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Awareness of farmers regarding climate change

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Abstract

The present study “ Awareness of farmers regarding climate change” was carried in two blocks of Kanpur Nagar, in each block three villages were randomly selected in each village 25 respondents were randomly selected so 150 respondents were selected randomly. Out of total respondents 53.3 per cent of farmers belonged to 50 years and above age group, whereas 31.3 per cent of the respondents were educated up to primary level. It was found that 66 per cent respondents belonged to OBC group, whereas, 92 per cent respondents belongs to Hindu religion with 65.3 per cent respondents involved in agriculture as their main occupation while 67.3 per cents respondents holds marginal land area. The 87.3 per cent of respondents were fully aware that Human and Animal health problems are increasing. The study reveals that farmers were aware about the increasing pollution in the atmosphere and weather has become unpredictable. As a result of climate change, there is increase in operational cost due to increased expenditure on inputs like seeds, chemical, labour, etc which affects the income from agriculture.

Keywords: Agriculture, Awareness, Climate change, Pollution

Introduction

Climate change and variability are concerns of human being. The recurrent droughts and floods threaten seriously the livelihood of billions of people who depend on land for most of their needs. Climate change is already affecting agriculture, with effects unevenly distributed across the world. Future climate changes will negatively affect crop production in low latitude countries, while effects in northern latitudes may be positive or negative. Climate change will probably increase the risk of food insecurity for some vulnerable groups, such as the poor animal. Agriculture is also responsible for CO₂, greenhouse gas production and a percentage of the world's methane, and future land infertility, and the displacement of local species. Agriculture contributes to climate change both by anthropogenic emissions of greenhouse gases and by the conversion of non-agricultural land such as forests into agricultural land. A range of policies can reduce the risk of negative climate change impacts on agriculture and greenhouse gas emissions from the agriculture sector.

Research Methodology

The study was conducted in district Kanpur Nagar with two blocks during the year 2018-2019. From each block three villages were selected randomly and 25 respondents were selected randomly from each village. Thus, 150 beneficiaries were selected. Dependent and independent variables, namely age, educational qualification, caste, religion, type of family, size of family, type of house, annual income, occupation, land holding, social participation, awareness, constraints, suggestions, etc. were used. The data collected were subjected to statistical analysis for which statistical tools, such as percentage, rank weighted mean correlation coefficient and standard deviation.

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Results

Table 1: Distribution of respondents according to age group. (N=150)

Age group	Frequency	Per cent
Up to 30 years	8	5.3
30 to 40 years	25	16.7
40 to 50 years	37	24.7
50 years and above	80	53.3
Total	150	100.0

Table 1 reveals that the distribution of respondents according to age group, 53.3 per cent of farmers belonged to 50 years and above age group followed by 24.7 per cent of farmers belonged to 40 to 50 years age group. 16.7 per cent of farmers were found to be 30 – 40 years age group, whereas, 5.3 per cent of farmers belonged to age group up to 30 years.

Table 2: Distribution of respondents according to the occupation. (N=150)

Occupation	Frequency	Per cent
Agriculture	98	65.3
Service	8	5.3
Agriculture labour	27	18
Caste based occupation	-	-
Business	12	8
Other	5	3.3
Total	150	100

Table 2 reveals the distribution of respondents according to the occupation, 65.3 per cent respondents were doing agriculture, 18 per cent respondents were agricultural labour, 8 per cent respondent were doing business, 5.3 per cent respondents were doing service and 3.3 per cent respondents were involved in other occupation.

Table 3: Distribution of respondents according to the Awareness about Climate change. (N=150)

S. No.	Statements	Fully Aware	Partially Aware	Unaware	Mean Score	Rank
1.	Climate is getting warmer	72.0	28.0	-	2.72	VII
2.	Weather has become unpredictable	80.7	18.7	0.7	2.80	II
3.	Duration of seasons is changing	74.0	26.0	-	2.74	VI
4.	Occurrence of extreme weather conditions	48.7	50.7	0.7	2.48	XIV
5.	Risk of crop failure has increased	78.0	22.0	-	2.78	III
6.	Pollution is increasing in the atmosphere	80.0	20.0	-	2.80	II
7.	Occurrence of natural disasters are increasing	50.0	50.0	-	2.50	XIII
8.	Rainfall pattern has been changing	70.7	28.7	0.7	2.70	IX
9.	Human and animal health problems are increasing	87.3	11.3	1.3	2.86	I
10.	Increase in frost occurrence increases the scope of pest and diseases	28.0	60.0	12.0	2.16	XVI
11.	Late onset of rain results in delayed farm operations and difficult to manage the crops	56.7	42.0	1.3	2.55	XII
12.	Heavy rainfall destroys irrigation water supply system	71.3	28.7	-	2.71	VIII
13.	Heavy rainfall, drought and frost situation results in abnormal growth of crops	61.3	38.7	-	2.61	XI
14.	Low market price for poor quality of produce results due unfavourable rainfall situation	70.7	28.0	1.3	2.69	X
15.	Rise in temperature results in large scale migration of people and animals	23.3	66.7	10.0	2.13	XVII
16.	Soil erosion will increase during stronger wind and heavy rainfall	38.0	50.0	12.0	2.26	XV
17.	As a result of climate change, there is increase in operational cost due to increased expenditure on inputs like seeds, chemical, labours, etc	76.7	22.7	0.7	2.76	V
18.	Income from agriculture is adversely affected due to climate change	76.7	23.3	-	2.77	IV

