Website : www.asthafoundation.in
Progressive Research : An International Journal
Vol 19 (1) : 52-54 (January-2024), Print ISSN : 0973-6417, Online ISSN : 2454-6003
Society for Scientific Development in Agriculture and Technology, Meerut (U.P.) India

Adoption Strategies followed by Paddy Farmers to Cope with Climate Variability in Prayagraj District of Uttar Pradesh

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Abstract

Rice has significant attention for food security because it fulfills approximately one third of the caloric intake of one third world population. A study was conducted in Prayagraj District of Uttar Pradesh to measure Adoption strategies followed by paddy farmers to cope with climate variability. Data were collected through personal interview and focus group discussion from the total 80 respondents. The findings of present investigation revealed that majority of the farmers (98.75%) have given their assent for appropriate variety to augment their profit & abating loss due to climate variability. Awareness should be created among the farmers to adapt the strategies that mitigate the effect of climate variability.

Key words : *Adoption strategies, paddy farmers, climate variability.*

Introduction

Rice has significant attention for food security because it fulfills approximately one third of the caloric intake of one third world population. In the northern region of India, increase in carbon dioxide and a low increase in temperature is projected to favour rice crop growth which at last amplify the rice yield, whereas a rapid augument in temperature and slow increase in carbon dioxide consequences low rice yield which is due to adverse effect of it in paddy crop production (1,2).

Adaptation and Mitigation are two basic criteria to counter ill effects of climate variation. Growers attitude poised these two answers to climate variability must be assessed. Adaptation to climate variation involves changes in management of agricultural practices in response to changes in climatic circumstances. These involves an agglomeration of various responses of individuals at the farm-level and assumes that growers have reach to alternative practices and technologies present in region. For adaption of strategies to curb climate variation, farmers are prerequisite first to know & notice that climate has altered and then have to identify their potential which is useful for adaptation measures and then implement them. To enhance these policies poised tackling the challenges of climate variation poses various amenability to the growers, it is significant to have knowledge of grower's perception on climate variability, potential of adaptation measures, and factors which affects adaptation measures to climate variability With unintended weather, the grower's keep changing crop management practices by growing resistant varieties and are prepared to constant change the farming practices. (3,4,5).

As everyone know from very primitive juncture, agriculture and climate are mutually dependent on each other , there is much need to understand the impact of climate change on agriculture at the global and regional levels, particularly in managing food for vulnerable populations.

Research Methodology

Prayagraj District was selected randomly. Two tehsils were selected randomly. From each selected tehsil, four villages were selected by simple random sampling technique. . Complete enumeration was done of Paddy farmers having at least one acre land. From each village, 20 respondents were selected randomly. Thus, the total number of respondent was 80.

Results and Discussion

Here, farmer's assent toward selecting appropriate crop variety to corroborate the quality, productivity, as well as production of whole crop been perceived. Majority of farmers (98.75%) have given their assent for appropriate variety to augment their profit & abating loss due to climate variability. while 1.25% have not given their assent for selecting crop varieties (Table-1).

Table-1 : Selection of appropriate crop varieties.

Sl. No.	Selection assent	Frequency	Percentage
1.	Yes	79	98.75
2.	No	1	01.25
	Total	80	100.00

Here, as we have seen that farmers were adopting strategies to counter ill effects of climate variability during paddy cultivation, majority of farmer's (96.25%)

Received : November-2023; Revised : November-2023; Accepted : December-2023

emphasized on earlier sowing than before, while 3.75% on no change in date of sowing the crop. This mainly accomplished to fulfill the perquisite of water to fulfill during cultivation (Table-2).

Table-2 : Changing planting/sowing date.

Sl. No.	Sowing time	Frequency	Percentage
1.	Earlier than before	77	96.25
2.	Not Earlier than before	3	03.75
	Total	80	100.00

Here, Method of sowing of paddy cultivation is discussed, where 58.75% farmer's emphasized on direct seed sowing method Non Appropriate, while 41.25% said that this direct seed sowing as Appropriate for them. Which is low input cost method of sowing the crop (Table-3).

Table-3 : Direct sowing method.

Sl. No.	Direct seeding method	Frequency	Percentage
1.	Appropriate	33	41.25
2.	Non Appropriate	47	58.75
	Total	80	100.00

Here, farmer's emphasis on to grow nursery for further sowing it on field. Here majority of farmer's 58.75% have commented on raising community nursery as Affordable, because small farmers do not have adequate resources to raise nursery countering climate change so, they prefer to collective raising of nursery. While 41.25% said this criteria as Non preferable (Table-4).

Table-4 : Raising community nursery.

