Towards Viksit Bharat@2047
Technological Innovations and Policy Options for Eastern Region

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CONTENT

Integrated Farming Systems for Different Ecologies of Eastern India

Period of development: 2011 - 2022

Developers:

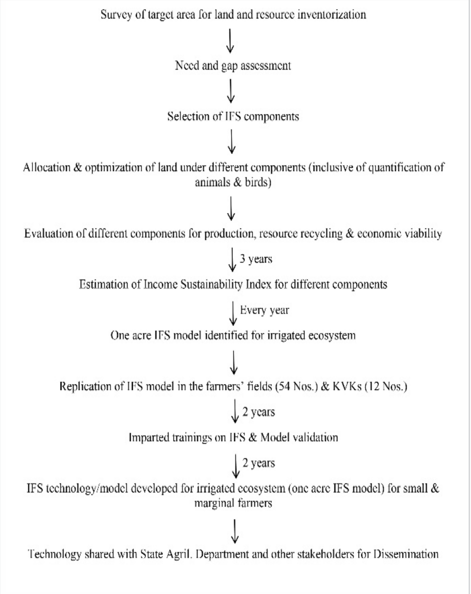
Sanjeev Kumar, Amitava Dey, Ujjwal Kumar, N Chandra, BP Bhatt, Abhay Kumar, Bikas Das, AK Singh, RS Pan, Lokendra Kumar, Md Monobrullah

Background:

Due to declining per capita availability (about 0.4ha) of land in the Eastern India, there is hardly any scope for horizontal expansion of land for food production. Only vertical expansion is possible by integrating appropriate farming components that require lesser space and time to ensure periodic income to the farmer by offering enough scope to nutrient recycling within the system to economize and sustain the system and minimizes the dependence on chemical fertilizers for crop production to earn more profit and offering more man-days generation over traditional cropping systems.

Description of the technology:

Detailed methodology of the IFS is presented here. The developed integrated farming system models fulfils the multiple objectives of making farmers self-sufficient by ensuring the family members a balance diet improving the standard of living through maximizing the total net returns and provide more employment, minimizing the risk and uncertainties and keeping harmony with environment. Different area specific IFS models were developed for waste land, irrigated ecology, flood prone ecology, hill and plateau region etc. The developed IFS models have enhanced the farm income by 112-256 percent, net income by three to four times over conventional cropping system (rice-wheat) along with ample employment 155-212 percent. Due to IFS interventions, the cost of production reduced by 28- 36 percent due to efficient resource recycling within the system.



Detailed methodology of the IFS

Commercial potential:

The technology can be commercialized for potential agribusiness, State Agricultural Department. The interested entrepreneurs can take up these IFS technologies which can provide an economic returns upto Rs. 1.0 lac/acre. The institute can commercialize this technology at a tentative cost of Rs. 10000/farmer.

Impact:

The developed IFS models have been accepted by Govt. of Bihar and the developed IFS models are being replicated in 1068 farmers field in 534 blocks of Bihar. More than 300 farmers have adopted the models suitable for their location due to which their livelihood enhanced with an increased income by 87-352 percent. Till date 52 acres of waste and unutilized lands had been made productive though IFS approach. Food and nutritional security of small and marginal farmers have been strengthened.

Half acre IFS model (Crops + Livestock + Fish + Duck): 2000m²

One acre IFS model (F. Crops + Hort.+ goat + Poultry + mushroom): 4000m²

Two-acre IFS model (F. Crops + Hort.+ Cows + Fish/duck): 8000m²

IFS models established in different Irrigated Ecologies of Eastern India

Agro-eco region suitability:

Irrigated Ecologies of Eastern India

Reference:

Kumar Sanjeev, Shivani, Dey A, Kumar U, Kumar, Mondal S, Kumar A, Manibhushan. 2022. Location-specific integrated farming system models for resource recycling and livelihood security for smallholders. Frontiers in Agronomy 4:938331, doi: 10.3389/fagro.2022.93833.