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Research Article

STUDY ANALYZING THE PROFILE OF FARMERS IN RELATION TO THEIR AWARENESS AND ADAPTATION TO CLIMATE CHANGE IN VIJAYAPUR DISTRICT OF NORTHERN KARNATAKA

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Abstract: In this study, attempt has been made to analyzing the profile of farmers in relation to their awareness and adaptation to climate change in the Vijayapur district of Karnataka. Based on the existence of high range of variability in rainfall and temperature (since 40 years), the district taluks were selected, accordingly the taluks selected were Bijapur and Sindagi. From each of the selected taluks five villages were selected randomly. By applying simple random sampling technique 150 respondents were selected for the study. The data collected through a detailed interview schedule employing personal interview method and the coefficient of correlation test was applied to ascertain the relationship of independent variables with the awareness of farmers about climate change and the results were observed that age, organizational participation, mass media exposure, farm resources, had a non-significant and positively correlation with awareness of climate change. Whereas, risk orientation, extension contact, were positively and significantly related at 0.01 level, farming experience, innovative proneness, mass media participation, land holding, social participation, scientific orientation, also had a positive and significant relationship at 0.05 level, with the awareness of climate change by farmers. For establishing a relationship between independent variables of farmers with adaptation measures initiated due to climate change was done by farmers the result of analysis observed that age, mass media exposure, organizational participation, size of land holding, and farm resources, had a positive and non-significant relationship with farmers adaptation to climate change. While education, farming experience, innovative proneness, risk orientation, extension contact, social participation, and scientific orientation, had a positive and significant relationship with farmers adaptations to climate change, at 0.01 per cent level.

Keywords: *Mass media, Innovative proneness, Farming experience, Scientific orientation*

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Introduction

Farmers are most vulnerable to climate change and its effects because of their livelihoods, to a large extent. Nowhere this is true than in the India, where majority of the country's labor force finds employment in agriculture and its related activities. Assessing the impact of climate change and its effects therefore, becomes essential in assuring the food and economic security of millions, not only in the rural areas, but the urban markets they serve as well. This is even more crucial for the large majority of India's farmers who are small scale and marginal. For many such farmers, irrigation is a remote dream, drought wreaks havoc and unpredictable rains force families to migrate in search of work and economic security. The multifarious problems farmers face due to climate variations can be best understood and evaluated through a participatory approach. Understanding these problems is the first step to finding solutions that will make communities resilient to climate change. Climate change is seen as a challenge and threat specifically to India's growing economy. India's physical diversity makes it imperative to address the challenge besides developing adaptation strategies. Hence, an urgent need for action to avoid irreversible calamities with appropriate climate risk management. Based on results of this study, it is hoped that appropriate strategies/ measures can be worked out to create awareness and learning mechanisms to enable farmers to handle their situations better.

Materials and Methods

The study was conducted in Vijayapur district of Karnataka during the year 2011-12, Vijayapur district was purposively selected for the study, as it is "drought prone district" It covers five taluks *viz*., Vijayapur, Basavan Bagewadi, Muddebihal, Indi, and Sindagi and these taluks comes under Northern Dry Zone. From each taluk, five villages and from each village, fifteen farmers were selected by applying simple random sampling. The villages selected were Bhutnal, Managooli, Hittinahalli, Ainapur and Rambapur from Bijapur taluk and Almel, Korhalli, Yaragall, Kerur and Rampur from Sindagi taluk. Thus, totally ten villages were selected for the study. List of farmers from each of the ten selected villages was obtained. From each village, fifteen farmers were selected randomly. Thus the total sample for the study was 150 respondents. Dependent variables: considering the objectives of the study farmers' awareness of climate change and farmers adaptations to climate change were considered as dependent variables and Independent variables: Independent variables that were supposed to influence the dependent variables were identified by discussion with scientists and reviews.The respondents were asked to indicate their responses for each of the statements on two point continuum of aware and not aware, at all with corresponding weightage of one and zero respectively to a set of statements related to conceptual and implication domains of climate change. The respondents were personally interviewed by the researcher with the help of a structured interview schedule. Data were analyzed using frequency, percentage, mean and standard deviation. The level of awareness was operationalized as the degree to which the farmers had information related to climate change and potential consequences. The adaptation level of people to the adverse impact of climate change depends upon their awareness level.

Results

The results in [Table-1] indicated that 49.33 per cent of the respondents belonged to middle age, whereas 34.66 and 16.00 per cent belonged to old age and young age, respectively. Regarding education, the results showed that 41.33 per cent of the farmers were illiterates, while 17.33 per cent and16 per cent farmers studied up to primary school and high school, respectively.

About 12.66 per cent of the respondents were graduates and 6.00 and 4.66 per cent farmers studied up to middle school and high school, respectively. A meager 0.66 per cent of the farmers had education up to post Graduation.

Nearly 38 per cent of the respondents had low farming experience whereas 35.33 per cent of the respondents had high farming experience followed by 26.66 per cent of the respondents had medium farming experience in agriculture, thirty-six per cent of the respondents belonged to medium farmers' category, followed by Big (24%) and semi medium farmers (18.66 %). Whereas 16.66 and 4.66 per cent of the farmers belonged to small and marginal farmers, respectively. Considerable per cent of the farmers (28.66%) were having bore well along with well as a source of irrigation followed by farmers having were well (25.33%). Whereas, very meager per cent of farmers (8.00%) were having only bore well. This was followed by 2.00 and 0.60 per cent farmers having canal along with well and, well along with borewell, canal, respectively as a source of irrigation. Farm resources were computed by considering the different resources like land, livestock, water, and material possession. Farm resources were found to be low among 52.00 per cent of farmers followed by high (40.00%) and medium (8.00%).

