



Livelihood Security of Tribal Farmers by Integration of Different Enterprises

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ABSTRACT

To enhance income and employment of small and marginal farmers, Krishi Vigyan Kendra, Kanker introduced multi-enterprises model. Six different models were developed at Kulgaon and Aturgaon villages on the small and marginal farmer's fields on their need basis. Out of the different farming system models, rice + vegetable + maize + fish + duck + backyard poultry + goat was found more remunerative. The net return from this model was Rs 1.13 lakh from 1.5 ha land holding. Also found suitable from the point of employment generation per unit utilization of resources. It provided about 826 mandays throughout the year.

Key Words: Livelihood, Integrated farming system, Enterprises, Tribal.

INTRODUCTION

Uttar Bastar Kanker is tribal dominated district, about 78 per cent population lives in the villages and 70 per cent of total population belong to ST/SC. Rainfed rice is the major crop of the district which is growing in 1.71 lakh hectare and average size of land holding was declined to 1.86 during 2011-12 from 2.19 ha in 2001-02. The sustenance of increased productivity must emphasize on the development of strategies aimed at maintaining improved yields without depleting natural resources or destabilizing the environment. Integrated farming (or integrated agriculture) is a commonly and broadly used word to explain a more integrated approach to farming as compared to existing monoculture approaches. It refers to agricultural systems that integrated livestock and crop production. Integrated farming system has revolutionized conventional farming of livestock, aquaculture, horticulture, agro-industry and allied activities (Chan, 2006). It could be crop-fish integration, livestock-fish integration, crop-fish-livestock integration or combinations of crop, livestock, fish and other enterprises (Thy, 2006).

The approach aims at increasing income and employment from small-holding by integrating

various farm enterprises and recycling crop residues and by products within the farm itself. Farming system approach is one of the important solutions to face this peculiar situation as in this approach the different enterprises can be carefully undertaken and the location specific systems are developed based on available resources which will result into sustainable development (Dashora and Singh, 2014). Therefore, present investigation was undertaken to study integration of different enterprises for livelihood security of tribal farmers.

MATERIALS AND METHODS

A study was conducted on integrated farming system at Kulgaon and Aturgaon villages of Kanker block under irrigated condition during 2012 to 2014 involving cropping (rice, maize, and vegetables), fishery, poultry, piggery, goat azolla and vermicompost as the integrated system. Six farmers were selected, a thorough PRA were conducted of selected farmers. Synergy of different schemes with line department helps in providing critical inputs for IFS model development. Training on integrated farming system, demonstrations of technologies and field visit understands the problems and cause of low output from the fields.

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Six farm families of two villages namely Kulgaon and Aturgaon were selected for development of farming system model. Six different models of 1.5 ha each were developed in the small and marginal farmers fields on need basis as follows

Model 1 - Crop+ backyard poultry + goatry + vermi compost + azolla+ fish + duck+ piggery

Model 2 - Crop + backyard poultry + goatry + vermi compost + azolla + piggery

Model 3 - Crop + goatry + vermi compost + azolla+ piggery + backyard poultry

Model 4 - Crop+ backyard poultry + Piggery + fish + gotary

Model 5 - Crop+ piggery + backyard poultry + goatry + vermi compost + azolla+ fish

Model 6 - Crop + backyard poultry+ goatry + fish+ piggery

To sustain the productivity the residues obtained in the system was recycled. Observations on the productivity and economics of individual components and the farming system as a whole

and employment generation and water requirement were recorded as per the standard procedure. Since, the study includes diversified enterprises like fish, poultry and goat, the yield was converted into rice equivalent yield as suggested by Singh *et al* (2005).

RESULTS AND DISCUSSION

The integration of crop with fish, poultry, piggery and goat resulted in higher productivity than adoption of conventional method of rice mono cropping. Mono cropping of rice generates employment of 233 mandays throughout the year, whereas integrated farming system provides on an average 730 mandays per year (Table 1), which helps in reducing migration of rural youth to urban areas. Also adopting IFS model, one can use efficiently family labour and conservation, preservation and utilization of farm biomass including non-conventional feed and fodder resource.

Out of the different farming system models (model 1 to 6) rice + vegetable + maize + fish + duck + backyard poultry + goat+ Piggery was found more remunerative (net return Rs 1.13



Rice Cultivation



Vegetable cultivation



Goat rearing



Fish + Duck production



Pig rearing



Poultry3

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Table 1: Comparative economics of mono cropping and IFS model

Sr. No.	Farming system	Cost of production (Rs./ha)	Gross return (Rs./ha)	Net return (Rs./ha)	Employment man days/year
1	Mono crop rice	36350	68400	32050	233
2	Crop+ backyard poultry + goatry + vermi compost + azolla+ fish + duck+ piggery	75350	188540	113190	826
3	crop + backyard poultry + goatry + vermi compost + azolla + piggery	71230	176460	105230	768
4	crop + goatry + vermi compost + azolla+ piggery	68390	162500	94110	686
5	crop+ backyard poultry + piggery + fish + goatry	66500	152340	85840	626
6	crop+ + backyard poultry + goatry + vermi compost + azolla+ fish + piggery	74250	186210	111960	817
7	crop + backyard poultry+ goatry + fish + piggery	67200	157325	90125	657

lakh from 1.5 ha land holding) from the point of employment generation (826 mandays per year), per unit utilization of resources (Table 1).

CONCLUSION

Integrated farming systems offer unique opportunities for maintaining and extending biodiversity. The emphasis should be on small livestock such as chicken, duck, pig, goat in accordance with constant income. Addition of organic residues in the form of animal and plant wastes could also help in improving the soil – health and thereby productivity over a longer period of time with lesser environmental hazards.

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