

Awareness about Climate Change and its Effect on Agriculture as Perceived by Extension Functionaries

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ABSTRACT

Awareness is the perception of an individual, conscious about climate changes. The awareness taken more, as a cognitive behaviour has been operational as the respondent's consciousness, i.e. being aware or not aware about climate change and its effect on agriculture. A study was undertaken to know awareness about climate change and its effect on agriculture as perceived by extension functionaries. The required data and information were collected through direct interview study. The results indicated that 38.37 per cent of the respondent had high level of general information about climate change and 55.00 per cent had medium level of awareness regarding the climate change and its effect on agriculture.

Keywords: Awareness, Climate change, Extension functionaries.

INTRODUCTION

Climate change inevitably affects the economy and livelihood of people. It is expected to have a serious environmental, economic, and social impact on the farming systems. In particular, rural farmers in India, whose livelihoods depend on the use of natural resources, are likely to bear the brunt of adverse impacts (Janssen, 2010). Climate change is generally detrimental to the agriculture sector; but with adaptation, vulnerability can largely be reduced (Smit and Skinner, 2002). Developing countries like India are more vulnerable due to lower adaptation capacity. Adaptation to climate variability and climate change requires long term strategic research in the area of natural resource management, crops, pests and disease dynamics, livestock, fisheries & energy efficiency. Focused programmes are taken up on different commodities on adaptation and mitigation. A detailed assessment on vulnerability of different agro-climatic zones of the country is also planned. Extension functionaries were recognized as a vital component to respond towards climate change therefore the present study was planned with following specific objectives:

- 1 To study the profile of the participants
- 2 To study the awareness about climate change and its effect on agriculture as perceived by extension functionary.
- 3 To ascertain the relationship between general information about climate change and their selected independent variable.

METHODOLOGY

The present study was conducted to assess the awareness about climate change and its effect on agriculture as perceived by extension functionaries. Participants who had attended the training programmes conducted at Extension Education Institute (EEI), Anand and outside the EEI during 2012-13 were randomly selected for the study. For the purpose, a total of 120 respondents were selected from 12 different training programmes conducted by EEI. The data were collected with the help of pretested structured interview schedule through personal interview method. The collected data were processed into some descriptive statistics and correlation analysis to draw a conclusion.

RESULTS AND DISCUSSION

Profile of participants

Table: 1 Distribution of the respondents according to their profile n =120

| Sr. No. | Profile of participants | Frequency | Per cent |
|--------------------------------|-------------------------|-----------|----------|
| Age | | | |
| 1 | 21 to 30 | 31 | 25.84 |
| 2 | 31 to 40 | 27 | 22.50 |
| 3 | 41 to 50 | 24 | 20.00 |
| 4 | Above 50 years | 38 | 31.66 |
| Gender | | | |
| 1 | Male | 107 | 89.13 |
| 2 | Female | 13 | 10.83 |
| Category | | | |
| 1 | SC | 19 | 15.83 |
| 2 | ST | 18 | 15.00 |
| 3 | OBC | 30 | 25.00 |
| 4 | GEN | 53 | 44.17 |
| Designation | | | |
| 1 | Class-I | 04 | 03.33 |
| 2 | Class-II | 86 | 71.67 |
| 3 | Class-III | 30 | 25.00 |
| Department | | | |
| 1 | Agriculture | 107 | 89.16 |
| 2 | A.H. | 10 | 08.34 |
| 3 | Fisheries | 03 | 02.50 |
| Education qualification | | | |
| 1 | Graduate | 55 | 45.83 |
| 2 | PG | 48 | 40.00 |
| 3 | Doctorate | 17 | 14.17 |
| Experience | | | |
| 1 | 0 to 10 years | 62 | 51.67 |
| 2 | 11 to 20 years | 18 | 15.00 |
| 3 | 20 years above | 40 | 33.33 |