With regard to innovativeness [Table-2] indicated that 43.33 per cent of the respondents belonged to low category of innovativeness followed by 31.33 per cent in medium and 25.33 per cent in high categories.

Table-1 Personal and socio-economic profile of the farmers (n=150)

Characteristics	Category	Frequency	Percent
Age	Young(18-30)	24	16
	Middle (31-50)	74	49.33
	Old (above 50)	52	34.66
Education	Illiterate	62	41.33
	Functionally literate	2	1.33
	Primary School(1-4 std)	26	17.33
	Middle school(5-7 std)	9	6
	High school(8-10 std)	24	16
	PUC	7	4.66
	Graduate	19	12.66
	Post graduate	1	0.66
Land holding	Marginal(up to-2.50 acres)	7	4.66
	Small farmers(2.51-5.00 acres)	25	16.66
	Semi medium farmers(5.01-10.00 acres)	28	18.66
	Medium farmers(10.01-25.00 acres)	54	36
	Big farmers(above 25 acres)	36	24
Farming experience	Low(<17.73)	57	38
	Medium(17.73-28.59)	40	26.66
	High(>28.59)	53	35.33
MEAN=23.16	SD=12.77		
Farm Resources	Low(<10.59)	78	52
	Medium(10.59-13.96)	12	8
	High(>13.96)	60	40
Mean=12.27	SD=3.97		

Table-2 Psychological characteristics of the farmers (n=150)

SN	Categories	Frequency	Percent
I	Innovative proneness		
1	Low(<5.74)	65	43.33
2	Medium(5.74-7.16)	47	31.33
3	High(>7.16)	38	25.33
	Mean=6.45	SD=1.67	
II	Risk orientation		
1	Low(<5.39)	56	37.33
2	Medium(5.39-6.71)	25	16.66
3	High(>6.71)	69	46
	Mean=6.05	SD=1.56	
III	Scientific orientation		
1	Low(<7.08)	53	35.33
2	Medium(7.08-8.68)	66	44
3	High(>8.68)	31	20.66
	Mean=7.88	SD=1.88	

With regard to risk orientation indicated that In their behavior of taking risk 46.00 per cent of the respondents had high level of risk taking ability followed by low (37.33%) and medium (16.66%) level of risk orientation.

With regard to scientific orientation indicated that forty-four per cent of the respondents had medium scientific orientation, whereas, 35.33 per cent and 20.66 per cent of them had low and high scientific orientation, respectively.

[Table-3] indicated that Nearly 63.00 per cent of the respondents fall in the medium level of organization participation, followed by high (27.33%) and low (10.00%) level of organization participation

With regard to extension contact [Table-4] indicated that 14.66 per cent of the farmers had low extension contact followed by medium (71.33%) and high (14.00%) were contact with extension agency.

Table-3 Distribution of farmers according to organizational participation (n=150)

SN	Category	Frequency	Percentage
1	Low(<3.37)	15	10
2	Medium(3.37-4.54)	94	62.66
3	High(>4.54)	41	27.33
	Mean=3.95	SD=1.38	

Table-4 Distribution of Farmers according to extension contact (n=150)

SN	Extension Contact	Frequency	Percentage
1	Low(<8.14)	22	14.66
2	Medium(8.14-10.53)	107	71.33
3	High(10.53)	21	14
	Mean=9.33	SD=2.81	

Discussion

An analysis of coefficient of correlation was made between the independent variables and adaptation to climate change. Association of awareness of climate change was studied with twelve independent variables viz., age, organizational participation, mass media exposure, farm resources had a non-significant and positively correlated with awareness of climate change, whereas risk orientation and extension contact positively and significantly related at 0.1 per cent level. It was evident from the findings that the adaptation to climate change was positively and significantly (at 5 per cent level) correlated with education, farming experience, innovative proneness, mass media participation, land holding, social participation and scientific orientation. As education level and farming experience of farmers' increases, it is quite natural that their awareness regarding climate change and adaptation will increase, also when exposure to mass media, extension contact and social participation increases, the general awareness regarding various aspects of farming increases include awareness regarding climate change and thereby their adaptation measures. As regards psychological variables as expected the variables like innovative proneness, risk orientation and scientific orientation. The results are in accordance with the findings of Balasubramanian (1997) [1] and Manjunath (2010) [2]. An analysis of coefficient of correlation was made between the independent variables and adaptation to climate change. Association of adaptation of climate change was studied with twelve independent variables viz., age, mass media exposure, organizational participation, size of land holding and farm resources positively and non-significantly relation with adaptation to climate change. It was evident from the findings that the adaptation to climate change was positively and significantly (at 5 per cent level) correlated with education, farming experience, innovative proneness, risk orientation, extension contact, social participation and scientific orientation. As education level and farming experience of farmers' increases, it is quite natural that their adaptation regarding climate change and adaptation will increase. So also when exposure to mass media, extension contact and social participation increases, the general adaptation regarding various aspects of farming increases include adaptation regarding climate change and thereby their adaptation measures. As regards psychological variables as expected the variables like innovative proneness, risk orientation and scientific orientation. Findings are in line with Nhemachena and Hassan (2007) [3] and Babanna (2002)[4].

Conclusion

As regard to relationship of independent variables with awareness of climate change (rainfall and temperature) by farmers, variables like risk orientation, extension contact, farming experience, innovative proneness, land holding, scientific orientation, and social participation, were significantly related.

Application of research: Study of farmers in relation to their awareness and adaptation to climate change

Research Category: Agricultural Extension Education

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Cultivar / Variety / Breed name: Nil

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