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PERCEPTION OF THE PARTICIPANTS OF SPRINKLER IRRIGATION AS INFLUENCED BY THEIR EXTENSION-CUM-ECONOMIC CHARACTERISTICS AND THEIR PROBLEMS*

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The study was conducted in Ranebennur Taluk of Dharwad District during 1984-85. Participants of sprinkler irrigation have perceived the sprinkler community well irrigation as more useful as compared to nonparticipants who had perceived the sprinkler irrigation as less useful. Perception of the usefulness of sprinkler irrigation by participant farmers is not influenced by their Extension-cum-Economic status. The most important problems encountered by participant farmers in using sprinkler irrigation were shortage of electricity and fault in starting, insufficient water in the irrigation well and nonavailability of facilities in the village for repairing pipes. The problems encountered by nonparticipants of sprinkler irrigation in increasing crop production were inadequate and untimely rains, lack of availability of credit for crop production and subsidiary occupation, nonavailability of bullock cart and agricultural implements on hire in time, destruction of crop by wild animals and high cost of fertilizers and pesticides.

Irrigation water is an important input in increasing crop production in India. Large number of small farmers and marginal farmers are conspicuous to the Indian planners, policy makers and development agencies. Land holdings of these farmers are small, scattered and undulating. The norms prescribed for encouraging sinking of irrigation wells are not within the reach of small farmers and marginal farmers. The place of construction of irrigation tanks irrigation projects is inadequate to satisfy the needs of small farmers and marginal farmers.

The Government of India in recent years, has promoted the sprinkler community well projects for the benefit of small farmers, marginal farmers, scheduled caste and scheduled tribe families. Each sprinkler community irrigation well project is provided with three pumpsets and sprinkler equipment (Dudhani and Hasanuddin, 1981) with necessary funds for maintenance for initial one year period. The beneficiaries are encouraged to form a society to get it registered under the Co-operative Societies Act and select a leader who acts a promoter.

Sprinkler community irrigation well projects are expected to provide irrigation facilities to small farmers, marginal farmers and families of scheduled caste and scheuled tribe. Change agencies of these programmes reiterate that participants of sprinkler community irrigation well project perceive the usefulness of the project better than the nonparticipants. Besides, the change agencies concerned with the projects also argue that participants have no problems in using the water for irrigation from the irrigation well.

Another school of thought indicates that the sprinkler community irrigation well projects have not resul-

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ted in the benefical effects to the participants and that participants do not differ from nonparticipants in respect of their educational and economic characteristics. The perception of the usefulness of sprinkler community irrigation well project by participants and nonparticipants of the project is similar. There is no objective information on these aspects. Therefore, the present study has been designed with the following specific objectives.

Objectives

1. To find out the perception of usefulness of sprinkler irrigation by nonparticipants and participants.
2. To find out the association between the perception of usefulness of sprinkler irrigation by the participants and their extension-cum-economic status ; and
3. To identify the problems of participants and nonparticipants.

MATERIAL AND METHODS

The present study was conducted in Ranebennur taluk of Dharwad district during 1984-85. Ranebennur taluk was purposively selected because large number of participant farmers in sprinkler irrigation well projects for more than four years were available. The five villages of Ranebennur taluk namely, Aremallapur, Gangapur, Kajjeri, Karur and Sidaganal were purposively selected. In each village, list of participants of sprinkler irrigation and lists of nonparticipants of sprinkler irrigation were prepared. Out of the population of 392 nonparticipants spread over five villages, 75 nonparticipants were randomly selected. Out of 84 participants in the population spread over five villages, 75 participants were randomly selected.

An interview schedule was developed based on the objectives of the study and with the assistance of experts in the field of agricultural extension. The interview schedule was translated into local language and pretested in a non-sample area with 24 respondents. In the light of pre-test experience, the interview schedule was revised and used. The validity and reliability of the interview schedule were ensured. The data were collected with the help of interview schedule by personal interview method at the work places of the respondents or at their residences. The purpose of the study was never revealed to any person in the selected villages or other villages.

Methods used for Quantification and Categorization of Dependent Variable

The dependent variable in the study is the perception of the farmer about the usefulness of sprinkler community irrigation well. Fourteen statements relating to the perception of usefulness of sprinkler community irrigation well project were posed to each respondent and used in the study.

The minimum and the maximum scores possible from the responses are '0' and '14', respectively. Based on the total scores, the respondents were categorized using mean and half standard deviation as a measure of check as described hereunder :

Total score	*Category based on perception*
Less than (Mean $-\frac{1}{2}$ SD)	Less usefull
Between (Mean $\mp \frac{1}{2}$ SD)	More useful
More than (Mean $+\frac{1}{2}$ SD)	Most usuful

Methods used for Quantification and Categorization of extension-cum-economic status

The intervening variable extension-cum-economic status includes a comprehensive index consisting of (i) general extension guidance, (ii) Specific extension guidance and (iii) family income.

