P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating: 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 1; January 2025; Page No. 438-441

Received: 06-11-2024
Accepted: 13-12-2024

Indexed Journal
Peer Reviewed Journal

Assessing the awareness level of farmers about weather forecasting advisory services in the north eastern plain zone of Uttar Pradesh

[1]Dr. Virendra Pratap, [2]Dr. RK Doharey, [3]Dr. Ankita Sagar, [4]Dr. Abhinav Singh and [5]Dr. Amritanshu Singh

[1, 3]Assistant Professor, Faculty of Agriculture and Allied Science, United University Jhalwa, Prayagraj, Uttar Pradesh, India

[2]Professor & Head, Department of Extension Education, ANDUA&T, Kumarganj, Ayodhya, Uttar Pradesh, India

[4]Guest faculty, Department of Extension Education ANDUA&T, Kumarganj, Ayodhya, Uttar Pradesh, India

[4]Assistant Professor, IIMT University, Meerut, Uttar Pradesh, India

DOI: https://doi.org/10.33545/26180723.2025.v8.i1g.1567

Corresponding Author: Dr. Virendra Pratap

Abstract

This study aims to evaluate the level of awareness and perception of farmers towards weather forecasting advisory services in the North-Eastern Plain Zone of Uttar Pradesh. Weather forecasts play a crucial role in agriculture by influencing key activities such as sowing, irrigation, pest management and harvesting, thereby helping farmers manage risks related to climate variability, drought, and floods. This research follows a descriptive design, with data collected from 300 farmers across three randomly selected districts—Balrampur, Shravasti, and Bahraich in Uttar Pradesh India. A pre-structured interview schedule was used to assess farmers' awareness, which was classified into three categories: low, medium, and high. The results revealed that 42.67% of farmers had a medium level of awareness, 33.33% had low awareness, and only 24% demonstrated a high level of awareness. The study further identifies the role of various sources, such as the Indian Meteorological Department (IMD), Krishi Vigyan Kendras (KVK), and Panchang, along with traditional bio and non-bio indicators, in weather prediction. It concludes that there is a significant need to enhance the dissemination of weather-related information through agricultural extension services, government initiatives, and other relevant channels to increase farmers' awareness and improve the adoption of weather forecasting services. The findings underscore the importance of effective communication in fostering sustainable agricultural practices.

Keywords: Weather forecasting, advisory services, farmer awareness, north-eastern plain zone, Uttar Pradesh, agricultural sustainability

1. Introduction

Weather refers to the atmospheric conditions at a specific time and place, characterized by parameters such as temperature, humidity, wind speed, and atmospheric pressure (World Meteorological Organization [WMO], 2023). In agriculture, weather conditions are critical for crop growth and productivity. Farmers need to carefully monitor weather conditions and adapt their farming practices to ensure that their crops receive the necessary amounts of water, nutrients, and sunlight to grow and produce high yields. Forecasting, the process of predicting future events or trends using past and present data, is a crucial tool for planning and decision-making across various sectors, including agriculture. Specifically, weather forecasting involves predicting atmospheric conditions at a given time and place through the collection of quantitative data and scientific modeling of atmospheric processes (NASA, 2023).

"Weather forecasting is the science of predicting the state of the atmosphere at a specific time and place. Weather forecasts are made by collecting quantitative data about the current state of the atmosphere and using scientific understanding of atmospheric processes to project how the atmosphere will evolve.

In the context of weather forecasting, advisory services provide information, guidance, and recommendations to individuals or organizations on weather-related issues. In agriculture, weather forecasting advisory services provide farmers with crucial insights into weather patterns, potential risks, and strategies for mitigating these risks. These services help farmers optimize the timing of critical activities such as sowing, fertilizing, and harvesting, while also offering guidance on resource management, including water conservation and nutrient application (IMD, 2023). By leveraging such advisories, farmers can minimize risks, improve productivity, and enhance overall agricultural sustainability.

1.1 Research Problem: The research focuses on the concept of awareness, which was defined by English and English (1961) as "a body of understood information possessed by an individual or a culture." They further stated that awareness comprises the portion of an individual's information that aligns with established facts. For the present study, awareness has been operationally defined as the amount of relevant and understood information held by

farmers regarding weather forecasting in the North-Eastern Plain Zone of Uttar Pradesh.

2. Research Methodology

2.1 Locale of the Study: Uttar Pradesh is a frontier state located in the north-central of India. It is located between 23°52' to 30°24' northern latitude and 77°05' to 84°38' east longitude. It measures 650 km from east to west and 240 km from south to north. The State of Uttar Pradesh falls under three agro-climatic zones *viz*. Agro Climatic Zone–IV: Middle Gangetic Plains zone, Agro Climatic Zone–V: Upper Gangetic Plains zone and Agro Climatic Zone–VIII: Central Plateau and Hills zone.

