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Improve Livelihood Security and Employment Generation through Integrated Farming System of Scheduled Caste Farm Families in CB Pura District of Karnataka

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Abstract: ***The study was undertaken in Chickaballapur district of Karnataka state to assess impact of the different farming system adopted cluster of villages during the year 2012-13 the study was selected randomly 300 respondents comprising of Scheduled Caste farm families across the study area. the net income per annum realized by a household was highest in C+D+SH+S (Rs 10625) net income less realized in case of C+D (Rs 35642) . Employment generation was found in C+D+SH+P (325man days/year) where as in case of C+D (321 man days/year. From above study it can be concluded Integrated farming system approach helps to stable income from farm as well as whole.***

Keywords: Integrated farming system, economic analysis, employment generation, livelihood security

1. Introduction

Farming system consist of several enterprises like cropping system, dairying, piggery, poultry, fishery, bee, keeping etc. these enterprises are interrelated. The end product and wastes of one enterprise are used as inputs in others. The waste of dairying like dung, urine, refuse etc. is used for preparation of FYM, which is an input in cropping systems. The straw obtained from the crops is used as fodder for cattle's are used for different field operations for growing crops. Thus different enterprises of farming systems are highly interrelated.

2. Methodology

The University of Agricultural Sciences Bangalore is implementing a project entitled ***"Holistic Development of Schedule Caste farmers in southern Districts of Karnataka through Integrated Farming System approach"*** to improve the livelihood security of Scheduled Caste farm families in the selected districts of Southern Karnataka on pilot basis with the financial assistance of the Karnataka State Department of Agriculture (KSDA) GOK under Special Component Plan (SCP). The benchmark survey conducted in the 10 Districts of southern Karnataka from selected Scheduled Caste farming families involved in different farming activities combined with allied enterprise are being adopted by the farmers. Among the 10 districts, one district were randomly selected Chickballapur. Total of 300 Scheduled Caste farm families involved in integrated farming system viz. crop production, horticulture, dairy, sheep and goat rearing, piggery, bee keeping and kitchen gardening were taken for the study from each districts. In order to collect relevant information for the study, a structural interview schedule was prepared based on the objectives of the study.

- To assess the impact of Integrated Farming Systems approach on the Scheduled caste farm families.
- To analyse the livelihood security, income & employment opportunity through integrated farming system of SC farm families.

The objective of this project was sustainable agriculture development, livelihood improvement and achieving food security of Scheduled caste farm families through Integrated Farming System. The technologies introduced by the scientists in the villages of the project areas were more of location specific. Attention was given to the introduction of sustainable, appropriate and profitable technologies. providing the HYV seeds, improving soil health, insitu soil conservation, crop diversification, planting of dryland horticulture crops like mango, sapota, guava, coconut etc., particularly in the waste lands. Introduced sericulture practices and animal husbandry components like, HF cow, bannur cross bread sheep, York shire piggery, Giriraja & Girirani poultry birds were also supplemented. Emphasis was also given for taking of subsidiary enterprises like the production of vermin-compost, construction of farm ponds, bio-gas units, bee keeping units, of IFS Sanghas, IFS commodity groups, value addition centers etc., Need based capacity building training programmes for enhancing knowledge and skills on various improved IFS practices were organized. Convergence with different line departments were established for better coordination of developmental programmes. **(Jaim, W.M.H and Rahman, M.D., 1988)**

Data Collection and Analysis

Data were collected during Year -2012-13 through face to face interview by using structured interview schedule. Tabular analysis was used to interpret the collected data. Collected data were compiled, coded, tabulated and analyzed according to the objectives of the study.

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Table 2: Impact of Integrated farming system on annual income status of beneficiary farmers

	Categories	Before Project		After Project	
		Frequency	%	Frequency	%
Annual Income	Low (up to Rs. 10000)	134	44.67	18	6.00
	Semi-medium (Rs. 10001 to 20000)	101	33.67	48	16.00
	Medium (Rs. 20001 to 30,000)	53	17.67	168	56.00
	High (above Rs. 31,000)	12	4.00	66	22.00

Note: Figures in parentheses represent percentage to total

Results in table 2 revealed that impact of Integrated farming system on annual income status of beneficiary farmers before project low income group (44.67 %) after project period (6.00 %) percent similarly Semi-medium 33.67 after project period 16.00 % in case of medium and high income group before project period (17.67 %) after project period shifting to (56.00 %) and in case of high income group of farmers before project period (4.00 %) after project period 22.00 percent respectively.

