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Constraints perceived by the farmers in use of implements in rice cultivation

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Abstract

This study was conducted on study on status and utilization of farm implements by the rice growers in Dhamtari district of Chhattisgarh during the year 2023-2024. Rice is India's most crucial cereal food crop, accounting for one-fourth of the country's total cropped area. 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). Chhattisgarh is often called the "Rice Bowl of India" because of its extensive rice cultivation during the Kharif season, which plays a significant rolein the country's rice production. Only 23.00% of Chhattisgarh's cultivated land is irrigated. Rice is grown on 4,040.9 hectares, producing 8 million tonnes annually with a productivity rate of 1.98 tonnes per hectare. The constraints faced by the farmers in use of implements in rice cultivation are economic constraints, extension constraints, technological constraints and infrastructural constraints, among the four categories of constraints studied.

Keywords: Constraints, irrigated, rice, utilization, productivity

Introduction

Rice is the staple food for over 65.00% of the Indian population and constitutes about 40.00% of the country's total food grain production, making it essential for food and livelihood security. India cultivates rice on 46.3 million hectares, yielding 130.29 million tonnes of milled rice with an average productivity of 2.8 tonnes per hectare. The major rice-producing states are West Bengal, Uttar Pradesh, Punjab, Odisha, Andhra Pradesh, Bihar, and Chhattisgarh. It grows well in India's hot and humid climate, particularly during the Kharif season in rain-fed areas with substantial annual rainfall (Madhu *et al*., 2023) [5]. To satisfy the rising food requirements, it is estimated that approximately 260 million tonnes of food grains need to be produced annually (Reddy and Sen, 2004) [8]. Chhattisgarh is often called the "Rice Bowl of India" because of its extensive rice cultivation during the Kharif season, which plays a significant rolein the country's rice production. Only 23.00% of Chhattisgarh's cultivated land is irrigated. Rice is grown on 4,040.9 hectares, producing 8 million tonnes annually with a productivity rate of 1.98 tonnes per hectare. In Dhamtari district alone, rice is cultivated on 139 hectares, yielding 428 tonnes with a productivity rate of 3.5 tonnes per hectare. To minimize human and animal labor, increase cropping intensity, precision, and timeliness in the use of different crop inputs, and lower losses at various stages of crop production, agricultural mechanization entails the use of multiple power sources and farm tools and equipment.

Materials and Methods

The present study was carried out in Dhamtari district of Chhattisgarh. There are total four blocks in Dhamtari district namely, Dhamtari, Kurud, Magarlod and Nagri, , out of which 2 blocks namely Nagri and Dhamtari were selected, four representative villages from each of the selected blocks were selected randomly among the villages of the respective block. In this way total 8 villages were considered for this study. A total of 15 farmers growing rice were selected randomly for this study from each of the selected village. In this way a total of 120 farmers were considered for the study. Farmers generally face a lot of obstacles in adopting any innovation due to various reasons. Sometimes obstacles may be related to economy, infrastructural facilities, inadequate information, lack of technical skills, etc. Constraints will not be the same for all farmers in all situations.

Result and Discussion

Constraints faced by farmers in use of implements in rice cultivation are economic constraints, extension constraints, technological constraints and infrastructural constraints.

Economic constraints

The respondents thought that their greatest economic

constraints were the high initial cost of farm machinery (69.88%). The respondents indicated that high hiring costs of farm machinery (48.72%), high maintenance costs of farm machinery (44.55%) and high fuel cost (30.73%) were the other constraints faced by the farmers.

Extension constraints

Lack of awareness about farm implements (35.44%) was one of the major extension constraint experienced by the respondents. This was followed by farmers not having adequate knowledge about the machinery mechanisms (23.33%) and lack availability of skilled labours to operate farm machineries (20.11%).

Technological constraints

Frequent repair (68.81%) was faced by farmer and it has been felt as constraint by majority of the respondents, followed by lack of training facilities on use of farm implements (40.23%).

Table 1: Distribution of respondents according to Constraints faced by farmers in use of implements in rice cultivation

Sl. No.	Constraints	Percentage	Rank
1.	Economic constraints		
	• High initial cost of farm machinery	69.88	I
	• High maintenance cost of farm machinery	44.55	III
	• Lack of credit facility	28.11	V
	• High hire charges of farm machinery	48.72	II
	• High fuel cost	30.73	IV
	• High tax rate on farm machinery	27.50	VI
2.	Extension constraints		
	• Lack of awareness about the implements	35.44	I
	• Lack of adequate knowledge	23.33	II
	• Lack of skill labour	20.11	III
3.	Technological constraints		
	• Frequent repairs of farm machinery	68.81	I
	• Lack of training on use of farm machinery and tool	40.23	II
4.	Infrastructural constraints		
	• Non availability of service center in nearby	35.66	II
	• Non availability of spare parts shops in nearby	44.17	I

Infrastructural constraints

Non availability of spare parts in nearby (44.17%) was the major constraint experienced by the respondents. This was followed by non-availability of service centers in the area (35.66%) constraint faced by the respondents.

Conclusion

Various conclusion drawn through above findings indicates most of the respondents are high initial cost of the implements (69.88%) was the most felt economic constraints by the respondents. Frequent repair (68.81%) faced by farmer it was felt as technological constraints by majority of the respondents. The suggestions provided by respondents to address the constraints in in use of farm implements. The data shows that a significant majority (82.50%) recommended that providing subsidies to farmers in purchasing of farm implements.

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