Sl. No.	Community Nursery	Frequency	Percentage
1.	Preferable	47	58.75
2.	Non preferable	33	41.25
	Total	80	100.00

Here, cultivation from most vulnerable areas are avoided to wane the loss incurred by the climate change, majority of farmer's 55% 'Thoroughly Avoided' cultivation from most vulnerable areas, while 45% farmer's 'Temporarily Avoided' in specific seasons, years when they prior predict that adventing seasons is less favorable for cultivation of the crop (Table-5).

Table-5 : Avoiding crop cultivation from vulnerable areas.

Sl. No.	Crop Cultivation	Frequency	Percentage
1.	Temporarily avoided	36	45.00
2.	Thoroughly avoided	44	55.00
	Total	80	100.00

Here, shift from paddy crop to other tolerant crops is referred, where Majority or farmer's 57.5% switch to Tolerant Vegetable crops. While, 42.5% farmer's altered to tolerant Horticulture crops, due to which emphasis on a single crop waned & diversification of available food products amplify, also it reduces farmer's lucrative losses by principle crop and corroborate their financial balance (Table-6).

Table-6 : Shift from paddy to perennial crops.

Sl. No.	Shift to	Frequency	Percentage
1.	Tolerant Horticulture crops	34	42.50
2.	Tolerant vegetables	46	57.50
	Total	80	100.00

Majority of farmer's 66.25% strives to diversify their crops to manifold crops ,while rest of them 33.75% have said that they don't have adequate amount of resources to diversify crops as well as enough interest to work on this. So, they prefer to their native way of crop cultivation instead of any other way (Table-7).

Table-7 : Diversify the crop cultivation to manifold.

Sl. No.	Farmer's Assent	Frequency	Percentage
1.	Yes	53	66.25
2.	No	27	33.75
	Total	80	100.00

Farmers input to their field decides what they are imparting in their field. & in return, what consequences are going to come out from it.

Here, majority of farmer's 77.50% are endowing Composite Fetilizers in their field. while, 22.50% are imparting it after taking an expert advice.

Inputs by farmers decides the way to which stratum his crop is going to be. New ways of farmers Inputs are decision making criteria for crop cultivation nowadays (Table-8).

Table-8 : Equivalent Manures/ Fertilizers to crops.

Sl. No.	To Apply	Frequency	Percentage
1.	Composite Fertilizer	62	77.50
2.	After expert advice	18	22.50
	Total	80	100.00

Majority of farmer's 60% adopted this technique. while, 40% don't have interest poised it (Table-9).

Table-9 : Practice of SRI (System of rice intensification).

Sl. No.	SRI	Frequency	Percentage
1.	Yes	48	60.00
2.	No	32	40.00
	Total	80	100.00

During paddy cultivation, Water is very much crucial through which farmer's irrigate their fields. Here, Majority of farmer's 50% adopted Tube well for irrigating their field. Solar pumps (6.25%), 13.75% adopted 'Both'.

While, 8.75% use Canal to irrigate their field & 21.25% emphasis on merely Rainfall as method of irrigation to their field, due lean ground water resources available at their (Table-10).

Table-10 : Method of Irrigation.

Sl. No.	Irrigation	Frequency	Percentage
1.	Tube well	40	50.00
2.	Solar pump	5	06.25
3.	Both	11	13.75
4.	Canal	7	08.75
5.	Only Rainfall	17	21.25
	Total	80	100.00

Nowadays, Climate change is appearing as a very crucial & decision-making term during cultivation of any crop throughout the world.

So to counter their ill effects, farmers have to use several methods to abate damages occurred due to them at crops. As like here, farmers use several methods to prepare themselves prior onset of any climate change effect.

Here, Majority of farmer's 58.75% use 'All' methods to get information about climate change, 20% through 'News Broadcast'. 17.5% through customer care service of weather forecast system & 3.75% through SMS (short message service) (Table-11).

Table-11 : Weather forecast method system.

Sl. No.	Through method	Frequency	Percentage
1.	SMS	3	03.75
2.	Customer care	14	17.50
3.	News Broadcast	16	20.00
4.	ABC	47	58.75
	Total	80	100.00

Here, process of field management by farmers are referred. Where All farmer's 100% used to practice Both process (precised tilling of entire field & puddling of field) (Table-12).

Table-12 : Field Management.

Sl. No.	Field	Frequency	Percentage
1.	Mere Precised tilling	-	-
2.	Mere Puddling	-	-
3.	Both	80	100.00
	Total	80	100.00

Conclusions

It can be concluded from the study that that majority of the farmers (98.75%) have given their assent for appropriate variety to augment their profit & abating loss due to climate variability. Enhance farmer capability and improve resilience in response to climate variability.

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