and well-developed farmstead area covering small and large ruminants (diary, sheep/goat, poultry, piggery, apiary) to provide year-round flow of small income and for higher employment opportunities.
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D. Indigenous farming system:

1. **Shifting cultivation:**Shifting cultivation mainly found in north eastern areas and traditionally the fallow period is 10-20 years but now it is reduced in many areas due to the increasing population pressure, the fallow period is drastically reduced and system has degenerated causing serious soil erosion depleting soil fertility resulting to low productivity.
2. **Taungya cultivation:** This system is like an organized a scientifically managed shifting cultivation and this word is reported to have originated in Myanmar. It involves cultivation of crops in forests or forest trees in crop field and was introduced to Chittagong and Bengal areas in colonial India in 1890.

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3. **Precision farming:**

Precision Farming is an information Technology Based, that Identifies, Procures, Analyzes & Manages, Natural Variability Amongst the Fields & Optimizes Productivity, Profitability, Sustainability, Which Protects the Land Resources. Objectives of precision farming system

- Empowerment of farmers and farmers forum.
- Promoting hi-tech horticulture in built with precision elements.
- Training the farmers in the latest state of art cultivation of technologies.
- Promotion of market led horticulture.
- It exploits the 100%genetic potential.

4. **Balance farming:**

In this system farm is carefully balanced system and that encompasses the elements of animal, feed, water, the animal environment and the farmer. Regardless of the production system, all these elements need to be in balance if a farm is to maximize output and profit. To make a profit out of farming is harder to do now than for some time, and the prospects are not too bright for next year. Those farmers who do the best job of farm management are the ones that are most likely to make a profit.

Conclusion:

Integrated horticulture production and organic production are developing sustainable horticulture. Use of organic manure, balanced chemical fertilizers, adopting integrated and precision farming system with balanced biological system, plays an important role of sustainable horticulture and also improves the standard of living through maximizing the total net return and providing more employment, recycling of crop residues, optimizing resource use, minimizing risks and keeping harmony with the environment by comprising a combination of carefully selected components/ enterprises under a given set of agro-climatic condition.