The Pharma Innovation Journal 2023; SP-12(11): 105-107

www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2023; SP-12(11): 105-107

www.thepharmajournal.com
Received: 07-09-2023
Accepted: 11-10-2023

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Farmer's perspective study on cropping pattern under the Bemetara and Kabirdham districts of Chhattisgarh

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Abstract
The study was conducted in Bemetara and Kabirdham districts of Chhattisgarh. A total of 120 respondents participated in this study 60 respondents crop each of the districts. It reveals that most farmers fall into the small farmers category, followed by marginal, semi-medium, medium, and large farmers groups. More than 80% percentage of respondents have full access to irrigation by the tube well and canal system. The majority of respondents acquire short-term loans from institutional sources through the KCC scheme. It also resulted that the Rice – Chickpea, Rice – Wheat, and Rice – Sugarcane were the main cropping patterns adopted by a maximum number of respondents.

Keywords: Small farmers, Irrigation, loan, KCC, cropping pattern. Chhattisgarh

Introduction
The selection of crops is the most important factor that affects farmers' income. Cropping pattern refers to the arrangement and sequence of different crops that are cultivated on a piece of land over a specific period, typically a year or a growing season. Cropping patterns are influenced by various factors, including climate, soil type, water availability, market demand, and the objectives of the farmer. Chhattisgarh state is located in the central region of India. The climate is tropical, with hot and humid summers and mild winters. The average annual rainfall is around 1,200 mm. The total geographical area of the state is around 138 Lakh ha. With a net sown area of 46.51 Lakh ha, which constitutes 34% of its total geographical area (agriportal.cg.nic.in). About 70% population is engaged in Agriculture. The majority of farmers fall into the marginal farmers category (< 1 ha. land). The state of Chhattisgarh was divided into three agro-climatic zones. namely C.G. Plains, Baster Plateau, and Northern Hills regions. Bemetara and Kabirdham districts comes into the agro-climatic zone of C.G. Plains which is highly irrigated due to numerous tube walls and canals. The Entisols (Bhatha) soil is the dominant type of soil found in both districts. A double cropping system is adopted in this area because of good irrigation facilities. The state of Chhattisgarh is often referred to as the "Rice Bowl of India" due to its higher rice production. *Oryza sativa* is the major cereal crop of Chhattisgarh and serves as a staple food in the state. Other cereals that can be grown include wheat and maize. Various pulses such as chickpea, lentil, and red gram are grown in the rabi season. Moreover, sugarcane is the primary commercial crop that can be cultivated in these districts.

Materials and Methods
The study was conducted in the Kabirdham and Bemetara districts of Chhattisgarh state. Two blocks were selected from each district: Kawardha and Bodla from Kabirdham district, and Nawagarh and Bemetara from Bemetara district. Two villages were selected from each of the selected blocks. Thus, a total of eight villages were included in the study for the purpose of choosing respondents. Fifteen respondents from each of the chosen villages were interviewed for this investigation, resulting in a total of 120 respondents/farmers included in the study for data collection.

Results and Discussion
Land Holding: The data regarding land holding is shown in Fig. 1, most of the respondent comes under the small farmer's group (1.1-2 ha) followed by marginal (<1 ha), semi-medium (2.1-4 ha), medium (4.1-10) and at last large farmers group (>10 ha).

