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A Dynamic Approach of Integrated Farming System

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Integrated Farming Systems (IFS), and ways of thinking about them, evolved in space and time. Rapid evolution took place in the last two decades when crop and livestock yields increased, together with concerns about their socio-economic and biophysical tradeoffs. The application of farming systems research (FSR) to agricultural development was a response to problems arising from a predominantly reductionist approach to research and a cornucopian view of external inputs. Modern technologies were either not welcome or caused unexpected negative trade-offs. This paper reviews definitions and forms of FSR and the need for evolution in thinking about agricultural development.

Introduction

Integrated Farming (IF) is a comprehensive farm management system with the goal of promoting more sustainable agriculture. The integrated farming system involves organizing various agricultural activities into a cohesive unit that effectively utilizes solar energy while preserving land productivity, maintaining environmental quality, and sustaining desirable levels of biological diversity and ecological stability. The system comprises a range of practices and processes organized into a functional entity. It is based on the principle that nothing goes to waste and that what is commonly perceived as waste can actually be utilized as valuable resources for other products. The IFS is specifically defined as a biologically integrated farming system that incorporates mechanisms for regulating natural resources into farming practices, aiming to achieve the following objectives: 1) maximizing the substitution of off-farm inputs, 2) ensuring sustainable production of high-quality food and other products through ecologically sound technologies, 3) sustaining farm income, and 4) mitigating the sources of environmental pollution associated with agriculture while preserving the multifunctional role of agriculture.

Advantages of IFS

- ✔ Profitability
- ✔ Potentiality or Sustainability
- ✔ Balanced food
- ✔ Environmental safety
- ✔ Recycling
- ✔ Income rounds the year

- ✔ Adoption of new technology
- ✔ Saving energy
- ✔ Meeting fodder crisis
- ✔ Solving fuel and Timber crisis
- ✔ Employment generation

COMPONENTS OF INTEGRATED FARMING SYSTEM			
1)	Agriculture	2)	Kitchen garden
3)	Fish farming	4)	Poultry
5)	Horticulture	6)	Fodder cultivation
7)	Duck rearing	8)	Goat rearing
9)	Forestry	10)	Nursery
11)	Pigeon rearing	12)	Sheep rearing
13)	Mushroom cultivation	14)	Seed production
15)	Sericulture	16)	Piggery
17)	Azolla rearing	18)	Vermiculture
19)	Dairy	20)	Bio-gas

ELEMENTS OF INTEGRATED FARMING SYSTEM	
1. Watershed	2. Bio-gas
3. Farm ponds	4. Solar energy
5. Bio-pesticides	6. Compost making
7. Bio-fertilizers	8. Green manuring
9. Plant products as pesticides	10. Rain water harvesting

Issues in Farming Systems Research and Development

In order to implement integrated farming system activities using modern methods, the issues which need greater emphasis for agriculture development on sustainable basis in rural areas are:

- Implementation in relation to the time required for obtaining results, organizational flexibility, staffing requirements, FSR costs and Governmental support. At times, researchers conduct trials to screen locally available technologies for their applicability to a specific farmer condition.
- At an early activity of FSR programme there is need to develop broad based manpower training to meet the requirements of IFS in rural areas.
- Characterization of existing farming systems and identification of main and complementary location-specific, need based enterprises for proper linkage between on farm and on station research and extension activities.
- Formation of a dedicated multi-disciplinary core team under the dynamic broad based scientific leadership, by providing suitable rewards and encouragements to start IFS activities in some selected fragile and problematic environments in rural areas.
- The impact and changes related to expanding market infrastructure and activity in rural areas, as well as broader implications of reduction in barriers to trade within and in between countries and future pattern of demand for agricultural outputs.
- Development of dynamic farming systems required a conductive enabling policy and environment. Structural adjustments have to be reduced, leaving in urban bias in policies. The role and impact of the state and related institutions and functioning of farming systems, expressed principally - through policies/programmes, institution, services, and public investment in rural space.

- The recent evaluation of farming systems based upon increasing specialization requires extra knowledge on the part of farm operators. Farmers have to understand the nature of demand that they are responding to in terms of its implications for varieties, timing, packing and permitted chemicals, etc. and increasingly to modify their products and activities as market demand changes. The relevance of non-material capital to the farming systems, in terms of knowledge information, and ability to assess and utilize such knowledge is required.

Constraints

- ❖ Lack of awareness about sustainable farming system.
- ❖ Unavailability of farming system models.
- ❖ Intensive recycling can cause nutrient losses.
- ❖ Farmers prefer use of chemical fertilizer instead of manure because it acts faster and easy to apply.
- ❖ Inadequate institutional support.
- ❖ Lack of timely availability of inputs.
- ❖ Lack of knowledge among farming community specially for rural youth and women.
- ❖ Resource investments are required to improve intake and digestibility of crop residues.

Conclusion

- ➢ Although information on concerning production data does not exist, it appears with proper management and technical skills.
- ➢ This farming become a profitable and viable industry in a country like ours where economy is largely based on agriculture.
- ➢ Investigation a different aspects of waste utilization have to be graded up.
- ➢ Suitable technology has to be developed for treatment of wastes and all-round effective utilization.

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