

Integrated Farming System

KVKs: Kanker, Gariyaband, Dantewada, Narayanpur, Bijapur, Surajpur, Raigarh, Balarampur, Dantewada

Description of the technology adopted

- Identification of IFS components according to prevalent farming situation in local area.
- Optimization of Resource Utilization. By-products of crops / vegetables for animals and utilization of animal waste produce for soil fertigation and fish ponds.
- Introduction of appropriate management techniques for all components under the IFS.

Objectives of the technology adopted:

- To reduce the cost of inputs and generate additional source of income due to savings generated by use of by-products of one components in another.
- To generate employment, empower the farmers and prevent migration during non agriculture season in rainfed areas.
- To ensure risk mitigation and to enhance bio-recycling.

Horizontal Spread of Technology

| Agro-climatic zone | No. of village covered | No. of farmers | Area in ha or No. of units |
|--------------------|------------------------|----------------|----------------------------|
| Bastar Plateau | 28 | 158 | 158 Units in 121 Ha |
| Central Plain | 17 | 48 | 48 Units in 56 Ha |
| Northern Hills | 102 | 165 | 165 Units in 133 Ha |
| Total | 147 | 371 | 371 Units in 310 Ha |



Promising characteristics of technology: ACZ covers

| S.No | Characteristics | Observation (Unit) |
|------|---|---|
| 1 | Agriculture produce + produce of other components | Quantity of agriculture / horticulture produce in quintals per ha / liters per lactation / no. of eggs per 10 birds / Kg of meat per animal |
| 2 | Annual net income (Per ha basis) | Rs. 1,10,840 to Rs. 1,86,156 |
| 3 | Annual savings generated | Rs. 15,000 to 35,000 |
| 4 | Round the year employment generated | In no. of man days 738 to 920 |
| 5 | Surplus bio fertilizers produced | Quantity in quintals 30 – 120 quintals |

Horizontal spread of technology

| Technology Promoting KVK | No. of village covered | No. of farmers | Area in ha or No. of units |
|--------------------------|------------------------|----------------|----------------------------|
| Dantewada | 2 | 10 | 10 Units in 16 Ha |
| Narayanpur | 4 | 12 | 12 Units in 16 Ha |
| Kanker | 9 | 88 | 88 Units in 50 Ha |
| Bijapur | 10 | 18 | 18 Units in 15 Ha |
| Bastar | 3 | 30 | 30 Units in 24 Ha |
| Bastar Plateau | 28 | 158 | 158 Units in 121 Ha |
| Gariyaband | 9 | 26 | 26 Units in 38 Ha |
| Raigarh | 8 | 22 | 22 Unit in 18 Ha |
| Central Plain | 17 | 48 | 48 Units in 56 Ha |
| Surajpur | 87 | 103 | 103 Units in 65 Ha |
| Balarampur | 15 | 62 | 62 Units in 68 Ha |
| Northern hills | 102 | 165 | 165 Units in 133 Ha |
| Total | 147 | 371 | 371 Units in 310 Ha |

Name of schemes supported by Central/State Govt. for large scale dissemination under convergence

| Central Govt. Schemes | Type of Support |
|---|--|
| MGNREGA | Infrastructure for Animal Shed, Vermicompost / Azola Tank etc. |
| Tribal Sub Plan, Govt of India | Project based Funding |
| Mission for Integrated Dev. of Horticulture (MIDH) | Upto 50-75% subsidy on Horticulture Projects |
| State Govt. Schemes | Support Factor |
| Dairy Entrepreneurship Dev. Scheme – Veterinary Deptt. | 2 -12 Cow Unit with Animal Shed with 50-66% subsidy |
| Beneficiary Oriented Schemes of Fisheries / Horticulture Departments. | Farm Equipments on 40-75% Subsidy |

Economics of adopted technology (Per ha annual basis)

| Farming system | Cost of production (Rs./ha) | Gross return (Rs./ha) | Net return (Rs./ha) | Employment man days per year |
|--|-----------------------------|-----------------------|---------------------|------------------------------|
| Mono Crop Paddy | 36,350 | 68,400 | 32,050 | 213 |
| Crop+ Poultry + Piggery + Fish | 66,500 | 1,77,340 | 1,10,840 | 738 |
| Crop + Poultry+ Goatery + Fish | 67,200 | 1,82,325 | 1,15,125 | 767 |
| Crop + Goatery + Vermi compost + Azolla + Piggery | 68,390 | 2,07,500 | 1,39,110 | 794 |
| Crop + 5 Cow Dairy + Vermi compost + Fodder + Fish | 1,68,542 | 3,54,753 | 1,86,156 | 865 |
| Crop + Poultry + Goatery + Vermi compost + Azolla + Piggery | 71,230 | 2,01,460 | 1,30,230 | 868 |
| Crop + Poultry + Goatery + Vermi compost + Azolla + Fish | 74,250 | 2,11,210 | 1,36,960 | 913 |
| Crop + Poultry + Goatery + Vermi compost + Azolla+ Fish + Duck | 75,350 | 2,13,540 | 1,38,190 | 920 |

IFS model at farmer's field

Rice + Vegetable + Poultry + Fish cum duck + Goatery + Piggery + Animal Hus. + Azola

| Land Holding (ha.) | Yield and Income per Annum | | | | | | | |
|---------------------|-------------------------------|------------|---------------|-------------------|------------------------------|------------|---------------|-------------------|
| | 2012-13 (Before Intervention) | | | | 2015-16 (After Intervention) | | | |
| | Crop | Area (ha.) | Yield (q/ha.) | Grass Income (Rs) | Crop | Area (ha.) | Yield (q) | Grass Income (Rs) |
| 2 | Rice | 2 | 76 | 83600 | Rice | 1-2 | 54 | 59400 |
| | | | | | Rabi Maize | 0-8 | 56 | 61600 |
| | | | | | Fishery | 0-2 | 6-0 | 60000 |
| | | | | | Veg. pro. | 0-15 | 78 | 78000 |
| | | | | | Poultry | 45 nos | 73 kg | 16200 |
| | | | | | Piggery | 18 Nos | 110 kg | 16500 |
| | | | | | Goatry | 12 Nos | 80 kg | 12000 |
| Total Income | | | | 89600 | | | 303700 | |

IFS Model at Farmers field

Paddy + vegetable + maize + fish + duck + poultry + goat + vermicompost + azolla



Paddy + vegetable + backyard poultry + fish cum duck + goat + lac cultivation



Rice + vegetable + fish + backyard poultry + goat + vermi compost + azolla



Rice + vegetable + backyard poultry + goat + piggery + vermi compost + azolla



Impact of the adopted technology

- Doubling of farmers income achieved in 2-4 years from initial adoption of different IFS sustainable model.
- Mono cropping of rice generates employment of approx. 230 mandays annually, whereas integrated farming system provides on an average 730 mandays annually, which helps in reducing migration.
- Integration of farming systems with minimum 3-4 components generates a total saving of approx. 26% of the total recurring cost of the Integrated Farm.
- There is approx. 40% increase in surplus organic manure due to availability of biomass and animal excreta in one farmyard.

Policy interventions recommended (Based on KVK Findings)

- Beneficiary oriented schemes of allied departments can be clubbed under one mission for Integrated farming system (MIFS).
- Under the mission the beneficiaries selected by gram shabha under eligible categories may be subsidized under existing patterns of the schemes.
- This does not have any implications on total outlay of the schemes but attempts institutional convergence.



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