

FARMERS' ROLE IN DECISION-MAKING ON ADOPTION OF MITIGATION AND ADAPTATION OF CLIMATE CHANGE PRACTICES IN AGRICULTURE

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ABSTRACT

Mitigation and adaptation planning requires more than legal frameworks and compliance to ensure that decisions are effective in meeting the challenges of vulnerability reduction in the context of a changing climate and its impact on agricultural production systems. Considering above instances, the following research objective has been inked for the study. To study farmers' role in decision-making on adoption of mitigation and adaptation of climate change practices in agriculture. The study followed exploratory research design. A total of 60 farmers were selected by way of proportionate random sampling method. The role of farmers in decision-making on adoption of various areas of mitigation and adaptation of climate change practices in agriculture was quite minimal, excepting domains of Soil Management and Crop Production Systems in which 55 per cent and 50 per cent of respondents respectively took role in final decision making.

Keywords : adaptation, climate change, decision-making, mitigation

INTRODUCTION

Climate change refers to any changes in climate over time, either due to natural variability or as a result of human activity (IPCC 2007 and Vinaya et al., 2017a, 2017b). In order to ensure ultimate objective of sustainable development with inclusive growth in the state, policies on mitigation and adaptation of climate change practices in agriculture has been integrated and institutionalized (MP SAPCC, 2014 and Patel et al., 2016). If farmers' role in decision-making on adoption of mitigation and adaptation of climate change practices in agriculture are not taken up properly and thoroughly studied, any initiatives on mitigation and adaptation approaches in coping with the climate change for small holder vulnerable farmers to increase their production through adoption of appropriate techniques are likely to fail due to improper decision making.

OBJECTIVE

To know the farmers' role in decision-making on adoption of mitigation and adaptation of climate change practices in agriculture

METHODOLOGY

The study followed exploratory research design. Mixed-method sampling procedure was followed. The study had been conducted at Manasa block of Neemuch district and Malhargarh block of Mandsaur district of Madhya Pradesh. Two villages were selected purposively from each of the selected blocks thereby constituting four villages for the study. A total of 60 farmers were selected by way of proportionate random sampling method. The collected data were classified, tabulated and analyzed with frequency, percentage and chi-square goodness of fit test.

RESULTS AND DISCUSSION

Table 1: Farmers' role in decision-making on adoption of mitigation and adaptation of climate change practices in agriculture n=60

Sr. No.	Aspects	Never Consulted	Only Consulted	Opinion Considered	Final Decision
1	Water Management	41 (68.33)	06 (10.00)	04 (6.66)	09 (15.00)
2	Soil Management	16 (26.66)	01 (1.66)	10 (16.66)	33 (55.00)
3	Conservation and Sustainable use of Genetic Resources	30 (50.00)	05 (8.33)	15 (25.00)	10 (16.66)
4	Crop Production Systems	22 (36.66)	00 (0.00)	08 (13.33)	30 (50.00)
5	Livestock Production Systems	55 (91.66)	02 (3.33)	00 (0.00)	03 (5.00)
6	Sustainable Food-Value Chain	54 (90.00)	01 (1.66)	01 (1.66)	04 (6.66)
7	Disaster Risk Reduction	50 (83.33)	03 (5.00)	02 (3.33)	05 (8.33)

The data apropos of the role of farmers in decision-making on adoption of mitigation and adaptation of climate change practices in agriculture is presented in Table 1. The role of farmers in decision-making on adoption of various areas of mitigation and adaptation of climate change practices in agriculture was quite minimal, as it could be inferred from the same table that excepting domains of Soil Management and Crop Production Systems in which 55 % and 50 % of respondents respectively took role in final decision making; in the remaining domains of agricultural practices viz., Livestock Production Systems, Water Management, Disaster Risk Reduction, Sustainable Food-Value Chain, and Conservation & Sustainable use of Genetic Resources from five to about seventeen (16.66 %) percent of respondent took role in final decision making. About 17 % or less of the respondents had their opinion considered for adoption in each

domain of the mitigation and adaptation of climate change practices in agriculture except in the domain of Conservation and Sustainable use of Genetic Resources where one fourth (25.00 %) of respondents had their opinion considered. Further perusal unveiled that 10 % and less of the respondents were only consulted while making decision. Majority of the respondents, about sixty eight percent (68.33 %), eighty three percent (83.33 %) ninety percent (90.00 %) and about ninety one percent (91.66 %) were never been consulted on domains of Water Management, Disaster Risk Reduction, Sustainable Food-Value Chain and Livestock Production Systems respectively. The table further revealed that fifty percent, about thirty six (36.66 %) and twenty six (26.66 %) percent of the respondents were never been consulted on domains of Conservation and Sustainable use of Genetic Resources, Crop Production Systems and Soil Management.

Table 2: Chi-square Goodness-of-fit Test

n=60

Sr. No.	Decision	Chi-square Value	Maximum Residual Value
1	Water Management	60.933 **	26 (Never Consulted)
2	Soil Management	36.400 **	18 (Final Decision)
3	Conservation and Sustainable use of Genetic Resources	23.333 **	15 (Never Consulted)
4	Crop production system	12.400 **	10 (Final Decision)
5	Livestock production system	91.900 **	35 (Never Consulted)
6	Sustainable Food-Value Chain	90.136 **	34 (Never Consulted)
7	Disaster Risk Reduction	36.818 **	22 (Never Consulted)

(** p < 0.01)

CONCLUSION

The role of farmers in decision-making on adoption of various areas of mitigation and adaptation of climate change practices in agriculture was quite minimal, as it could be inferred from the same table that excepting domains of Soil Management and Crop Production Systems in which 55 % and 50 % of respondents respectively took role in final decision making; in the remaining domains of agricultural practices viz., Livestock Production Systems, Water Management, Disaster Risk Reduction, Sustainable Food-Value Chain, and Conservation & Sustainable use of Genetic Resources from five to about seventeen (16.66 %) percent of respondent took role in final decision making. The Chi-square Goodness-of-fit Test proves that Decisions on Water Management, Soil Management, Conservation & Sustainable use of Genetic Resources, Crop Production System, Livestock Production System, Sustainable Food-Value Chain and Disaster Management are statistically significant at 1% level of significance.

REFERENCES

IPCC. (2007). Climate change 2007: the physical science

basis, summary for policymakers. <http://www.ipcc.ch>.

MP SAPCC. (2014). State Action Plan on Climate Change: Madhya Pradesh, Government of Madhya Pradesh

Patel, R.R , Pandya, S.P. and Patel, P.K. (2016). Characterization of Farming System in North West Agro Climatic Zone of Gujarat State. *Guj. J. Ext. Edu.*, 27(2): 206-208

Vinaya Kumar, H. M., Shivamurthy, M., and Lunagaria, M. M. (2017a). Rainfall Trend Analysis and Adaptation Strategies to Manage Climate-Induced Crisis in Coastal Zone of Karnataka, India, *Journal of Scientific Research and Reports*, 13(5): 1-11. DOI: 10.9734/JSRR/2017/32709

Vinaya Kumar, H. M., Shivamurthy, M., Govinda Gowda, V. and Biradar, G. S. (2017b). Assessing decision-making and economic performance of farmers to manage climate-induced crisis in Coastal Karnataka (India). *Climatic Change. Springer*, May 2017, 142 (1):43–153. doi:10.1007/s10584-017-1928-x

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