

Producers' organisation and economics of cultivation of turmeric as high valued crop against rice-wheat cropping system for increasing farm income: a case study in hoshiarpur district of Punjab

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ABSTRACT

The study was conducted in the Ghugial village of Hoshiarpur district of Punjab during 2010-11. The main objectives were to study the cropping and crop diversification of the members of FAPRO and to examine the relative advantages of cultivation of turmeric as a high valued crop amongst the members of FAPRO unit. The study was based on primary data collected from 40 member farmers selected proportionately. It was observed that the cropping pattern was more diverse towards high valued horticultural crops, sugarcane and fodder as cash crop from cereals that occupied more than 70.00% of gross cropped area. Cultivation of turmeric was found relatively advantageous over Rice –Wheat cropping system in respect of input use and profitability as an annual crop. Price of turmeric was more assured due to the presence of FAPRO as a buying agent. The crop was also found to be more protective.

Keywords: FAPRO, turmeric, Rice –Wheat cropping system and relative advantages

Punjab is considered as the bread basket of India contributing more than 50% of food grains to the national pool. Out of total gross cropped area more than 70.00% of it are occupied by cereals, potato and other low valued crops. However, cereals are reported as low profitable crops affecting the sustainability of natural resources in the state such as degradation of soil and depletion of ground water level for which farmers want to diversify the area for these two crops (Chand 1996, 1998). The farmers are seeking a new cropping pattern with high valued crops so that household income increases. There is strong evidence that it is not the size but the infrastructures like access to roads and assured markets and scope of value addition which determine the profitability of a high valued crop. FAPRO is a producer organization established by Punjab government for value addition of turmeric cultivated by its member

farmers for increasing farm income with assured price. With the presence of such institutions, farmers will be willing to alter their cropping pattern diverse from low valued to high valued crop for increasing farm income. The study is an attempt to examine: i. Extent of diversification and cropping pattern with high valued crops followed by the member farmers' ii. Relative advantage of turmeric cultivation over Rice-Wheat cropping system of the member farmers of FAPRO.

Materials and Methods

The study was conducted in Hoshiarpur district of Punjab during 2010-11. Primary data were collected for the study selecting the villages randomly so that the farmers are members of Farms Produce Promotion Society (FAPRO). Out of 10 villages,

140 turmeric cultivators were identified and 40 of them were selected for the study proportionately based on farm size. Thus 1 marginal, 11 small, 17 medium and 11 large farmers were selected. Data were collected by personal interview method using a structured questionnaire after pre testing the interview schedules. The information were collected for various parameters such as, operational holding, cropping pattern and important sources of income of the household. The data collected were analysed using various statistical tools like percentage, simple average through tabular analysis.

Results and Discussion

Distribution of land holding

Size of land holding of a farmer not only depends on the food requirement for subsistence living but also depends upon the cash crops to generate income for the livelihood. Response of area of such high valued crop is accelerated with an ideal marketing system of the produce so as to earn more return per unit area and time over the traditional crops. Establishment of FAPRO in Hoshiarpur district of Punjab has played an important role in increasing farm income. Table 1 shows that about 70% of the member farmers growing turmeric belonged to the medium and large farm-size category. On the other hand, 27.5% were small farmers while 2.5% were marginal farmers cultivating turmeric. The overall average size of operational holding was 7.00 acres for the turmeric growing members. In nutshell, the turmeric growing members were operating comparatively larger sized holdings.

Table 1. Distribution of land holdings amongst turmeric growers

Farm size	Turmeric growers		
	Number	PC of total farmers	Average size (acre)
Marginal	1	2.5	1.00
Small	11	27.5	3.81
Medium	17	42.5	5.76
Large	11	27.5	12.63
Total	40	40 (100.00)	7.00

Note: Figures in parentheses are percentages of the total number of farmers in a given category.

Extent of diversification and cropping pattern followed by the member farmers

The cropping pattern in the vicinity of processing centre is always affected due to easy access of its processor-buyers (FAPRO) and its remunerative prices along with other benefits like quick terms of payment and input flows to farmer-producers. Table 2 indicates that in case of the turmeric growers, each of the rice and wheat crops covered 20.8% of the gross cropped area (GCA). Turmeric was being grown on 26.4% of the GCA and the proportion of vegetables in each of the kharif and rabi seasons was 11.60%. Vegetables also covered about 16.8% of the area. In nutshell, the FAPRO members had relatively more diversified cropping pattern as compared to the cereal dominated cropping pattern of the state. It was due to the reason that these farmers were growing turmeric and vegetables and were not inclined to practice the monoculture of rice and wheat.

Table 2. Extent of Diversification indices and cropping pattern of member farmers of FAPRO

Name of crops	(Acre)	
	Turmeric growers	PC share
Kharif Rice	2.21	20.80
Turmeric	2.81	26.8
Sugarcane	0.55	5.2
Vegetables	1.23	11.6
Fodder	0.20	1.9
Sub-total	7.00	65.8
Rabi Wheat	2.21	20.8
Vegetables	1.23	11.6
Fodder	0.20	1.9
Sub-total	3.64	34.2
Gross cropped area	10.64	100.0

Note: Figures in parentheses are percentages of the gross cropped area.