2.1.1 Location of the Zone: The Agro-climatic zone IV (Middle Gangetic Plains region) is further divided into three sub-zone namely North Eastern Plains Zone, Eastern Plain Zone and Vindhyan Zone of Uttar Pradesh, out of these three North Eastern Plains Zone of Uttar Pradesh was selected for the study. This sub-zone covers the ten districts of Uttar-Pradesh that is Bahraich, Gonda, Balrampur, Shravasti, Basti, Gorakhpur, Sidharth Nagar, Maharajgunj, Kushinagar and Deoria. From these ten districts, three districts are randomly selected for the study the name of the districts are Balrampur, Shravasti and Bahraich.

2.1.2 Selection of the Blocks: On the basis of two block from each district, There are 6 block are randomly selected from above three district of north eastern plain zone of Uttar-Pradesh these are Harriya satgharwa and Balrampur block of balrampur district, Ikauna and Hariherpur rani block of shravasti and Visheshwarganj and Risia block of Beharich.

2.1.3 Selection of the Village: Five villages from each identified blocks were randomly selected, Thus total thirty village were selected for the study from 6 randomly selected blocks.

2.1.4 Selection of respondents: A random selection of ten respondents was made from each village, resulting in 50 respondents from each block of the district. Consequently, 100 respondents were selected from each district, leading to a total of 300 respondents included in the study. The study utilized an ex-post facto research design, focusing on variables that had already occurred and were not subject to manipulation. Data were collected using a pre-structured interview schedule.

2.2 Data Collection: Data were collected using a pre-structured interview schedule. An interview schedule was developed for this purpose In order to measure the awareness level of farmers they were asked to reply as set of questions on selected part of weather forecasting information. The score so obtained was placed under three categories on the basis of awareness level they possessed i.e. full awareness partial awareness and no awareness. The awareness index (A.I) was worked out with the help of following formula.

$$AI = \frac{\text{Summation of obtained awareness level}}{\text{Maximum Possible obtained awareness score}}$$

3. Results and Discussion

The study gathered responses from 300 respondents to assess their information processing behavior. Here is a summary of the findings for each categories.

3.1 Overall awareness level of respondents

The awareness level of farmers refers to their understanding and knowledge of various aspects related to agriculture. The awareness level of farmers can vary based on several factors, including education, access to information and resources, technological advancements, and the availability of extension services. The overall awareness of weather forecasting Advisory services of farmers in North Eastern plain zone of Uttar-Pradesh are present in table 1

Table 1: Overall awareness level of respondents

Sr. No.	Awareness status	Respondents	
		Frequency	Percentage
1.	Low (< 25)	100	33.33
2.	Medium (25-35)	128	42.67
3.	High (>35)	72	24.00
	Total	300	100.0

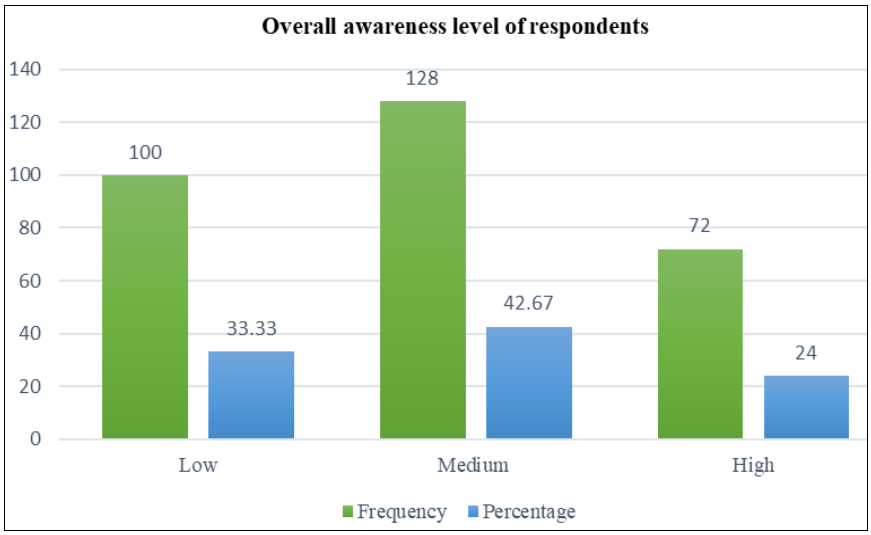

Fig 1: Overall awareness level of respondents

The findings reveal that 42.67% of the respondents had a medium level of awareness, while 33.33% exhibited a low level of awareness. In comparison, only 24.00% of the respondents demonstrated a high level of awareness regarding weather forecasting advisory services. This indicates that 76% of the respondents had medium to low awareness levels about these services.

