

Study of ownership pattern of tractors at farm level in district Muzaffarnagar (U.P.)

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ABSTRACT

A study was conducted in district Muzaffarnagar to understand the ownership pattern of tractors at farm level. For this study, tractor owner farmers were divided in two categories. (i) Farmers owning tractors for use on own farm only and (ii) Farmers owning tractors for use mainly on custom hiring. A total of 35 samples from each category of tractor owner farmer were selected through multi-stage random sampling. Data was collected with the help of a pre-structured schedule for the year 2000-01 and 2001-02. It was concluded from the study that farmers of land holding below two hectare were unable to own tractors for use on own farms only. Farmers of small and semi medium land holding categories owned tractors for use on custom hiring. Farmers of higher land holdings did not own tractors for use on custom hiring due to socio-economic reasons. Average age of tractors used on own farms only and those used mainly on custom hiring were 14 and 9 years respectively and choice of new tractors was shifting towards higher tractor power size. In comparisons to tractors used on own farms only, new tractors were preferred for use on custom hiring.

Key words : Tractor ownership, Tractor age, Tractor power.

INTRODUCTION

Farm mechanization has been helpful to bring about a significant improvement in agricultural productivity. A sea change has occurred in Indian agriculture since independence. Progressive mechanization and other developments, such as establishment of agro-industries, agro service centre, rural credit facilities etc. have all contributed to these changes. The composition of Indian farms varies drastically. Single farm ownership and use of tractor machinery on all farms is not economically viable. But through custom hiring of agricultural machinery even small farms are able to get the benefits of agricultural mechanization (Sharma et al. 2003).

Rural family scenario is changing very fast in the country. Due to increase in population and division in the family, land holdings are divided. There is gradual reduction in the average size of land holding. It reduced from 2.58 ha in 1950 to 1.57 in 2000 (Singh , G. 2002). Reduced land holding has made it difficult to own tractors for own purpose. Though, land holdings are reducing, demand of tractor is continuously increasing in the country (Srivastava 2003). Now tractors are owned not only by the farmers of medium and large land holdings but also by the farmers of small land holdings for use on custom hiring In the context of increasing commercialization of agriculture, farm mechanization is very important. We can frame suitable policies, such as liberalizing land lease market, encouraging cooperative management, custom hiring of machinery, encouraging standard service inputs devising machinery problems from small farmers (Singh 2003).

Muzaffarnagar district of Uttar Pradesh is an agriculturally advance district. Cultivated land has reached to saturation and all most total cultivated area is under irrigation. Tractor density in this district is 99 per 1000 ha (Singh et al. 2006a, 2006b). This district was selected to

understand the ownership pattern of tractors in its territory. It will provide an insight to various aspects of tractor ownership pattern at farm level in the district.

MATERIALS AND METHODS

For this study primary data was collected. For this study tractor owner farmers were divided in two categories. (i) Farmers owning tractors and using it on own farm only (TOF) and (ii) Farmers owning tractors for use mainly on custom hiring (TCH). A total of 35 samples from each category of tractor owner farmer were selected through multi-stage random sampling. Data was collected with the help of a pre-structured schedule for the year 2000-01 and 2001-02. It was analyzed and collected for inference and knowing distribution pattern of tractors of different power size with farmers of different land holding category and in different age group.

RESULTS AND DISCUSSION

1. Land holding category wise distribution of tractors: (a) Tractors used on own farms only (TOF):

In this tractor category a maximum of 57 per cent tractors were owned by the farmers of medium land holdings followed by 26 per cent with the farmers of semi-medium land holdings and 17 per cent with large land holdings. Farmers of small and marginal land holding did not own the tractors for use on own farms only (Table-1). Thus, two hectare of land holding size coupled with other factors can be taken as threshold level for owning tractors for use on own farms only in the study area. Further in this tractor category, about half of the tractors were in < 25 hp power group and about one third tractors were in 25-35 hp group and rest were in above 35 hp group. Farmers of semi-medium and medium land holdings preferred tractors of < 25 hp and 25-35 hp tractors where as farmers of large land holdings preferred tractors of 25-35 hp and > 35 hp tractors.

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Farmers of large land holdings preferred tractors of higher horse power to complete their work in time.

