



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; SP-11(9): 2871-2874
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www.thepharmajournal.com
Received: 28-07-2022
Accepted: 30-08-2022

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Information sources preferred by the farmers in receiving farm information

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Abstract

The Agricultural sector is the main occupation for most of the rural peoples especially for developing countries like India however, their agricultural production and livelihood tangled with climatic conditions. The climate change is one the biggest challenge for the farmers in achieving the sustainable agricultural production in India particularly Madhya Pradesh state. The farmer level assessment in choice of climate information and their adaptation strategies with objective of understand how different sources of climate information and their influences on adaptations strategies at farm household level. The present studied carried out in Chhindwara district of M.P. state was selected purposively, the multistage random sampling technique employed for the present study each 40 farmers were selected from each block, totally 240 respondents. The findings shows that majority of the respondents get the information from KVKs and also electronic media (Radio and television) also helps in disseminating the information with respect to adaptation strategies. The appropriate policies measures should be framed with respect to in strengthening KVKs by capacity buildings and the government should resolve the issues with respect to delaying in releasing insurance compensations to the farmers and also payment of prescribed sum insured amount.

Keywords: Climate change, adaptation strategies, PMFBY, KVK

Introduction

The Agricultural sector is the main occupation for most of the rural peoples especially for developing countries like India however, their agricultural production and livelihood tangled with climatic conditions. As per the previous estimates about 10 to 40 percent of loss in the crop productivity major due to climatic events. (ICAR, 2021) ^[7] this situation further aggravates in coming decades. Thus, safeguarding the farming community from the vagaries of climate change and its extreme events like flooding, drought situations which further dampens the agricultural sector. In recent period due to flooding huge crop loss occurred about 18.17 million hectares of land and 8.5 per cent of the gross cropped area out of this 6.047 mha losses due to recent floods.

The commitment to ensure the farmers sustainability under the climatic challenge necessitates appropriate climate information on time and capacity building through institutional arrangement and agricultural extension services that enables farmers in adopting new technologies and new farming practices (Dunne *et al.*, 2019) ^[8]. The Access to agricultural extension services and reliable information improve farmers knowledge with respect to changing climatic conditions and facilitates in adaptation of strategies to cope with climate change and knowledge on different management practices that they can adapt to climate change and according to farm situations. Thus, it enables the farmers be timely, perceive changes in climatic events and modify their agronomic practices accordingly. Thus, it helps farmers timely, perceive changes in climatic events and modify their agronomic practices accordingly (Ramborun *et al.*, 2019) ^[9]. It is essential to assess the several sources of information with respect to adaptation strategies to cope with climate change and the successful execution of adaptations strategies depends on accurate, timely information on the climate variability. This motive, the present study aims to conduct the farmer level assessment in choice of climate information and their adaptation strategies with objective of understand how different sources of climate information and their influences on adaptations strategies at farm household level.

Methodology

Madhya Pradesh is a state with about 70 per cent of the population depending on agricultural sector for their livelihood.

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The climatic variability and climate change have potential threat to the agriculture sector in Madhya Pradesh state. The sector is most vulnerable to climate change which supports large chunk of the rural people. The present studied carried out in Agro climatic zone of Satpura range viz. Betul, Chhindwara and Seoni district. The Chhindwara was selected purposively, comes under high vulnerability index in the mid-century (2050) from medium vulnerability in the base period. The multistage stratified sampling technique employed for the present study each 40 farmers were selected from each block, totally 240 respondents. The selected respondents were interviewed personally with the help of a well-structured and pre-tested interview schedule. The data collected with source of information with respect to adaptation strategies and their influences on employing adaptations strategies to cope with climate change. The data thus collected were tabulated and

statistically analyzed.

Results and Discussion

Source of information

The respondents used several information sources to collect information with respect to climatic variability and adopt different strategies to cope with climate change. However, the choice of adaptation strategies and its execution at farm level is manifested by lot of factors on accurate, timely information on the climate variability and precise technical details of adaptation strategies and also accessing the source traditional source (self, neighbour, newspaper and radio); institutions (KVKs); electronic media (television, telephone).