Table 3 indicates the distribution of respondents according to climate change, 87.3 per cent of respondents were fully aware that Human and Animal health problem are increasing, whereas, 11.3 per cent of respondents were partially aware and 1.3 per cent of respondents were unaware with mean score value 2.86 and rank I. 80.7 per cent of respondents were fully aware that weather has become unpredictable, whereas 18.7 per cent of respondents were partially aware and 0.7 per cent of respondents were unaware with mean score value 2.80 and rank II. 80.0 per cent of respondents were fully aware that pollution is increasing in the atmosphere, whereas, 20.0 per cent of respondents were partially aware with mean score value 2.80 and rank II. 78.0 per cent of respondents were fully aware that risk of crop failure has increased, whereas, 22.0 per cent of respondents were partially aware with mean score value 2.78 and rank III. 76.7 per cent of respondents were fully aware that income from agriculture is adversely affected due to climate change, whereas 23.3 per cent of respondents were partially aware with mean score value 2.77 and rank IV. 76.7 per cent of respondents were fully aware that as a result of climate change, there is increase in operational cost due to increased expenditure on inputs like seeds, chemical, labours, etc, whereas, 22.7 per cent of respondents were partially aware and 0.7 per cent of respondents were unaware with mean score value 2.76 and rank V. 74.0 per cent of respondents

were fully aware that duration of seasons is changing, whereas, 26.0 per cent of respondents were partially aware with mean score value 2.74 and rank VI. 72.0 per cent of respondents were fully aware that climate is getting warmer, whereas, 28.0 per cent of respondents were partially aware and 0 per cent of respondents were unaware with mean score value 2.72 and rank VII. 71.3 per cent of respondents were fully aware that heavy rainfall destroys irrigation water supply system, whereas, 28.7 per cent of respondents were partially aware with mean score value 2.71 and rank VIII. 70.7 per cent of respondents were fully aware that rainfall pattern has been changing, whereas, 28.7 per cent of respondents were partially aware and 0.7 per cent of respondents were unaware with mean score value 2.70 and rank IX. 70.7 per cent of respondents were fully aware that there would be low market price for poor quality of produce resulting due to unfavorable rainfall situation, whereas 28.0 per cent of respondents were partially aware and 1.3 per cent of respondents were unaware with mean score value 2.69 and rank X. 61.3 per cent of respondents were fully aware that heavy rainfall, drought and frost situation results in abnormal growth of crops, whereas, 38.7 per cent of respondents were partially aware with mean score value 2.61 and rank XI. 56.7 per cent of respondents were fully aware that late onset of rainfall leads to delayed farm operations and difficulty into managing the crops,

whereas, 42.0 per cent of respondents were partially aware and 1.3 per cent of respondents unaware with mean score value 2.55 and rank XII. 50.0 per cent of respondents were fully aware that occurrence of natural disasters is increasing, whereas 50.0 per cent of respondents were partially aware and 0 per cent of respondents unaware with mean score value 2.50 and rank XIII. 48.7 per cent of respondents were fully aware about occurrence of extreme weather conditions, whereas 50.7 per cent of respondents were partially aware and 0.7 per cent of respondents unaware with mean score value 2.48 and rank XIV. 38.0 per cent of respondents were fully aware that soil erosion will increase during stronger wind and heavy rainfall, whereas 50.0 per cent of respondents were partially aware and 12.0 per cent of respondents unaware with mean score value 2.26 and rank XV. 28.0 per cent of respondents were fully aware that increase in frost occurrence increases the scope of pest and diseases, whereas 60.0 per cent of respondents were partially aware and 2.16 per cent of respondents were unaware with mean score value 2.16 and rank XVI. 23.3 per cent of respondents were fully aware that rise in temperature results in large scale migration of people and animals, whereas, 66.7 per cent of respondents were partially aware and 10.0 per cent of respondents were unaware with mean score value 2.13 and rank XVII.

Conclusion

The study indicates that the farmers are fully aware about the human and animal problems that are increasing due to climate change. Weather has become unpredictable due to which risk of crop failure has increased. Duration of seasons is changing and changes in rainfall patterns causing higher risk of crop failure as well as abnormal growth of crops. Farmers were aware that as a result of climate change there is an increase in operational cost due to increased expenditure on input like seeds, chemical, labour, etc which adversely affect the income from agriculture.

Recommendations and Suggestions

1. Assist farmers in coping with current climate risk by providing them value-added weather services.
2. An early warning system should be put to monitor changes in pest and disease outbreaks.
3. Adoption of resource conservation technologies which would help in reducing the global warming potential.
4. Providing more funds to strengthen research for enhancing adaptation and mitigation capacity of agriculture and allied activities.
5. Seasonal weather forecast could be used as a supportive measure to optimize planting and irrigation patterns.

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