

Integrated Farming System (IFS): An Holistic Approach for Sustainable Development in Indian

LR Meena*

ICAR-Indian Institute of Farming System Research, Modipuram, Meerut (Uttar Pradesh) India

***Corresponding Author:** LR Meena, ICAR-Indian Institute of Farming System Research, Modipuram, Meerut (Uttar Pradesh) India.

Received: April 04, 2024; **Published:** May 02, 2024

There are 146.45 million operational holdings in the country and about 86.45 % are marginal and small farmers. To fulfill the basic demands of households including food (cereals, pulses, oilseeds, milk, fruit, honey, meat, eggs, etc.), feed, fodder fuel and fibre attract the attention of integrated farming systems (IFS). Undoubtedly, the majority of the farmers have been doing farming for a long back but their main focus was on individual components, rather than on an integrated manner. A lot of efforts have been made by the ICAR and State Agricultural Universities (SAU) level, aiming at increasing the productivity of different components of the farming system like crop, dairy, livestock, poultry, piggery, goat keeping, duckery, apiculture, sericulture, horticulture, mushroom production, etc. but lacking in their integration by following farming system approaches. The allocation of farmland involving different enterprises viz. cereals (34%), pulses (19%), oilseed (4%), horticulture (15%), fishery (7%), livestock (4%), poultry (0.002%), boundary plantation (1%), kitchen garden (1%) and green fodder production (13%) under different cropping and farming systems throughout the year. Land allocation in integrated farming systems is very crucial for the efficient use of all available resources and to enhance input use efficiency. The integration was made in such a way that product of one component should be used as input for other enterprises with a high degree of complementary effects on each other. The fodder fed to cattle produces milk, dung, urine and litter producing farmyard manure and the energy used for crops and fish ponds. The silting of fish ponds is utilized as manure for crops, however, farmyard manure/ vermicompost and other farm-based wastes can substitute about 55.6% of recommended N, P, and K for crops, besides, improving the physical and biological properties of soil. The fish pond water can be used by gravity method when there is a breakdown in the electricity supply. Oilseed crops (mustard and sunflower) provide nectar for honey bees, edible oil for humans, and oilseed cakes for dairy animal's feed. Integrated nutrient management (INM) through green manuring enhances the productivity of cereals (rice and wheat) by 0.5 to 1.0 tons/ha. Processing and value addition of different farms shall increase income to the tune of 25 & 50% higher over direct selling of fruits and vegetables in the market, besides, generation of 626 man-days/family/year of employment from 1.5 ha of a model. The fish pond embankment (dike) comprising of 20-30% can be used for growing of annual cucurbits, cole crops, and fruit trees like guava, papaya, and lemon which have provided effective soil cover to check the soil and water erosions and also making the system more economically viable. The preliminary research investigations advocated the benefits of productivity improvement by 40-50% depending upon the number and kind of enterprises and their management. The information on farming systems in a systematic way is an effort to present in form of a technical bulletin. The methodology is explained keeping in mind the work done so far to realize better productivity, profitability, and sustainability of production systems that would help to solve the problem of food, fuel, feed, and energy crisis, creating more employment avenues, ensuring regular income to encourage agriculture-oriented industries which are purely dependent on agriculture and allied sectors. Backyard poultry and nutritional kitchen gardening have been found a suitable IFS component for nutritional security as well as income generation. Demonstration of poultry component produced a total of 68 eggs per farm family per month. While nutritional kitchen gardening provided 80% of the family's requirement for fresh vegetables. Adoption of IFS model helps in reducing the impact of climate change through strategies like mitigation and adaptation because of dependence on external sources for inputs like insecticides, chemical fertilizers, and other chemicals that are being used in farm produce. The output of one process becomes inputs for the other while the quality and quantity of production are enhanced. Furthermore, farm families are kept actively involved in farming activities by the constant need for labour to maintain a system of diversification of crops and livestock farming in an integrated manner to benefit each other and cut down the cost of production.

Volume 6 Issue 5 May 2024

© All rights are reserved by LR Meena