



E-ISSN: 2278-4136  
P-ISSN: 2349-8234  
JPP 2019; 8(3): 4388-4390  
Received: 16-03-2019  
Accepted: 18-04-2019

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## Constraints faced by farmers during climate change

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### Abstract

The present study "Constraints faced by farmers during climate change" was carried in two blocks of Kanpur Nagar; in each block three villages were randomly selected therefore 25 respondents from each village were randomly selected from two blocks of six villages. Out of total respondents 39.4 per cent of respondents belonged to those families whose annual income was Rs 1,20,000 and above, whereas, 67.3 per cent of respondents holds marginal land area. It was found that maximum 53.3 per cent respondents belonged to 50 year and above age group, followed by 31.3 per cent respondents who were educated up to primary level while 70.7 per cent respondents belongs to nuclear family. The study reveals that 83.3 per cent respondents always face inadequate supply of irrigation water in canal. It was examined that respondents were facing many problems due to climate change such as people do not get information about accurate weather forecast due to which they were not able to adapt appropriate measures regarding climate change, lack of government policies to combat against natural calamities and low price of produce in the market.

**Keywords:** Constraints, climate, farmers, irrigation

### Introduction

Climate change is a change in the statistical distribution of weather over periods of time that range from decades to millions of years. It can be change in the average weather or a change in the distribution of weather or a change in the distribution of weather events around an average. It explores how the agricultural growth and environmental sustainability has to be achieved, while coping with the climate change phenomenon. Agriculture growth also has directly affected poverty alleviation and important factor for employment generation. By adversely affecting freshwater availability and quality, biodiversity, climate change tends disproportionately affects the poorest in the society, worsening inequities in access to food, water and health for human as well as animals. The relationship of climate change on agriculture by relating with the crop, soil, rainfall, green-house gas, temperature and how the threatening of Agriculture can be mitigated in a sustainable and viable way by adopting suggested agricultural measures like crop diversification, adoption of new crop varieties, drought and flood management, restoration of waste and degraded lands. In nearly every step of meat, egg, and milk production, climate-changing gases are released into the atmosphere, potentially disrupting weather, temperature, and ecosystem health. Mitigating this serious problem requires immediate and far-reaching changes in current animal agriculture practices and consumption patterns.

### 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.

## Results

**Table 1:** Distribution of respondents according to annual income. (N=150)

Annual Income	Frequency	Per cent
Up to Rs 60000	53	35.3
Rs. 60000 to 120000	38	25.3
Rs. 120000 and above	59	39.4
Total	150	100.0

Table 1 indicates that the distribution of respondents according to annual income, 39.4 per cent of respondents belonged to those families whose annual income was Rs 1,20,000 and above, whereas, followed by 35.5 per cent of respondents with annual income was up to 60,000 annual income and 25.3 per cent of respondents belonged to those

families whose annual income was between Rs 60,000 to 1,20,000.

**Table 2:** Distribution of respondents according to size of land holding. (N=150)

Land holding	Frequency	Per cent
Landless	3	2
Up to 2.5 acres (Marginal)	101	67.3
2.5 to 5 acres (Small)	31	20.7
5 acres and above (Large)	15	10.0
Total	150	100.0

Table 2 represents the distribution of respondents according to their size of land holding, 67.3 per cent of respondents hold marginal land area followed by 20.7 per cent of respondents with small area, whereas, 10.0 per cent of respondents have large land area and 2 per cent of respondents were landless.

**Table 3:** Distribution of respondents according to the constraints faced by farmers during climate change. (N=150)

S. No	Statements	Always	Sometimes	Never	Mean Score	Rank
1.	Higher cost of the agriculture inputs	62.0	38.0	-	2.62	VII
2.	Non availability of inputs in time	52.7	47.3	-	2.53	X
3.	Difficult to work in the field due to severe temperature	28.7	70.0	1.3	2.27	XIII
4.	Low price of produce in the market	62.7	37.3	-	2.63	VI
5.	Lack of knowledge about post-harvest technology	51.3	48.7	-	2.51	XI
6.	Lack of knowledge about processing of different crops	51.3	48.0	0.7	2.51	XI
7.	Lack of storage facility in the village	52.0	47.3	0.7	2.51	XI
8.	Absence of processing units in the village	53.3	46.7	-	2.53	X
9.	Grading for the produce to maintain their quality	47.3	52.0	0.7	2.47	XII
10.	Lack of knowledge regarding appropriate adaptation measures	52.0	47.3	0.7	2.51	XI
11.	Lack of information about long term climate change	67.3	32.7	-	2.67	III
12.	Lack of information about accurate weather forecast	70.0	28.7	1.3	2.69	II
13.	Less/ no subsidies on desired agriculture inputs	66.0	33.3	0.7	2.65	V
14.	Lack of government policies to combat against natural calamities	66.0	34.0	-	2.66	IV
15.	Lack of believe on current weather forecast system	64.0	32.7	3.3	2.61	VIII
16.	Irregularity in electricity supply	54.7	45.3	-	2.55	IX
17.	Lacking of training programmes on disaster management	53.3	46.7	-	2.53	X
18.	Inadequate supply of irrigation water in canal	83.3	16.7	-	2.83	I