(b) Tractors used mainly on custom hiring (TCH):

Farmers of small land holding category owned about 1/3 share and farmers of semi-medium land holding category owned about 2/3 share of the tractors used mainly on custom hiring (TCH). Farmers of medium and large land holding category did not own the tractors for use on custom hiring. It was due to socio-economic reasons. In this tractor category, share of tractors in 25-35 hp group was a maximum of 60 per cent followed by share of tractors in < 25 hp group, 28 per cent and the same of > 35 hp group was only 11 percent (Table-1). Thus, it was observed that

tractors in the power groups of 25-35hp and >35 hp. It indicated that choice of new tractors is shifting towards higher power size. Overall average age of tractors of this category was 14 years (Table-2).

(b) Tractors used mainly on custom hiring (TCH):

In this tractor category, shares of tractors in the age group of 0-5, 5-10, and 10-15 years were 23,43 and 14 per cent respectively and the same in the age group of 15-20,20-25 and >25 years were 17,3 and nil per cent respectively. Further, it was observed that combined share of tractors in the age group of 0-5 and 5-10 year was 66 per cent. Average age of tractors in this category was 9 years (Table-2). It indicated that comparatively new tractors were in use for

Table 1: Land holding category wise distribution of tractors (In per cent)

Land holding category of the tractor owner	Tractors used on own farms only (TOF)				Tractors used mainly on custom hiring(TCH)			
	<25hp	25-35 hp	>35 hp	Total	<25hp	25-35 hp	>35 hp	Total
Marginal (0-1 ha)	0	0	0	0	0	0	0	0
Small (1-2 ha)	0	0	0	0	17	20	0	37
Semi-medium (2-4 ha)	26	0	0	26	11	40	11	63
Medium (4-10 ha)	23	23	11	57	0	0	0	0
Large (>10 ha)	0	11	6	17	0	0	0	0
Total	49	34	17	100	28	60	11	100

tractors of 25-35 hp were preferred most for use on custom hiring in the study area. Tractors of higher power size (>35 hp) were not preferred for custom hiring because sufficient work was not available at a time.

2. Age group wise distribution of tractors:

(a) Tractors used on own farms only (TOF):

In this tractor category, shares of tractors in the age group of 0-5, 5-10, and 10-15 years were 9, 20 and 26 percent respectively and the same in the age group of 15-20,20-25 and >25 years were 26, 14 and 6 per cent respectively. Further, it was also observed that in the age group of 0-5 year there was no tractor in <25hp group. Where as, in the age group of >25 year there were no

custom hiring work (TCH) in comparison to the tractors used on own farms only (TOF).

CONCLUSION

It was concluded from the study that farmers of land holding below two hectare were unable to own tractors for use on own farms only. Farmers of small and semi medium land holding categories owned tractors for use on custom hiring. Farmers of higher land holdings did not own tractors for use on custom hiring due to socio-economic reasons. Average age of tractors used on own farms only ad that used mainly on custom hiring were 14 and 9 years respectively. Choice of new tractors was shifting towards higher power size. In comparisons to tractors used on own

Table 2: Age group wise distribution of tractor (In per cent)

Tractor age group	Tractors used on own farms only (TOF)				Tractors used mainly on custom hiring(TCH)			
	<25hp	25-35 hp	>35 hp	Total	<25hp	25-35 hp	>35 hp	Total
0-5 years	0	6	3	9	6	14	3	23
5-10 years	9	6	6	20	14	23	6	43
10-15 years	9	11	6	26	6	9	0	14
15-20years	14	9	3	26	3	11	3	17
20-25 years	11	3	0	14	0	3	0	3
>25 years	6	0	0	6	0	0	0	0
Total	49	34	17	100	28	60	11	100
Average age (years)	17	12	13	14	7	10	12	9

farms only new tractors were preferred for use on custom hiring.

REFERENCES

Sharma, V.K., Singh, K. and Panesar, B.S. (2003). Custom hiring of agricultural machinery and its future scope. A study of farm mechanization in India: 217-227.

Singh, J. (2003). Scope, progress and constraints of farm mechanization in India. A study of farm mechanization in India : 75-90.

Singh, G., (2002). Equipment to ensure timeliness. The Hindu Survey of Indian Agriculture : 95-198.

Singh, A.K., Indra Mani and Om Prakash (2006 a). Trend of cultivated area and cropping intensity in relation to tractor population in district Muzaffarnagar U.P.). *Internat. Journal of Agric Sci* . **2(1)**: 115-117.

Singh, A.K., Indra Mani and Om Prakash (2006 b). Growth in crop productivity in relation to tractor population density in district Muzaffarnagar U.P.). *International Journal of Plant Sciences* . **1(1)**: 69-71.

Srivatava, N.S.L. (2003). Farm power sources, their availability and future requirements to sustain agricultural production, A study of farm mechanization in India : 91-111.

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