Study of Different Cropping Pattern Followed By The Farmers Of Punjab

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Abstract

Agriculture plays a pivotal role in the Indian economy. The paper presents preliminary results from a study of the economics and adoption of various cropping pattern followed by farmer. During this survey different characters such as age, family size, cropping pattern, total input/output and total income are taken into considerations. The results shows that income obtained by farmers who adopted the cropping pattern rice-wheat was Rs 49,190 with cotton-wheat was Rs -18,667 with both (RW+CW) Rs 30,000 and the farmers who followed cropping pattern other than this obtained an income of Rs 29,500.

Introduction

Agricultural Census data shows that there were about 121 million agricultural holdings in India in 2000-01. Around 99 million were small and marginal farmers. Average size has declined from 2.3 ha in 1970-71 to 1.37 ha in 2000-01.Small and marginal farmers account for more than 80% of total farms. But their share in operated area is around 44%. Thus, there are significant land inequalities in India. The role of small farms in development and poverty reduction is well recognized. The global experience of growth and poverty reduction shows that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth outside agriculture. Small holdings play important role in raising agricultural development and poverty reduction.

The objective of this paper is to study the different cropping patterns of farmers in achieving agricultural growth, food security and livelihoods in India. It is known that small farmers face several challenges in the access to inputs and marketing. They need a level playing field with large farms in terms of accessing land, water, inputs, credit, technology and markets.

About 98 million out of total 120 million farm holdings are small and marginal farmers. The sustainability of these farmers is crucial for livelihoods in rural areas and for the entire country. It is true that small holdings have higher productivity than medium and large farms. But, as our discussion below shows that it is not enough to compensate for the disadvantage of the small area of holdings is higher than large holdings. The data at state level shows that in 9 out of 20 states, the reverse is true- net farm income per hectare is in large holdings than small holdings.

Materials And Methods

The quality of any research is judged on the basis of its methodological approach. It is the way to systematically solve the research problem. It explains not only the steps adopted by a researcher in studying the research problem but also the logic behind them. The methodological frame work adopted for the study has been discussed under the following headings:

Location Of Work

In order to achieve the stipulated objectives, present study was conducted in Punjab state. As farmers with different social characters were scattered over as many districts of the state, a required sample of different farmers with different social behavior was selected from the areas around the fazilka district.

Sampling Procedure

A purposive sampling technique was adopted for the selection of the sample. As the farmers with different social behavior were scattered over many villages, thus villages around fazilka districts became the sample for the present study.

Collection Of Data

The primary data were collected from the respondent farmers with the help of specially designed and pre-tested schedule through personal interview method. The information so collected related to the operational holding, cropping pattern , no. of crops sown and area under each crops, rotation, method of sowing, fertilizer application, plant protection method, source of irrigation, yield obtained, production, total input used and total output were obtained from the farmer.

Table 2.3.1 Sampling Design Of The Study

District	Block	Villages	Respondents (Number)
Fazilka	Abohar	Tootanwala	4
		Gobindgarh	4
		Gidderanwali	2
		Kandhwalaamarkot	1
		Bhawalwasi	2
		Kabul shah hither	3
		Roherianwali	4
Grand Total		7	20

Results And Discussion

In this study different social characters of different farmers were evaluated. This chapter deals with the examination of the results obtained through the analysis of data collected and were classified into different sections as follows

Socio Economic Profile Of The Sample Farmers

This section includes the socio-economic profile of the sample households such as age, education, size of holding, family size, occupation etc. The socio-economic characteristics may have direct or indirect bearing on the decision-making process in farming. Therefore, it is relevant here, to have an overview of socio-economic characteristics of the different farmers of the region under study.

