DIFFERENTIAL NEED PERCEPTION AND CORRELATES OF TECHNOLOGICAL GAP IN RECOMMENDED RICE CULTIVATION TECHNOLOGIES

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Agriculture is a dominating factor in Indian economy. A lot of technologies have been developed in this field and diffused to the farmers. However, increase in agriculture production is neither upto the mark nor proportionate with respect to increase in population. In fact, in our country, the problem is not technology development but its adoption. Our agricultural scientists have developed a number of technologies for farmers but in reality it is seen that there is a wide gap between the adopted technologies and the recommended ones. The realization that stable performance is as important as progressive improvement of yield, and the fact that the gap between actual and potential yields in rice is still wide, have prompted scientists to identify the yield-destabilizing factors and develop methods to correct them. The ultimate decision to adopt a technology depends upon the technology itself and farmers' perception of the technoloty. Farmers and development personnel should percieve the need of a technology in the same line for it's appropriateness. The specific objectives of this study was to-

1. Study the differential need perception of farmers and development personnel regarding adoption of recommended rice cultivation technologies and
2. Find out the correlates of technological gap in recommended rice cultivation technologies.

METHODOLOGY

This study was undertaken in Burdwan district of West Bengal state. Two blocks were from Burdwan district and two villages from each of the selected blocks were selected by random sampling. Eighty (80) farmers as respondents were selected from the strata of small, medium and large farmers in proportion to the size of the strata. A sample of 20 personnel was selected by random sampling who were engaged in the field of agriculture development at villages, block and district level.

Need perception regarding improved rice farming

A schedule was developed to measure. The respondents were directly requested to rank the selected items according to their perceived importance. Rank orders of each item given by the respondents of both groups were plotted down separately. Then, rank order correlation was applied to study the agreement among the two groups with respect to their perceived needs.

Technological gap

In this study technological gap was operationalised as the gap between recommended practices and its adoption by the rice farmers in terms of deviation from the recommended practices. After disucssion with the experts and government officials, total fourteen (14) recommended practices were selected on which the gap was measured. Then, mean and standard deviation were worked out and farmers were categorised as low, medium and high technological gaps. Technological gap was calculated with the help of following formula

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$$\text{Gap \%} = \frac{RS - AS}{RS} \times 100$$ (RS- Recommended practice score, AS- Actual Score) (Ghosh, 1997).

The formula was modified after discussion with the experts to suit the study. The correlation was found out with the other independent variables such as age, education, occupation, social participation, paddy production, consumption & sale, income etc. All the variables are operationalised for the study accordingly.

RESULTS AND DISCUSSION

1. Differential need perception

Singh (1995) reported that the development projects which were not based on clients felt needs often went stray or produced unexpected consequences. Thus, any programme can be effective and purposeful, only if it is synchronised with local needs and requirements

Table 1: Need perception of farmers and development personnel about improved rice farming.

Need	Farmers		Development Personnel		Pooled	
	Mean score	Rank	Mean score	Rank	Mean score	Rank
1. Location of block head quarters within the radius of 5 km. from the village	9.47	XII	8.00	IX	9.17	XII
2. Testing of soil before sowing	3.90	I	4.45	IV	4.01	I
3. Demonstration before introducing a new technology	6.47	VI	3.30	II	5.83	IV
4. Timely availability of fertilizers and pesticide	8.37	X	9.55	XII	8.60	XI
5. Getting fertilizer and pesticides at reasonable rates	5.90	IV	8.35	X	6.39	V
6. Organising campaigns, discussions etc.on new technologies.	6.30	V	7.65	VII	6.57	VII
7. Training on recommended rice cultivation technologies	4.43	II	2.65	I	4.07	II
8. Prompt measures against insects and diseases through chemicals	6.77	VII	8.75	XI	7.16	IX
9. Functioning of co-operative societies in the village	6.87	IX	7.20	VI	6.94	VIII
10. Availability of bank serivces and loan facilities in the area	6.52	VII	6.20	V	6.45	VI
11. Encouragement to the farmers for HYV cultivation	8.67	XI	7.70	VIII	8.47	X
12. Availability of marketing facilities after harvesting	4.75	II	4.20	III	4.64	III

Rank correlation (rs) = 0.618* Si

Kokate (1984) also mentioned that for the success of any development programme, it was necessary for both officials and clienteles to have similar perception about needs. Keeping this in view, this study aimed to ascertain the need perception about improved rice cultivation between farmers of the study area and development personnel. Data pertaining to this aspect are presented in table 1.

A look at the table 1 makes it clear that farmers had identified the need for testing of soil before sowing, training on recommended rice cultivation technologies and availability of marketing facilities after harvesting as the most important ones. On the other hand, the development personnel perceived the need for 'training on recommended rice cultivation technologies' as the most important, followed by the need for 'demonstration before introducing a new technology' and 'availability of marketing facilities' as the prior ones.

The data in Table 1 did not reveal any significant differences between the farmers and the development personnel as far as the selected needs for the improved rice farming were concerned as revealed by the significant rank correlation co-efficient (rs = 0.616), which meant, that there was an agreement in assigning the priorities for various needs for improved rice farming.

2.TECHNOLOGICAL GAP

The overall technological gap in rice farming was estimated by taking into account the data of all recommended technologies. The farmers were categorised as low, medium and high technological gaps categories with the help of mean (41.30) and standard deviation (7.17) as worked out from the data (given in table 2). The overall mean technological gap taking all the farmers together was 41.30 per cent which falls in the range of medium technological gap.

