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A problem analysis: Maize growers of the Surguja district of Chhattisgarh

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Abstract

The present investigation was carried out in the Surguja district of Chhattisgarh state. Data were collected from 120 maize grower respondents from eight selected villages of Ambikapur block. The results of the study in context with problems related to maize cultivation, out of a total of 294.74 ha of land, a maximum (25.91%) land was occupied under upland unbanded (Entisols), also highly irrigated and most suitable for maize production. The high-intensity problems of respondents were expressed as a lack of money to purchase agricultural products inputs followed by High cost of seed, fertilizer, insecticide and implements, Not being immediately ready to adopt new technology, High labour charges, lack of training facilities, Less contact with extension officers and Harm from wild animals (bears, monkeys & elephants). Under remedial measures were identified; Labour and credit facilities should be available in proper time, Subsidies should be increased on fertilizers and seeds, the Price of seeds should be minimised, Extension agency or agent should convey the right information at the right time, Government should manage to protect wild animals and Proper marketing facilities should be established in their locality.

Keywords: Problems, respondents, banded, rank and agroclimatic

Introduction

Maize (*Zea mays* L.) is called the "Queen of Cereals" throughout the world. For billions of people, maize is an important grain that can be used as food, fodder, fuel and industrial raw material. Currently, more than 170 countries collectively produce about 1147.7 million metric tons of maize in an area of 193.7 million hectares, with an average productivity of 5.75 tons/hectare (FAOSTAT, 2020). In the state of Chhattisgarh, maize is the second most important crop after rice for the production of food grains. 71.75 million ha of land is used to cultivate maize in Chhattisgarh, producing 134.16 mt of grain with a productivity of 1886 kg/ha. In CG, there is an annual average of 1200-1400 mm of rain. In addition to a 137 percent cropping intensity. Chhattisgarh has three distinct agroclimatic zones, each with enormous potential for agricultural development. The climates of the two northern hills and the Bastar Plateau are the most suitable for growing maize crops out of these three zones. Northern Hills; it includes the districts of Surguja, Surajpur, Balrampur, Korea, Jashpur, Raigarh and Dharamjaigarh Tehsil of Raigarh. Surguja district is the leading maize-growing district of the state. The state has very good potential for maize but the productivity is very low due to the cultivation of open-pollinated varieties (OPVs), improper input management practices and ignorance of the improved technology of maize as well as some constraints and barriers faced by the growers, which can be urgently required with their remedial measures for minimize the problems and enhanced the adoptability of maize technology among growers.

Materials and Methods

The present study was carried out in the Chhattisgarh State and Ambikapur block was randomly selected under the Surguja district and a total of 120 farmers were randomly selected from the 8 selected villages; Khaliba, Thakurpur, Bakirma, Balsedi, Mendra Khurd, Sukhari, Sarganwa and Parsa. Thus, 120 respondents were finally selected and collected the data with the help of a well-developed structured interview schedule.

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Results and Discussion

Problem-related soil: The soil is an important aspect related to the productivity and production of maize. The soil type and area distribution under irrigated and non-irrigated conditions are given in Table 1; results indicate that under upland unbanded (*Entisols/dand/ bari/tikra*); Out of 121.95 ha area about 94.29 ha land was found irrigated with 53.60 percent and 27.66 ha was unirrigated with 9.38 percent. Which is more fertile and suitable for all the years for maize cultivation. Under upland banded (*Inseptsols/Goda Chawar*): In the upland banded 17.80 percent was found total land 61.83 ha with 35.15 irrigated and 7.45 percent of land unirrigated. This situation of soil is only suitable for rabi and summer seasons for maize cultivation under assured irrigation. Under Low land banded (*Alfisols/Gadar Chawar*);

52.21 ha of 11.09 percent of the total land about 36.65 ha with 20.83 percent was irrigated and 15.56 ha with 5.28 percent of the land was unirrigated. This situation of land is not suitable for maize due to having moist conditions. Under extreme low land banded (*Vertisols/Bahara*); out of 36.79 ha 7.82 percent was total land about 28.56 ha with 16.23 percent of land was irrigated and 8.23 ha with 2.79 percent land was unirrigated. Low land and extreme low land banded are only suitable for rice cultivation. Thus, it can be concluded that out of a total of 121.95 ha of land, 53.60 percent was irrigated and suitable for maize crops in all seasons and the remaining 25.91 percent of the land was found non-irrigated under the upland unbanded farming situations of land and found suitable for the rainy season only.