Age

Table 3.1.1: Age-wise Distribution Of The Sample Farmers, Punjab, 2015-16

Age of the respondent (years)	Number	Percentage (%)
20-30	7	35
30-40	7	35
40-50	4	20
50-60	2	10
Total	20	100

The perusal of table 4.1.1 revealed that the highest proportion i.e. 35% of farmers belonged to the age group of 20-30 years and 30-40years, followed by 20% in the age group of 20-45 years and 10% in the age group of 50-60 years. This showed that more than 90% of the farmers belonged to the age group of 20-50 years. Only 10% of them were in the age group of above 50 years. This clearly revealed that the majority of the farmers were almost in the young age group.

Family Size

It was evident from the results that 45% of farmers belonged to the large families having 6 to 7 and 8 or above members respectively. About 55% of the selected farmers had small sized families with 4 to 5 members. The details were described in Table 4.1.3.

Table 3.1.2: Family Size Of The Sample Farmers, Punjab, 2015-16

Family Size	Number	Percentage (%)
4-5	11	55
6-7	4	20
≥ 8	5	25
Total	20	100

Cropping Pattern Of The Sample Farmers

The cropping pattern of the sample farmers has been depicted in Table 4.1.5. Paddy was the predominant crop over cotton crop. Rice-wheat crop rotation occupies highest i.e. 45% of the total area Cotton-wheat occupies 40% area whereas as 10% of the sample growers covers 10% area and 5% sample farmers had grown other crops which includes kinnow, sugarcane and fodder.

Table 3.2: Cropping Pattern Of The Sample Farmers, Punjab, 2015-16

Cropping pattern	No. of growers	Percentage (%)
Rice- wheat (RW)	8	40
Cotton-wheat (CW)	9	45
Both (RW+CW)	2	10
Others	1	5
Total	20	100

Table 3.2.1: Input-Output Relation Between Different Crop Cultivars

Farm Size category	Average Input-output relation between different crop cultivars in rupees							
	Cotton-wheat (CW)		Rice-wheat (RW)		Both (CW+RW)		Others	
	Input	Output	Input	Output	Input	Output	Input	Output
Small(<10 acres)	12,667	10,000	10,667	32,077	-	-	65,00	36,000
Large(>10 acres)	11,667	8,334	15,800	43,580	17,500	47,500	-	-
Total	24,334	18,334	26,467	75,657	17,500	47,500	65,00	36,000

