

RESEARCH PAPER

The farmer's perception about weather forecasting advisory services

RAJESH*, S.K. MEHTA, C. D. AUTADE AND A. K. GODARA

Department of Extension Education, College of Agriculture, Chaudhary Charan Singh Haryana Agriculture University, HISAR (HARYANA) INDIA (Email: charudattautade@gmail.com)

ABSTRACT

Weather forecasting is the application of science and technology to predict the state of atmosphere for the future time and a given location. Human beings have attempted to predict the weather informally for the millennia and formally since at least the nineteenth century. Weather forecasts are made by collecting quantitative data about the current state of atmosphere and using scientific understanding of atmosphere processes to predict the atmosphere will evolve. Gibson (1959) defined PERCEPTION as the process by which an individual maintains contact with the environment. Perception is what we want to perceive from information. Perceptions vary from person to person. Different people perceive different things about the same situation. But more than that, we assign different meanings to what we perceive. It was concluded from the observation that most of the respondents had low perception level about weather forecasting advisory services in Hisar and Kaithal district. Most of the respondent had high belief in traditional weather forecasting pattern than scientific weather forecasting. The most important thing is that farmers are not interested in knowing the economic benefits of weather forecasting advisory services. It was also noticed from this survey that weather forecast advisory services will be more readily adopted if the agricultural extension services are improved. It was also observed that weather forecast affects the farmer's decision to small extent.

Key Words : Perception, Weather forecasting, Weather forecasting advisory services

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Gibson (1959) defined PERCEPTION as the process by which an individual maintains contact with the environment. Perception is what we want to perceive from information. Perceptions vary from person to person. Different people perceive different things about the same situation. But more than that, we assign different meanings to what we perceive. Benefit arises when the use of forecasts results in decisions that reduce the vulnerability of human populations to the adverse impacts of climate variability. The focus here is on impacts of climate variability on agricultural production systems and decisions related to

* **Author for correspondence**

Rajesh, Department of Extension Education, College of Agriculture, Chaudhary Charan Singh Haryana Agriculture University, HISAR (HARYANA) INDIA

their management. We can represent the opportunity to benefit as falling within the intersection of human vulnerability, climate predictability and decision capacity.

Motivation is also conditioned by confidence in available forecasts and sufficient knowledge and perceived flexibility to use forecast information to modify decisions to their advantage. For support institutions, motivation comes from internal mandate or external policy. Understanding and involving target decision makers is at the core of successful intervention, and is foundational for understanding and successfully addressing the remaining four issues (*i.e.* decision options, climate prediction, communication and institutions and Although the concept of vulnerability as it is commonly used focuses on negative impacts of extreme events (Ribot, 1996; Vogel, 1998 and Downing and Bakker, 2000) such as drought or flood.

RESEARCH METHODOLOGY

The study was conducted in purposively selected districts Hisar from western zone and Kaithal from eastern zone of Haryana state, respectively. It is also because of familiarity of researcher with the local condition, convenience and easy accessibility. Two blocks *viz.*, Hisar-1 from Hisar and Kaithal-1 from Kaithal districts were selected randomly. Two villages were selected randomly from each selected block Constantly, Gangua and Dheeranwas from Hisar-1 block and Kyorak and Balwanti from Kaithal-1 blocks were selected randomly for the study. A random sample of 30 farmers from each village was taken. In this way a total number of 120 farmers were selected for the present study.

RESULTS AND REMONSTRATION

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Overall farmers' perception status about weather forecasting advisory services :

The study shows that 43.33 per cent of the

respondents had negative perception about weather forecasting advisory services. While 30.00 per cent of respondents perceived positive perception and 26.66 per cent of the respondents had negative perception towards weather forecasting advisory services (Table 1).

Aspect wise farmers' perception about weather forecasting advisory services :

The study reveals that majority of the respondents (76.19%) were fully agreed, whereas 35.23 per cent were agree and only 12.38 per cent were disagreed with the statement on the basis of weather forecast the farmer should change their farm operation. It was found that 85.17 per cent of the respondents were fully agreed with the statement that radio broadcasting about weather forecast advisory services is useful to the farmers.

However, majority of the respondents (76.19%) were fully agreed whereas 32.38 per cent of the respondents were agreed and only 15.06 per cent were disagreed with that telephone weather services will be useful to the farmers if the call made is free and timely. It was observed that 85.71 per cent were fully with the statement that weather forecasting advisory services help farmers in reducing farm losses.