Table 3: Impact of Integrated farming system on different occupation status of beneficiary farmers

Sl. No.	Variable	Occupation	Before project		after project	
			Frequency	%	Frequency	%
1	a) Primary	1.Agriculture	185	61.67	256	85.33
		2.Agriculture Labour	115	38.33	44	14.67
2	a) Secondary	1.Service	28	9.33	82	27.33
		2.Business	34	11.33	125	41.67
		3.Other occupation	23	7.67	67	22.33

Note: Figures in parentheses represent percentage to total

Results in table 3 revealed that, impact of Integrated farming system on different occupation status of beneficiary farmers before project period occupation in agriculture (61.67 %), after project period (85.33 %) in case of agriculture laboures (38.33%) after project period 14.67 percent in case of before project service sector (9.33 %) after project (27.33 %) similarly business sector (11.33) 41.67 percent respectively.

Table 4: Economic viability of farmers under integrated farming systems under dry land farming situation

S. No	Different Farming Systems	Cost before project (Rs.)	Net return before project (Rs.)	Cost After project (Rs.)	Net return after project (Rs.)
1	Crop + Dairy	10646	17552	13256	29036
2	Crop + Dairy+ Sheep	20268	35390	25689	66957
3	Crop+Dairy+ Sericulture	22856	29105	32145	56851
4	Crop + Cow+ Sheep+ Piggery	30531	47122	32654	88741
5	Crop +Dairy+ Sheep + Sericulture practices	33163	51098	35642	106251

Note: C=Crop production, D=Dairy, S=Sheep, S=Sericulture, P=Piggery

Results in table 4 revealed that, combining crop enterprises with that of livestock to take advantage of complementary and supplementary relationship between them, would increases the labour requirement tremendously and can help in solving the problem of underemployment to a great extent. The economic viability of farmers practiced integrated farming systems in dry land farming was practiced before project period production cost (Rs.10646) and net return before project (Rs.17552 per year). In case of Crop + Dairy similarly production cost and income of after project period return Rs.13256, Rs29036 respectively. In case of similarly Crop +Dairy+ Sheep Sericulture practices was highest income before and after project period Rs. 33163, Rs.51098, Rs.36642 and Rs.10625 respectively. Similar study was found Behera and Sharma (2007). **(Ahsan, R.M., 1986).**

Table 5: Employment generation of farmers practicing integrated farming systems after project period-2012-13

S. No	*Diffrent farming system*	*Kharif (in days)*	*Rabi (in days)*	*Summer (in days)*	*Grand total (in days)*
1	Crop + Dairy	125	78	41	244
2	Crop + Dairy+ Sheep	132	82	62	276
3	Crop+ Dairy+ Sericulture	107	153	62	322
4	Crop + Cow+ Sheep Piggery	142	132	67	341
5	Crop +Dairy+ Sheep Sericulture practices	138	125	80	343

Note *The agricultural operation start from the month of May to June Months have been mentioned different farming system employment required C=Crop production, D=Dairy, S=Sheep, S=Sericulture, P=Piggery

Results in (table 5) revealed that, employment generation of farmers in dry land showed that in case highest employment generation was found in Crop production (244 man days/year) crop with Dairy (276 man days/year) Crop+ Dairy+ Sericulture (322 man days/year). In case of Crop + Cow+ Sheep Piggery (341 man days/year). Similarly in case of Crop +Dairy+ Sheep Sericulture practices(343 man days/year) the probable reasons may be that under dry land conditions, the labour requirement will be less because of less no. of crops and also the requirement of labour is restricted only to monsoon season. Further, maintenance of one or two dairy animals may not require additional labour except the family labour which is not productively utilized in the system. even though sericulture demands more labor, they can take only two or three crops in year because of scarcity of water. Further, cultivation of vegetables with

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bore well irrigation might have contributed for further generation of employment opportunities. Whereas, highest employment generation was found in Crop +Dairy+ Sheep Sericulture practices .The probable reasons may be that the big farmers by virtue of their large land holding, high socio economic status the capability of these farmers to adopt the enterprise on large scale is quite possible. Similar study was found **(Bob Watson, 2009)**

