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Usefulness of Mobile Phone Based Agro-advisories in Manipur, North Eastern India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Mobile phones are the devices that can help to improve the livelihoods of rural people by getting much needed timely information to their fingertips at potentially low cost. Manipur is one of the North-Eastern states of India, covering an area of 22,327 sq km which nearly accounts for 0.7 per cent of the total land surface of India. The study was conducted in Bishnupur, Thoubal, Kakching, Imphal East and Imphal West districts of Manipur with 110 randomly selected respondents. It was observed that majority of the respondents (70.91%) perceived that mobile based agro-advisories were responsive in terms of timeliness of the messages and 73.64 per cent mentioned that the messages were highly relevant. In terms of the comprehension of massages, 98.18 per cent of respondents stated that massages were easy to understand, while 59.18 per cent observed that the messages were less technical and 83.64 per cent mentioned that the messages were in terms of message treatment and content adequacy. Mobile phone based agro-advisories was said to be more useful for weather forecasting by 83.64 per cent; followed by 82.73 per cent for plant protection measures; 80.91 per cent indicated that mobile advisories improved their knowledge about agriculture and allied sector as well as 80.00 per cent for fish health management. Majority of

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the respondents, that is, 68.18% had positive perception about mobile based agro- advisories, followed by 4.55 per cent with negative perception for the same services. Moreover, the inclusion of need based training component and convergence with different extension functionaries helped to develop an ICT based Stakeholder Interface in the field of agriculture in the region. This alternate extension system also helped to develop better rapport with the farmers and can be replicated in other hilly region of the world.

Keywords: Mobile phone; agro-advisory; usefulness; North Eastern India.

1. INTRODUCTION

Poor farmers in the backward communities in India can benefit tremendously with the application of ICTs (Information and Communication Technologies) in agriculture, especially changes in their in socio-economic conditions. The Indian government has in the past introduced many technologies and development plans to alleviate the conditions of the numerous small-scale and poor farmers. For instance, different initiatives in IT have been launched in Manipur to improve poor farming and farmers' welfare through agro-advisory services [1]. "The most widespread ICTs in developing countries (including India), today, are the mobile phone. Mobile phones are ICT devices that can create, store, access and share information anytime, anywhere. However, these devices have much other potential when teamed with extension and advisory services. They can help to improve the livelihoods of rural people by getting much needed timely information to their fingertips at potentially low cost" [2,3]. Among the initiatives, a mobile based agro-advisory system was launched under the project of "Mobile based agro- advisory system" by the Central Agricultural University, Imphal, Manipur in the state of Manipur since 2020. It is a mobile based pull and push system where agriculture and allied sector related information can be pulled/pushed by the farmers using their mobile phones.

Manipur is one of the North-Eastern states of India, covering an area of 22,327 sq km which nearly accounts for 0.7 per cent of the total land surface of India. The state is unique in producing varieties of paddy. Agriculture being the backbone of the state's economy and rice is the dominant crop grown by farmers in Manipur. Imphal West district is classified under high productivity of rice in the state of Manipur [4]. Area under rice cultivation in the state is 225.77 thousand ha with a production of 602.21 thousand MT [5]. Keeping this in view, this study assessed the usefulness of mobile phone based agro-advisories in Manipur.

2. METHODOLOGY

The study was conducted in Bishnupur, Thoubal, Kakching, Imphal East and Imphal West districts of Manipur with 110 nos. of randomly selected project beneficiaries. The perception of the respondents towards mobile phone based agro-advisories in terms of timeliness of the messages, relevance, understanding of message, message treatment and content adequacy were studied and measured in terms of frequency and percentage. Usefulness of mobile phone based agro-advisories by the respondents were measured in terms of level of usefulness, *viz.*, most useful, useful and not useful. Frequency and percentage were calculated for each category. Overall parameters of mobile phone based agro-advisories by the respondents were also calculated. A wellstructured interview schedule was used to collect the data according to the objectives of the study. Statistical tools like mean, frequency and percentages were used for data analysis.

3. RESULTS AND DISCUSSION

The perceptions of respondents towards mobile based agro-advisories are presented on Table 1. Data reveals that majority of the respondents (70.91%) perceived that mobile based agro-advisories are early in terms of timeliness of the messages and 73.64 per cent of the respondents responded that the messages are highly relevant. Table 1 also reveals that, in terms of understanding of massage 98.18 per cent of respondents observed that massages are easy to understand, message is less technical (58.18%) and adequate (83.64%) in terms of message treatment and content adequacy respectively. This might be due to the simplicity and need based nature of the message.