It was revealed that 84.76 per cent of the respondents were fully agreed with the statement Weather forecasting is helpful in managing the operation and activity on the farm /home. It was found that majority of the respondents (76.19%) were fully agreed whereas 29.52 per cent of the respondents were agreed and 08.52 per cent were not agreed with the statement that Weather forecast affects the farmer's decision.

It was revealed that majority of the respondents (79.04%) were fully agreed with the statement traditional weather forecast information does not specify natural disaster like cyclone, depression, drought and flood in a year. It was also found that per cent of the respondents were fully agreed while 76.19 per cent were fully agreed while 28.57 per cent were agreed and 09.52 per cent were disagreed with the statement that the weather forecasting advisory services, helps farmers in making rational decision. It was revealed that majority of the

| Sr. No. | Perception status | Frequency | Percentage |
|---------|-------------------|-----------|------------|
| 1. | Negative (<70) | 52 | 43.33 |
| 2. | Neutral (70-75) | 32 | 26.66 |
| 3. | Positive (>75) | 36 | 30.00 |

P.I= perception index

respondents (77.14%) were fully agreed with the statement that weather forecast can more useful if they can be understood by a majority of farmers.

It was found from the Table 2 that majority of the respondents (71.42%) had fully agreed with the

statement that Weather forecast agro advisory can reduce the input cost. It was revealed that majority of respondents (76.19) were fully agreed with the statement that Weather forecasting agro advisory services helps in better utilization of land. It was found

Table 2 : Aspect wise farmers' perception about weather forecasting advisory services (n=120)

| Sr. No. | Aspect | Perception level | | | | | | Mean |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------|-------|-------|----------|-------|------|
| | | Fully | | Agree | | Disagree | | |
| | | F | % | F | % | F | % | |
| 1. | On the basis of Weather forecast the farmer should change their farm operation | 80 | 76.19 | 37 | 35.23 | 13 | 12.38 | 2.72 |
| 2. | Radio broadcasting about weather forecast advisory services is useful to the farmers | 90 | 85.71 | 25 | 23.80 | 5 | 04.76 | 2.70 |
| 3. | Telephone weather services will be useful to the farmers if the call made is free and timely | 80 | 76.19 | 34 | 32.38 | 16 | 15.23 | 2.70 |
| 4. | Weather forecasting advisory services help farmers in reducing farm losses | 90 | 85.71 | 24 | 22.85 | 6 | 05.71 | 2.70 |
| 5. | Weather forecasting is helpful in managing the operation and activity on the farm /home | 89 | 84.76 | 21 | 20.01 | 10 | 09.52 | 2.65 |
| 6. | Weather forecast affects the farmer's decision | 80 | 76.19 | 31 | 29.52 | 9 | 08.52 | 2.59 |
| 7. | Traditional weather forecast information does not specify natural disaster like cyclone, depression, drought and flood in a year | 83 | 79.04 | 25 | 23.80 | 12 | 11.42 | 2.59 |
| 8. | Weather forecasting advisory services help farmers in making rational decision | 80 | 76.19 | 30 | 28.57 | 10 | 09.52 | 2.58 |
| 9. | Weather forecast can more useful if they can be understood by a majority of farmers | 81 | 77.14 | 27 | 25.71 | 12 | 11.42 | 2.58 |
| 10. | Weather forecast agro advisory can reduce the input cost | 75 | 71.42 | 35 | 33.33 | 10 | 9.52 | 2.54 |
| 11. | Weather forecasting agro advisory services helps in better utilization of land | 80 | 76.19 | 22 | 20.95 | 18 | 17.14 | 2.51 |
| 12. | The farmers rely on <i>nakshatra</i> for seasonal rainfall forecast for their agricultural activities | 76 | 72.38 | 30 | 28.57 | 14 | 13.33 | 2.51 |
| 13. | Farmers are not interested in knowing the economic benefit of weather forecast | 72 | 68.57 | 32 | 30.47 | 16 | 15.23 | 2.46 |
| 14. | Language of weather forecasting is not understood | 74 | 70.47 | 26 | 27.76 | 20 | 19.04 | 2.45 |
| 15. | Rain forecasting through Radio/TV is desirable | 74 | 70.67 | 31 | 29.52 | 15 | 14.28 | 2.40 |
| 16. | Weather forecast information is more location specific, rather than generalized | 25 | 23.80 | 66 | 62.85 | 29 | 27.62 | 2.36 |
| 17. | Weather forecasting advisory services increase certainly in planning and executing farm operations | 33 | 31.42 | 82 | 78.09 | 5 | 4.76 | 2.23 |
| 18. | The weather forecast will be useful to disseminate through local language newspaper, only if emphasizes more on current and future weather than the past data | 40 | 38.09 | 66 | 62.85 | 14 | 13.13 | 2.21 |
| 19. | Farmer listens and knows the rainfall pattern of the year through the Hindu almanac | 25 | 23.80 | 85 | 80.95 | 10 | 9.52 | 2.12 |
| 20. | Long range weather forecasting advisory services through weather conditions like long and sever summer days come true rarely | 16 | 15.23 | 76 | 72.38 | 28 | 26.66 | 1.90 |
| 21. | Scientific weather advisory services are more accurate than traditional methods of forecasting in agriculture | 23 | 21.90 | 31 | 29.52 | 66 | 62.85 | 1.64 |
| 22. | Weather forecasting advisory services are not a risk management tool in agriculture | 31 | 29.52 | 26 | 24.76 | 73 | 69.52 | 1.56 |
| 23. | Weather forecasting advisory services do not help in better utilization of labour | 12 | 11.42 | 40 | 38.09 | 68 | 64.76 | 1.53 |
| 24. | A weather forecasting advisory service is location specific rather than generalized | 22 | 20.95 | 73 | 06.52 | 25 | 23.80 | 1.47 |
| 25. | Weather forecasting can act an activity management tool in day to day life also | 10 | 09.52 | 30 | 28.57 | 80 | 76.19 | 1.41 |
| 26. | The reliability of traditional weather forecasting advisory services Information is very high | 10 | 09.32 | 25 | 23.80 | 85 | 80.92 | 1.37 |
| 27. | Radio/TV is not the effective medium for forecasting natural disaster like cyclones floods and drought | 5 | 4.16 | 25 | 20.83 | 90 | 75.00 | 1.31 |
| 28. | On the basis of weather forecast the farmer could change their decision | 5 | 04.76 | 25 | 23.80 | 90 | 85.71 | 1.29 |

