Adoptionof Electronic Media in Agricultural Activities Enhance productivity in India

Vaibhav Srivastav[1], Dr.Meenakshi Srivastava[2],Dr.Shailendra Rajan[3]

1 Research Scholar, Amity University, Lucknow,
2 Assistant Professor, Amity University, Lucknow,
3 Director, ICAR-CISH Rehmankhera Kakori Lucknow.

ABSTRACT

Increased demand for farm productions and the use of natural resources compelled the agriculture community to enhance the use of Information and Communication Technology (ICT) in various farming processes. A Decision Support System (DSS) in agriculture proved very useful as the agricultural systems are complex and partially known. The majority of available agricultural decision support system is either specific to crop or task-specific. The rapid growth of electronic media and the introduction of mobile-enabled information services provide different ways to improve information dissemination in the agriculture sector and also help to overcome information asymmetry existing among the group of farmers. It assists with crossing over any barrier between the accessibility and conveyance of agricultural information sources and farming practices. As electronic media continues to grow among farming communities and societies, there is a need for adaptation and dissemination to have a much greater rural productivity impact in the future.To use the full potential of scattered information by electronic media with supporting infrastructure and capacity building among farmers it is necessary to guarantee the quality of information, its practicality, and dependability.

Keywords: Agriculture, technology, electronic media.

1. INTRODUCTION

India is an agricultural country. Agriculture and its ailed activities act as a main source of livelihood for more than 80% of the population of rural India. It employs approximately 52% of labor. Its contribution to GDP is between 14-15%. India has 120 million farmers out of which 30 million uses smartphones and has a basic sense of understanding about the electronic marketplace [1]. Electronic media is being used in agriculture to improve results with a minimal environmental cost.

The decision support systems mainly use to develop a rule-based or knowledge transfer based approach. These methodologies can support the development of large knowledgebase information. For large and inclusive decision support system modelling approaches are more suitable than transfer approaches. Unfortunately, it seems that model-based knowledge engineering is not much utilized for the development of Agriculture DSS. The paper presents the organizational structure, farmer communities, tasks, communication channel, knowledge, and design models based on the minimum model approach for the development of scalable, broad and practically usable agricultural decision support systems. The use of the electronic information system helps in decision support for irrigation scheduling and weather-based disease forecasting for the important crops of India. The proposed model along with the required expert knowledge providesa platform on which the larger DSS can build for any crop of given locations.

To modernize Indian Agriculture the Indian government has coordinated endeavours like:

1. PradhanMantriFasalBimaYojana
2. PradhanMantriKisaanMaan-DhanYojana
3. Prime Minister KrishiSinchayeeYojana
4. National Centre for Cold-Chain Development
5. Direct Benefit Transfer (DBT) Portal for Agriculture Schemes
6. E-Farm Machinery Online

According to the various report, facilities mentioned above have not reached many farmers and still require the attention of policymakers. Electronic media can be used to fill the existing gap. Impact of electronic media on agriculture will benefit in several ways:

1. Electronic media provides more efficient ways to produce, harvest and sell essential crops.
2. Technology implementation emphasis on checking defective crops and improving the potential for healthy crop production.
3. The growth in Agriculture technology has strengthened agro-based businesses to run more efficiently.
4. Information technology is being used in applications such as automated machine adjustments for weather forecasting and disease or pest identification.
5. The use of electronic media in agriculture can improve crop management practices thus, helping many tech businesses invest in algorithms that are becoming useful in agriculture.

Classification of new computerized applications is presently accelerating mediations that have been appeared to improve efficiency and development in this segment. Though a huge amount of electronic information is available for helping the farmers unfortunately very limited applications are available which can use this available information and suggest the latest best practices for the farmer.

Hence there is a need for IT-based platforms that can make the farmers aware of the latest good agricultural practices like orchard site preparation, fumigation, soil management, cover crop, taken care of tree density, etc. Use of technology in agriculture is rapidly rectifying the problems while recommending specific action that is required to overcome the problem.

There are lots of works done for the betterment of farmer's and there are various studies suggested good practices for farmers. There aredifferent online and offline tool or mobile apps which are specifically made to provide the financial enhancement of the farmer's communities. As in a general article by P. Krishna Reddy a framework is designed for agriculture information to improve crop productivity. It is a serious concern that after huge information available online and works for farmers and theiradvancement; there is a loophole that resists the improvement of farmers. B.L Dhaka stated in a research paper that the effect of farmers' experience with ICTs on the transfer of technology in changing the agri-rural environment is based on statistical and mathematical knowledge of farming. It is beyond the use of local farmers. So the study by which the electronic market place helps the rural farmers in India will take place.

