

Factors Influencing Level of Knowledge of Farmers on Climate Resilient Practices in Virudhunagar district of Tamil Nadu

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Abstract: Climate change is considered as the major threat to the globe; especially peoples who depend on nature are directly affected by the climate change and its impacts. Resilient practices are those which recover or restore the lost resources. The present study has been undertaken in Sivakasi taluk of Virudhunagar district, which comes under semi-arid climatic zone. Around 120 respondents were selected and their level of knowledge about climate resilient practices viz, Natural Resource Management, Crop Production, Livestock Management and Institutional interventions were measured. The results of descriptive study revealed that the level of knowledge on climate resilient practices were low. About 74.17 per cent of respondents had low level knowledge on Natural resource management, 68.33 per cent of respondents had low level of knowledge on crop production, and 65.78 per cent of respondents had low level of knowledge on livestock management and 71.67 per cent of respondents had low level of knowledge on institutional interventions. And it was also found that the relationship between the variables like age, income, landholding, social participation, farming experience and family type with knowledge are found not significant. From the above results it is concluded that the level of knowledge on climate resilient practices are poor since the respondents does not undergone any training or programmes on climate resilient practices.

Key Words: Climate change, Resilient practices, Knowledge, Semi arid region

1. INTRODUCTION:

Agriculture is largely depends on climate. Dryland agriculture totally depends on climate only, the farmers of these regions are greatly affected due to the effect and impacts of climate change. In order to find out permanent solution to these changes in climate, Indian Council of Agricultural Research (ICAR) initiated National Initiative for Climate Resilient Agriculture (NICRA) to promote climate resilient practices over these climate change affected places. Under technology demonstration of climate resilient practices like Natural resource management, crop production, livestock management and institutional interventions are selected. The above four climate resilient practices give overall picture of climate resilience. Since, the study has been chosen to find out the level of knowledge on climate resilient practices by the farmers of Dryland agriculture.

2. MATERIALS AND METHODS:

For the present study, Sivakasi taluk of Virudhunagar district of Tamil Nadu has been selected, since the taluk's agriculture production is very less due to extreme climatic condition. Eight villages were selected randomly from the Sivakasi taluk for the present study. An interview schedule was prepared and pre-tested for the study. The sample population of 120 has been selected randomly from the selected villages. Relevant questions on climate resilient practices were collected with pre structured interview schedule to understand the knowledge levels of the respondents and answers were recorded with 3 point scale as fully correct (3), partially correct (2) and not correct (1).

3. RESULTS:

3.1. DISTRIBUTION OF RESPONDENTS BASED ON SOCIO-ECONOMIC PROFILE:

Table: 1. shows the distribution of respondents based on their socio-economic profile. About 50.83 per cent of the respondents are belonged to the age above 55 years followed by the age group of (36-55) and (20-35) respectively. 80 per cent of the respondents are in Nuclear family, followed by the joint family (20%) respectively. 43.33% of the respondents are earning the amount range of Rupees 50,000- 75,000 followed by Rs. 25,000-50,000(31.67%) and above 75,000 (25%) respectively. 28.33 per cent of the respondents are having education up to primary education, followed by secondary education (21.67), Can read and write only (19%) and Illiterate (19%) respectively. 43.33 per cent of the respondents are having experience of 20-40 years, followed by less than 20 years (31.67%) and above 40 years (25%) respectively. 42.50 per cent of the respondents are having less than one hectare of land, followed by 1-2 ha (36.67%) and above 2 ha (20.83%) respectively. 39.17 per cent of the respondents were having medium level of mass media exposure. 62.50 per cent of the respondents we having low level of extension contacts . 93.33 per cent of the respondents were having low level of social participation. 74.17 per cent of the respondents we having low level

of innovativeness. 68.33 per cent of the respondents we having low level of risk orientation. 54.17 per cent of the respondents we having low level of scientific orientation.

Table 1 Distribution of respondents based on socio economic profile (n=120)

S. No.	Variables	Categories	Frequency	Percentage
1.	Age (in years)	20-35	4	3.33
		36-55	55	45.83
		Above 55	61	50.83
2.	Family type	Joint	24	20.00
		Nuclear	96	80.00
3.	Income	25000-50000	38	31.67
		50000-75000	52	43.33
		Above 75000	30	25.00
4.	Education	Illiterate	19	15.83
		Can read and write only	19	15.83
		Primary	34	28.33
		Secondary	26	21.67
		Higher Secondary	8	6.67
		Graduate	4	3.33
		Others	11	9.17
5.	Farming Experience	Less than 20	38	31.67
		20-40	52	43.33
		Above 40	30	25.00
6.	Land holding	Less one ha	51	42.50
		1-2	44	36.67
		Above 2	25	20.83
7.	Mass Media Exposure level	Low	45	37.50
		Medium	47	39.17
		High	28	23.33
8.	Extension contacts level	Low	75	62.50
		Medium	34	28.33
		High	11	9.17
9.	Social participation level	Low	112	93.33
		Medium	13	10.83
		High	5	4.17
10.	Innovativeness level	Low	89	74.17
		Medium	19	15.83
		High	12	10.00
11.	Risk orientation level	Low	82	68.33
		Medium	19	15.83
		High	19	15.83
12.	Scientific orientation level	Low	65	54.17
		Medium	38	31.67
		High	17	14.17

