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Agricultural mechanization enhancement in Chhattisgarh state

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Abstract

Farm Mechanization is an essential input in modern agriculture. It enhances productivity, besides reducing human drudgery and cost of cultivation. Mechanization helpful in improving utilization efficiency of other inputs safety and comfort of the agricultural worker improvements in the quality and value addition of the produce. Better useful machinery helps in increasing production and productivity besides enabling the farmers to grown a second crop. Farm mechanization has played a pivoted in improving agricultural production as well as productivity through time saving of field operations and by enabling proper utilize of critical inputs. Use of appropriate farm machines for field preparation can save time and energy and enables the farmers to sow the crops in time and thus obtain higher yield. Farm mechanization also improves the quality of life by reducing drudgery and by providing respectability to farm operators.

Keywords: Mechanization, farm power, farm machinery, power availability

Introduction

The Chhattisgarh came into existences a state on November 01st 2000. It is the 10th largest state in India with a geographical area of 13790 thousand ha. Chhattisgarh stretches across the longitudinal expanse of 17^o46' to 23^o15' North on one hand to the longitudinal meridian of 80^o 30' to 84^o 23' East on the other. Baster plateau, Chhattisgarh plains and Northern hills are the prime geographical landmarks that have been marked as the productive areas of Chhattisgarh agriculture. Chhattisgarh known for rice cultivation and called "rice bowl" of India. The average rainfall was observed around 1207 mm. The total geographical area of the state is around 138 lakh ha, with net sown area of 46.51 lakh ha, which is 34% of its total geographical area. About 57% area has medium to light soil. Chhattisgarh has one of the richest bio-diverse areas in the country with around 63.4 lakh ha area under forest cover which is 46% of its total geographical area. The total population of the state is around 2.55 crore of which about 70% population is engaged in Agriculture. There are around 37.46 lakh farm families in the state with about 80% farmers falling under small and marginal category. Paddy, Soybean, Urd and Arhar are the major Kharif crops while Rabi season is mainly by chickpea and Lathyrus.

As per the study report of IARI New Delhi average farm power availability was 0.72 kW/ha in the Chhattisgarh state in year 2001-02 as compared to the national average farm power availability (1.6 kW/ha).

Farm Power is an essential input in agriculture for timely field operations for operating different types of farm equipment and for stationary jobs like operating of irrigation equipments, threshers/cleaners/ graders and other post harvest equipments. Information about the availability of this power source under time-series is very essential in planning and prediction level of farm mechanization as this directly and indirectly provides vast potential for manufacturers, entrepreneurs, sales and repair etc. (Singh *et al.* 2010) [6]. The different sources of power available on the farm for doing various mobile and stationary operations are as under mobile power; Human, draught animals, tractors, power tillers, self propelled machines (combines, dozers, reapers, sprayer etc.) stationary power; Diesel/oil engines (for pump sets, threshers, sprayers and other stationary operations).

Materials and Methods

The present study was conducted in the Chhattisgarh state which is the major agriculture production areas of Chhattisgarh region. The data was collected from different Agriculture Department of Agriculture and allied department.

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Results and Discussion

Table 1: Farm Power Availability (kW/ha) in Chhattisgarh

Name of state	Farm power availability (kW/ha)		
	2010-11	2014-15	2015-16
Chhattisgarh	0.73	0.96	0.99

Source: State Government through Department of Agriculture, Cooperation and farmers welfare, Ministry of Agriculture and farmers Welfare, Govt. of India, Mechanization and Technology Division

In the table 1, in state of Chhattisgarh, power availability was 0.96 kW/ha in 2014-15 and 0.99 kW/ha in 2015-16.

Table 2: Horse power wise sale of tractors in 2014-15 and 2015-16

State	Horse power for 2014-15					Total for 2014-15	Total for 2015-16
	up to 20 hp	21-30 hp	31-40 hp	41-50 hp	Above 51 hp		
Chhattisgarh	114	2231	10336	6194	1138	20013	16861

Source: TMA

In the table 2, in state of Chhattisgarh, horse power wise sale of tractors was 20013 in 2014-15 and 16861 in 2015-16.

Table 3: Farm Machinery Distribute in Chhattisgarh State.

S. No.	Distribution of Machinery	2001-02	2011-12	Absolute Change	Relative Change %
1	Tractor	317	699	382	120.50
2	Power Tiller 8 H.P.	26	1203	1177	4526.92
3	Power drawn implements	77	7711	7634	9914.28
4.	Hand/Bullock drawn implements	27958	24117	3841	13.74
	Total	28378	33730	5352	18.86

Source: Directorate of Agriculture, C.G. Raipur

In the table 3, during the year 2001-02, the distribution of total farm machinery in Chhattisgarh state was also found to be 28378. During the year 2011-12, distribution of total farm machinery in Chhattisgarh state was found to be 33730. It is increased by 18.86 per cent as compared to 2001-02 (28378). Amongst all the machinery the distribution of power drawn implements (9914.28%) was found more as compare to power tiller 8 H.P. (4526.92%), tractors (120.50%). The bullock

operated implements has been found to decrease by -13.74% in 2011-12 as compared to 2001-02.

Irrigated Area

The net and gross irrigated area has been found to be increased by 43.80 and 58.01 per cent in the year 2011 (1415, 1648 thousand ha) as compared to year 2001 (984, 1043 thousand ha.)

Table 4: Source wise irrigated area in Chhattisgarh State

Category	2001-02	2011-12	Absolute Change	Relative change %
Tube-wells	131	383	252	192.37
Canals	678	873	195	28.76
Wells	39	20	-19	-48.72
Ponds /tank	55	54	-1	-1.82
Other sources	81	85s	4	4.94
Net irrigated area	984	1415	431	43.80
Gross irrigated area	1043	1648	605	58.01
% of net irrigated area to net area sown	20.70	30	9.3	
% of gross irrigated area to gross area sown	19.6	29	9.4	

Source: Directorate of Agriculture, C.G. Raipur

Among all the sources of irrigation the maximum change was found in tube well (192.37%) followed by canal (28.76%) and other sources (4.94%). The area irrigated by wells and ponds was found to be decreased by -48.72% and -1.82% in the year 2011 as compared to 2001.

Conclusions

It is concluded that the mechanization gap between the expected level of knowledge and status of implements. It was found that lack of awareness resulted in low status in respect of implements and its importance. For state level there should be technical know-how should be provided to the farmers with respect to appropriateness of farm machinery for the situation and for its proper use. Standardization and quality-marking centres of farm equipment should be established in

potential areas of the state.

References

1. Anonymous. Annual Progress Report, Directorate of Agriculture, Department of Agriculture, Govt. of Chhattisgarh, 2010.
2. Bector, Vishal, Gupta PK. Present status and growth rate of utilization of farm power sources in India. Agric. Engg. Today. 2009;33(4):3-9.
3. Sharma HO, Rathi D, Chouhan RS, Niranjana HK. States of Agriculture in Chhattisgarh: Progress Report: Govt. of India New Delhi, 2014.
4. Singh Surendra. Annual report, Mechanization of rice wheat cropping system for increasing the productivity, 2001-02, Deptt. Of farm Power and Machinery, Punjab

Agricultural University, Ludhiana, 2002.

5. Singh Surendra. Engineering Interventions in Agriculture; National Seminar on Agricultural Engineering: The way to improve rural economy. 2011, 1-9.
6. Singh RS, Singh S, Singh SP. Farm power availability and agriculture production scenario in India. Agric. Engg. Today. 2010;34(1):9-20.
7. Tractor Manufacturers Association of India (TMA).