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INTEGRATED FARMING SYSTEM (IFS): A NEW ENTRANT FOR ENTREPRENEURS

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ABSTRACT

India has immersed untapped business opportunities in its agricultural sector. Even though India is backed in its agri-business due to unorganized ineffective farming system and unutilized resource. Government has introduced many schemes to upgrade the farming community and increase the income but due to the fragmented landholding and conventional practices, farm mechanization and new technologies are not able to implement. In today' India farming context a system or approach should suitable to the fragment holding, cut down the input cost and there should provision for the reuse of the waste as the input for the another to yield better productivity and output.

The marginal and small farmers constitute 78.2 per cent of the farming community in India. The unique Indian situation of small fragmented holdings and lack of capital investments is not suitable for single commodity farming being practiced in developed countries. Therefore, the integrated farming system appears to be a viable solution to the Indian agriculture for increasing productivity and income of the small and marginal farmers with constrained resources.

The concept of integrated farming can be adopted in any situational basis as it does not involve any particular pattern and it can be formulated as the facilities available and land type. Integrated farming system adoption can be better business opportunities for graduates as by better planning and provides employment for the rural population.it will be better enterprise option for women entrepreneur as it involve low cost and yield high income.

KEYWORDS

Farming, Business Opportunities, Mechanization, Fragmentation etc.

INTRODUCTION

Integrated Farming System (IFS): A New Entrant for Entrepreneurs

India is a global agricultural powerhouse. It is the world's largest producer of milk, pulses, and spices, and has the world's largest cattle herd (buffaloes), as well as the largest area under wheat, rice and cotton. It is the second largest producer of rice, wheat, cotton, sugarcane, farmed fish, sheep & goat meat, fruit, vegetables and tea. In recent years, food security, livelihood security, water security as well as natural resources conservation and environment protection have emerged as major issues worldwide. Developing countries are struggling to deal with these issues and have to contend with the dual burden of climate change and globalization.

Decision makers have accepted it across the globe that sustainable development is the only way to promote rational utilization of resources and environmental protection without hampering economic growth and serves as the profitable zone. Different countries around the world are promoting sustainable development through sustainable agricultural practices, which will help them in addressing socio-economic as well as environmental issues simultaneously. An integrated farming system allows us to use some of the advantages of nature, and ecology, as opposed to relying on chemistry to solve all our production issues.

Within the broad concept of sustainable agriculture "Integrated Farming Systems" hold special position as in this system nothing is wasted, the byproduct of one system becomes the input for other. Integrated farming is an integrated approach to farming as compared to existing monoculture approaches. It refers to agricultural systems that integrate livestock and crop production. Moreover, the system help small entrepreneur who have very small land holding for crop production and a few heads of livestock to diversify farm production, increase cash income, improve quality and quantity of food produced and exploitation of unutilized resources.

INTEGRATED FARMING SYSTEM

Integrated farming or integrated production is a commonly and broadly used word to explain a more integrated approach to farming as compared to existing monoculture approaches. It refers to agricultural systems that integrate livestock and crop production and may sometimes be known as Integrated Bio systems.

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At present, farming and business are viewed as two individual units, which do not go hand in hand, and the farmers concentrate mainly on crop production, which is subjected to a high degree of uncertainty in income and employment to the farmers. In this contest, it is imperative to evolve suitable strategy for augmenting the income of a farm and to meet the challenges in agricultural practices and make it as business zone. Integrated farming system has revolutionized conventional farming of livestock, aquaculture, horticulture, agro-industry and allied activities. It could be crop-fish integration, livestock-fish integration, crop-fish-livestock integration or combinations of crop, livestock, fish and other enterprises.

WHY IT IS NEEDED?

To make strong link between the crop production with its allied activities and to be better recycled for productive purposes in the integrated system to change in the farming techniques for maximum production in the cropping pattern and make better utilization of resources to make the farming as the business enterprise which gives steady profit and employment opportunity.