Table 1. Perception of the respondents towards Mobile Phone based Agro-advisories N=110

Parameter	Category	Frequency	Percentage
a. Timeliness of the messages			
	Coinciding with the farm activity	8	7.27
	Early	78	70.91
	Late	24	21.82
b. Relevance			
	Highly relevant	81	73.64
	Somewhat relevant	25	22.73
	Irrelevant	4	3.64
c. Understanding of message			
	Easy to understand	108	98.18
	Difficult to understand	2	1.82
	Not understand	0	0
d. Message treatment			
	Less technical	64	58.18
	Moderately technical	41	37.27
	Highly technical	5	4.55
e. Content adequacy			
	Adequate	92	83.64
	Needs more details	12	10.91
	Not at all adequate	6	5.45

Table 2. Usefulness of Mobile Phone based Agro-advisories by the respondents (N=110)

Sl. No.	Particulars	Level of Usefulness					
		Most useful		Useful		Not Useful	
		F	%	F	%	F	%
1.	Improving the knowledge in agriculture and allied sector	89	80.91	19	17.27	2	1.82
2.	Information about new technologies	20	18.18	67	60.91	23	20.91
3.	Selection of crop and variety	36	32.73	64	58.18	10	9.09
4.	Use of fertilizer and other micronutrients	69	62.73	34	30.91	7	6.36
5.	Seed purchase and seed bed preparation	41	37.27	56	50.91	13	11.82
6.	Land preparation and planting/sowing	64	58.18	43	39.09	3	2.73
7.	Nutrient management	48	43.64	58	52.73	4	3.64
8.	Seed treatment	71	64.55	37	33.64	2	1.82
9.	Weed management	39	35.45	61	55.45	10	9.09
10.	Plant protection measures	91	82.73	17	15.45	2	1.82
11.	Harvesting/picking and storing	50	45.45	54	49.09	6	5.45
12.	Sale of produce	28	25.45	62	56.36	20	18.18
13.	Animal health management	35	31.82	58	52.74	17	15.45
14.	Animal feeding management	44	40.00	56	50.91	10	9.09
15.	Animal shelter management	59	53.64	36	32.73	15	13.64
16.	Animal breeding management	29	26.36	72	65.45	9	8.18
17.	Fish health management	88	80.00	18	16.36	4	3.64
18.	Water management in fish pond	67	60.91	55	50.00	2	1.82
19.	Fish pond preparation	44	40.00	51	46.36	15	13.64
20.	Fish production techniques	39	35.45	50	45.45	21	19.09
21.	Market information	37	33.64	59	53.64	14	12.73
22.	Weather forecasting	92	83.64	12	10.91	6	5.45

F= Frequency, %= Percentage

Table 3. Overall parameter of Mobile Phone based Agro-advisories by the respondents (N=110)

Parameter	Category	Frequency	Percentage
Perception			
	Positive	75	68.18
	Neutral	30	27.27
	Negative	5	4.55
Usefulness			
	Most useful	43	39.09
	Moderate useful	58	52.73
	Less useful	9	8.18
Performance			
	Highly satisfied	61	55.45
	Moderately satisfied	47	42.73
	Not satisfied	2	1.82
Problem solving			
	Very much	55	50.00
	Moderate	51	46.36
	Not at all	4	3.64
Need based			
	Very much	79	71.82
	Moderate	23	20.91
	Not at all	8	7.27

The usefulness of mobile phone based agro-advisories is presented on Table 2. Data presented reveals that mobile phone based agro-advisories is more useful (83.64%) in weather forecasting followed by plant protection measures (82.73%), improving the knowledge in agriculture and allied sector (80.91%) and fish health management (80.00%). The Table 2 also reveals that majority of the respondents (65.45%) observed that messages are useful for animal breeding management followed by information about new technologies, selection of crop & variety and sale of produce with 60.91 per cent, 58.18 per cent and 56.36 per cent respectively. Highest percentage of respondents (20.91%) mentioned that agro-advisories related to information about new technologies is not useful followed by fish production techniques (19.09%), animal health management (15.45%) and fish pond preparation (13.64%).

The overall parameter of mobile based agro-advisories by the respondents is presented on Table 3. Data presented on Table 3 reveals that majority of the respondents at 68.18 per cent has positive perception towards mobile based agro-advisories followed by 4.55 per cent has negative perception towards the advisories. Table 3 also reveals that 52.73 per cent of respondents has moderate usefulness of the messages, 55.45 per cent has highly satisfied with the messages whereas 50.00 per cent of the respondents showed it as very much problem solving and 71.82 per cent of as very much need based. The study is in same line with the Reddy et al. [2].

“There are several organizations extensively using modern information technology in India to facilitate better communication between researchers, extension workers and their farmer clients to transfer technologies and information more cost effectively” [6]. “The most widespread ICT in developing countries today is the mobile phone. Mobile phones are the devices that can create, store, access and share information anytime, anywhere. But they are more than that, when teamed with extension and advisory services, they can help improve the livelihoods of rural people by getting much needed timely information to their fingertips at potentially low cost” [2].

4. CONCLUSION

From the study, it can be concluded that using mobile phone networks to disseminate agricultural knowledge is one of the most effective ways to increase farmers' access to high-quality information who might not otherwise be reached by extension programmes. To provide the agro-advisory in sustainable manner, the convergence of such type of programmes with state line departments, KVVKs is highly recommended so that it will help to uplift the

livelihood of rural mass. Mobile-based agro-advisories would play a significant role in reducing the information gap and information asymmetry between the farmers as a result of the increased availability, access, and ownership of mobile phones in India.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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