

Research Note

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Assessing Attitude of Tank Irrigated Farmers Towards Climate Change

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ABSTRACT

The present study was conducted in ten districts of five Agro Climatic Zones of Tamil Nadu to assess the attitude of tank irrigated farmers towards climate change. In order to measure the attitude of tank user farmers, the scale was constructed by following 'Equal Appearing Interval' scaling technique developed by Thurstone and Chave (1929). The study revealed that majority of the farmers had moderately favourable attitude towards climate change.

Tank irrigation is one of the oldest and significant sources of irrigation in India and is particularly in South India (Palanisami and Balasubramanian, 1998). Nearly 39,000 tanks exist in Tamil Nadu State as natural surface water harvesting structures since the olden king regimes for the purpose of irrigation and other water usage (Palanisami *et al.*, 2006). The majority of small and marginal farmers in the region depend on tanks for their livelihood since small and marginal farmers are mostly poor, could not afford cost-intensive irrigation sources like groundwater. Hence, tank irrigation continues to play a crucial role for them. Although irrigation tanks can be found in major parts of India, they accounted for more than one-third of the area irrigated in the South Indian states viz., Tamil Nadu, Karnataka and Andhra Pradesh (Karthikeyan, 2010). Among the states, Tamil Nadu has experienced a gradual decline in tank-irrigated area over the years. The highest decline was observed in Tamil Nadu (34.00 per cent) and the lowest for Maharashtra (6.00 per cent). Most of the irrigation tanks (90 per cent) in the state are non-system tanks that

depend on the rainfall in their own catchment area and are not connected to major streams, or reservoirs. So, they are more vulnerable to climate change due to the fact, tanks mostly depend upon local rainfall than other sources of irrigation. Hence, the present study aimed to assess the attitude of farmers towards climate change.

METHODOLOGY

Tamil Nadu is classified into seven agro climatic zones namely North East, North West, Western, Cauvery Delta, Southern, High rainfall and Hilly and tribal zone. Considering the objectives of the study and the zone-wise availability of tanks, it was decided to select five Agro- climatic zones leaving high rainfall and Hilly and tribal zone. Keeping the intensity of tanks at district level with each of selected zones, two districts in each of these five zones were selected. Accordingly, 10 districts were selected from the five agro-climatic zones for this study. In each of the selected 10 districts, two blocks were selected considering the total net area irrigated by the tanks. Tank user

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farmers were interviewed in correspondence with the objective set forth. In order to measure the attitude of tank user farmers towards climate change, a scale was constructed by following 'Equal Appearing Interval' scaling technique developed by Thurstone and Chave (1929).

FINDINGS AND DISCUSSION

Computation of attitude scale

Possible statements concerning the psychological object i.e., 'climate change' was collected based on review of literature and

Table 1.
Final Set of Attitude Items Selected with Corresponding S and Q Values and the Nature of Statement

Sl. No.	Statement No.	S Value	Q Value	Statement	Nature of the statement
1.	2	4.080	0.701	The climate change influences agriculture negatively.	Unfavourable
2.	41	4.031	0.658	Climate changes aggravated out-migration in tank command areas.	Unfavourable
3.	18	2.005	1.245	Climate change increased number of rainy days in tank command areas	Favourable
4.	11	3.635	0.657	Climate change reduced water availability in irrigation tanks.	Unfavourable
5.	19	1.514	0.642	Climate change increased the propensity of farmers to take up agriculture.	Favourable
6.	25	3.492	1.017	Climate change led to yield decline of tank irrigated crops.	Unfavourable
7.	34	2.036	1.316	Climate change often results in crop failure/crop crash.	Unfavourable
8.	54	1.755	0.082	Climate change provided conducive environment for agriculture.	Favourable
9.	28	1.020	0.136	Climate change increased the crop yield in tank command area	Favourable

discussion with social scientists and agro meteorologists. Totally 75 statements were collected which were organised and structured in the form of attitude items. The items were screened by following the informal criteria. Based on the screening, 60 items were selected which formed the universe of content. The 60 statements were then subjected to judges opinion on a five-point continuum, ranging from, most unfavourable to most favourable.

The list of statements was sent to 60 judges who comprised of extensionists of Tamil Nadu Agricultural Universities, Kerala Agricultural University and Annamalai University. Of the 60 judges, 40 judges responded by sending their judgements. By applying the formula as suggested by Thurstone and Chave (1929), the scale values and Q values were computed for the 60 statements. Finally the nine statements having high scale values and low Q values

Table.2.
Attitude of Tank User Farmers Towards Climate Change

Sl. No.	Attitude towards climate change	Score Range	Total (n=300)	
			No	%
1.	Less favourable	<17	59	19.67
2.	Moderately favourable	18-23	199	66.33
3.	Highly favourable	>23	42	14.00
	Total		300	100
	Mean	20.13		
	Standard deviation	2.94		

were selected. Final set of attitude items selected with corresponding S and Q values and the nature of statement is presented in Table 1.

Attitude of farmers towards climate change

It could be observed from the Table 2 that majority (66.33 %) of the farmers were found to possess moderately favourable attitude towards climate change followed by 19.67 per cent had less favourable and 14.00 per cent had highly favourable attitude respectively.

CONCLUSION

The present study revealed that tank user farmers possessed moderately favourable attitude towards climate change. Thus, it could be inferred that climate change possesses a threat to tank irrigation. The policy makers should take care of attitude of farmers towards

climate change when designing adaptation options to climate change as it is important to consider the attitude of local communities towards climate change.

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