Table 1: Distribution of the soil type and area under irrigated and rainfed Condition

Farming Situation (Soil type) (local name)	Area (ha)					
	Irrigated		Non-Irrigated		Total	
	Area	%	Area	%	Area	%
Upland unbanded (<i>Entisols</i>) (dand/ bari/tikra)	94.29	53.60	27.66	9.38	121.95	25.91
Upland banded (<i>Inseptsols</i>) (Goda Chawar)	61.83	35.15	21.96	7.45	83.79	17.80
Low land banded (<i>Alfisols</i>) (Gadar Chawar)	36.65	20.83	15.56	5.28	52.21	11.09
Extreme low land banded (<i>Vertisols</i>)(Bahera)	28.56	16.23	8.23	2.79	36.79	7.82
Total	221.33	74.98	73.41	24.91	294.74	62.62

Socio-economic-psychological and technical problem faced by maize growers

Several responses were taken to ascertain the problem faced by

the maize growers in the adoption of recommended maize production technology. Various Problems are presented in Table 2 which indicates that under the problem.

Table 2: Distribution of respondents according to their intensity of problems

SI. No.	Problem statement	Intensity of problem			Mean score	Rank order	Overall Rank
		Very Serious (3)	Serious (2)	Less Serious (1)			
A	Individual Problem						
1	To be busy with other business	0 (0%)	14 (11.66%)	106 (88.33%)	1.11	II	XVI
2	Reduction of land area	21 (17.5%)	35 (29.16%)	64 (53.33%)	1.64	I	XII
B	Socio Economic Problem						
1	Lack of money to purchase agri. input	60 (50%)	59 (49.16%)	1 (0.83%)	2.49	I	I
2	High labour charge	64 (53.33%)	34 (28.33%)	22 (18.33%)	2.35	II	IV
3	High-cost of seed, fertilizer, insecticide and implement	65 (54.16%)	33 (27.5%)	22 (18.33%)	2.38	I	II
4	Lack of loan facility	12 (10%)	61 (50.83%)	47 (39.16%)	1.70	IV	X
C	Social-Psychological Problem						
1.	Not being immediately ready to adopt new technology	50 (41.66%)	64 (53.33%)	6 (5%)	2.36	I	III
2.	Lack of motivation	13 (10.83%)	85 (70.83%)	22 (18.33%)	1.92	II	IX
D	Information Problem						
1	Lack of training	35 (29.16%)	85 (70.83%)	0 (0%)	2.29	I	V
2	Timely not receipt of technical information	17 (14.16%)	78 (65%)	25 (20.83%)	1.93	III	VIII
3	Less contact with extension officers	33 (27.4%)	87 (72.5%)	00 (0%)	2.27	II	VI
E	Technical Problem						
1	Lack of proper knowledge about advanced technology	22 (18.33%)	36 (30%)	62 (51.66%)	1.66	I	XI
2	Timely non-availability of input like fertilizer and agri. Equipment etc.	0 (0%)	47 (39.16%)	73 (60.83%)	1.39	II	XVII
F	Other Problem						
1	Lack of market	0 (0%)	47 (39.16%)	73 (60.83%)	1.39	III	XIV
2	Harm from wild animals (bears, monkeys & elephants)	16 (13.33%)	101 (84.16%)	3 (2.5%)	2.10	I	VII
3	Damage caused by rat	0 (0%)	55(45.83%)	65 (54.16%)	1.45	II	XIII
4	Damage from birds	0 (0%)	15 (12.5%)	104 (86.66%)	1.11	IV	XVII