Out of total 120 respondents' 38.00 per cent belonged to above 50 years of age group followed by 21 to 30 years of age group (25.84 per cent), 22.50 per cent and 20.00 per cent of respondents were observed in 31 to 40 years of age group and 41 to 50 years of age group respectively. The data presented in above table indicated that great majority (89.13 per cent) of the respondents were male and only 10.83 per cent of them was female respondents, respectively. Out of total, 44.17 per cent were belonged to general category followed 25.00 per cent, 15.83 per cent and 15.00 per cent

of them belonged to OBC, SC and ST category, respectively. The great majority of the extension functionaries 71.67 per cent had Class-II level of position followed by 25.00 per cent and only 3.33 per cent of the respondents had Class-III and Class-I level of position, respectively. The data revealed that out of total respondents' vast majority (89.16 per cent) were from agriculture department followed by 8.34 per cent was belonged to animal husbandry department and only 2.50 per cent of them belonged to fishery department, respectively. Regarding experience of respondents, 51.67 per cent of them had upto 10 years of experience whereas 33.33 per cent and 15.00 per cent of them had above 20 years of experience and 10 to 20 years of experience of working in various departments. The presented data indicate the distribution of extension functionaries in different education level. 45.83 per cent were having education up to graduate level followed by 40.00 per cent and 14.17 per cent of them had post graduate and doctorate level of education, respectively.

Table 2: Distribution of the respondents according to general information about climate change

n=120

| Sr. No. | Category | Frequency | Per cent |
|---------|---------------------------------------|-----------|----------|
| 1 | Low (less than 16.29 score) | 38 | 31.66 |
| 2 | Medium (between 16.29 to 19.27 score) | 36 | 30.00 |
| 3 | High (more than 19.27 score) | 46 | 38.37 |

From the Table-2 it was pointed out that slightly more than one third (38.37 per cent) of the respondent had high level of general information about climate change whereas, 31.66 per cent and 30 per cent of them had low and medium range of general information about climate change for agriculture, respectively.

Table 3: Distribution of the respondents according to awareness about climate change and its effect on agriculture n=120

| Sr. No. | Category | Frequency | Per cent |
|---------|---------------------------------------|-----------|----------|
| 1 | Low (less than 16.20 score) | 25 | 20.83 |
| 2 | Medium (between 16.20 to 19.30 score) | 66 | 55.00 |
| 3 | High (more than 19.30 score) | 29 | 24.17 |

The data presented in Table-3 portrayed that nearly

half of the respondents (55.00 per cent) had medium level of awareness regarding the climate change for agriculture, followed by 24.17 percent and 20.83 percent had high and low level of awareness regarding the climate change for agriculture.

Table 4: Relationship between profile of participants and their general information about climate change n=120

| Sr. No. | Characteristics | r - value |
|---------|-------------------------|-------------|
| 1 | Age | -0.01946 NS |
| 2 | Gender | 0.01630 NS |
| 3 | Category | 0.07860 NS |
| 4 | Designation | -0.00458 NS |
| 5 | Department | 0.00658 NS |
| 6 | Education Qualification | -0.00781 NS |
| 7 | Experience | 0.08480 NS |

The data presented in Table 4 reveal that independent variables like, gender, category, department and experience shows positive and non-significant relationship with general information about climate change possessed by participants. While variables like, age, designation and education had negative and non-significant relationship with general information about climate change possessed by participants. The above result reflected that, general information on climate change was not influenced by their characteristics.

Table 5: Relationship between the profile of participants and their awareness about climate change and its effect on agriculture n=120

| Sr. No. | Characteristics | r - value |
|---------|-------------------------|-------------|
| 1 | Age | -0.12828 NS |
| 2 | Gender | 0.01023 NS |
| 3 | Category | 0.13768 NS |
| 4 | Designation | -0.00458 NS |
| 5 | Department | 0.01676 NS |
| 6 | Education Qualification | -0.02386 NS |
| 7 | Experience | -0.19114 NS |

The data mentioned in Table 5 reveal that independent variables like, gender, category and department shows positive and non-significant relationship with awareness of participants about climate change. While variables like, age, designation, education and experience had negative and non-significant relationship with awareness of participants about climate change. The above result reflected that, awareness of

participants about climate change was not influenced by their characteristics.