To address this gap, efforts should focus on enhancing farmers' awareness through various channels. Agricultural extension services, government programs, research institutions, NGOs, and farmer organizations play a pivotal role in this regard. These entities can effectively disseminate information, provide training, and promote best practices, thereby empowering farmers with the knowledge required to utilize weather forecasting advisory services effectively.

3.2 Aspect wise awareness of respondents

The awareness of respondents about weather forecasting advisory services can be evaluated across several aspects. Here are some key aspects of awareness that can be considered

Table 2: Aspect wise awareness

Sr. No.	Aspects	Awareness Level						Mean	Rank
		Fully aware		Aware		Not aware			
		F	%	F	%	F	%		
1.	Do you aware about weather forecasting Advisory services,	117	39.00	132	44.00	51	17.00	2.22	**iv**
2.	Do you understand the meaning of weather forecasting Advisory services	108	36.0	124	41.30	68	22.70	2.13	vii
3.	Do you aware about Weather forecasting advisory services provide by ANDUAT Kumarganj Ayodhya	49	16.30	91	30.30	160	53.30	1.63	xiii
4.	Do you know about weather forecasting Advisory services provided by KVK of your district	68	22.70	113	37.70	119	39.70	1.83	xii
5.	Do you follows bio and non- bio indicators for weather prediction.	115	38.30	95	31.70	90	30.00	2.08	xv
6.	Do you know about weather forecasting Advisory services provided by. IMD Lucknow U.P	45	15.00	88	29.30	167	55.70	1.59	viii
7.	Do you know about Radio Television and mobile source of weather forecasting advisory services?	109	36.30	120	40.00	71	23.70	2.12	xiv
8.	Do you aware about Panchang weather forecasting	128	42.70	114	38.00	58	19.30	2.23	III
9.	Do you know the usefulness weather forecasting advisory services at the time of flood and drought	136	45.30	100	33.30	64	21.30	2.24	II
10.	Are you doing farming practices like sowing, irrigation and harvesting according to weather forecasting advisory services	114	38.00	67	22.30	114	39.70	1.98	X
11.	Farmers are use the weather forecasting advisory services at the time of pesticide, insecticide spray	100	33.30	81	27.00	119	39.70	1.93	XI
12.	Weather forecasting advisory services is useful to farmers in lead time	136	45.30	94	31.30	70	23.3	2.22	V
13.	Do you have knowledge about where the information related to weather forecasting are achieve	112	37.30	80	26.70	108	36.00	2.01	IX
14.	The possibility of weather forecasting advisory services becoming true in agriculture	145	48.30	107	35.70	48	16.0	2.32	I
15.	The information are received, about the weather forecasting is useful for you	142	47.30	73	24.30	85	28.30	2.19	VI

F = Frequency, % = Percentage

The findings of the study highlight varying levels of awareness among respondents regarding weather forecasting advisory services. A majority of respondents (41.30%) reported being aware of the meaning of weather forecasting advisory services, while 36.00% were fully aware, and 22.70% were not aware. Regarding the knowledge of weather forecasting advisory services provided by ANDUAT, Kumarganj, Ayodhya, 53.30% of farmers were not aware, 30.30% were aware, and only 16.30% were fully aware. Similarly, in the case of weather forecasting advisory services provided by the KVK of their district, 39.70% of respondents were not aware, 37.70% were aware, and 22.70% were fully aware.

When asked about the use of bio and non-bio indicators for weather prediction, 38.30% of respondents were fully aware, 31.70% were aware, and 30.00% were not aware. Awareness about weather forecasting advisory services provided by IMD Lucknow, U.P., showed that 55.70% were not aware, 29.30% were aware, and only 15.00% were fully aware. The data also revealed that 40.00% of respondents were aware, 36.30% were fully aware, and 23.70% were not aware of radio, television, and mobile as sources of weather forecasting advisory services. Similarly, 42.70% were fully aware, 38.00% were aware, and 19.30% were not aware of Panchang as a source of weather forecasting information.

When asked about the usefulness of weather forecasting advisory services during floods and droughts, 45.30% of respondents were fully aware, 33.30% were aware, and 21.30% were not aware. Regarding farming practices such as sowing, irrigation, and harvesting based on weather forecasting advisory services, 39.70% of farmers were not aware, 38.00% were fully aware, and 22.30% were aware. For the application of weather forecasting advisory services during pesticide and insecticide spraying, 39.70% of respondents were not aware, 33.30% were fully aware, and 27.00% were aware. Additionally, 45.30% were fully aware, 31.30% were aware, and 23.30% were not aware of the usefulness of weather forecasting advisory services for lead time preparation.

