



Nutritional Management Through Integrated Farming for Upliftment of Rural Economy

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In India, agriculture is a significant economic industry that provides many job possibilities. It is also crucial to the advancement of civilization. Despite the fact that one of the main causes of the country's GDP contribution is declining, urbanization is still a major contributing element. 15,73,50,000 km² or 52.92 percent of India's total land area is designated as arable, according to the country. Due to ongoing pressure from an expanding population and increasing urbanization, India's arable land is decreasing.

Problems Faced by The Agriculture Sector

- Stagnation in Production of Major Crops
- Soil Exhaustion
- Decrease in Fresh Ground Water
- Costly Farm Inputs
- Agricultural Marketing
- Lack of Storage Facilities
- Effect of Global Climate Change
- Increasing malnutrition

Objectives of Integrated Farming System (IFS)

- Optimal utilization of resources
- Farm wastes are better recycled
- Better socioeconomic status of farmer
- Change in the farming techniques

Advantages Of IFS

- Higher food production Increased farm income

- Sustainable soil fertility and productivity
- Availability of nutritious food
- Reduced production cost of components
- Regular stable income
- Regular employment for the farm family members
- Reducing use of chemicals

COMPONENTS OF IFS



POULTRY CUM FISHERY INTEGRATED FARMING

GOAT CUM FISHERY INTEGRATED FARM



GOAT CUM FISHERY INTEGRATED FARMING



LAND AND WATER MANAGEMENT



PADDY CUM FISHERY INTEGRATED FARMING

Integrated Nutrient Management (INM)

Farmers applied micronutrient amendments to a variety of crops, including mung bean, sorghum, maize, pigeon pea, castor, and peanut, based on the findings of soil tests. In addition to an increase in grain yield of between 70 and 119 percent, a balanced nutrient supply also results in significant improvements in income.

Micronutrient Amendments

Based on the results of the baseline characterization, it was determined that in addition to N and P, 80–100% of farmer fields had serious deficiencies in B, Zn, and S. The use of Zn, B, and S as micronutrient



supplements to treat deficiencies has produced impressive results. Participatory R&D trials with farmers in the states of Gujarat, Madhya Pradesh, Rajasthan, and Andhra Pradesh revealed 30–60% higher crop yields as a result of micronutrient modifications. The effectiveness of using rainfall was also improved by adding micronutrients. Micronutrient additions in soybean boosted the plant's ability to utilize rainfall by 25%. Sorghum had the highest observed rainwater usage efficiency of 117 percent. In terms of net economic returns, the usage efficiency of rainfall for rainfed crops was 1.5–1.75 times greater.

Soil Organic Matter

Tropical drylands have marginal to irrigated soils. Nearly all of the studied farmer fields had low levels of organic carbon, according to an analysis of their fertility. However, it is acknowledged and stressed that tropical drylands' low production is a result of a lack of water. However, managing the available water with improved water use efficiency is a concern, and soil fertility is vital. This is different from water quantity per se. In drylands, high-value irrigated crops are typically sprayed with farmyard manure, which is in short supply. Growing *Gliricidia sepium*, *Cassia semia*, and other N₂-fixing legumes on contour and property bunds and keeping them as shrubs aids in the in-situ formation of N-rich organic matter, which helps to contribute organic matter to the soil. Animals do not enjoy *Gliricidia sepium*, yet it is resilient to drought and strong in a range of temperature conditions. Once established, *G. sepium* lopping's provide 30 to 50 kg of nitrogen per hectare (kg N/ha), a major portion of which is fixed from the atmosphere. Additional plant nutrients are also recycled from deeper soil layers. Additionally, it offers important organic matter, which is crucial for preserving soil fertility in the tropics. In order to generate cash, the SHGs established *Gliricidia* nurseries in the villages and supplied the plants for field bund planting.

Conclusion

Innovative strategies are required to address the concerns of equality for everyone in the watershed; institutions and policy directives for fair use of water resources are also required. Equity concerns surrounding the sustainable use of the watershed's common resources must also be addressed in addition to the usage of water. Building on microbusinesses increased the advantages for women and vulnerable societal groups. Sharing and managing knowledge is a crucial part of managing natural resources for sustainable development. Since the current extension techniques are unable to keep up with the demand, it is essential to use ICTs to reach the unreached and to share the great body of knowledge with the numerous small and marginal groups.