Relative advantages of turmeric cultivation over Rice-Wheat cropping system

Crops compete for same type of land and there will be acreage substitution from one crop to other based on cost, return and profitability. It is an important transition of commercial agriculture with high valued crops in Punjab in the recent years. The important crops in the cropping pattern of

Punjab are Wheat, Rice, Potato, Groundnut, Cotton and Sugarcane which constitute more than 70% of gross cropped area. Establishment of FAPRO has encouraged the farmers to put more acreage under turmeric substituting the area under cereals like Wheat and Rice. Attempt was made to examine the relative advantage of cultivating turmeric over Rice-Wheat cropping system practiced by the farmers.

Table 3 indicates that value productivity of turmeric per acre was advantageous by 49% over Rice-Wheat cropping system. It was also found that turmeric as a perennial crop incurred 33% more of variable cost per acre while return over variable cost per acre was 54% higher over Rice-Wheat cropping system. Return over variable cost per quintal was also higher by 3% over Rice-Wheat cropping system. Examination of cost of inputs per quintal indicated that Rice-Wheat cropping system needed 98% higher cost over turmeric cultivation. Input-output ratio was also higher in turmeric. Cultivation of turmeric also saved labour by 68 per cent.

Return per day from one acre of turmeric cultivation was 49% higher over return per day obtained from Rice-Wheat cropping system. The analysis indicated that cultivation of turmeric in the district was relatively advantageous over Rice-Wheat cropping system.

Composition of household income of the FAPRO members

The distribution of average household income of the members of FAPRO is presented in Table 4. Average income of the turmeric growing households was ₹ 2,63,125 per annum. For the turmeric growers, the income from farming (except turmeric) was ₹ 68,050 and that from turmeric was ₹ 1,73,625. The income from turmeric accounted for about 66% of the total income for these households. Hence, turmeric was the major source of income followed by the other crops such as wheat and rice. Income from livestock was 2.4% of total income.

Table 3 Relative advantages of turmeric cultivation over Rice-Wheat cropping system

S No.	Particulars	Turmeric	Rice-Wheat	Advantage(+)/ Disadvantage(-) of turmeric cultivation over Rice-Wheat cropping system
1	Value productivity (Rs/acre)	119000.00	60600.00	(+) 58400.00 (49%)
2	Variable cost (Rs/acre)	28568.00	19026.41	(-) 9541.59 (33%)
3	Return over variable cost (Rs/acre)	90432.00	41573.59	(+) 48858.41 (54%)
4	Return over variable cost (Rs/q)	753.6	729.36	(+) 24.24 (3%)
5	Cost of inputs (Rs/q)	168.04	333.79	(+) 165.75 (98%)
6	Input-output ratio	1:4.48	1:2.18	(+) 1:2.30
7	Labour productivity (Rs/MD)	4554.15	1442.85	(+) 3111.30 (68%)
8	Return per day from one acre(Rs)	326.02	166.02	(+) 160 (49%)

Figures in parentheses indicate percentage increase/decrease of advantage/disadvantage

Table 4. Composition of household income of members of FAPRO, 2010-11

Source of Income	Turmeric growers	PC share
Income from crop farming	68050	25.9
Livestock	6250	2.4
Turmeric cultivation	173625	66.0
Other income	15200	5.7
Total household income	263125	100.00
Annual Per capita farm income	61981.25	
Annual Per capita household income	65781.25	

(₹/household)

Note: Figures in parentheses are percentages of total household income

Conclusion and Policy Suggestions

With the establishment of Farms Produce Promotion Society the cropping pattern of the members of the society was found to include high valued horticultural crops like turmeric and vegetables in place of Rice –Wheat cropping system which increased farm income many fold. Cultivation of turmeric was found to be more remunerative and protective over cereals which needed exhaustive use of water generating lower income. It is suggested that the govt. of Punjab should put attention in popularizing turmeric cultivation replacing the excess area under Rice–Wheat cropping system in the state with suitability of land. The functioning of FAPRO should be strengthened more after removing its constraints to serve as a strong cooperative marketing institution for sustaining the diversified cropping pattern making the farm income more sustainable. The model can be replicated in other similar places of the state.

Note: Farms Produce Promotion Society (FAPRO) was established in Ghugial village in the Hoshiarpur district of Punjab state by collective efforts of the State Department of Agriculture and more than 300 farmers in the year 2001 and registered under Societies Registration Act XXI of 1860. With the objective of self-marketing and processing of the

farm produce, the society set up processing plant of honey and turmeric in 2005 under Rastriya Sam Vikas Yojana (RSVY) scheme of the Government of India. FAPRO has set up a system comprising production, processing and self-marketing for diverse farm produce. It is aimed that after establishment of FAPRO will pave the way to increase farm incomes as well as crop diversification in the state of Punjab.

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