Source of information adaptation strategies

Table 1: Sources of information with respect to adaptation strategies employed by the farmers

S. No.	Information source	Frequency (Yes)	%	Frequency (No)	%	Mean score	Rank
1.	KVK	208	86.67	32	13.33	1.86	I
2.	Radio	70	29.17	170	70.83	1.29	VI
3.	Television	126	52.50	114	47.50	1.52	III
4.	Newspaper	108	45.00	132	55.00	1.45	IV
5.	Experiment	91	37.92	149	62.08	1.38	V
6.	Telephone / Mobile	185	77.08	55	22.92	1.77	II
7.	Neighbour /Friend	183	76.25	57	23.75	1.77	II
8.	Kissanmitra	124	51.67	116	48.33	1.52	III
9.	Self	28	11.67	212	88.33	1.12	VII

The respondents used several information sources to collect information with respect to climatic variability and adopt different strategies to cope with climate change. However, the choice of adaptation strategies and its execution at farm level is manifested by lot of factors on accurate, timely information on the climate variability and precise technical details of adaptation strategies and also accessing the source traditional source (self, neighbor, newspaper and radio); institutions (KVKs); electronic media (television, telephone). By keeping the importance of climate information tabulated in 1 the findings reveal that The findings show that KVK (86.67%) found to be most used source of information with mean score of 1.86 and ranks I and The Neighbor and friends (76.25%) and Telephone and mobile (77.08%) found to be next source of information with mean score of 1.77 and ranks II among the source of information. Kissanmitra (51.67%) was the source of information for the respondents with mean score of 1.52 and ranks III and the remaining 78.33 per cent them access the information from other sources. Radio (29.17%) and television (52.50%) plays significant role in providing the information with respect to adaptation strategies with mean score of 1.29 and 1.52 and ranks IV and III respectively. Likewise, Newspaper (45.00%) and experiment (37.92%) and self (11.67%) also plays very least as compared to other sources disseminating the information to the respondents. The findings infer that majority of the respondents get the information from KVKs. The KVKs are provide a key facilitating role in training of farmers and extension personnel to update their knowledge and skills in adaptation strategies to cope with climate change. The study further revealed that

institutional arrangement (KVKs) access to information on climate change increase the probability of adopting knowledge-intensive adaptation strategies alteration of sowing dates, Balanced use chemical fertilizers and IPM method to control pests and diseases and use of rabi crop after the kharif crop failure. The findings are in line with Ansari (2018) [10].

Adaptation strategies adopted by farmer in study area

Table 2. Categorization of farmers based on Adaptation strategies in the study area.

Table 2: Distribution of farmers based on Adaptation strategies

S. No.	Categorization	Frequency	%
1.	Low (20 - 26)	20	8.33
2.	Medium (27 - 33)	87	36.25
3.	High (34 - 40)	133	55.42
	Total	240	100

The categorization of the respondents based on adaptation strategies is presented in the table 2. The findings reveals that more than half (55.42%) of respondents were under the category of high, which shows that majority were adopting the adaptation strategies, to cope up with climate change. Further, it was found that 36.25 per cent of the respondents were categorized under medium category and only 8.33 per cent were under the low category.

The findings infers that most of respondents (55.42%) had high category adaptation strategies in the study area.