Table 2. reveals that out of the total problems of maize growers, Lack of money to purchase agri. the input was ranked 1st with the highest mean score, i.e., 2.49 followed by a 2.37 mean score under High-cost of seed, fertilizer, insecticide and implement ranked 2nd, 'Not being immediately ready to adopt new technology ranked 3rd with a 3.36 mean score, High labour charge had 4th rank with 2.35 mean score, Lack of training

ranked 5th with 2.29 mean score, Less contact with extension officers had 6th ranked with a 2.27 mean score, Harm from wild animals (bears, monkeys & elephants) ranked 7th with a 2.10 mean score, Timely not receipt technical information ranked 8th with 1.93 mean scores, Lack of motivation ranked 9th with 1.92 mean scores, Lack of loan facility ranked 10th with 1.70 mean scores, Lack of proper knowledge about advance technology

ranked 11th with 1.66 mean scores, Reduction of land area ranked 12th with 1.64 mean score, Damage caused by rat ranked 13th with 1.45 mean score, Timely un-availability of input like fertilizer, agri. Equipment etc. ranked 14th with a 1.39 mean score, Lack of market ranked 15th with a 1.38 mean score, To be busy in Other business ranked 16th with a 1.11 mean score and Damage from birds ranked 17th with a 1.11 mean score was found. Thus, it can be concluded from the table that the high-intensity problems of maize grower respondents were expressed

as “Lack of money to purchase agri. input” “High cost of seed, fertilizer insecticide and implements”, ‘Not being immediately ready to adopt new technology’ High labour charge” “lack of training facilities,” “less contact with extension officers” and “Harm from wild animals (bears, monkeys & elephants)”.

The remedial measures to overcome the problems of maize growers

Table 3: Distribution of respondents according to their remedial measures to overcome the problems of Maize growers

SI. No.	Remedial measures statement to overcome the problem	Frequency	Percentage	Rank order
1.	The price of seed should be minimized.	94	78.33	IV
2.	Labour should be available in proper time with optimum wage.	112	93.33	I
3.	Govt. should protect wild animals.	89	74.16	V.5
4.	Proper marketing facilities should be established	79	65.83	VII
5.	Credit facilities should be timely provided to farmers in a minimum rate of interest	102	85	II
6.	To promote the machinery equipment for harvesting	28	23.33	X
7.	Extension agency or agent should convey the right information at right time	89	74.16	V.5
8.	Subsidies should be increased on fertilizer and seed etc	95	79.16	III
9.	Timely technical guidance & advisory through experts should be provided	60	50	IX
10.	Timely provides the seed of maize	15	12.5	XI
11.	Timely provide chemical fertilizers and pesticide	65	54.16	VIII

Table 3 revealed that the remedial measures expressed by 93.33 percent of respondents suggested that Labour should be available in proper time with an optimum wage which is 1st ranked followed by 85 percent were suggested that Credit facilities should be provided to farmers in a minimum rate of interest ranked 2nd. About 79.16 percent suggested Subsidies should be increased on fertilizer and seed, ranked 3rd, whereas 78.33 percent suggested the price of seed should be minimized ranked 4th followed by Extension agency or agent should convey the right information at the right time and Govt. should protect wild animals ranked 5-6th with 74.16 percent, Proper marketing facilities should be established ranked 7th with 65.83 percent, Timely provide chemical fertilizers and pesticide had ranked 8th with 54.16 percent, Timely technical guidance & advisory through experts should be provided had ranked 9th with 50 percent, To promote the machinery equipment for harvesting had ranked 10th with 23.33 percent and Timely provides the seed of maize had ranked 11th with 12.5 percent.

Conclusion

It can be concluded from the study, that the maximum area occupied in upland unbanded farming situation with irrigated and maize was the main crop during the wet and dry season for commercial purposes. The high-intensity problems of maize grower respondents were expressed as “Lack of money to purchase agri. input” “High cost of seed, fertilizer insecticide and implements”, ‘Not being immediately ready to adopt new technology’ High labour charge” “lack of training facilities”, “Less contact with extension officer” and “Harm from wild animals (bears, monkeys & elephants). In their remedial measures for minimizing the problems and suggested that “Labour should be available in proper time’, ‘Credit facilities should be provided to farmers at the minimum rate of interest, ‘Subsidies should be increased on fertilizer and seed’, ‘Price of seed should be minimized’, ‘Extension agency or agent should convey the right information at the right time’ and “Proper marketing facilities should be established in their locality” so that problems of maize growers can be minimized and their production of maize crop will also be enhanced along with overall their socio-economic condition.

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