

International Journal of Agriculture Extension and Social Development

Volume 7; Issue 1; Jan 2024; Page No. 411-414

Received: 01-10-2023
Accepted: 08-11-2023

Indexed Journal
Peer Reviewed Journal

Knowledge level of NICRA beneficiaries about climate resilient technologies

¹Tariq Aziz, ¹Tabina, ²Bilal A Bhat and ³Mudasir M Magray

¹ PG Scholars, Department of Agriculture Extension, SKUAST-Kashmir, Jammu and Kashmir, India

² Programme Coordinator, KVK Gurez, SKUAST-K, Jammu and Kashmir, India

³ Assistant Professor, Department of Vegetable Science, SKUAST-Kashmir, Jammu and Kashmir, India

DOI: <https://doi.org/10.33545/26180723.2024.v7.i1f.239>

Corresponding Author: Bilal A Bhat

Abstract

The present study was conducted in district Bandipora of Union Territory of Jammu and Kashmir to find out the knowledge level of beneficiaries and non-beneficiaries of National Innovations on Climate Resilient Agriculture (NICRA) about the climate resilient practices. The findings of the study revealed that majority of the beneficiaries had medium level of knowledge about recommended climate resilient varieties, seed rate, spacing, water management practices and high level of knowledge regarding sowing time, nutrient management practices and soil management practices. The overall knowledge of beneficiaries (mean knowledge score=46.33) was more as compared to non-beneficiaries (mean knowledge score=25.83) of NICRA. This mean increase in knowledge level of beneficiaries was due to the efforts of NICRA team and the demonstrations attended by beneficiaries under NICRA.

Keywords: NICRA, Climate resilient, Knowledge, nutrient and soil management

Introduction

National Innovations in Climate Resilient Agriculture (NICRA) is a network project of the Indian Council of Agricultural Research (ICAR) launched in February, 2011. The project aims to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration. The research on adaptation and mitigation covers crops, livestock, fisheries and natural resource management. The project consists of four components viz. Strategic Research, Technology Demonstration, Capacity Building and Sponsored/Competitive Grants (Anonymous, 2020) [2].

The NICRA project is running in three Krishi Vigyan Kendras of the Jammu and Kashmir (U.T) i.e., Kathua, Pulwama and Bandipora. The district Bandipora in Kashmir division is among the 100 most vulnerable districts of the country to climate change. The extreme climatic events experienced include cold wave, frost, hailstorms and flash floods. The NICRA project is running in district Bandipora since 2014 and is being implemented through KVK Bandipora. (Anonymous, 2017) [1].

Materials and Methods

The present study was conducted in Bandipora district of Jammu and Kashmir which was selected purposively because of being the only district of north Kashmir in which NICRA project is being operational.

The respondents of the study were the beneficiaries and non-beneficiaries of NICRA. The proportionate allocation method was employed to select 80 beneficiaries and from

the selected villages 40 non-beneficiaries were also taken for study selected by simple random sampling technique as control group. So, the total sample size for the study was 120 (80 beneficiaries and 40 non-beneficiaries).

In the present study, knowledge refers to the body of information understood and retained by the respondents about the different climate resilient technologies demonstrated by the KVK. A list of knowledge items was prepared based on the technologies demonstrated by the concerned KVK in the selected villages. Each demonstrated practice was framed in a question form to obtain the response from the respondents. The answers to the question were quantified by giving 2 score to full knowledge, 1 score for partial knowledge and zero score for no knowledge. The test constituted 35 knowledge questions. The maximum knowledge score obtained by a respondent could be 70 and the minimum 0. The maximum and minimum score obtained by the respondents was 61 and 10 respectively. The knowledge part was made up of 7 components i.e. recommended varieties, sowing time, seed rate, spacing, water management, nutrient management and soil management. The respondents were asked questions about these 7 components of knowledge. The total knowledge of the respondent was the addition of its knowledge components.

On the basis of mean (37.23) and S.D (17.02), the classification of respondents in low, medium and high knowledge was done following the procedure low: [Below mean-S. D] medium: [Between mean + S.D] and high: [Above mean + S.D].

Table 1: Categorization of Knowledge level of respondents

S. No.	Category (Score)	Criteria
1.	Low knowledge (up to 20.21)	Below mean–S.D (37.23-17.02)
2.	Medium knowledge (20.22-54.25)	Between mean + S.D (37.23±17.02)
3.	High knowledge (Above 54.25)	Above mean + S.D (37.23+17.02)

Results and Discussions

Knowledge level of respondents about the crop-based climate resilient Technologies demonstrated under NICRA

The data regarding the overall knowledge level of the respondents about the demonstrated climate resilient practices is presented in Table 2:

Table 2: Overall knowledge level of respondents (N=120)