2. METHODOLOGY

Population: The population of this study comprised of those farmers' communities who were directly or indirectly involved in agriculture activities living in India. Due to the dominance of farmers having smartphones and electronic media and using it in taking decisions related to agricultural activities, it was decided to include only farmer's communities and related agencies in the population of the study.

Sample: Multistage sampling technique was employed to select participants of the study. At the first stage, few villages like *Gopramau, Sarsanda, KasmandiKalan, and Naubasta*from tehsils like*Malihabad* and *Bakshikatalab*fromLucknow district of Uttar Pradesh were selected through random sampling were Mango is the major crop. Furthermore, the farmer's society and communitieswere selectedconveniently by keeping in mind the accessibility and convenience of the researcher to collect data. At the final stage, 120 farmers from these fourvillages wereapproached using a convenient sampling technique. Those farmers were chosen by the criteria of their involvement in agricultural activities.

Instrumentation: The data were collected by using a questionnaire developed to gather information from farmers.Thedata is collected by the interview schedule which was developed by the help of literature. There were some defensible terms found through pilot study and modifications were recommended by the panel of experts. These improvementswere incorporated intothe questionnaire and the interview. The data were collected by using Hindi and English languages.

Data analysis: Thedatawere analysed employing descriptive and inferential statistics using SPSS. The frequency and percentage of categories were presented in tabular form.

3. RESULT AND DISCUSSION

The demographic information describe that all the respondents were farmers, most (50%) and above of them had more than primary education,most of them had access to electronic media and likewise, most ofthe respondents (48%) had medium-size farmlands with income level up to 50 thousand. The absence of higher educational qualifications is a striking elementamong the respondents.

Most of the respondents had access to T.V, radio, and smartphones but when asked about farmersa preferred source of information most considered newspapers, brochures, and posters aremore effective and frequently used information sources. In this respect, the respondents were probed about their preference of 'other media' over smartphone and TV. It was revealed that the preferred sources of agriculture information were distributed at theirdoorsteps by smartphones. It is been observed that farmers are more curious about the protection of crops as shown in figure and table 4. Farmers also seek information in their local language.

Table 1. Demographical information of farmers including their educational level, farm size, and their income level

Variables	Frequency	Percentage
1. Educational Level		
1.1.Primary	47	39.16
1.2.Junior high school	55	45.83
1.3.High School and above	18	15.00
2. Ownership		
2.1.Personal farming land	36	30.00
2.2.Tenant land	29	24.16
2.3.Family property	49	40.83
2.4.Other	06	05.00
3. Farm Size		
3.1.Small	46	38.33
3.2.Medium	58	48.33
3.3.Large	16	13.33
4. Income level		
4.1.Below 50 Thousand	89	74.16
4.2.Up to 1 Lakh	26	21.66
4.3.More than 1 Lakh	05	4.166

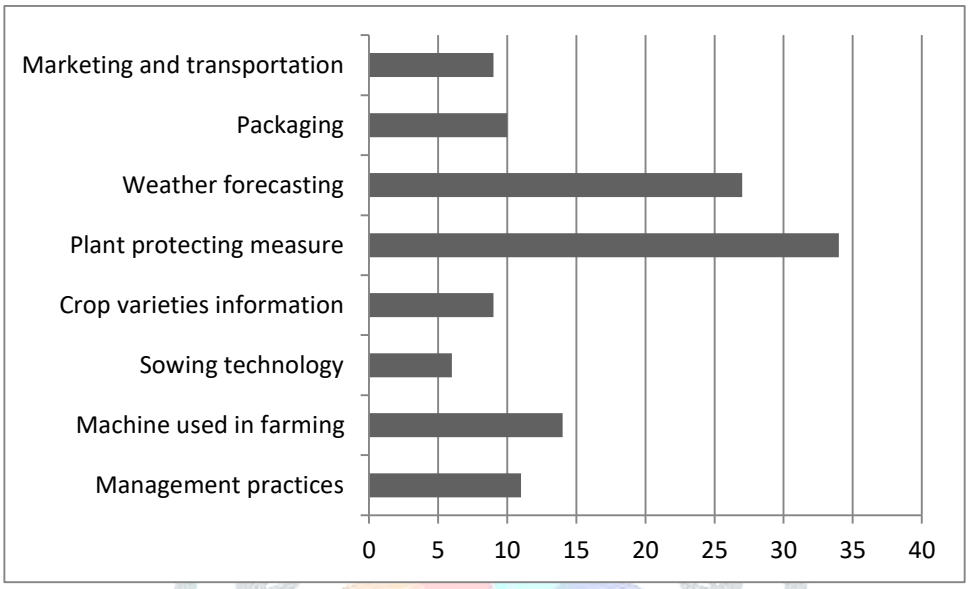
Table 2. Access and preference regarding electronic media sources in getting agriculture information

