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ASSESSMENT OF FARMERS' ATTITUDE TOWARDS WATER USERS' ASSOCIATIONS UNDER CADA A CASE STUDY IN KERALA

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ABSTRACT: Considering the importance of farmers' participation in Irrigation management, Govt. of India introduced the Command Area Development programme and established Command Area Development Authorities(CADA) in different states in the country. In order to ensure farmers' participation,Water Users'/Farmers Associations have been organised and registered under CADA.An attempt has been made in the present paper to develop a scale to measure the attitude of farmers towards these Water Users' Associations(WUAs). This scale has been administered among a sample of farmers of WUAs of CADA in Malampuzha irrigation project, Palakkad district,Kerala state. The study has shown that (1)Majority of the farmers,irrespective of their landholding size, possess a medium level of attitude (2) The attitude which farmers possess are not dependant on/influenced by the differences in their landholding size.

INTRODUCTION

Despite the success of irrigation in supporting the Green Revolution in India,irrigation schemes have often under-performed in economic terms. This is mainly because the social aspects of irrigaion management have been neglected,handled badly or assumed not to require any special knowledge or expertise (Nandeshwar and James,1996). Regardless of how elaborate an irrigation project may be (with big dams,diversion structures and canal networks), it cannot be successful unless the individual farmers themselves involve and participate in irrigation management. It is the farmers who make the system work. Considering the importance of farmers' participation, Government of India introduced the Command Area Development (CAD) programme in the country during 1974-75. Accordingly, Command Area Development Authorities (CADA) have been established in different states.

In Kerala,the programmes of CADA have been implemented in ten completed irrigation projects. For achieving farmers' participation, about 2000 Water Users'/Farmers' associations have been reported to be organised and registerted (as per Societies registration act) under the command areas of these projects(CADA, 1993).

SCOPE OF WATER USERS' ASSOCIATION (WUA)

In order to ensure effective farmers' participation, the ayacut area under each association has been limited to 20 to 40 hectares under an outlet. These associations are to be consulted and their views talen into account

before finalising and implementing various activities of CADA. The construction of fields channels for effective water distribution, agricultural development activities such as purchase and distribution of inputs, land levelling, arranging loans for farmers, construction of farm roads etc. all come under the purview of the activities of these associations.

The classical problem that has often arisen as a complaint or criticism of the efforts to establish WUAs is the number of these associations which have not become functional or are inactive after their formation. This problem is not only faced in the establishment programmes that attempt to motivate formation of WUAs through a top down approach, but also where there have been efforts to apply a participatory approach.

In order to achieve positive results out of farmers' participation, it is necessary that the farmers should possess a favourable attitude towards the programme. Sherif and Centril have defined attitude as a "predisposition action" (M. Sherif,and H.Centril,1945). Thurstone defined attitude as the degree of positive or negative effect associated with some psychological object (L.L. Thurstone, 1946). Krench and Ballchey were of the opinion that attitude is an enduring system of positive or negative evaluations,emotional feelings and actions with respect to social objects (D. Kruchfield Krench and E.L.Ballchey,1962). The attitude which farmers possess towards Water Users' Associations under CADA would be an important determinant of his behaviour and role performance/participation in the association.

According to Edwards the two methods of assessing attitude of individuals viz; (1) by direct questioning (verbal behaviour and (2) by direct observation of behaviour(non verbal or overt behaviour) are capable of giving only a crude classification of attitude. He was of the opinion that for a quick, convenient and reliable measurement with a large group of people, the method of Attitude scaling would yield fruitful results, since it gives information on the positive or negative effect an individual may associate with some psychological object (A.L. Edwards,1957)

An attempt has been made in this paper to develop an Attitude scale and administered among a sample of farmers in order to assess their attitude towards Water Users' Associations established under CADA programme in Kerala state.

METHODOLOGY

Collection of items(statements). Seventy items(statements)expressing some opinion about the object under study viz., Water User's Associations established under CADA were collected from review of literature and discussion with officials and experts working in this field. These items were then classified under the following heads:

1. Necessary / Favourable conditions for functioning of Water Users' Association (WUA)
2. Type of WUA
3. Selection of office bearers of WUA
4. Functions of WUA
5. Advantages of WUA

Relevance rating of items. The seventy items arranged under the above five heads along with their responses under a five point continuum - most relevant, more relevant, relevant, less relevant, least relevant - were prepared on sheets of paper and sent by mail to thirty judges who were asked to perform the rating of the relevance of each item in measuring attitude of farmers on the five point continuum mentioned above. The judges selected include officials

and experts in the field of Sociology, Irrigation Engineering and Agronomy. It was ensured that these judges were not the same persons who had been contacted for discussion during collection of statements mentioned earlier. Out of the thirty judges, twenty five persons responded with their relevance rating of the items. From this, the response of twenty three judges, who had rated all the items only were considered for developing the scale (Anantharaman, 1991).