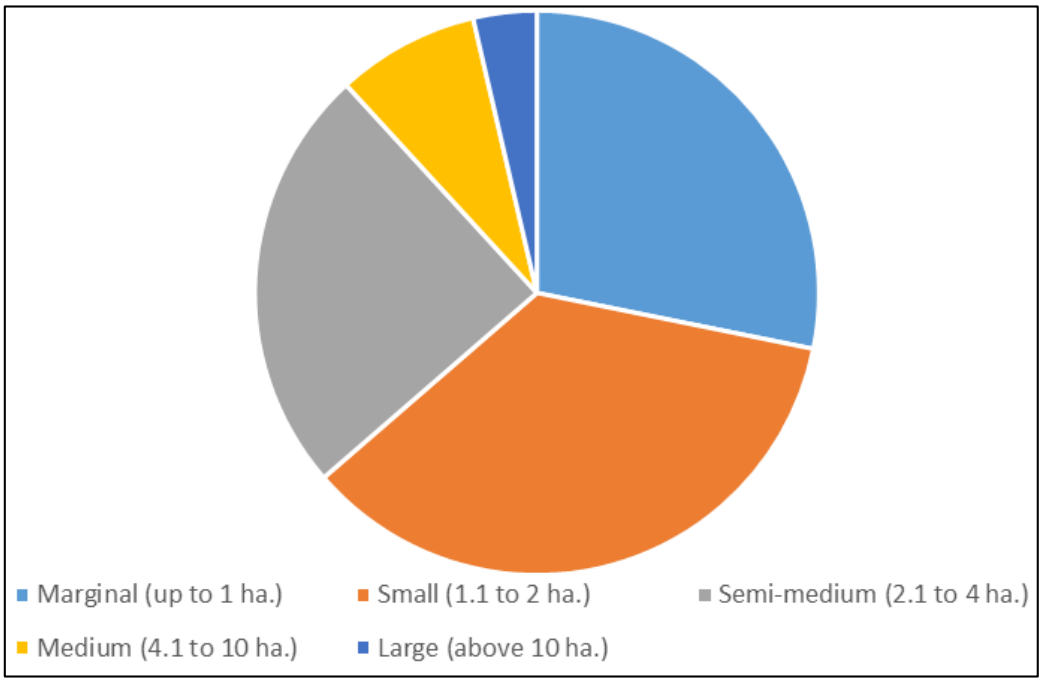

Fig 1: Distribution of respondents according to their land holding

Irrigation facilities: Water is the most important input for successful crop production and crop intensification. Fig. 2, concluded that 83.33% of respondents had full access to irrigation, 2.50% had partial access, and 14.17% had no access. Regarding source of irrigation 74.76% primarily used tube wells for irrigation, 14.56% used both tube wells and canals, and 10.68% relied on canals. Regarding the availability of irrigation facilities, 10.68% had access only during the kharif season, while 41.75% had year-round access (Shekhar and Biswas, 2019) [2].

