

# Socio-economic improvement is now achievable for Odisha

Integrated Farming System (IFS) model enhances the income of small and marginal farmers in Kalahandi-Bolangir-Koraput region

## Context ●●●

Koraput district in Odisha is largely a rural, agrarian economy. Declining land-holdings, poor incomes, and threatened nutrition security, combined with the consequences of climate change, pose a serious challenge for sustainable livelihoods. The gradual shrinking of land-holdings can be dealt with by pooling together land-based enterprises like fishery, poultry, duckery, apiary, field and horticultural crops, etc. This is possible within the same bio-physical and socio-economic environment, and farmers can earn more profits, making farming a dependable source of livelihood. Non-availability of work and fewer opportunities for income near their home-towns, coupled with low / delayed wages for landless labourers, also low agricultural productivity resulting from drought / natural calamities, indebtedness and migration are on the rise. Farmers are migrating from the Kalahandi-Bolangir-Koraput (KBK) region to other cities to make a living, particularly during Rabi season. A holistic strategy on crop and livestock-based farming system for small and marginal farmers is therefore the best way to keep farmers in the KBK region.

## ●●● Intervention

The Integrated Farming System (IFS) model by MSSRF aims to enhance the incomes of small and marginal farmers in the region. The project began in April 2018 and is funded by Government of Odisha under Rashtriya Krishi Vikas Yojana.

## Aqua & Non-Aqua based IFS

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Focusing on three major components viz: i) Aqua-based Integrated Farming System wherever fish pond is available. Along with pisciculture, this model was integrated with duckery, horticulture based intervention in the pond dyke and agriculture-based interventions in the adjoining fish-pond land; ii) Agriculture-based Integrated Farming System along with agriculture intervention (paddy, finger millet, maize, pigeonpea in Kharif, horsegram in pre-Rabi and Greengram and blackgram for Rabi in rice fallow), the model is integrated with vegetable and mushroom cultivation, etc.; and iii) Support system such as backyard poultry, goatary for landless households, and mushroom production and value addition of rice and millet as a group activity for women Self-Help Groups (SHGs). The project was completed successfully in September 2021.

Since April 2018





## IFS Model

### Outputs

- \* Ten aqua-based IFS units and 100 agriculture based IFS units, 100 household nutrition gardens were established
- \* Members of 100 women SHGs are involved in mushroom cultivation and value-addition activities as an additional income-generation programme
- \* 100 vermicompost pits were established
- \* 114 landless labourers are now involved in backyard poultry rearing, and 100 landless households have taken up sheep/goat rearing
- \* 30 different trainings on crop improvement, animal husbandry and fishery were organised in 156 days of project period
- \* Six farmer producer groups were strengthened

### Outcomes

The testimonial of aqua-based IFS model inspired eight more farmers from eight villages to adopt the same model for sustainable livelihoods. As a result, the number of aqua-based IFS unit increased to 18. Fish production under aqua-based IFS model increased by 134 percent with an average production from 41 kg to 96 kg/pond.

Overall productivity of selected dry land crops increased by 91 percent, whereas, in case of paddy 19 percent (16 - 19 q. /acre), finger millet 65 percent (2.9 - 4.8 q. /acre), green gram 20 percent (2.5 - 3.0 q. /acre), black gram 7 percent (1.1 - 1.2 q. /acre), maize 118 percent (6.2 - 13.5 q. /acre), and pigeon pea 110 percent (1.0 - 2.1 q. /acre).

Overall, area under non-paddy crops increased by 111 percent; in case of finger millet, it was 10 percent, green gram 84 percent, black gram 85 percent, maize 176 percent, pigeon pea 330 percent, and vegetables 80 percent

Numbers of agriculture-based IFS model increased from 100 to 209

Additional income was generated by growing vegetables along the pond dyke area, and production ranged from Rs. 1540/- to Rs. 9680 /- depending on the size of dyke area.

Members of 50 women SHGs were involved in oyster mushroom cultivation during winter season in group activity. After using the produce for household consumption, each member received an average of Rs.1867/- as additional income for every round of harvest.

Overall, socio-economic improvement of small and marginal farmers increased by 63.5 percent compared to baseline over a period of three years. Under aqua-based IFS model, it was 76 percent (Rs. 65,815/- to 1,15,805/-) and under non-aqua based IFS model, it was 51 percent (Rs. 58,435/- to 88,156/-).

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