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Role of ICT Tools in Providing Information to Hill Farmers on Extreme Weather Events

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Abstract

A study was conducted taking a random sample of 100 farmers from Mahatgaon cluster of Hawalbagh block in Almora district, Uttarakhand. The objective was to study the role of various ICT tools for providing information on extreme weather events as perceived by the farmers. It was found that mobile was mostly used ICT tool in hills followed by television (98% and 97%, respectively). It was also found that television has a major role in providing information related to drought, heavy rainfall and heavy snowfall as perceived by 92%, 99% and 94% of the respondents, respectively. Radio was found to be in the second position for providing information on weather vagaries. Other ICT tools like telephone, mobile and internet were reported to be very less used by farmers for getting information on extreme weather events. Majority of the farmers (65%) perceived that the weather informations received through the ICT tools used by them are mostly informative instead of informative-cum-suggestive for contingency planning. According to most of the farmers (80%), weather informations received through ICT tools were most appropriate. The study recommends that mobile, the most used ICT tool in hills should be leveraged with all its possible applications to send and receive weather informations in hills and the weather information should be more informative-cum-suggestive instead of only informative.

Keywords: *ICT, information dissemination, extreme weather events, hill farmers*

Introduction

In India, the use of various ICT tools in dissemination of information is gaining its speed day by day through various public and private initiatives. ICT led extension service also has a profound role to alert and inform the farming community of hills regarding unwanted climatic phenomenon and climate smart agricultural technologies to cope up with climate change so that they can be able to prepare a contingency plan at farm level. The ICTs are playing an increasing role in the delivery of emergent climatic knowledge, in the facilitation of cross-scale networking (e.g. interactions by community members with scientists, diagnosticians, researchers or government officials located in urban areas) and in the implementation of capacity building programmes for local farmers[1]. Based on this context the present study was formulated to study the role of ICT tools in providing information to hill farmers on extreme weather events.

Materials and Methods

The study was carried out in Mahatgaon cluster of villages which is situated in Hawalbagh block of Almora district, Uttarakhand. The altitude of Mahatgaon is about 1236m above msl. Among 500 farm families of the cluster, 100 farmers were randomly selected for the purpose of the study. The data were collected by a pre-tested structured interview schedule through personal

interview method. Extent of usage of ICT tools by the farmers were measured using a 3-point continuum *viz.* often (2), seldom (1) and never (0). Degree of appropriateness of information received through ICT tools as perceived by the farmers was also measured on a 3-point continuum *viz.* most appropriate (2), somewhat appropriate (1) and not appropriate (0). The list of items under the role of ICT tools in providing information to the hill farmers in extreme weather events were selected after the pilot study. Open ended responses instead of closed ended responses were invited from the farmers at the time of interview. Multiple responses of the farmers [4] were considered for determining the extent of using various ICT tools by the farmers for getting weather information and role of different ICT tools in providing information on extreme weather events as perceived by the farmers. Descriptive statistics like frequency and percentage were used to analyze the raw data.

Results and Discussion

Extent of usage of ICT tools by the farmers

A perusal of Table 1 shows that majority of the farmers often used mobile (98%) followed by TV (97%), telephone (60%), radio (57%) and internet (49%) as ICT tools. It was also found that most of the farmers seldom used radio (40%) followed by telephone (15%) and internet (11%) as ICT tools. Internet was reported to be never used ICT tool by majority of the respondents (40%) followed by telephone (25%). The accessibility to internet in hills is comparatively lower than the plains. The landline telephones become obsolete nowadays with the advent of mobile phones [3, 6].

Table 1 Extent of usage of ICT tools by the farmers (N=100)

ICT tools	Extent of usage					
	Often (2)		Seldom (1)		Never (0)	
	F	%	F	%	F	%
Radio	57	57.00	40	40.00	3	3.00
TV	97	97.00	3	3.00	0	0.00
Telephone	60	60.00	15	15.00	25	25.00
Mobile	98	98.00	2	2.00	0	0.00
Internet	49	49.00	11	11.00	40	40.00

Extent of using various ICT tools by the farmers for getting weather information

It was revealed (Table 2) that the ICT tools which the respondents mostly used to get weather information, were television (99%) followed by radio (97%). Mobile, internet and telephone were found to be the least used media of the farmers for getting weather information (20%, 19% and 5%, respectively). It was found that these ICT tools were mostly used by the farmers for personal communication with friends and relatives [2, 7, and 8].

Table 2 Extent of using various ICT tools by the farmers for getting weather information (N=100)*

Purpose	TV (%)	Radio (%)	Mobile (%)	Internet (%)	Telephone (%)
Weather information	99.00	97.00	20.00	19.00	5.00

* Multiple responses

Role of different ICT tools in providing information on extreme weather events as perceived by the farmers

The table 3 gives a picture showing the role of different ICT tools in providing information on extreme weather events as perceived by the farmers. It was found that television has a major role in providing information related to drought, heavy rainfall and heavy snowfall as perceived by 92%, 99% and 94% of the respondents, respectively. Radio was found to be in second position for providing information regarding weather vagaries like drought, heavy rainfall and heavy snowfall as perceived by 85%, 98% and 88% of the respondents, respectively. Other ICT tools like telephone, mobile and internet were reported to be very less used by farmers (5-12%, 15-25%, and 6-25%, respectively) for getting information on extreme weather events [5].

Table 3 Role of different ICT tools in providing information on extreme weather events as perceived by the farmers (N=100)*

Extreme weather events	Radio (%)	TV (%)	Telephone (%)	Mobile (%)	Internet (%)
Drought	85.00	92.00	5.00	15.00	6.00
Heavy rainfall	98.00	99.00	10.00	25.00	10.00
Heavy snowfall	88.00	94.00	12.00	20.00	25.00

* Multiple responses

The table 4 indicates the type of weather information received through ICT tools as perceived by the farmers. Majority of the farmers (65%) perceived that the weather informations received through available ICT tools are mostly informative that means these informations only inform the weather condition or sometimes forecast the extreme weather events but do not suggest the future course of action which will help in contingency planning. Comparatively less number of farmers (35%) perceived that the weather informations received through the ICT tools used by them are informative-cum-suggestive and these informations not only tell the weather condition or forecast the extreme weather events but also suggest the suitable course of action for contingency planning.

Table 4 Type of weather information received through ICT tools as perceived by the farmers (N=100)

Subject	Type of information			
	Informative		Informative-cum-suggestive	
	F	%	F	%
Weather information	65	65.00	35	35.00

Table 5 Appropriateness of weather information received through ICT tools as perceived by the farmers (N=100)

Subject	Degree of appropriateness					
	Most appropriate (2)		Somewhat appropriate (1)		Not appropriate (0)	
	F	%	F	%	F	%
Weather information	80	80.00	15	15.00	5	5.00

It can be observed from Table 5 that majority of the farmers (80%) perceived that weather information received through ICT tools were most appropriate , Only 15% and 5% of the respondents perceived that weather information received through ICT tools were somewhat appropriate and not appropriate , respectively[4].

Conclusion

Mobile is the most used ICT tool in hills followed by television, The main source of getting weather information in hills is television followed by radio, Television has a major role in providing information related to drought, heavy rainfall and heavy snowfall in hills, Majority of the farmers perceived that the weather informations received through the ICT tools used by them are mostly informative instead of informative-cum-suggestive for contingency planning and weather informations received through ICT tools were most appropriate.

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