



Research Article

PERCEIVED CONSTRAINTS OF PADDY GROWERS IN ADOPTION OF SYSTEM OF RICE INTENSIFICATION (SRI) IN IMPHAL EAST DISTRICT, MANIPUR

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Abstract: Adoption of suitable rice production technology such as SRI, minimize yield loss due to the climate irregularities to a great extent and ensure better livelihood to the farmers. The study was conducted to ascertain the constraints encountered by paddy growers in taking up SRI in Imphal East district of Manipur. The study was conducted in three block of Imphal East district viz., Kairao Bitra, Sawombung and Khetrigao Block during the year 2021. Forty respondents from each block comprising a total of 120 farmers were randomly selected and interviewed by using a planned and pre-tested questionnaires. The study observed that, middle age group (30 to 45 years) formed majority of respondent accounting to 53.33 percent and the least were young group (Up to 30 years) with 5.83 percent. As land holding is concerned, majority of the farmers (55.83 percent) falls under the category of marginal (Up to 0.5 ha). Under the technological constraints, lack of proper row marker facility for marking the transplantation points were the main limiting factor with quotient value 59.10. Absence of government support was the key constraint under administrative constraints with quotient value 54.10. There is a need to address the problems face by the paddy growers in adopting SRI by the concern authority of the district and state.

Keywords: Constraints, Paddy Growers, System of Rice Intensification (SRI), Row marker, Imphal East District

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Introduction

Asian countries the food security depends mainly on irrigated rice accounting to 75 percent of the total rice production [1]. As rice production is concerned India ranked 2nd with an area over 45.5 million ha next to China [2]. In India rice alone compensates about 31 percent of calorie intake [3]. Manipur is a hill state located at lower slope of Sub Himalayan range of north-eastern region of India. Like most northern state of India, the economy of Manipur state depends mainly on agriculture and its related activities. Though the state total land under the agriculture accounted only 6.74 percent of total geographical area it provides livelihood for more than 52 percent of total state population. Rice being the main crop, accounts more than 95 percent of total food grains production covering more than 72 percent of the overall total cropped area of Manipur state.

The demand of rice in the state has been tremendously increased with its increased in population. However, the rice production has been decreased due to many factors such as inadequate irrigation facilities, high labour cost and irregular rainfall resulting in severe variations in production of rice. Under such condition, paddy cultivation by adopting SRI method could be one of the options for increasing productivity of rice for the farmers of the state. Adoption of SRI method minimised use of water to a great extent compared to conventional method of farming. The Imphal East district lies between 24°78' 07" North (Latitudes) and 93° 96' 74" East (Longitudes) with the elevation of 790 m above mean sea level. The district is categorized by mild to temperate climate of subtropical monsoon with an average temperature of 25° C Max. and min.8° C. Paddy is the main crop in this district and other crops includes, Soyabean, rapeseed mustard, black gram, pea, french beans, rice beans, other pulses, wheat, cole crops etc. Adoption of SRI production technology minimizes loss of yield due to climate anomalies and provide better livelihood to the farmers. Beside its advantages, farmers adopting SRI method have been facing many challenges and constraints. Thus, present study was conducted to identify constraints encountered by the paddy growers in taking SRI in Imphal East district of Manipur.

Materials and Methods

Present study was undertaken in 3 blocks of Imphal East district viz., Keirao Bitra, Sawombung and Khetrigao Block of Imphal East district, Manipur during the year 2021. Forty respondents from each block comprising a total of 120 farmers were randomly selected and interviewed by using a planned and pre-tested questionnaires collect information about the constraint encountered by the paddy growers in taking up SRI after harvesting the crop.

Constraints were identified through personal interview to the selected paddy growers of Imphal east district. The selected respondents were requested to rank the identified constrains as per the severity (1 for adequate; 2 for moderate; 3 for fair; 4 for good and 5 for low). The ranks were then converted to score and then average to arrive at RBQ (Rank Based Quotient). Further, all the constraint was then subjected to prioritization by estimating RBQ according to Reddy and Sontakki (2003) [4].