EVOLUTION OF IFS

Between 1996 and 2002, MS Swaminathan Research Foundation (MSSRF) had been carrying out adaptive participatory research and demonstration on Integrated Farming System at Keelamanakkudi village, Parangipettai Block, Chidambaram Taluk with a major focus on demonstrating water use efficiency by incorporating intermediate components into the conventional paddy cultivation practice. This initiative was based on the premise that farmers would be able to mitigate issues relating to water constraints faced during the critical periods of crop growth by having water storage structures in their farms. It was also envisaged that incorporating multiple activities along with the farm ponds, based on IFS concepts would provide opportunities of enhanced livelihood options in the region.

COMPONENTS OF INTEGRATED FARMING SYSTEM

- Crops, livestock, birds and trees are the major components of any IFS.
- Crop may have subsystem like monocarp, mixed/intercrop, multi-tier crops of cereals, legumes (pulses), oilseeds, forage etc.
- Livestock components may be milch cow, goat, sheep, poultry, bees, fish, and piggery.
- Tree components may include timer, fuel, fodder and fruit trees.

INTEGRATED FARMING SYSTEM IN TAMILNADU

Tamil Nadu agriculture is the most overriding sector in the economy of the state. Around 70 percent of the state's population is involved in agricultural activities, as this is one of the major means of livelihood in Tamil Nadu. The major crops sown in Tamil Nadu are rice, jowar, ragi, bajra, maize, and pulses. Few other crops that are highly cultivated in the regions of Tamil Nadu are cotton, sugarcane, tea, coffee, and coconut. Tamil Nadu has also gained a commendable status is the horticultural sector in its agricultural department. The horticultural products of Tamil Nadu include cash crops and oil seed crops. Bananas and mangoes are cash crops while groundnuts, sesame, and sunflower are oil seed crops. Paddy is the leading crop in Tamil Nadu. Tamil Nadu agriculture possesses jatropha plant that has Bio-diesel policy, which gives away the wasteland of the state to the farmers for cropping. Tamil Nadu is also widely popular as the largest producer of agricultural products in India. It is imperative to focus attention overall farm approach by integrating various allied enterprises with cropping for better security, sustenance and productivity. Integration of various enterprises in a farm ensures recycling of residues, optimum resource use, and higher employment, minimization of risk and uncertainties and increased farm income. Integrated farming systems research in wet land; garden land and rain fed ecosystems have demonstrated the technical feasibility and economic viability through linking of different components as projected data.

Table-1: Net Return (Rs. ha-1)

Net return (Rs.. ha-1)			
Ecosystem	**Wet land**	**Garden land**	**Rain fed**
Farming system model	**Crop + Fish + Poultry + Mushroom**	**Crop + Milch cow+ Goat + Vermicompost**	**Crop +Goat + Agro forestry + Farm pond**
Integrated farming system	1,76,774	1,56,177	67,015
Conventional system	37,153	65,833	22,670
Increase over conventional system	1,39,621	90,344	44,345

Sources: Authors Compilation

The establishment of farming system will be able to help for the efficient allocation of available resources in the farm and reduce the use of external inputs. With the aid of the developed technology and the knowledge on the strength of farming system, it would be possible to disseminate the integrated farming system model for large-scale adoption.

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POSSIBLE ENTERPRISE LINKAGE IN IFS

Wetland Ecosystem

Crop + Fish + Poultry
Crop + Fish + Duck
Crop + Fish + Pigeon
Crop + Fish + Poultry/pigeon + mushroom
Crop + Fish +Mushroom
Crop + Fish + Pig + Mushroom
Crop + Fish + Goat