Table 2: Distribution of respondent farmers based on their overall technological gap in recommended rice cutivation technologies.

Technological gap (%)	Categories of farmers		
	Small (n=35)	Medium (n-32)	Large (N=13)
1. Low (less than 34.13)	2 (5.72)	7 (21.88)	4 (30.77)
2. Medium (34.13-48.47)	21 (60.0)	22 (68.75)	6 (46.15)
3. High (more than 48.47)	12 (34.28)	3 (9.37)	3 (23.08)

(Values in the parenthesis indicate percentage)

The data in the table 2, reveal that only 5.72 per cent of small farmers 21.88 per cent medium farmers and 30.77 per cent large farmers had low technological gap. In the category of medium technological gap, there were 60 per cent of small farmers, 68.75 per cent of medium farmers and 46.15 per cent of large farmers. about 34.28 per cent of small farmers were having high technological gap.

The data presented in the table 3 indicates that all the farmers irrespective of their category had highest technological gap in case of technology related to seed treatment. The least adoption gap was found in case of timely harvesting of crops. Overall, it was found that all the three categories of farmers fell in the range of medium technological gap (34.13-48.47).

In case of high technological gap, the findings revealed that there were 23.08 per cent of large farmers. While collecting data with the large farmers, it was noticed that they used more than the recommended doses for technologies related to application of fertilizers and pesticides. They did not seem to be concerned about fertilizer use efficiency or soil health in this context. It was found that maximum farmers of all the categories fell in the medium adoption category. It was because the farmers did not adopt recommended technologies in full. They adopted it in part or in piecemeal.

Table 3 : Mean Technological gap (%) of recommended rice cultivation technologies for different categories of farmers

	Recommended	Categories of farmers			
		Small (n=35)	Medium (n-32)	Large (n=13)	Total (N=80)
1.	Using recommended varieties	27.14	18.21	17.93	22.07
2.	Using seed rate of 18-21 kg/acre	45.67	24.98	15.38	32.47
3.	Wet tratment of seeds by recommended fungicides	97.14	98.44	88.46	96.25
4.	Transplanting the seedlings within 25-30 DAS	28.54	23.93	17.93	24.98
5.	Applying compost in the seed bed as per availability	—	—	—	—
6.	Applying organic manure @ 8-10 cartful/acre	48.52	34.34	48.68	42.88
7.	Applying 17 kg urea, 22 kg DAP, and 16 kg MOP per acre as basal dose	39.01	41.63	33.30	39.13
8.	Applying 12 kg urea/acre as first top dressing at 15 DAT	48.52	43.71	53.79	47.45
9.	Maintaining water level at about 2.5 cm (1 inch) during transplanting	39.01	40.58	38.42	39.54
1o.	Applying irrigation in 7-10 days interval	49.47	48.91	51.23	49.53
11.	Applying 6 kg urea per acre as second top dressing at 45 DAT	56.13	43.71	53.79	50.78
12.	Hand weeding twice, 15 and 30 days after transplanting	50.00	45.31	38.46	46.25
13.	Use of need based pesticides	30.00	39.06	34.42	34.38
14.	Timely harvesting of crop	15.71	10.94	0.00	11.25
	Total	44.22	39.52	37.85	41.30

3. CORRELATION OF TECHNOLOGICAL GAP

An attempt was made to discuss different variables associated with the technological gap. It is apparent from table 4 that five variables out of ten were negatively and significantly related to the overall technological gap in recommended rice cultivation technologies. These variables were education, land holding, paddy production, paddy sale, income and perceived

appropriateness. This could be partly supported by a study of Sadamate (1978) on tribal farming system of technological gap who found education and landholding as significantly and negatively related to the technological gap. Among other variables, it was seen that age andoccupation were positively related to technological gap, whereas social participation was negatively and non-significantly correlated with technological gap. Thus, it can be concluded that the people are less likely to adopt recommended technologies as they like to stick to the traditonal ideas.

Table 4: Relatioship between independent variables and technological gap in recommended rice cultivation technologies.

S. No.	Variables	'r' value
1.	Age	0.157
2.	Education	-0.332*
3.	Occupation	0.022
4.	Social participation	-0.036
5.	Land holding	-0.362*
6.	Paddy production	-0.261*
7.	Paddy consumption	-0.109
8.	Paddy sale	-0.357*
9.	Income	-0.358*
10.	Communication score	-0.155

* Significant at 0.05 level

CONCLUSION

The overall technological gap was the highest in case of seed treatment (96.25%) followed by topdressing (50.78%) and irrigation in 7-10 days interval (49.53%). The other technologies which had significant technological gap were application of first top dressing (47.45%), application of two hand weeding (46.25%), organic manure (42.88%) and chemical fertilizers as basal dose (39.13%). The technologies, which had the lowest adoption gap, was 'timely harvesting of crop' (11.25%). Majority of farmers, in the study area had a medium (34.13-48.47%) technological gap in the overall recommended technologies.

The variables like education, land holding, paddy production, paddy sale, and income were negatively and significantly correlated with technological gap. Whereas, age and occupation were positively associated with technological gap but they were not significant. Social participation and use of communication sources were negatively but non significanlty correlated with technological gap.

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