S. No	Category	Beneficiaries (n=80)		Non-Beneficiaries (n=40)	
		Frequency	Percentage	Frequency	Percentage
1	Low Knowledge. (Up to 20.21)	06	07.50	21	52.50
2	Medium Knowledge (20.22-54.25)	31	38.75	18	45.00
3	High Knowledge (Above 54.25)	43	53.75	01	02.50
Mean		46.33		25.83	
Standard Deviation		12.86		8.83	

From the table 2, it is clear that, 38.75 percent of the beneficiaries and 45.00 percent of the non-beneficiaries had medium level of knowledge about various climate resilient practices, whereas, 53.75 percent of beneficiaries and 02.50 percent of the non-beneficiaries had high knowledge and 7.50 percent of the beneficiaries and 52.50 percent of the non-beneficiaries had low level of knowledge. The mean knowledge score of beneficiaries was 46.833 and that of non-beneficiaries was 25.83 with a standard deviation of 12.86 and 8.83 respectively.

This may be due to the fact that the beneficiaries were constantly updated and received regular trainings, demonstrations and awareness sessions regarding climate

resilient technologies from KVK Bandipora under the NICRA project. The knowledge about the climate resilient technologies to non-beneficiaries was passed through interpersonal networks and hence their mean knowledge scores were much lower than beneficiaries. This finding is line with findings of Harsha Vardhan (2019)^[4].

Practice wise Knowledge of respondents regarding climate resilient technologies

The overall knowledge of the respondents is the sum total of the knowledge about the specific practices which were demonstrated under the NICRA project. The data about these practices in presented in Table 3.

Table 3: Knowledge of respondents about demonstrated practices: (N=120)

Practice	Categories	Beneficiaries (n=80)		Non-beneficiaries n=40	
		Frequency	Percentage	Frequency	Percentage
Recommended varieties	Low	10	12.25	34	85.00
	Medium	48	60.00	06	15.00
	High	22	27.50	00	00.00
Sowing Time	Low	03	3.75	18	45.00
	Medium	20	25.00	21	52.50
	High	57	71.25	01	02.50
Spacing	Low	18	22.50	30	75.00
	Medium	32	40.00	10	25.00
	High	30	37.50	00	00.00
Seed rate	Low	10	12.50	38	95.00
	Medium	52	65.00	02	05.00
	High	18	22.50	00	00.00
Water management	Low	10	12.50	27	67.50
	Medium	36	45.00	12	30.00
	High	34	42.50	01	02.50
Nutrient management	Low	07	08.75	32	80.00
	Medium	34	42.50	08	20.00
	High	39	48.75	00	00.00
Soil Management	Low	09	11.25	31	77.50
	Medium	34	42.50	09	22.50
	High	37	46.25	00	00.00

As depicted in the table 3 majority (60.00%) of the beneficiaries and only 15.00 percent of the non-beneficiaries had medium level of knowledge about recommended climate resilient varieties, 12.25 percent of the beneficiaries

and majority (85.00%) of the non-beneficiaries had low level of knowledge about recommended varieties. Whereas, 27.50 percent of the beneficiaries were having high knowledge about recommended varieties and it is very

important to mention that none of the non-beneficiaries had high knowledge about the recommended varieties. Similarly 71.25% of the beneficiaries and only 2.5 percent of the non-beneficiaries had high level of knowledge regarding sowing time of different recommended varieties, 25.00 percent of the beneficiaries and almost double (52.50%) of the non-beneficiaries were having medium level of knowledge regarding sowing time.

As far as spacing is concerned majority (40.00%) of the beneficiaries had medium knowledge followed by 37.50 percent beneficiaries in high knowledge category and only 22.50 percent of the beneficiaries had low knowledge about recommended spacing. The non-beneficiaries had low and medium knowledge about recommended spacing with 75.00 percent and 25.00 percent of the non-beneficiaries in low and medium knowledge categories. In case of seed rate majority (65.00%) of the beneficiaries and only 5.00 percent of the non-beneficiaries had medium level of knowledge about seed rate, followed by 22.50% of beneficiaries in high knowledge about seed rate category, while as 12.50 percent of the beneficiaries and 95.00 percent of the non-beneficiaries had low knowledge about recommended seed rate.

Regarding Water Management practices nearly half (45.00%) of the beneficiaries and only 12.00 percent of the non-beneficiaries had medium knowledge about the recommended water management practices, followed by 34.00 percent of the beneficiaries and only 02.50 percent of

the non-beneficiaries in high knowledge category, while as 12.50 percent of the beneficiaries and majority (67.50%) of the non-beneficiaries were having low knowledge about the recommended climate resilient water management practices. Further it is also clear from the Table 3 that nearly half (48.75%) of the beneficiaries were having high level of knowledge about the recommended nutrient management practices. While as 42.50 percent beneficiaries and 20.00 percent of non-beneficiaries had medium knowledge about nutrient management. Only a small portion (08.75%) of the beneficiaries and about four-fifth (80.00%) of the non-beneficiaries had low knowledge about the recommended nutrient management practices. The data in the table 3 also reveals that 46.25, 42.50 and 11.25 percent of the beneficiaries had high, medium and low level of knowledge about the recommended soil management practices respectively. As far as the non-beneficiaries is concerned 77.50 and 22.50 percent of non-beneficiaries fall in low and medium knowledge categories respectively. None of the non-beneficiary had high level of knowledge about soil management.