Table 6: Suggestions to create awareness among the extension functionaries on climate change and its effect on agriculture n=20

| Sr. No. | Suggestions | Mean score | Rank |
|---------|--|------------|------|
| 1 | Use of plastic package material should be restricted | 2.79 | I |
| 2 | Awareness on long term effect of climate change problem should be created environmental information at block level | 2.66 | II |
| 3 | Technology solving climate change problem should be demonstrated | 2.63 | III |
| 4 | Regular educational visit / tours of extension functionaries should be organized at the centers / location where eco friendly efforts are demonstrated | 2.61 | IV |
| 5 | Live demonstration on the use of renewable energy should be organized in the field | 2.56 | V |
| 6 | Regular planting of tree/plants should be organized on farmer's field | 2.51 | VI |
| 7 | Energy saving day should be organized | 2.49 | VII |
| 8 | Rally to protest climate change problem should be organized | 2.45 | VIII |
| 9 | Each extension center should established nature club to create awareness and work to minimize climate change problem | 2.43 | IX |
| 10 | Award should be given for best extension work done by extension functionary on climate change issues | 2.41 | X |

The result of Table-6 indicated that top five major suggestions offered by the extension functionaries were restriction of use of plastic package material, followed by awareness on long term effect of climate change problems, creation of environmental information centre at block level, demonstration of technology solving climate change problems, organization of regular educational visit/tour of the extension functionaries to the centers or location where eco-

friendly efforts are demonstrated and also live demonstration on the use of renewable energy into field. Some minor suggestions offered by extension functionaries to create better awareness about climate changes where regular planting of trees/plants on farmers field, organization of energy saving day, rally to protect climate change problems, establishment of nature club and award for the best extension work done by extension functionaries on climate change issues.

CONCLUSION

It can be concluded that, slightly more than one third (31.66 per cent) of the respondents belonged to the age group of 50 and above years. Majority of the respondents (89.13 per cent) were the male and the remaining 10.83 per cent respondent's female. Nearly half of the respondents (44.17 per cent) belonged to general category. Slightly three fourth (71.67 per cent) of the respondents had class-II designation. Overwhelming (89.16 per cent) of the respondents belonged to Agriculture department. Less than (45.83 per cent) of the respondents had Graduation as education level and slightly more than half (51.67 per cent) had 0 to 10 years of experience. Slightly more than one third (38.37 per cent) of the respondent had high level of general information about climate change, whereas, 31.66 per cent and 30.00 per cent of them had low and medium general information about climate change for agriculture, respectively. Nearly half of the

respondents (55.00 per cent) had medium level of awareness regarding the climate change for agriculture followed by 24.17 percent and 20.83 percent had high and low level of awareness regarding the climate change for agriculture. The independent variables like gender, category, department and experience shows positive and non-significant relationship with general information about climate change possessed by participants. While variables like, gender, category and department shows positive and non-significant relationship with awareness of participants about climate change.

REFERENCES

- Janssen, Sander, Louhichi, Kamel, Kanellopoulos, Argyris, Zander, Peter, Flichman, Hengsdijk, Huib, Meuter, Eelco, Andersen, Erling, Belhouchette, Hatem, Blanco, Maria, Borkowski, Nina, Heckelei, Thomas, Hecker, Martin, Li, Hongtao, Lansink, Alfons Oude, Stokstd, Grete, Thorne, Peter, Van Keulen, Herman and Van Ittersum, Martin K. (2010). A generic bio-economic farm models for environmental and economic assessment of agricultural systems. *Environ. Manage.*, 46 (6): 862-877.
- Smit, B. and Skinner, M. W. (2002). Adaptations options in agriculture to climate change: A typology. *Mitigation & Adaptation Strategies Global Change*, 7: 85-114.

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