Selection of items. Under the relevance rating, the responses - most relevant, more relevant, relevant, less relevant and least relevant were given weightages of 5, 4, 3, 2 and 1 respectively. For inclusion of items in the final scale, the follwoing two criteria were considred (Anantharaman, 1991).

(a) Mean relevance score (MRS) of items : Mean relevance score (MRS) of each item was found out by summing up the weightages obtained for an item (based on the response of twenty three judges) and dividing by the number of judges.

(b) Coefficient of variation (cv) : cv of each item was found out using the following standard formula.

$$cv = \frac{\text{Standard deviation of an item score}}{\text{Mean score of the item}} \times 100$$

From the above mean relevancy score (MRS) and coefficient of variation (cv), the averages MRS and cv were worked out by dividing the calculated MRS and cv with the number of items included in the judges rating. Those items (statements) having MRS more than average MRS and cv less than average cv were selected for inclusion in the final Attitude scale. The former criteria showed higher level of relevancy for an item, while the latter indicated a higher degree of agreement among the judges on the relevancy of an item (Anantharaman, 1991). Accordingly, a total number of Forty one items were selected under the five heads mentioned earlier to be included in the Attitude scale.

Reliability of the scale. Reliability of the Attitude scale developed was determined by the test-re-test method as mentioned below.

Test – re-test method : A sample of fifty farmers who were members of WUAs of CADA in Malampuzha irrigation project, Palakkad District, Kerala State were randomly selected. The Attitude scale was administered to this sample, twice, at an interval of 15 days. The two sets of Attitude scores thus obtained from the same respondents were correlated. The correlation coefficient (r) was found to be 0.82, indicating the reliability of the scale in measuring attitude of the respondents.

Content validity of the scale. Content validity relates to how well the contents of the scale represent the subject matter under study. Since all the possible items covering the universe of contents were selected from review of literature as well as through discussion with experts and officials working in this field, the scale may be considered as satisfying content validity.

ADMINISTERING THE SCALE

Study Area. The Forty one statements (in the Attitude scale developed) were arranged in a structured questionnaire under the five heads mentioned earlier. The format of the scale is given in Table 1. The questionnaire was administered among a randomly selected sample of one hundred and fifty farmers coming under ten WUAs of CADA in Malampuzha irrigation project (one of the major irrigation projects in Kerala). Malampuzha irrigation project is located between 10° 48' and 10° 55' N. latitude and between 76° 39' and 76° 42' E. longitude in Palakkad district of Kerala. The project comprises of a dam built across Malampuzha

Table 1

Scale to measure attitude of farmers towards water users' associations (WUAs) under cada

I. *Necessary/Favourable conditions for functioning of WUA*

S. No.	Statement	Agree	Undecided	Disagree
1	Farmers should feel a sense of ownership of the irrigation system			
2	There should be mutual confidence / trust between farmers and Dept. officials.			
3	Farming should become profitable to farmers due to the activities of WUA.			
4	Farmers feel that WUAs are meant to fulfill their needs and not just a tool to fulfill the objectives of Govt.			
5	Higher level of crop productivity is required to sustain farmer participation through WUAs.			
6	Forcefully imposed programmes for formation of WUAs lead to failure.			
7	Availability of irrigation water has to be reliable and timely for WUAs to function effectively.			
8	Political interference leads to problems in functioning of WUA			
9	The attitude/commitment of CADA officials to a 'Participatory' approach is crucial for the success of WUAs.			
10	Sustainable WUAs are those which have their own source of income, free from state subsidies and proceedural control.			
11	Training to be given to farmers of WUA to match their knowledge and skills with the tasks/responsibilities.			
12	Full authority and rights have to be given to WUA to increase their managerial flexibility.			
13	It is necessary to create sufficient awareness among farmers on various activities of CADA through different mass media.			
14	Farmers' in volvement in operation and maintenance activities helps to build up successful WUAs.			
15	Proper liason/co-ordination between Irrigation and CADA officials necessary.			

S. No.	Statement	Agree	Undecided	Disagree
16	Decision making process in WUAs should be democratic.			
II.	***Type of WUA***			
1	Formal type necessary.			
2	Association/affiliation of WUAs with other established co-operative institutions will be helpful.			
3	Multi-purpose (Multi-functionary) WUAs will be better than single purpose (ie; water only) WUAs.			
III.	***Selection of office bearers of WUA***			
1	The procedure of electing the office bearers is desirable.			
2	The following leadershp qualities are necessary for a farmer to become an office bearer. (a) Age(mature and grown up people) (b) Educated. (C) Good personal character. (d) Availability of time for public service.			
IV.	***Function of WUA***			
1	Liason with CADA on behalf of farmers.			
2	Solviong disputes among irrigators.			
3	Procurement of seeds, fertilisers, pesticides, farm implements etc. in bulk and making them available to farmers in time.			
4	Purchase of sprayers and other machines for renting out tomembers.			
5	Deciding upon a suitable cropping pattem.			
6	Arranging loans/subsidies for members.			
7	Land levelling and adoption of scientific Agrl. practioces including water management.			
8	Observing Rotational water supply Warabandhi system of water distribution.			
9	Extension education on water management and other Agricultural practices.			
10	To nominate members to canal/project level committees.			
11	To implement decisions of the canal committee.			
V.	***Advantages of WUA***			
1	Agrl. inputs like seeds, fertilisers etc. can be			