Results and Discussion

Socio economic profile of the farmers

Development of the farming activity depend on several factors viz. economics, social, political, psychological etc. All these conditions might impact both the negative and positive influences on emergence of farm activity. The socio personal information includes age, caste, size of family, education, size of land holding, farming experience and farmers income [Table-1].

It was observed that, the majority of respondent were under the middle age group (30 to 45 years) accounting to 53.33 percent and the least were young group (Up to 30 years) with 5.83 percent. The old group (above 45 years) occupy a fairly large portion with 40.83 percent. Majority of the respondent were General (70.00 percent) followed by others with 22.50 percent and the least was OBC with 7.5 percent. The educational status of the farmers was highest with 35.83 percent (Class 10th to 12th) closely followed by the group class 6th to 10th (30.83 percent), above 12th with 13.33 percent and illiterate with 20.00 percent.

As land holding is concerned, majority of the farmers (55.83 percent) falls under the category of marginal (Up to 0.5 ha) followed by large farmers (above 3ha), small farmers (0.5 to 1 ha) and medium farmers (1 to 3 ha) with a percentage of 10.83, 18.33 and 15.00 respectively. The present study observed that farmer's with medium experience was found to be highest with 44.17 percent followed by high experience (31.67 percent) and the low experience (24.17 percent). It was also observed that majority of the farmers were in low-income group (64.17 percent) having an income less than 1 lakh followed by medium (26.67 percent) and high (9.17 percent). The present findings were in similarity to the earlier findings reported by Pandey *et al.*, (2004) [5]; Reddy *et al.*, (2005) [6]; Oinam and Sudhakar, (2014) [7] and Pal *et al.*, (2019) [8] in various part of the country.

Table-1 Socio-economic profile of the respondents

Variable	Frequency	Percentage
Age		
Young group (Up to 30 yr)	7	5.83
Middle group (30-45 yr)	64	53.33
Old group (Above 45 yr)	49	40.83
Caste		
General	84	70.00
OBC	9	7.50
Others	27	22.50
Family size		
Small (Up to 4 members)	43	35.83
Medium (5 to 7 members)	55	45.83
Large (Above 7 members)	22	18.33
Education status		
Illiterate	24	20.00
Up to class 5 th	-	0.00
Class 6 th to 10 th	37	30.83
Class 10 th to 12 th	43	35.83
Above 12 th	16	13.33
Land holding		
Marginal (Upto 0.5 ha)	67	55.83
Small Farmers (0.5 to 1 ha)	22	18.33
Medium Farmers (1 to 3 ha)	18	15.00
Large Farmers (Above 3 ha)	13	10.83
Experience in farming		
Low (1 to 2 years)	29	24.17
Medium (3 to 5 years)	53	44.17
High (Above 5 years)	38	31.67
Income		
Low (Below 1 lakh)	77	64.17
Medium (1 to 3 lakh)	32	26.67
High (Above 3 lakh)	11	9.17

Perceived constraints

The constraints alleged by paddy growers of the district are given in [Table-2] and were largely categorized into 7 categories viz. economic, technological, social, administrative, extension, infrastructural and cultivation constraints.

Under technological constraints, lack of availability proper row marker facility was the main limiting factor with quotient value of 59.10 followed by lack of knowledge on the use of marker, unsuitability with the environment, non-availability of cono-weeder, lack of awareness and training and lack of management practices with a quotient value of 47.9, 46.2, 45.1, 43.6 and 37.5 respectively. Under economic constraints, non-availability of credit facility ranks first with quotient value of 58.3 followed by absences of financial assistant with quotient value 51.70, high input's cost with a quotient value of 40.80, non-judicious use of the available resources (38.70), high wages and labour cost with a quotient value of 34.90 and lack of marketing facilities with a quotient value of 34.80. The results of the present study were in similarity with finding of Pandey *et al.*, (2004).