General extension guidance scale consisted of forty statements Each statement with possible two responses namely, No and Yes. The scoring of responses is No = 0, and yes = 1. Thus, the minimum and maximum scores possible are 0 and 40 respec tively. Based on the mean and half standard deviation, the respondents were categorized into three groups (low, medium and high)

The specific extension guidance scale developed by Desai (1981) consisted of 22 statements. Each statement with six possible responses was adopted. The total maximum score obtained by a farmer was (110) and the minimum being '0'. The raw score obtained by the respondents was con verted into specific extension guidance index score by using the following formula :

$$\text{Specific extension guidance index score} = \frac{\text{Score obtained by the respondent}}{\text{Total maximum score possible}} \times 100$$

Based on the total score using the mean (42.70) and half standard deviation (21.35) as measures of check, the farmers were categorized as low, medium and high The scores for each one of these categories are 4 (low), 5 (medium) and 6 (high).

Family Income

Information on the income of the head of the family and the members of the family from agriculture and other professions as applicable to the year 1984-85 was collected and expressed in rupees Using the mean score (Rs. 2194.64) of the family income, the respondents were categorised into two groups and scored The data were analysed using frequencies, percentages, mean, standard deviation and chisquare test.

RESULTS AND DISCUSSION

Perception of Usefulness of Sprinkler Irrigation by Nonparticipants and Participants

Participants of sprinkler irrigation perceived the usefulness of sprinkler irrigation better than the nonparticipants (Table I). The findings do not get the support from Mani and Johnknight (1981) who have reported that in Periyar district of Tamil Nadu, 88.3 per cent of participants (farmers) and 83 3 per cent of nonparticipants (farmers) had either favourable attitude or most favourable attitude towards regulated market.

Participant farmers possibly may have been exposed to educational media on the usefulness of sprinkler irrigation whereas the nonparticipants may not have been involved in such learning situations. Practical experience of participants may be another reason for their high perception of the usefulness of sprinkler irrigation:

Table 1 : Perception of the usefulness of sprinkler irrigation by nonparticipants and participants.

Perception of usefulness	Non-participants		Participants		Total	
	No.	Per cent	No.	Per cent	No.	per cent
Less useful	32	42.7	10	13.3	42	28.0
More useful	29	38.7	46	61.4	75	50.0
Most useful	14	18.6	19	25.3	33	22.0
Total	75	100.0	75	100.0	150	100.0

χ^2 = 16.02 df = 2 Significant at 1 per cent level of probability

Table 2 : Perception of sprinkler irrigation by the participants and their level of extension-cum-economic status

Perception	Extension-cum-economic status							
	LOW ECE		MEDIUM ECE		HIGH ECE		TOTAL	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Less	4	15.4	2	10.5	4	13.3	10	13.3
More	17	65.4	12	63.2	17	56.7	46	61.4
Most	5	19.2	5	26.3	9	30.0	19	25.3
Total	26	100.0	19	100.0	30	100.0	75	100.0

χ^2 = 0.96 df = 4 Not significat at 5 per cent level of probability

Table 3 : Problems encountered by the participants in using sprinkler irrigation equipment

(N=75)

Sl. No.	Problems	Frequency	
		No.	Per cent
1.	Shortage of electricity and fault in starting	25	33.3*
2.	Insufficient water in the irrigation well	21	28.0
3.	Nonavailability of facilities in the village for repairing	15	20.0
4.	No facilities in the locality to repair motor when it becomes out of order	9	12.0
5.	No proper technical guidance on the management of equipment.	4	5.3
6.	Inadequate water for fields which are far off from the well	3	4.0

*The total exceeds 100 since more than one response was expected from each respondent.

Table 4 : Problems encountered by the nonparticipants of sprinkler irrigation in increasing crop Production (N = 75)

Sl. No.	Problems	Frequency	
		No.	Per cent
1.	Inadequate and untimely rains	30	40.0
2.	Lack of availability of credit for crop production	29	38.7
3.	Non-availability of credit for subsidiary occupations	29	38.7
4.	Absence of alternate employment opportunities round the year	16	21.3
5.	Non-availability of bullock-cart and agricultural implements on hire in time	14	18.7
6.	Destruction of crop and yield by wild animals	14	18.7
7.	High cost of fertilizers and pesticidess	13	17.3

Association between the Perception of usefulness of Sprinkler irrigation by the Participants and their Extension-cum-economic status

Perception of the usefulness of sprinkler irrigation by participant farmers is not influenced by their extension-cum-economic status (Table II).

This finding gets support from Reddy and Reddy (1977).

Possibly the change agents in the locale may not have designed extension teaching activities for promoting sprinkler community irrigation well project. Further, family income derived by small farmers and marginal farmers may be very less in acting as a motivator to gain differential perception of the usefulness of sprinkler irrigation.

Problems of Participants in using Sprinkler Irrigation

The most important problems encountered by participant farmers were:

i) Shortage of electricity and fault in starting

ii) Insufficient water in the irrigation well, and

iii) Nonavailability of facilities in the village for repairing pipes (Table III).

Problems of Nonparticipants in increasing Crop production

The problems encountered by nonparticipants of sprinkler irrigation in increasing crop production were (1) inadequate and untimely rains (ii) lack of availability of credit for crop production and subsidiary occnpation

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