Dry Land Ecosystem

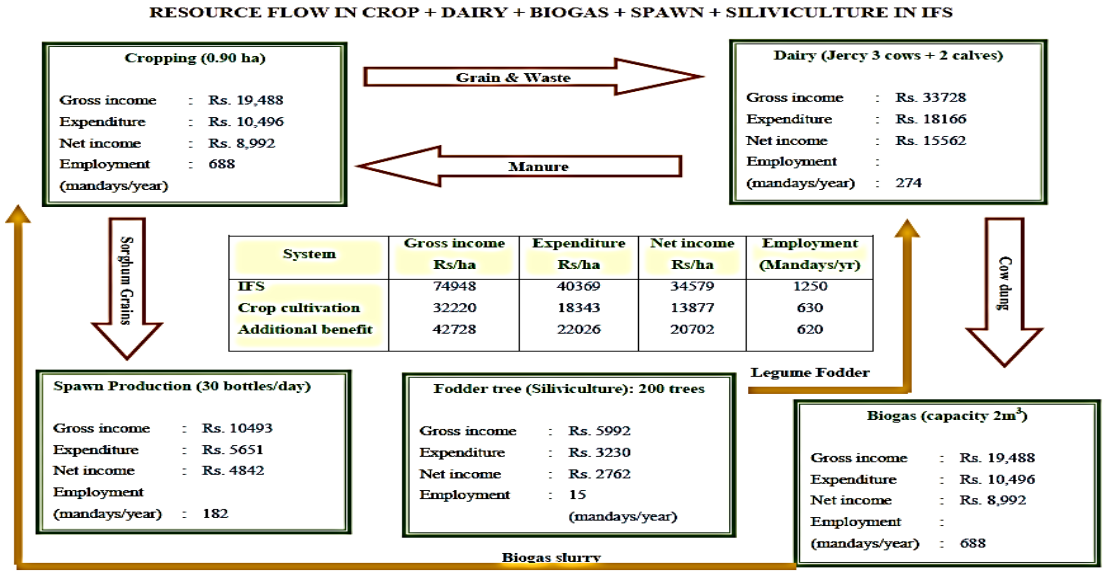
Crop + Goat
Crop + Goat + Agroforestry
Crop + Goat + Agroforestry + Horticulture
Crop + Goat + Agroforestry + Horticulture + Farm pond
Crop + Goat + Buffalo + Agroforestry + Farm pond
Crop + Goat + Pigeon + Buffalo + Agroforestry + Farm pond
Crop + Goat + Rabbit

Garden Land Ecosystem

Crop + Dairy + Biogas
Crop + Goat + Biogas + fishery
Crop + Dairy + Biogas + Sericulture
Crop + Dairy + Biogas + Fishery
Crop + Dairy + Biogas + Homestead garden + piggery
Crop + Dairy + Biogas + Homestead garden + Silviculture + Apiculture.
Crop + Dairy + Biogas + Spawn production + Mushroom
Crop + Dairy + Biogas + Spawn production + Mushroom + Silviculture.

The profit from fish culture is often increased 30-40 percent because of integration. Secondly, the overall income is increased by adding pig and / or poultry rising, grain and vegetable farming, etc., which supplement the income from fish farming. Thirdly, by producing grain, vegetables, fish and livestock products, the community becomes self-sufficient about food and this contributes to a high degree of self-reliance. Fourthly, the silt from the ponds, which is used to fertilize crops, increases the yield of crops at a lower cost and the need to buy chemical fertilizer is greatly reduced. Hence, Erode district is of garden land, the integrated farming system of feasible economical ecosystem resource flow, cost incurred and profit obtained is projected.