from the Table 2 that majority of the respondents (72.38%) were fully agreed whereas, 28.57 per cent were agreed and 13.33 per cent were disagreed with the statement The farmers rely on *nakshatra* for seasonal rainfall forecast for their agricultural activities. It was found that majority of the respondents (68.57%) were fully agreed whereas 30.47 per cent were agreed while 15.23 per cent of the respondents were not disagreed with the statement Farmers are not interested in knowing the economic benefit of weather forecast. It was observed that majority of respondents (70.47%) were fully with the statement language of weather forecasting is not understood. It was revealed that majority of the respondents (70.67%) were fully agreed whereas 29.52 per cent were agreed and 14.28 per cent were disagreed with the statement language of the forecasting is not understood.

It was found that majority of the respondents (23.80%) were fully agreed whereas, 62.85 per cent were

agreed and 27.62 per cent were disagreed with the statement weather forecast information is more location specific, rather than generalized. It was revealed that majority of the respondents (31.42%) were fully agreed whereas 78.09 per cent were agreed and 04.76 per cent were disagreed with the statement

Weather forecasting advisory services increase certainly in planning and executing farm operations. It was found from the Table 2 that majority of the respondents (38.09%) were fully agreed with the statement. The weather forecast will be useful to disseminate through local language newspaper, only if emphasizes more on current and future weather than the past data.

It was found that majority of the respondents (23.80%) were fully agreed whereas, 80.95 per cent were agreed and 09.52 per cent were disagreed with the statement Farmer listens and knows the rainfall pattern of the year through the Hindu almanac. It was revealed that majority of respondents (15.23%) were fully agreed

Table 3 : Correlation between independent variables and farmers' perception about weather forecasting advisory services (n=120)

| Sr. No. | Independent variables | Correction co-efficient |
|---------|-----------------------|-------------------------|
| 1. | Age | -0.2933** |
| 2. | Education | 0.8718** |
| 3. | Mass media exposure | 0.9055** |
| 4. | Extension contact | 0.1874* |
| 5. | Land holding | 0.0689 |
| 6. | Socio-economic status | 0.1553 |
| 7. | Irrigation facility | -0.0073 |
| 8. | Scienticism fatalism | 0.0196 |
| 9. | Change proneness | 0.0536 |