3.2. LEVEL OF KNOWLEDGE ON CLIMATE RESILIENT TECHNOLOGIES:

Table: 2. Level of Knowledge on Climate Resilient Technologies (n=120)

S. No.	Climate resilient practices	Level of Knowledge	Frequency	Percentage
1.	Natural Resource Management	Low (13-16.67)	89	74.17
		Medium (16.67-20.33)	20	16.67
		High (20.33-24)	11	9.16
		Total	120	100.00
2.	Crop Production	Low (10-12)	82	68.33
		Medium (13-14)	34	28.33
		High (15-16)	4	3.33
		Total	120	100.00
3.	Livestock Management	Low (9-12)	25	65.78

	(n=38)	Medium (13-15)	9	23.68
		High (16-18)	4	10.53
		Total	120	100.00
4.	Institutional Interventions	Low (8-11)	86	71.67
		Medium (12-14)	29	24.17
		High (15-17)	5	4.16
		Total	120	100.00

The table: 2 presented the distribution of respondents based on their level of Knowledge on climate resilient practices. 74.17 per cent of the respondents are having low level of knowledge on Natural resources management practices followed by medium (16.67%) and high (9.16%) respectively. About 68.33 per cent of the respondents are having low level of knowledge on crop production practices followed by medium (28.33%) and high (3.33%) respectively. 65.78 per cent of the respondents are having low level of knowledge on livestock production practices followed by medium (23.68%) and high (10.53%) respectively. 71.67 per cent of the respondents are having low level of knowledge on institutional interventions followed by medium (24.17%) and high (4.16%) respectively.

3.3. RELATIONSHIP OF INDEPENDENT VARIABLES WITH KNOWLEDGE ON CLIMATE RESILIENT PRACTICES:

Table: 3. Relationship of independent variables with Knowledge on climate resilient practices

S. No.	Independent variables	Correlation (r) value			
		Natural Resource Management	Crop Production	Livestock management	Institutional interventions
1.	Age	0.076565 ^{NS}	-0.0706 ^{NS}	-0.0786 ^{NS}	-0.0512 ^{NS}
2.	Family type	-0.09659 ^{NS}	-0.1477 ^{NS}	-0.0319 ^{NS}	-0.08761 ^{NS}
3.	Income	0.058158 ^{NS}	0.04268 ^{NS}	0.32057 ^{NS}	0.153563 ^{NS}
4.	Education	0.653758*	0.664259*	0.564772*	0.688864*
5.	Farming experience	0.040129 ^{NS}	-0.02813 ^{NS}	-0.0906 ^{NS}	-0.0425 ^{NS}
6.	Land holding	-0.16084 ^{NS}	-0.19195 ^{NS}	-0.0352 ^{NS}	-0.13222 ^{NS}
7.	Mass Media Exposure	0.652024*	0.698667*	0.760786*	0.737305*
8.	Extension contacts	0.611538*	0.582606*	0.60404*	0.650997*
9.	Social participation	0.404055 ^{NS}	0.409533 ^{NS}	0.578111*	0.471421 ^{NS}
10.	Innovativeness	0.604819*	0.605027*	0.644617*	0.640517*
11.	Risk orientation	0.830117*	0.865149*	0.918976*	0.85865*
12.	Scientific orientation	0.632187*	0.653712*	0.784253*	0.661641*

^{NS} = Not Significant

*= positively correlated

The table: 3 presents that the relationship between independent variables with knowledge on climate change and its impacts. Variables like age, family type, income, farming experience and land holding found no significant relationship [2] with knowledge on climate resilient practices, while variables like education, mass media exposure, extension contacts, innovativeness, risk orientation and scientific orientation has strong positive relationship with knowledge. Regarding social participation found significant in livestock management in the meantime found no significant with rest of the practices viz, Natural Resource Management, crop production and institutional interventions. [1]

4. DISCUSSION:

From the above interpreted results, it is found that there is a low level of knowledge on climate resilient agricultural practices viz, Natural Resource Management, Crop Production, Livestock Management and Institutional Interventions. Even though the level of knowledge is less, there is a positive strong relationship between variables like mass media exposure, extension contacts, innovativeness, risk orientation and scientific orientation with knowledge. Similarly social participation also has medium strong positive relationship with knowledge.

5. CONCLUSION:

From the above results, it is concluded that the level of knowledge on climate resilient practices are low. There is no significant relationship between socio-economic variables like age, family type, income, farming experience and social participation with the level of knowledge on climate resilient practices. Further it shows that there is a significant relationship between variables like education, mass media exposure, extension contacts, innovativeness, risk orientation and scientific orientation with the level of knowledge on climate resilient practices. The above condition was observed because of the poor training and programmes on climate resilient agriculture, so the NICRA could take this results in mind in future for their technology demonstration programmes of non-selected districts like Virudhunagar.

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