	Television (%)	Radio (%)	Smartphone (%)	Other (%)
Access to media?	11	9	21	79
	9.16%	7.5%	17.5%	65.83%
The preferred source of agricultural information?	16	9	73	22
	13.33%	7.5%	60.83%	18.33%

Table 3. Language of media for agricultural information

	Hindi	English	Other
Prefer language?	101	05	14
	84.16%	4.16%	11.6%
The information available in?	24	94	02
	20%	78.33%	1.66%

Table 4. Factor affecting agriculture productivity in media devices		
Factors	Frequency	Percentage
Management practices	11	09.16
The machine used in farming	14	11.66
Sowing technology	06	05.00
Crop varieties information	09	07.50
Plant protecting measure	34	28.33
Weather forecasting	27	22.50
Packaging	10	08.33
Marketing and transportation	09	07.50



Factors affecting agriculture productivity in media devices

A system by which agricultural activities going on is complex and partly known to farmers. The design of the decision-making system for agricultural activities is quite challenging and involved. Theelectronic approach provides a scalable and modular framework in agricultural practices. A single framework which is multitasking and provides a better decision support system is required in our country that can break down the entire problem and construct a designated knowledge, communication, design, model, task organisation and agents in various section of agriculture. The advantage of the use of electronic media in the agricultural process is time saving and work according to the situation. It can act as an overview of the problem and differentiate the role of elements in the agriculture process. It includes the knowledge elicitation and every minute detail of the process is being used. To remove the complexity level over the head of knowledge providers and users can get the hassle-free solution on the electronic media.

6. CONCLUSION

The development of a web-based Agriculturalelectronic model is presented in a well-known electronicframework. It is always useful to undertake the decision support system problem with a modular approach which helps predict the things. It helps to remove the blockage of knowledge acquisitionthat occurs in the knowledge transfer approach. Typically, in the development of the agricultural practices knowledge framework approach encourage the reuse of knowledge. At present, the agricultural techniques are mainly either crop-specific or task-specific. These limitations of the farmer's community require some rules and technology transfer approaches. More and more use of electronic media based approach in the development of agricultural activities enhances the development in a more generalized way of the comprehensive pattern. It has an edge over the traditional knowledge transfer approach in terms of modularity and scalability.

7. REFERENCES

[1] Forbes magazine stated that in an article that "India has 120 million farmers out of which 30 million uses smartphones and has a basic sense of understanding about the electronicmarketplace" in an article "*For India's Farmers, itsAgtechstartups, Not Government That is Key*".
[2] William Warshauer proposed the step How Electronically Is Solving Three Problems in Agriculture and the way to solve the farmer's issues.
[3] How Mobile Phones Contribute to Growth of Small Farmers? Evidence from India.By Surabhi Mittal and MamtaMehar in Quarterly Journal of International Agriculture 51 (2012), No. 3: 227-244.
[4] Applications of Smartphone-Based Sensors in Agriculture.By SupornPongnumkul, PimwadeeChaovalit, and NavapornSurasvadi in Hindawi Publishing Corporation.Journal of Sensors.Volume 2015, Article ID 195308.
[5] A Decision Support System for Enhancing Crop Productivity of Smallholder by Ayubu J. Churi, Malongo R. S. Mlozi, Henry Mahoo, Siza D. Tumbo, RespickiusCasimir in International Journal of Information and Communication Technology Research.
[6] Farmers' Experience with ICTs on Transfer of Technology in Changing Agri-rural Environment by B. L. Dhaka and K. Chayal.
[7] A framework of information technology-based agriculture information dissemination system to improve crop productivity general article by P. Krishna Reddy* and R. Ankaiah.