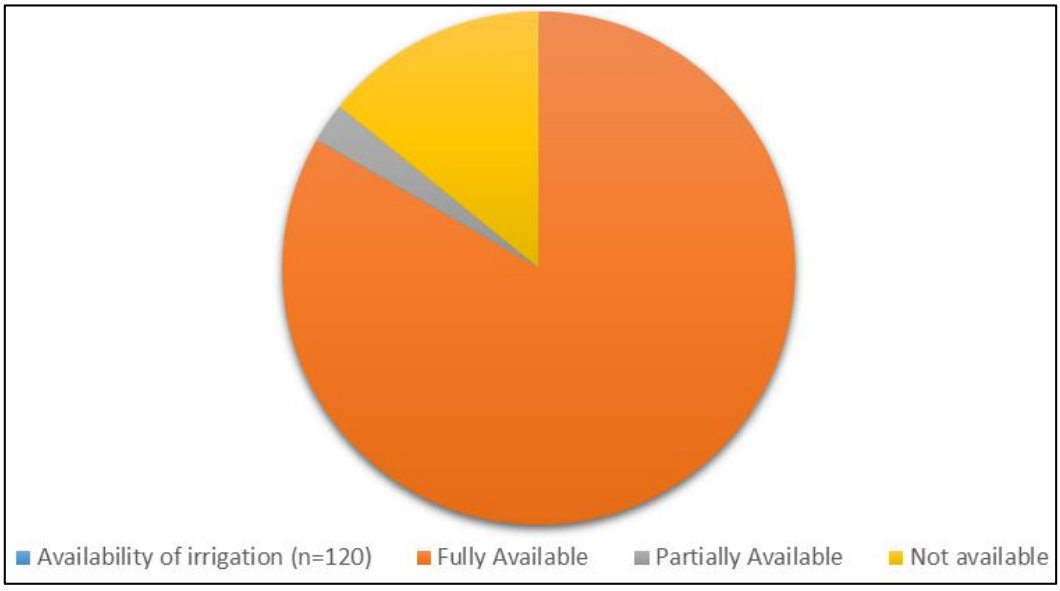

Fig 2: Distribution of respondents according to irrigation facilities available

Credit acquisition: In a study about credit acquisition represented in Fig. 3, almost all respondents (96.67%) had taken out credit. Most of them (90.52%) used short-term loans, with only a few using long-term (1.72%) or medium-term (7.76%) loans. The majority got credit from cooperative banks (73.28%), while some used nationalized banks (15.52%), middlemen (6.03%), or friends and family (5.17%). Most of the credit (93.10%) was used for agricultural inputs, with only a small portion (6.90%) used for other things like education, marriage, festivals, and medical costs.

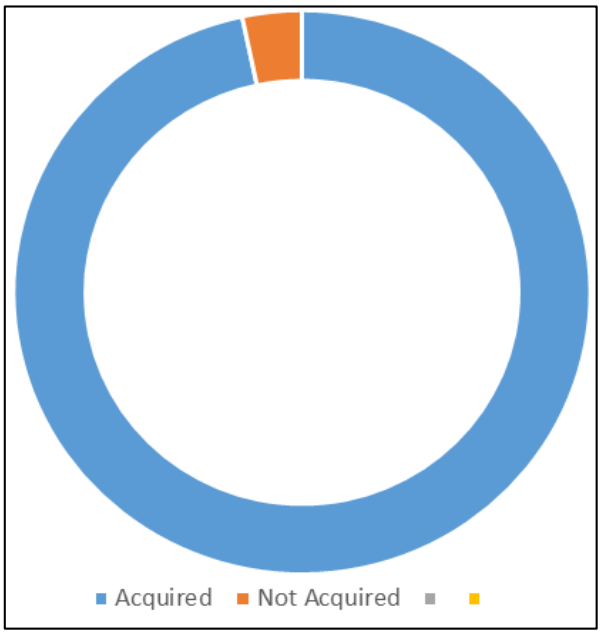

Fig 3: Distribution of respondents according to their credit acquisition

Cropping pattern adopted by the respondents

The survey concluded that the most common cropping patterns among the respondents were Rice-Wheat, Rice-Chickpea, and Rice-Sugarcane. During the Kharif season, as depicted in Table 1, 110 respondents were cultivating rice, while 64 respondents were growing sugarcane and various other crops. In the Rabi season, as shown in Table 2, 90 respondents were engaged in chickpea cultivation, and 60 respondents were growing wheat, with additional crops like lentils, vegetables, and coriander. In the Zaid season, according to Table 3, only 15 respondents were involved in summer rice cultivation, while 10 respondents were cultivating vegetables.

Table 1: Distribution of respondents according to their crop preference in Kharif Season

S. No	Crops	F	%	Area
1.	Rice	110	91.67	254.59
2.	Soybean	12	10	17.68
3.	Sugarcane	64	53.33	144.24
4.	Groundnut	6	5	4.41
5.	Tur	13	10.83	21.22
6.	Kodo	1	0.83	0.4
7.	Maize	1	0.83	0.4

Date based on multiple responses

Table 2: Distribution respondents according to their crop preference in Rabi Season

S. No	Crops	F	%	Area
1.	Wheat	60	50	120.29
2.	Chickpeas	90	75	151.12
3.	Lantil	8	6.67	10.56
4.	Coriander	5	4.17	6.1
5.	Vegetables	8	6.67	10.1

Date based on multiple responses

Table 3: Distribution of respondents according to their crop preference in Zaid Season

S. No	Crops	F	%	Area
1.	Rice	15	12.5	20.6
2.	Vegetables	10	8.33	15.2

Date based on multiple responses

Conclusion

Based on the analysis of the survey, it was concluded that the majority of the farmers had adopted a cropping pattern centered around rice and sugarcane. For the Kharif season, the main crops cultivated were rice, sugarcane, soybean, and groundnut. Wheat and chickpeas were primarily grown during the Rabi season. The availability of good irrigation facilities and a reliable source of credit enabled the successful implementation of a double cropping system in this research area.

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