Table 3 shows that distribution of respondents according to constraints faced due to climate change, 83.3 per cent of respondents always faced inadequate supply of irrigation water in canal, whereas, 16.7 per cent of respondents sometimes face this problem with mean score value 2.83 and rank I. 70.0 per cent of respondents always face lack of information about accurate weather forecast, whereas, 28.7 per cent of respondents sometimes face this problem and 1.3 per cent of respondents never face this problem with mean score value 2.69 and rank II. 67.3 per cent of respondents always face lack of information about long term climate change, whereas, 32.7 per cent of respondents sometimes face this problem with mean score value 2.67 and rank III. 66.0 per cent of respondents always face lack of government policies to combat against natural calamities, whereas, 34.0 per cent of respondents sometimes face this problem with mean score value 2.66 and rank IV. 66.0 per cent of respondents always face less/no subsidies on desired agriculture inputs, whereas, 33.3 per cent of respondents sometimes face this problem and 0.7 per cent of respondents never faced this problem with mean score value 2.65 and rank V. 62.7 per cent of respondents always face low price of produce in the market, whereas 37.3 per cent of respondents sometimes face this problem with mean score value 2.83 and rank VI. 62.0 per cent of respondents always face higher cost of the agriculture inputs, whereas, 38.0 per cent of respondents sometimes face this problem with mean score value 2.62 and rank VII. 64.0

per cent of respondents always face lack of believe in current weather forecast system, whereas, 32.7 per cent of respondents sometimes face this problem and 3.3 per cent of respondents never face this problem with mean score value 2.61 and rank VIII. 28.7 per cent of respondents always face difficult to work in the field due to severe temperature, whereas, 70.7 per cent of respondents sometimes face this problem and 1.3 per cent of respondents never face this problem with mean score value 2.27 and rank VIII. 54.7 per cent of respondents always face irregularity in electricity supply, whereas, 45.3 per cent of respondents sometimes face this problem with mean score value 2.55 and rank IX. 52.7 per cent of respondents always face non availability of inputs in time, whereas 47.3 per cent of respondents sometimes face this problem with mean score value 2.53 and rank X. 53.3 per cent of respondents always face lack of training programmes on disaster management, whereas 46.7 per cent of respondents sometimes face this problem with mean score value 2.53 and rank X. 51.3 per cent of respondents always face lack of knowledge about processing of different crops, whereas, 48.0 per cent of respondents never faced this problem and 7 per cent of respondents never faced this problem with mean score value 2.51 and rank XI, and same with the respondents who lack of knowledge about post-harvest technology. 52.0 per cent of respondents always face lack of storage facility in the village and lack of knowledge regarding appropriate adaptation measure, 47.3 per cent of respondents sometimes

face these problems, whereas, 0.7 per cent of respondents never faced problems with mean score value 2.51 and rank XI. 47.3 per cent of respondents always face problem of grading for the produce to maintain their quality and 52.0 per cent of respondents sometimes face this problem with mean score value 2.47 and rank XII. 28.7 per cent of respondents always face difficulty to work in the field due to severe temperature and 70.0 per cent of respondents sometimes face this problem while 1.3 per cent of respondents never faced this problem with mean score value 2.27 and rank XIII.

### Conclusion

The study reveals that respondents are facing many problems due to climate change such as inadequate supply of irrigation water in canal which affects the quality and quantity of soil and crops. Lack of information about accurate weather forecast was also a problem farmer's face. Shortage of storage facility in the village leads to large amount of yield wastage at the time of natural calamity. Thus it is an evident that climate change plays an important role in the constraints faced by farmers which can be met by bringing desirable changes in technologies and agricultural practices

### Recommendations and Suggestions

1. An early warning system should be put in place to monitor changes in pest and disease outbreaks.
2. Seasonal weather forecasts should be used as a supportive measure to optimize planting and irrigation patterns.
3. Provide greater coverage of weather linked agriculture insurance.
4. National grain storages at the household/community level to the district level must be established to ensure local food security and stabilize prices.
5. Provide technical, institutional and financial support for establishment of community bank of food, forage and seed.
6. Provide more funds to strengthen research for enhancing adaptation and mitigation capacity of agriculture.

### References

1. Deressa T, Hassan RM, Tekie A, Mahmud Y, Ringler C. Analyzing the determinants of farmers' choice of adaptation methods and perceptions of climate change in the Nile Basin of Ethiopia. IFPRI- Discussion Papers. 2008; 798:viii-26.
2. Olivar LE, Ballesil SO, Ngilangil MLA. Farmers' awareness and knowledge on climate change adaptation strategies in northern Luzon, Philippines. E-International Scientific Research Journal. 2013; 5(3):74-82.
3. Kwaghe PV, Mohammed D. Analysis of adaptation to climate change among crop farmers in Adamawa state, Nigeria. Advances in Arts, Social Sciences and Education Research. 2013; 3(1):379-386.
4. Rahman AMA, Hamid ME. Assessment of awareness and adaptation to climate change rain fed farmers in Um Alqora Locality, Gezira State, Sudan. International Journal of Agricultural Science, Research and Technology in Extension and Education System. 2013; 3(3):133-138.
5. Sahu NC, Mishra D. Response of farmers to climate change in Odisha: An empirical investigation. International Journal of Environmental Sciences. 2014; 4(5):786-797.

6. Singh AK, Pathak H. Climate sensitivity of intensive rice- wheat systems in tropical Asia: focus on the Indo-Gangetic plains. Climate change impact and adaptation in agricultural system, 2014, 31-46.