Relation between knowledge and independent variables

Coefficient of correlation (r value) was worked out to know the extent of relationship between independent variables and knowledge level of respondents. The results obtained are presented in Table 4.

Table 4: Correlation coefficient between knowledge and independent variables

S. No	Variable	Beneficiaries		Non-beneficiaries	
		'r'-Value	'p'-Value	'r'-Value	'p'-Value
1	Age	0.290	0.009**	-0.144	0.375 ^{NS}
2	Gender	-0.315	0.004**	-0.179	0.270 ^{NS}
3	Marital Status	-0.218	0.042*	-0.013	0.936 ^{NS}
4	Education	0.377	0.001**	0.381	0.015*
5	Family size	0.325	0.003**	0.005	0.975 ^{NS}
6	Total Land holding	0.440	0.000**	0.310	0.042*
7	Occupation	0.571	0.000**	0.494	0.001**
8	Annual income	0.624	0.000**	0.335	0.034*
9	Experience in Farming	0.141	0.213 ^{NS}	-0.166	0.307 ^{NS}
10	Trainings attended	0.719	0.000**	0.466	0.002**
11	Extension contacts	0.730	0.000**	0.275	0.048*
12	Sources of information	0.692	0.000**	0.578	0.000**
13	Scientific Orientation	0.656	0.000**	0.781	0.000**
14	Economic motivation	0.629	0.000**	0.713	0.000**
15	Innovativeness	0.637	0.000**	0.707	0.000**

* Correlation is significant at the 5 percent level ** Correlation is significant at the 1 percent level
NS: Non-significant.

From Table- 4, it is clear that in case of NICRA beneficiaries independent variables such as age, educational qualification, family size, land holding, occupation, annual income, trainings attended, extension contacts, sources of information, scientific orientation, innovativeness and economic motivation had positive and significant correlation with the knowledge level of beneficiaries, whereas marital status and gender had negative and significant correlation with knowledge level of the beneficiaries. However, experience in farming was non-

significantly correlated with knowledge level of beneficiaries.

The data in Table 4, further revealed that in case of non-beneficiaries the independent variables like education, total land holdings, occupation, annual income, trainings attended, extension contacts, sources of information, scientific orientation, economic motivation and innovativeness had positive and significant correlation with knowledge level of the non-beneficiaries, whereas age, gender, marital status, experience in farming had a negative

and non-significant relationship with knowledge. However, age, gender, marital status, family size and experience in farming had non-significant relation with knowledge level of the non-beneficiaries. The findings of the study are in line with the results of Harikrishna 2019 ^[3].

Conclusion

Majority of the beneficiaries had high overall knowledge about the climate resilient technologies demonstrated under NICRA and had medium level of knowledge about recommended climate resilient varieties, seed rate and spacing, water management practices and high level of Knowledge regarding sowing time nutrient management practices soil management practices. The overall knowledge of beneficiaries (Mean Knowledge Score 46.33) was more as compared to non-beneficiaries (Mean Knowledge Score 25.83) of NICRA. This mean increase in knowledge level of beneficiaries is due to the efforts of NICRA team and the demonstrations attended by beneficiaries under NICRA. Independent variables such as age, educational qualification, family size, land holding, occupation, annual income, trainings attended, extension contacts, sources of information, scientific orientation, innovativeness and economic motivation had positive and significant correlation with the knowledge level of beneficiaries.

References

1. Anonymous. Annual Report, National Initiative on Climate Resilient Agriculture 2016-2017. Krishi Vigyan Kendra, Bandipora SKUAST-Kashmir; c2017.
2. Anonymous. About NICRA. [Online] Available: <http://www.nicra-icar.in/nicrarevised/index.php/home1>. 2020.
3. Harikrishna, Y. N. Impact Assessment of National Innovations on Climate Resilient Agriculture (NICRA) Project on Farmers in Anantapur District of Andhra Pradesh. M. Sc. (Agri.) Thesis (Unpublished). Jabalpur (JNKVV); c2019.
4. Harsha Vardhan, P.N. Impact of KVKs' on Adoption of Climate Resilient Technologies in Agriculture in North Bengal Districts of West Bengal. MSc. (Agri.) Thesis (Unpublished). Pundibari, Cooch Behar, West Bengal, Uttar Banga Krishi Viswavidyalaya; c2019.
5. Jadon P, Gupta S, Mishra YD, Singh AK. Knowledge Level of NICRA Beneficiaries on Climate Resilient Technologies and Its Relationship with Their Profile Characteristics. International Journal of Environment and Climate Change. 2022;12(11):3699-705.