* and ** indicate significance of values at P=0.05 and 0.01, respectively

Table 4 : Regression co-efficient of respondents' independent variables with the perception level about weather forecasting advisory services (n=120)

| Sr. No. | Independent variables | Regression co-efficient | |
|---------|-----------------------|-------------------------|----------|
| | | b-value | t-value |
| 1. | Age | -0.0129 | -0.816 |
| 2. | Education | 0.6378 | 2.604** |
| 3. | Socio-economic status | 0.0494 | 1.429 |
| 4. | Extension contact | 0.2636 | 4.084** |
| 5. | Land holding | 0.1627 | 1.327 |
| 6. | Mass media exposure | 0.4009 | 2.297** |
| 7. | Irrigation facility | -0.6557 | -2.715** |
| 8. | Scienticism fatalism | 0.0512 | 1.001 |
| 9. | Change proneness | 0.0646 | 1.185 |

R-square value: 0.6247

* and ** indicate significance of values at P=0.05 and 0.01, respectively

with the statement Long range weather forecasting advisory services through weather conditions like long and sever summer days come true rarely. It was found that majority of the respondents (21.90%) had fully agreed with the statement Scientific weather advisory services are more accurate than traditional methods of forecasting in agriculture. It was revealed that majority of the respondents (11.42%) were fully agreed whereas 35.09 per cent were agreed and 64.76 per cent were disagreed with the statement Weather forecasting advisory services do not help in better utilization of labour. It was revealed that majority of respondents (09.52%) were fully agreed whereas 23.80 per cent had agreed and 80.92 per cent were not agreed with the statement. The reliability of traditional weather forecasting advisory services Information is very high. It was found that majority of the respondents (23.80%) were fully agreed whereas, 80.95 per cent were agreed and 09.52 per cent were disagreed with the statement on the basis of weather forecast the farmer could change their decision. (Table 2).

Correlation between independent variables and farmers' perception about weather forecasting advisory services :

It was revealed education ($r = 0.8718$), mass media exposure ($r = 0.9055$) and socio-economic status ($r = 0.5530$) were found highly significant and positively associated with the perception level of respondents about weather forecasting advisory services. Whereas extension contact ($r = 0.1874$) was found significant and positively associated with the perception about weather forecasting advisory services. These findings are in conformity with the findings of Kumar (2001). The study further revealed that land holding, scienticism fatalism and change proneness were positive and non-significantly correlated with perception level of respondents about weather forecasting advisory services. The respondents' age ($r = 0.2933$) were found to be non-significant and negative relationship with the perception level about weather forecasting advisory services. These finding predicted that respondents who are old age had not shown particular interest about weather forecasting advisory services. The study shows further revealed that irrigation facilities ($r = 0.0073$) had no significant but negative correlation with perception level (Table

3).

Multiple regression co-efficients of respondents' independent variables with the perception level about weather forecasting advisory services :

It has been evident from Table 4 that the regression coefficient of education, extension contact and mass media exposure were highly and positively significant. The extension contact and irrigation facilities were negative and highly significant with respondents' perception about weather forecasting advisory services. The regression co-efficient of perception of respondent's age, socio-economic status, land holding, scienticism fatalism and change proneness were not found to have the predication variables of significant level.

The irrigation facilities has negative but positively direction and highly significant regression while age has also negative but non-significant regression with respondents' perception toward weather forecasting advisory services. The data also showed that multiple regression co-efficient of age, socio-economic status and change proneness were found to negatively trend, this lead to the conclusion that an increase in these variable by one unit leads to decrease in perception about weather forecasting advisory services. The table further showed that all the nine independent variables collectively explained 62.47 per cent variation in perception of farmers towards weather forecasting advisory services, when other factors were kept constant showing that there are some other variation responsible for 37.53 per cent in perception of respondents.

Conclusion :

The findings of the study regarding existing perception level of the farmers towards weather forecasting information advisory services will definitely help the planners, executors, researchers and administrators to know that in which segment of the farmers. Farmers must be aware about weather forecasting advisory services. In order to aware about weather forecasting govt. must be advertised about weather forecasting on Radio and Television in active way. It was concluded from the observation that most of the respondents had low perception level about weather forecasting advisory services in Hisar and Kaithal district. Most of the respondent had high belief in traditional weather forecasting pattern than scientific weather forecasting. The most important thing is that

farmers are not interested in knowing the economic benefits of weather forecasting advisory services. It was also noticed from this survey that Weather forecast advisory services will be more readily adopted if the agricultural extension services are improved. Weather forecasting can be more effective if they can be understood by majority of the farmers. So government must initiate such campaign which provides importance of weather forecasting information to the farmers. It was observed that language of weather forecast is not understood by majority of the farmer. There should be broadcasting of weather forecasting in local language so that farmers can understand the message about weather forecast.

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