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Editorial

Agriculture is the backbone of the Indian economy; nearly 60 percent of the Indian population directly depends on agricultural activities as a source of livelihood. Indian agriculture is dominated by small and marginal farmers (86 percent), having only 44 percent of the total arable land. The average size of an operating land holding in India is less than one hectare, and farm size has been further reduced due to fragmentation. In Indian states like Bihar and Kerala, the average size of a holding has been reduced by more than 60 percent, and in Andhra Pradesh, Karnataka, Madhya Pradesh, and Maharashtra, farm size has been halved. IFS is a sustainable agricultural system that integrates livestock, crop production, fish, poultry, tree crops, plantation crops and other systems that benefit each other. It is based on the concept that 'there is no waste' and 'waste is only a misplaced resource' which means waste from one component becomes an input for another part of the system. IFS approach is considered to be the most powerful tool for increasing profitability of farming systems especially for small and marginal farmers to make them bountiful. IFS entails a holistic approach to farming aimed at meeting the multiple demands (impart farm resilience, farmer livelihoods, food security, ecosystem services, and making farms adaptive and resilient, etc.). IFS is characterised by temporal and spatial mixing of crops, livestock, fishery, and allied activities in a single farm. It is hypothesized that these complex farms are more productive at a system level, are less vulnerable to volatility, and produce fewer negative externalities than simplified farms. Thereby, they cater the needs of small and marginal farmers, who are the backbone of agriculture in India. Researches on IFS show that IFS has the potential to improve farm profitability (265 percent) and employment (143 percent) compared to single enterprise farms. Scientific literature also shows that IFS enhances nutrient recycling through composting, mulching, and residue incorporation and, as a consequence, has the capacity to reduce the external purchase of inputs. The nutrient recycling in turn helps to increase the soil quality indicators such as soil nutrient availability and also improves soil microbial activity. The IFS plays a major role in biodiversity conservation through adoption of diversified cropping system and through integration of indigenous livestock breeds. IFS also plays important role in improving soil organic carbon from 0.75 to 0.82 percent. Due to increased carbon sequestration, biomass production by trees, reduced consumption of fertilisers, and pesticides the greenhouse gas emission can be reduced significantly. The main challenge associated with adoption of IFS is it requires skill, knowledge, resources, labour, and capital which are not always available with small and marginal farmers. Therefore, there is a need for integrating productivity, profitability, and environmental sustainability variables in a single evaluation framework to effectively generate information toward enhancing adaptability of IFS.

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