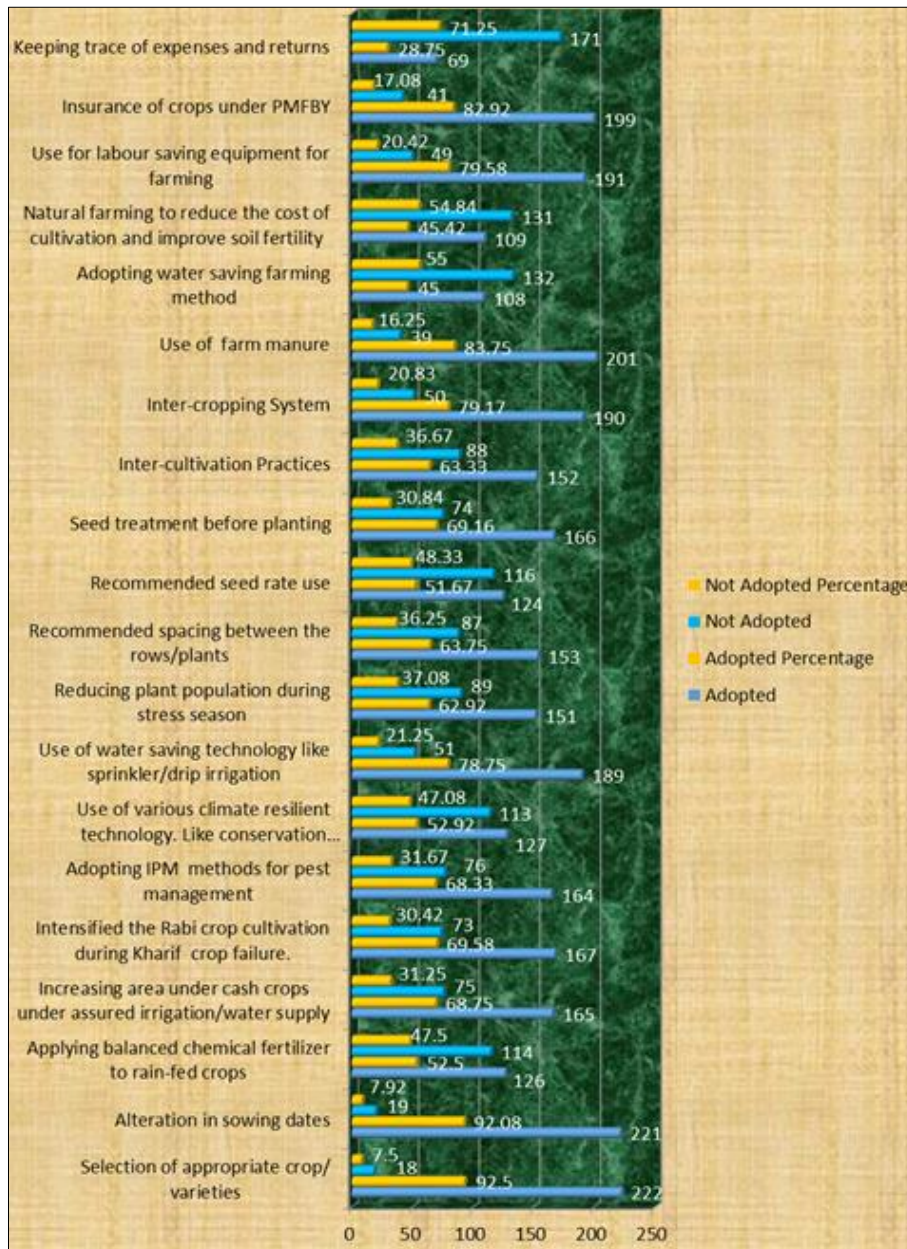


Fig 1: Distribution of the respondents based on adaptations strategies employed percent

The farmers were enquiring about their selection adaptation strategies from 20 different adaptation strategies displayed in the fig.1. Due to change in temperature and precipitations level. The sample respondents expressed their selections based on their perceptions with respect to climate change and their agricultural practices and availability of resources in the farm. Thus, the majority of them decided to adopt to combat climate change. At the farmers level, the adaptations are generally influenced by their potential to predict the climate change whilst the adaptations strategies are greatly driven by their socioeconomic, communications and psychological parameters. The selection of adaptations strategies is not mutually exclusive, thus farmers indicated select more than one or sometime two strategies at time because some of the strategies are complementary in nature. For instance, farmers may change crop varieties or protective irrigation during critical stages which requires irrigation facilities. The results indicate that most common adaptation strategies adopted by farmers in the study area is selection of appropriate crop/varieties and alteration of sowing dates about 92.50 per cent and the remaining 7.50 per cent did not adopted the

appropriate crop/varieties and alteration of sowing dates. About 83.75 per cent of them applied for farm yard manure ranks II in selection of adaptation strategies. Likewise, 79.58, 79.17 and 78.75 per cent of the respondents go for use for labour saving equipment for farming inter cropping system and use of water saving technology like sprinkler. About 69.58 and 68.75 per cent of them employed Intensified the rabi crop cultivation during kharif crop failure and Increasing area under cash crops under assured irrigation/water supply. Intercultural activities (63.33%); reducing plant population during stress season (62.92%); recommended spacing between the rows and plants (63.75%). Applying balanced use of fertilizer (52.50%); Use of various climate resilient technology. Like conservation agriculture, zero - tillage (52.92%) recommended seed rate (51.67%). Adopting water saving farming method (45.00%); natural farming to reduce the cost of cultivation (45.42%0. Finally, keeping trace of expenses and returns adapts this strategy of about 61.25 per cent in the study area.

Conclusions

The climate change is one the biggest challenge for the farmers in achieving the sustainable agricultural production in India particularly Madhya Pradesh state where large chunk of the population depends on agriculture for their livelihood. The intensification of the climatic events has makes the agriculture sector into vulnerable areas. Thus, reliable and timely information improves farmers knowledge with respect to changing climatic conditions and facilitates in adaptation of strategies to cope with climate change. Thus, farmer level assessment in choice of climate information and their adaptation strategies with objective of understand how different sources of climate information and their influences on adaptations strategies at farm household level. Our study underscores majority of the respondents get the information from KVKs in the study area. Thus, strengthening of KVKs with respect to regular capacity building and providing necessary infrastructures the KVKs are provide a key facilitating role in training of farmers and extension personnel to update their knowledge and skills in adaptation strategies to cope with climate change. The farmers employ crop insurance with respect to PMFBY as strategy means to protect the farmers against financial losses due to risk and uncertainties that may arise from the crop failures due untimely rain or prolonged dry spell which are under control. The government should resolve the issues with respect to delaying in releasing insurance compensations to the farmers and also payment of prescribed sum insured amount.

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