Absence of government support with the quotient value of 54.10 was the main problem under administrative constraints. These were followed by non-availability of crop scheme, lack of guidance from government officials and lack of extension contacts with quotient value of 46.3, 36.2 and 35.3 respectively. The main constraint identified under infrastructural constraints were lack of support for farm implements with a quotient value of 52.10, non-availability of labours with a quotient value of 30.40, lack of soil testing facilities with a quotient value of 46.40, lack of custom hiring service with a quotient value of 45.40, non-availability of

seed on time with a quotient value of 45.10, lack of transport facilities with a quotient value of 41.60 and lack of irrigation facilities with quotient value of 39.20. Under extension constraint, quotient value for the lack of mass media exposure, lack of field and exposure visit, lack of need- based training programme, lack of communication and lack of extension service were 54.10, 36.10, 36.00, 32.30 and 31.70 respectively. In case of cultivation constraints, the quotient value was highest in lack of transplanting skill (43.30) followed by improper maintaining of ideal field (41.70), lack of water source (38.10), Labourer's reluctance in transplanting (35.60) and improper nursery rising of seedling (34.4). Similar findings were also stated by Thakur *et al.*, (2010) [9], Dagar (2015) [10] and Arsil *et al.*, (2018) [11].

Table-2 Ranking of constraints faced by the fish farmers along with RBQ value

SN	Items of Constraints	RBQ value	Rank
A.	Technological constraints		
1	Marker availability	59.10	I
2	Knowledge on use of marker	47.90	II
3	Cono weeder availability	45.10	IV
4	Management practices	37.50	VI
5	Technology suitability with the environment	46.20	III
6	Awareness and training	43.60	V
B.	Economic constraints		
1	Credit facilities	58.30	I
2	Financial support	51.70	II
3	Marketing facilities	34.80	VI
4	Input's cost	40.80	III
5	Wages and labour cost	34.90	V
6	Use of available resources	38.70	IV
C.	Administrative constraints		
1	Implementation of crops scheme	46.30	II
2	Government support	54.10	I
3	Extension contacts	35.30	IV
4	Guidance from government officials	36.20	III
D.	Social constraints		
1	Illiteracy	31.70	III
2	Family support and encouragement	39.00	II
3	Self confidence	42.10	I
E.	Infrastructural constraints		
1	Soil testing facilities	46.40	II
2	Timely seed availability	45.10	IV
3	Labour availability	30.40	VII
4	Transportation facilities	41.60	V
5	Irrigation facilities	39.20	VI
6	Custom hiring services	45.40	III
7	Supports for purchase of farm implements	52.10	I
F.	Extension constraints		
1	Mass media exposure	54.10	I
2	Communication	32.30	IV
3	Extension services	31.70	V
4	Need based training programme	36.00	III
5	Field visit and exposure visit	36.10	II
G.	Cultivation constraints		
1	Maintaining ideal field	41.70	II
2	Transplantation skill	43.30	I
3	Water source	38.10	III
4	Labourer's reluctance in transplanting	35.60	IV
5	Nursery raising of seedling	34.40	V

Conclusion

The study observed that raw marker unavailability, high inputs cost, lack of government support, lack of self-confidence, lack of financial support for purchase of farm implements, lack of exposure and lack of transplantation skill were some of the major constraints faced by the paddy growers in adoption of SRI. To strengthen the paddy grower community, agriculture extension plays a vital role by providing technical known how. As land holding is concerned, majority of the farmers (55.83 percent) falls under the category of marginal (Up to 0.5 ha). Absence of government support with quotient value 54.10 was the main problem under administrative constraints. There is a need to address the problems face by the paddy growers in adopting SRI by the concern authority of the district and state.

Application of research: Research was conducted to identify constraints encountered by the paddy growers in taking SRI in Imphal East district of Manipur.

Research Category: Agricultural Extension

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Study area / Sample Collection: Keirao Bitra, Sawombung and Khetrigao Block, Imphal East district

Cultivar / Variety / Breed name: Rice

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

Ethical Committee Approval Number: Nil

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