S. No.	Statement	Agree	Undecided	Disagree
	made available to farmers at a comparitively lower cose.			
2	Tail end farmers are assured of irrigation water.			
3	Unwanted losses of water are minimised.			
4	Problems of conflict among farmers can solved.			
5	Progitability to farmers enhanced.			
6	Farmers are able to develop a sense of "We feeling" (a feeling of "oneness").			

river, a tributary of the Bharathapuzha river. There are two main canals viz; Left bank canal of legth 31.6 Km. and Right bank canal of length 32.0 Km. (Fig.1). The project has a command area of 20553 ha. Irrigation is provided for two crops of paddy-Virippu and Mundakan. CADA has established 412 Water Users' Associations under the Malampuzha irrigation project (CWRDM, 1994).

While selecting the sample of farmers, it was ensured that those who had been selected earlier for the text-re-test of the scale were not included in the sample chosen now. The farmers were classified into three categories with reference to the size of farms as Marginal (landholding size not exceeding lha.), Small (landholding size above lha. and not exceeding 2ha.) and Large farmers (landholding size of 2ha. and above) as per the official definitions of landholding size (T.K.Jayaraman,1982). The distribution of farmers in the sample was as follows: Marginal farmers-50 numbers, Small farmers-50 numbers, Large farmers-50 numbers.

The statements in the Attitude scale were graded on a three-point response (Likert scale) viz; 'agree', 'undecided', 'disagree' with weights of 3, 2 and 1 respectively. The conventional five point scale was not adopted,since, in a pilot test of the questionnaire,most of the farmers were not able to distinguish between the two views 'strongly disagree' and 'dosagree' or 'strongly agree' amd 'agree'. The range of total score on the forty one item scale was form 41 to 123.

ANALYSIS OF ATTITUDE RESPONSES

The total score obtained from all the statements was considered as the Attitude score of the individual respondent. The scores were categorised as low, medium and high Attitude based on mean + standard deviation method (M.Jaya Raj and D.P.Singh, 1994). The mean Attitude score of the respondents and standard deviation (SD) were 113.26 and 5.97 respectively.

Accordingly, those scores less than mean minus one standard deviation (SD) were considered as low scores while those more than mean plus one SD were considered as high scores. Those scores lying on both sides of teh mean (upto mean minus one SD as well as upto mean plus one SD) were considered as medium scores.

Table 2 shows the catergorisation of Marginal/ Small / Large farmers in teh sample into low, medium and high attitude scores. Majority of the Marginal, Small and Large farmers were found to have a medium attitude score. Inorder to determine the statistical siginificance of any emperical relationship between the differences in size of farms (Marginal / Small / Large) and the attitude of farmers, Chi-square test was

conducted with the level of siginificance at 5%. The result is presented in Table 2. Since the computed Chi-square is found to be non-significant at the 5% level, it implies that the attitude which farmers posses towards WUAs under CADA is not dependant upon the differences in their landholding size. Jayaraman, in his study of the attitude of farmers towards irrigators' organisations in Gujarat, has reported a similar finding (T.K.Jayaraman,1982). This may be because the benefits available to farmers under WUAs of CADA are not specifically being enjoyed by farmers having a particular landholding size only, but are distributed more or less equitably among farmers having different landholding sizes.

Table 2
Impact of differences in farmers' land holding size on their attitude towards WUAs

Land holding size	Percentage of farmers having Low attitude score	Medium attitude score	High attitude score
<1 ha. (Marginal)	20.5	70.5	9.0
1 to 2 ha. (Small	16.7	76.6	6.7
>2 ha. (Large)	19.2	65.4	15.4

Marginal / Small / Large - Degrees of freedon : 4 Computed Chi-square value : 5.206 (not significant)

CONCLUSION

A study of Attitude of farmers towards Water Users' Associations (WUAs) established by the Command Area Development Authority (CADA) in Malampuzha irrigation project in Kerala using an Attitude scale developed for the purpose leads us to conclude that -

(1) Majority of the farmers (irrespective of their land holding size) possess a medium level of Attitude towards WUAs. This is an appreciable sign, since it can be considered as an indication of their willingness to participate in the programmes undertaken by these WUAs for Command Area Development.

(2) The Attitude which farmers possess are not found to be dependant upon / influenced by the differences in their land holding size. This may be because benefits from CADA are not being enjoyed by only a section of farmers possessing a particular land holding size, but is more equitably distributed among the farming community. This is also a favourable indication, since, one of the major objectives of the establishment of WUAs under CADA is to ensure participation of all the beneficiary farmers coming under an outlet in the irrigation system network in the programmes related to Command Area Development.

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