Table 6: Social network status of farm households in selected farm families during 2012-13

Particulars	C+D (n=60)	C+S+D (n=60)	C+D+SH (n=60)	C+D+SH+PG (n=60)	C+D+SH+S (n=60)	Total
Member in Gram Panchyath	4 (9.30)	8 (20)	12 (19)	15 (37)	20 (52)	59 (20)
Member in Taluk Panchyath	0	0	4 (6)	3 (5.26)	5 (5.38)	12 (4)
Member in Zilla Panchyath	0	2 (4.88)	1(2)	2 (3.51)	3(3)	8 (2.69)
Member in Milk Producers Co-operative Society	12 (28)	0	15(24)	5 (9)	18 (19)	50(17)
SHG's	27(63)	32(78)	30(48)	32 (56)	47(51)	168(57)
Total Members	43 (100)	42(100)	62(100)	57 (100)	93 (100)	297(100)
Television (No.)	42 (70)	48(80)	52(87)	53 (88)	57(95)	252(100)
Phone (No.)	32 (53)	23(38)	42(70)	23 (38)	42 (70)	162(100)
Social network status	1.2	1.3	1.5	1.8	1.6	

Note: Figures in parentheses represent percentage to total

The analysis of social network status of households (Table 6) revealed that no household is the member of any organization like Gram panchayat, in Crop+Dairy farming system but only 4 households are members of Taluk panchayat in case of Crop+Dairy+Sheep+Sericulture farming system the number of participants in is (5), in case of Zilla Panchyath (3) co-operatives Societies (18) and SHG"S (47) was more. Only 30 per cent of the households in Crop+Dairy and 70 per cent of households in case of Crop+Sericulture +Dairy +Sheep farming system was 95 per cent had access to television. The number of phone users was more in Crop+ Sericulture +Dairy +Sheep farming system (70) per cent .in case of Crop+Dairy was 53 per cent had access telephone facilities Based on the level of participation in social organizations and access to social medias like television and phone an index of Social network status was worked out which was more in Crop+Dairy+sheep+Piggery (1.8) which means that most of the households participated/ access to more than one of the social networks) farm households and least in Crop+Dairy (1.2) which means that most of the households participated/ access to less than one of the social networks) farm households. **(Uddin Nasir Mohammed, 2008)**

3. Result and Discussion

The success of integrated farming system lies on the farmer who very much involve in almost all farm operations, caring of components. IFS should envisage involvement of farmers in the selection of components viz, crops production, livestock, poultry, sheep and goat rearing etc. Farmer spending more time for crop production, dairying and horticulture followed by sheep and goat rearing, generating employment opportunities and help getting more income through employment generation mainly from crop production, dairy, horticulture and kitchen gardening.

The on-campus and off-campus trainings were organised on various components on IFS. The necessary inputs like HYV seeds, saplings/grafts, animals (sheep, cow, poultry birds) etc. were distributed to the farmers. Scientist specialists will provide the necessary technical guidance. The expected outcome is to enhance income from crop production +Dairy farming to return Rs.13256,Rs29036 and similarly in case of similarly Crop +Dairy+ Sheep Sericulture practices was highest income before and after project period Rs. 33163, Rs.51098, Rs.36642 and Rs.10625 respectively. Increasing net income because of intervention mulberry cultivation practices. Apart from this also registered 80 per cent of IFS farmers Self-Help Groups in the cluster villages and established the linkages with all line departments and financial institutions. Provided training on value addition for SC Farm women and farmers.

4. Conclusion

The impact of the project revealed that, within a span of three years, crop yield of ragi, maize, groundnut, paddy and redgram was increased upto 10-20 per cent. Average income of the farmers has increased to Rs.69567 from Rs.36054. and percentage change in income is about (52) percent Livelihood improvement among selected farmers was achieved through food security and prevented rural migration. The experiences reveals that large scale adoption of such multi-enterprise agriculture require an effective network of marketing, post harvest processing, value addition, specialized handling and transport system, market intelligence, price support and export opportunities. Required research, development and policy initiatives to up-scale this kind of diversification in small farm holdings are also suggested.

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