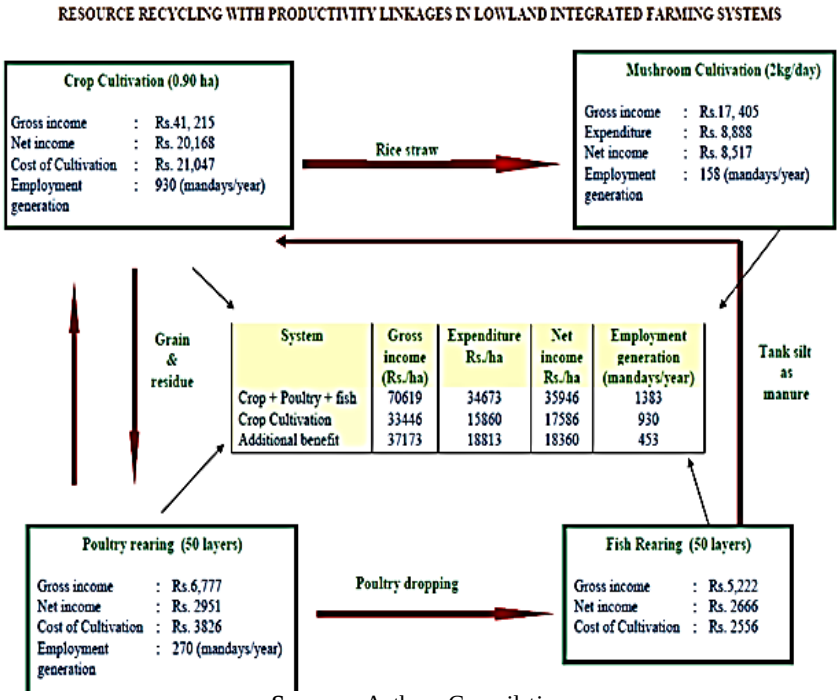
Figure-1



Sources: Authors Compilation

The grain and cropping waste (straw) can be used as the feed for the dairy farming and in other hand; the dairy waste (dung) can be used as the manure for the crop production and for biogas production. The power produced from the biogas plant will be sufficient for the farm to carry its production activities. The sorghum seeds produced from the crop production can be used as the raw material for spawn production and paddy straw can be used for the bedding of mushrooms. The biogas slurry can be used for crop production and the fodder can be used as the feed for the dairy animals. Than from the integrated farming system the individual unit will provides its maximum output as the resources are better utilized to their maximum and cut down the input cost.

Figure-2



Sources: Authors Compilation

The poultry drooping can be used as the manure for the crop cultivation and as feed for fish rearing.in integrated system the poultry shed can be constructed as hanging system in the pond so that the dropping can be used as feed by the fishes directly which reduces labour. In addition, the grains are used for feed for the poultry birds.

ADVANTAGES OF INTEGRATED FARMING SYSTEM

- Increasing agricultural productivity and profitability in a sustained manner by adopting appropriate IFS approach in watershed areas.
- Increased income and better investment business zone through proper residue recycling and allied components.
- Reduce the input cost by better utilization of resources and byproducts.
- To provide appropriate technical guidance through establishment of IFS models in farmers field for different ecosystem
- To empower farmers and farmwomen as entrepreneur through training and demonstration on component integration and efficient resource utilization.
- Inclusion of biogas & agro forestry in integrated farming system will solve the prognosticated energy crisis.
- Generation of regular employment opportunities.
- Integration of allied activities will result in the availability of nutritious food enriched with protein, carbohydrate, fat, minerals and vitamins, which increase the production and gives better quality products.
- Cultivation of fodder crops as intercropping and as border cropping will result in the availability of adequate nutritious fodder for animal components like milch cow, goat / sheep, pig and rabbit.
- Firewood and construction wood requirements could be met from the agroforestry system without affecting the natural forest.
- Sustainable soil fertility and productivity through organic waste recycling.
- Integrated farming will help in environmental protection through effective recycling of waste from animal activities like piggery, poultry and pigeon rearing.

- Regular cash flow throughout the year and have provision to obtain additional income through the products like egg, milk, mushroom, vegetables, honey and silkworm cocoons from the linked activities in integrated farming.

CONCLUSION

Integrated Farming is a common sense whole farm management approach that combines the ecological care of a diverse and healthy environment with the economic demands of agriculture to ensure a continuing supply of wholesome, affordable food. It is not prescriptive because it is a dynamic concept: it must have the flexibility to be relevant on any farm, in any country, and it must always be receptive to change and technological advances. Above all, Integrated Farming is a practical way forward for agriculture that will benefit all society, not just those who practice it. Integrated Farming makes a vital contribution to sustainable development by adding consideration of economic, ecological and social objectives to the essential business of agricultural food production.

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