Knowledge about accessing weather forecasting information showed that 37.30% of respondents were fully aware, 36.00% were not aware, and 26.70% were aware. Regarding the potential accuracy of weather forecasting advisory services in agriculture, 48.30% of farmers were fully aware, 35.70% were aware, and 16.00% were not aware. Finally, when asked whether the information received through weather forecasting advisory services was useful, 47.30% of respondents were fully aware, 28.30% were not aware, and 24.30% were aware.

4. Conclusion

Majority of the respondents 42.67% per cent of the

respondents had medium level of awareness however 33.33 per cent were having low level of awareness followed by 24.00 per cent of the respondents who had high level of awareness about weather forecasting advisory services. This indicates that 76 per cent of the respondent were having medium to low awareness level about weather forecasting advisory services. a majority of respondents were unaware of services provided by institutions like ANDUAT and IMD Lucknow.

5. Suggestion

To improve farmers' awareness of weather forecasting advisory services, the following strategies should be considered: Strengthening agricultural extension services to ensure farmers receive timely and accurate weather information. Organizing awareness campaigns through research institutions, government bodies, and NGOs to increase the reach of weather forecasting services. Leveraging modern communication tools to effectively disseminate weather-related information and updates. By implementing these strategies, farmers can be equipped with the necessary knowledge to better utilize weather forecasting services, ultimately enhancing agricultural productivity and sustainability.

6. References

1. Jensen DE, Ray E. Weather forecast and advisory services for agriculture in South-East. Florida State Horticultural Society. NOAA-National Weather Service Environmental Studies Service Center, Auburn, Alabama; c1974.
2. Dupdal R, Manjunatha BL, Dhakar RK, Patil SL. Perception and economic impact of Agromet advisory services: A case study of Thrissur AICRPAM Centre of Kerala State. Indian J Ext Educ. 2020;56(3):10-16.
3. Ghimire NP, Aryal M. Analysis of perception and adaptation to climate change by farmers in Gulmi district, Nepal. J Agric Environ. 2013;14:31-43.
4. Hasan Z. Artisan fishers' perceptions of and adaptation to climate change in the Southeast coast of Bangladesh. PhD thesis, University of Adelaide; 2015.
5. Hoque ME, Banna MF. Perception and awareness of Bangladeshi urban people on climate change and its impact on food security. Int J Appl Agric Res. 2010;5(4):441-54.
6. Hoque MZ. Climate change awareness and risk perception by the coastal people of Bangladesh. Int J Multidiscip Res Dev. 2015;2(8):431-40.
7. Hansen J, Marx S, Weber E. The role of climate perceptions, expectations and forecasts in farmer decision making. Final report of an IRI seed grant project. Palisades, NY: Earth Institute at Columbia University; 2004.
8. Ishaya S, Abaje IB. Indigenous people's perception on climate change and adaptation strategies in Jema'a local government area of Kaduna State, Nigeria. J Geogr Reg Plann. 2008;1(8):138-43.
9. Chhabra K, Kumar M. Perception and adoption behaviour of farmers regarding agromet advisory services in Baramulla district of Jammu-Kashmir. Virtual National Conference on "Strategic Reorientation for Climate Smart Agriculture" (V-AGMET 2021), Punjab Agricultural University, Ludhiana; 2021 Mar 17-19.
10. Manjusha K, Nitin P, Suvarna D, Vinaykumar HM. Exposure, perception and advantages about weather-based agro-advisory services by selected farmers of Anand district, India. Int J Curr Microbiol Appl Sci. 2019;8(5):2001-6.
11. Kumar Sharma S, Baghel KS, Giri AK, Singh S, Pandey AK. Utility perception about weather-based agro-advisory services in Rewa district (M.P.). The Pharma Innovation J. 2022;SP-11(9):1611-5.
12. Manjusha K, Nitin P, Suvarna D, Vinaykumar HM. Exposure, perception and advantages about weather-based agro-advisory services by selected farmers of Anand district, India. Int J Curr Microbiol Appl Sci. 2019;8(5):2001-6.
13. Manjusha K, Nitin P, Suvarna D, Kumar HM. Exposure, perception and advantages about weather-based agro-advisory services by selected farmers of Anand district, India. Int J Curr Microbiol Appl Sci. 2019;8(5):2001-6.
14. Raghuvanshi R, Ansari MA. A study of farmers' awareness about climate change and adaptation practices in India. Int J Appl Agric Sci. 2017;3(6):154-60.
15. Ratiya PB, Thakor RF, Solanki AH. Perception of farmers towards Agromet advisory service. J Krishi Vigyan. 2022;11(1):55-9.
16. Ravi Dupdal, Manjunatha BL, Dhakar RK, Patil SL. Perception and economic impact of Agromet advisory services: A case study of Thrissur AICRPAM Centre of Kerala State. Indian J Ext Educ. 2020;56(3):10-16.