Output of the farm resources per acre or a particular crop on a farm firm is a function of different inputs used. The elasticity of crop productivity with respect to use of important inputs was studied and results obtained for input- output relation for Cotton- wheat, Rice- wheat, Both and other crop rotation in table 4.1.6 shows that maximum input is used in cotton- wheat cycle whereas maximum output has been obtained in kinnow (others).
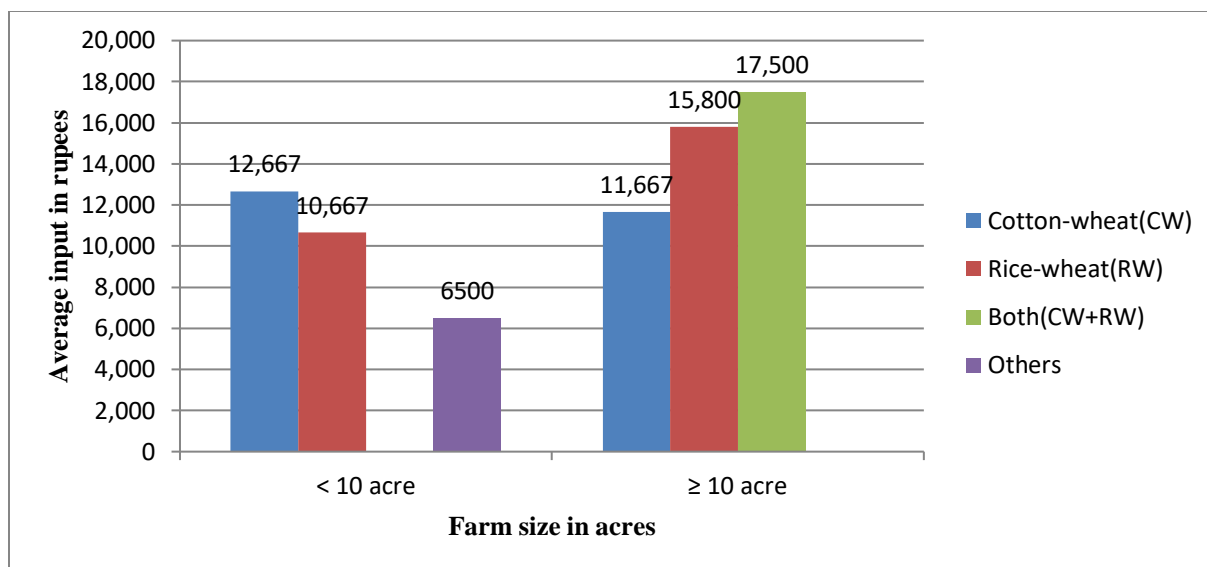
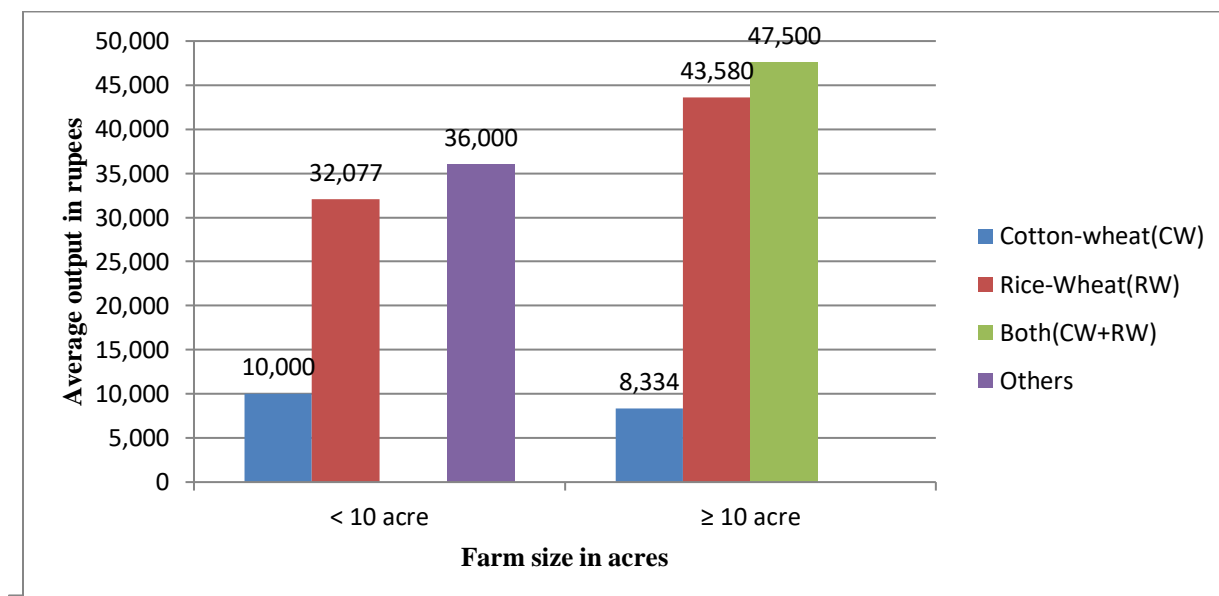**Fig. 1 Shows Input Relation Between Different Growers**

Fig. 2 Shows Output Relation Between Different Growers.

Income

Income is the factor which describes the social character of farmers. Maximum income was obtained by the famers with rice-wheat cropping pattern i.e. Rs 49,190 per acre followed by the farmers with rice and cotton based cropping pattern i.e. Rs 30,000 per acre followed by kinnow (others) growers i.e. Rs 29,500 per acre and farmers with cropping pattern cotton-wheat doesn't obtains any income instead spent money from their own pockets which shows the least income i.e. Rs -18,667 per acre. (Table 4.1.7)

