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Integrated farming system: an approach for agricultural sustainability

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Introduction:

In India, a. large share of population is engaged in agriculture and earns their livelihood through farming. The green revolution has paved way for intensive agriculture in India with high yielding varieties, fertilizers, pesticides etc. This has caused tremendous increase in yield and has led to self-sufficiency in food production. However, the input intensive agriculture has depleted our natural resources and cause huge imbalances in agricultural sustainability. Moreover, Farmers face production risks and uncertainties because of relying on crop production. It also leads to uncertainty regarding income and employment. Some of the hostile effects of modern input intensive agriculture are:

1. Overuse of natural resources.
2. Contamination of groundwater and air because of pesticide use and crop residue burning, respectively.
3. Food and fodder contamination with pesticides residue.
4. Pesticide resistance in pests including weeds, insects and diseases.
5. Erosion of genetic diversity.
6. Health hazards for farmers using harmful agrochemicals and workers of agrochemical industries.

So, there is a need to formulate a suitable strategy for increasing the farm income all over the year. There is a great potential of integrating a number of enterprises such as cropping, livestock rearing, poultry, fishery etc. in agricultural system. The integration of various enterprises viz. integrated farming system not only increases the farm income but also generated additional employment.

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Integrated farming system: It introduces a variation in agricultural techniques for highest production in the cropping pattern and optimum use of resources. The farm byproducts and waste products are better utilized and recycled in IFS. Its activity focuses around some selected, interdependent, interrelated and interlinked production systems based on some crops, livestock and related subsidiary enterprises. IFS mainly explored the synergistic and complementary relationships of various agricultural enterprises and raise the total productivity while maintaining sustainability and increasing employment opportunities (Rana and Chopra, 2013).

Objectives of integrated farming system:

1. Income stabilization at higher levels by maximizing the productivity of all the components of farming system.
2. Pest management with natural cropping system management.
3. Reduced use of chemical fertilizers and pesticides to have healthy soil, produce and environment.
4. Achieving the agro-ecological equilibrium by rejuvenation of the farming systems' productivity.

Advantages of integrated farming system:

1. Better utilization of space and increased productivity.
2. Improvement of soil health.
3. Reduction of pest infestation.
4. Delivers diversified products.
5. Utilization of crop byproducts and livestock wastes.
6. Ensured increase and stability in income due to various products.
7. Higher returns per unit of resources used.
8. Reduction of production cost.
9. Reduction of production and price risk.

Integrated farming system as a means of sustainable agriculture:

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Sustainable agriculture is a philosophy based on human goals and on understanding the long-term impact of our activities on the environment and on other species. Use of this philosophy guides our application of prior experience and the latest scientific advances to create integrated, resource-conserving, equitable farming systems. These systems reduce environmental degradation, maintain agricultural productivity, promote economic viability in both the short and long term, and maintain stable rural communities and quality of life (Garth and Youngberg, 1990). Sustainable agriculture addresses economic, environmental and social aspects of sustainability by means of an integrated approach for resource management and increasing farm productivity. Integrated farming systems ensure the recycling of waste and by products on the farm and reduce dependence on external sources. As residue recycling is an important component of IFS, it improves the soil health and raises soil productivity (Ansar and Fathurrahman, 2018). IFS also helps to reduce the production and price risk involved in agriculture.

Conclusion:

The modern intensive agriculture is causing detrimental effect on soil health and environment. This also causes exploitation of natural resources and brings unsustainability in agricultural production. This necessitates the approach of integrated farming system which is a holistic approach of involving a number of enterprises in farming system which ensure use of by products and waste products of one enterprise in the other and so on. The integrated farming system increases the farm income and generates additional employment opportunities on the same piece of land ensuring optimum utilization of available resources and sustainability in agricultural production.

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