

INTEGRATED FARMING SYSTEM (IFS)

¹Priya Saini and ²Shilpa Kaushal

¹UIAS, Chandigarh University, Mohali,

²Assistant Professor, UIAS, Chandigarh University

ABSTRACT

There are total 115 million operational holdings in the country and in that about 80 % peoples are marginal farmers. To fulfill the basic needs of households including food, feed, fodder, fiber, etc., they have to adopt Integrated Farming System (IFS). No doubt, majority of the farmers are doing farming since long years back but their main focus was on individual components but not in an integrated system. State Agricultural Universities and ICAR's, lot of efforts have been made aiming at increasing the productivity of different components of farming system like crop, piggery, dairy, livestock, goat keeping, duckery, apiculture, horticulture, mushroom cultivation, sericulture, poultry etc. individually but lack in integration. The integration should have made in such a way that product of one component should be the input for other enterprises with high degree of complimentary effects on each other. The research investigations advocated the benefits of productivity improvement by 30-50% depending upon the number and kind of enterprises and their management. This method is explained by keeping in mind that the work done so far is to realize better

productivity, profitability and sustainable production systems that would help to solve the feed, energy and fuel, create more employment avenues, gives regular income and encourage agricultural based industries.

KEYWORDS: Integrated Farming System, Employment, Farming skill, marginal farmers.

INTRODUCTION

Despite increasing rate of economic growth in India, the agriculture sector is still running behind. It has been recorded by the Economic survey of India 2008 that the growth rate of food grain production decelerated to 1.2% during 1990-2007, lower than the population growth of 1.9%. It has been marked that with increasing trends in population, the population will reach 1370 million by 2030 and to 1600 million by 2050. It is expected that we require 289 and 349 million tonnes of food grains to satisfy the hunger demand. But to fulfil these needs, more area should be converted into agricultural fields on the other hand it is somehow expected to decrease up to 20% in 2030.

It is clear that with increase in population more

area is getting converted in nonagricultural land so as to build shelter. Thus there is no scope for horizontal expansion of land for agriculture. Only vertical expansion can be done to change this scenario, integrating farming components requiring lesser space and time and ensuring reasonable returns to farm families.

IFS is defined as Integration of various agricultural enterprises viz., cropping, animal husbandry, fishery, forestry etc. have great potentialities in the agricultural economy. The IFS is found beneficial as it has various advantages including increased farm production and reduction in the environmental degradation and maintain sustainability. IFS is a unique system that helps to design enterprises in such way that they are beneficial to both inputs and the outputs therefore full utilization of the resource is the main motive behind it. These could be practiced in aquaculture, agro-forestry, agri-horticulture, apiculture and sericulture.

Being such a wide range of enterprises effective recycling of wastes and crop residues helps in additional source of income to farmer. IFS also works on other principles that include sustainable management as the impact of fertilizers to led to decrease in soils health IFS leads to increase in the fertility of soil and enrich it with nutrients along with recycling of resources.

GOALS

- To maximize the yield of all components to earn a supplement income.
- Rejuvenation system's productivity to achieve agro-ecological equilibrium.
- To give healthy and chemical free products and reduce the use of chemicals.
- Natural cropping system management should be done to avoid insect-pests and diseases.



ADVANTAGES

- Increase in production by using outputs from a single source or enterprises by recycling.
- Organic wastes are used as biogas thus leading to less pollution and waste material could be used as input for farmers to earn throughout the year by providing milk, honey, eggs, mushrooms etc.
- Addition of timber component in the farming system reduces pressure on forests.
- IFS provide entrepreneurs more knowledge to enhance more new technologies
- It provides huge opportunity for the growth of agriculture based industries.
- It also helps in increasing input use efficiency.

COMPONENT

Agriculture with Fish farming, Horticulture with Duck rearing, Forestry with Pigeon rearing, Apiary with Mushroom cultivation, Sericulture with Azolla farming, Dairy with Kitchen gardening, Poultry with Fodder production, Goat rearing with Nursery, Sheep rearing with Seed Production, Piggery with Vermiculture

ELEMENTS

Watershed, Farm ponds, Bio-pesticides, Bio-fertilizers, Plant products as pesticides, Bio-gas, Solar energy, Compost making (Vermi, Japanese, Improved etc.), Green manuring, Rain water harvesting.

PRESENT STATUS OF FARMING SYSTEM RESEARCH

From previous investigations we came to the conclusion that integration of agricultural enterprises i.e crop, livestock, fishery, forestry etc. have high potential towards the improvement in the agricultural economy. These enterprises also ensure the rational use of the resources and further helps in reducing the problem of unemployment. The farming system is governed by various aspects i.e. Physical environment, socio-economic conditions, political forces under various institutional and operational constraints and above all government favorable policies, which may keep the livelihood fully protected.

In traditional Chinese system, the animal houses were built over a pond so that animal waste fell directly into the pond and directly consume by fish as food. Not only for fish harvested but the pond water was used for irrigation in fields.

For marginal farmers, it starts small with ducks and chickens, then a few goats are kept for milk, then a milch cow, then a bullock for ploughing in co-operation with another one buffalo family, then 2 bullocks used to plough the fields of others. Farmers would add a milch buffalos to reach the highest point of achievement. The main concept is to start with small livestock and then the household will step by step get out of poverty. The poorest households kept only poultry and these households were most dependent on common property resources for their living for example use and sale of firewood from the forest. Survey on farming systems in the country revealed that milch animals, cows and buffaloes irrespective of breed and productivity is the first choice of the farmers as a major part of their farming system. By seeing economic value, vegetables and fruits followed by bee keeping, sericulture, mushroom and fish cultivation was the most enterprising

components of any of the farming systems in the country. Diversification of farming system by integration of enterprises in various farming situations enabled to enhance total production in terms of rice equivalent yield ranging from 9.2% in eastern Himalayan region to as high as 36.6% in Western-plain and Ghat region when compared to prevailing farming systems of the region. A number of success stories on IFS models including Sukhomajari Watershed of Chandigarh, Fakot Watershed in hilly areas of Uttarakhand, Jayanthi models for almost all the situations of TN, in punjab Darshan Singh Model for irrigated conditions, PDCSR model, for western Uttar Pradesh and many more in different parts of the country suggest that farmer's income can be increased by integration of enterprises in a farming system mode for sustainability and economic viability of small and marginal category of farmers.

CONCLUSION

In the nutshell, I conclude that IFS seems to be the answer to the problems of increasing food production, for increasing income and improving nutrition for all the small scale farmers. Around 95% of nutritional requirement of the system is self-sustained through resource recycling. As the number of enterprises are increased, the profit margin also increases but simultaneously coupled with increase in cost of production and employment generation though the profit increase was marginal. It is also assumed that profit margin varied with the ecosystem, management skill, and socio-economic conditions. On an average profit margin varied from Rs 15,000 to Rs 1,50,000/ha/annum. Concurrently it takes care of the food and nutritional security of the producing family. It further revealed that improvement in the net profit margin varying from 30-50%. This discloses that per hectare improvement in profitability varied from Rs 20,000 to 25,000 under irrigated condition, resource recycling improve fertility led to 5 to 10 q/ha crop yield increases and generate 50-75 mandays/ family/ year and reduce the cost of production by Rs.500-1,000/ha. Therefore, there is a need to promote the IFS concept under all agro-climatic conditions of the country so that they all improve their standard of living.