Table 3.2.2 Income Relation Between Different Crop Cultivars In Rupees

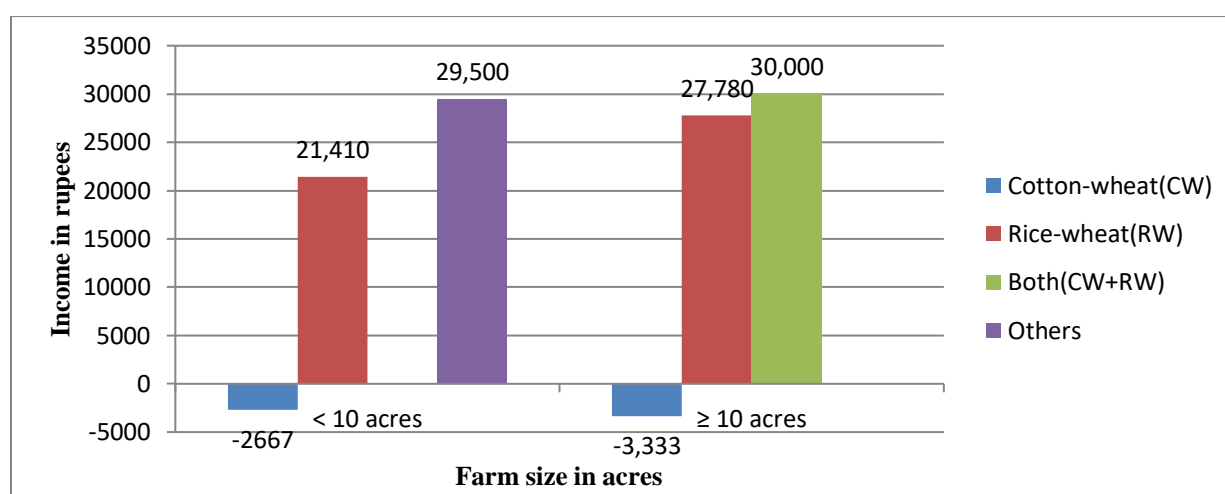| Farm Size category	Income Relation Between Different Crop Cultivars In Rupees			
	Cotton-wheat (CW)	Rice-wheat (RW)	Both (CW+RW)	Others
Small(<10 acres)	-2,667	21,410	-	29,500
Large(>10 acres)	-16,000	27,780	30,000	-
Total	-18,667	49,190	30,000	29,500

Fig. 2 Shows Income Relation Between Different Growers

Conclusions

Results concluded that

- 35% of the sample farmers belonged to the age group of 20-30 years and also 35% belonged to age group of 30-40 years. Whereas, 20% belonged to 40-50 years and remaining 10% belonged to 50-60 years. This showed that 70% of the sample growers were young.

- On the basis of family size, 55% of farmers belongs to family size with 4-5 members in their family, 20% with 6-7 family members whereas 25% with more than 8 family members.

- According to the cropping pattern farmers with 40% followed the rice-wheat cropping pattern, 45% with cotton-wheat, 10% with both (RW+CW) whereas 5% with farmers who followed the cropping pattern other than rice-wheat and cotton-wheat.

- On the basis of income maximum income was obtained by the farmers with rice-wheat cropping pattern i.e. Rs 49,190 per acre followed by farmers with rice and cotton based cropping pattern i.e. Rs 30,000 per acre whereas 5% of the other growers i.e. Rs 29,500 per acre and farmers with cotton-wheat cropping pattern does not obtains any income whereas suffers the loss and gets the least income i.e. Rs -18,667 per acre.

Hence, farmers which adopt rice-wheat cropping system have get maximum output and thus gets maximum income. While the farmers which adopt cotton-wheat cropping system have get lower output and thus gets lesser income. Output was low in cotton-wheat based cropping system due to severe attack of white fly and more expenditure on fertilizers and other resources used during cultivation practices which clearly reveals the social characters of different farmers and thus directly affects the standard of living of farmers.

From the above project study, it would be recommended that farmers should grow horticultural crops instead of following cotton-wheat cropping pattern which improves the social characters of the farmers

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