International Journal of Science, Environment and Technology, Vol. 6, No 4, 2017, 2339 – 2342

ISSN 2278-3687 (O)
2277-663X (P)

Review Paper

USE OF INFORMATION COMMUNICATION TECHNOLOGIES FOR AGRICULTURAL DEVELOPMENT BY RURAL FARMERS

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Abstract: The main goal of this study is to inquire into the possibilities of technological conventions and practices in multifarious agricultural resource management systems. The study also provides an overview on overcoming the emerging impediments in the adoption of information and communication technology by identifying the innovative implementation of IT applications. This paper also highlights some of the remarkable findings of the research carried out on majority of the farmers that ICT devices like multi SIM mobile phones, smart phones and tablets as well. The widely accepted and used ICTs are cell phones and smart phones with the help of which farmers have become socially active, many agriculture friendly mobile apps are helping farmers realizing the importance of technology. They can contact the middle-men for marketing purpose and can directly call upon field specialist on real time basis and take expert's advice on various issues like maintaining the quality of inputs/outputs, insect/pest control and management of crops' disease and many more. Though major problems in the actively accepting the ICT is the hostility from technology and hesitation to adopt new thing and its potential effects in restructuring of extension services.
Keywords: Information communication technologies**,** agriculture development, information system.

1. Introduction

Information technology is a multifaceted suit of heterogeneous technological implements, advanced support systems, and portable resources that are developed for the purpose of communication, information storage, easy retrieval, understanding complex structures and management of multidimensional data [1]. The advancement of technology has incorporated many devices that include personal computers, laptops, smart phones, tablets, and various hardware and software connected via internet. The conventional communication systems also work in supports with persisting technology that include live-telecasting and broadcasting via television and radio, and toll free telephony lines. Hand in hand walks various services such as online portals, E-mail, webinars, live recordings, video conferencing and many more [2]. The motto of information technology is to deliver the information via various medias in right form at right time. Now-a-days, growth of agricultural aspects is highly getting dependent on

*Received June 21, 2017 * Published Aug 2, 2017 * www.ijset.net*

technology with the update of automated farming equipments specifically for small scale and middle scale farmers. Many farmers still continue with the orthodox ways of growing crops. They require to improve, sustain, and diversify their farm enterprises in order to compete with high production at low input cost. Though farmers are accepting the IT as integral part of agricultural tools but their persists a gap of substantial knowledge of novice technology based farming practices. This results into many challenges in widely embracing the new technologies. In fact, ITC is directly impacting the farmer's knowledge by facilitating 24*7 support system dedicated to provide relevant information empowering them[3][4]. A couple of decade ago we were talking about television and radio as the main communication channel to reach out rural areas. However, today Internet based mobile communication channels have contagiously spread out to all dimensions of the agriculture sector. IT has also facilitated with social media, digitized information repositories and digital video recording and photography. Despite of all facilities and potentiality provided by IT, farmers face common challenges and issues like sustainability, scalability, and availability of appropriate content [5].

2. New Age Information Communication models

Many new Information Communication models have been introduced with the fast growth of IT era marking the spontaneous evolution with improvised quality[6]. Currently, the agricultural information decree has been categorized as follows:

a) Online Web Portal: This refers to a congregation of websites and web links providing on one platform for users.

b) Voice-Oriented Service: Interactive Voice services are served to farmers at a telephone

terminal often at KVKs where famers can reach to obtain a support. Actually, this does the job of Information dissemination through telephone, i.e. BPO, KPO, etc.

c) VoIP: Voice over Internet Protocol allows the farmers to communicate via a UFP (Unified Access Platform). This protocol is able to provide information dissemination by phone calling and high speed data services abreast to each other. The development of voice call services has allowed the farmers to allow instant live chat, voice cum video chat, and the use of other multimedia communication platforms.

d) SMS/MMS Service: This kind of information dissemination involved communication through text/media messages. It has to be cooperated by agriculture sector and telecom service providers.

e) Support Community Formation– This possesses both free and premium online forum based support system on which farmers can communicate by asking questions and get expert's advice as per the desired. This type of service oriented structure formulates the farmer community on which farmers may register with their genuine information to get the support from the members of the communities [7]. The active participants of the community may include other farmers, government officers, agriculture professionals, industry technical, and small enterprise owners. All may communicate via online chatting application using their personal devices.

f) Video Conferencing: This is the dedicated satellite system which binds different places like number of KVKs and various farmer location with same facility to communicate with distant resources [8]. This technology has played a major role in information dissemination as farmers need not be present at site where conversation is going on, but being at home they interact face to face and understand the practical techniques and tricks. Likewise they can show samples of diseased crops along with their symptoms to an expert sitting on other side and may know the cure for crop.

g) Smart Internet Services: This technology includes all the smart devices that farmers are using for information dissemination. The smart phone is the main device used for online marketing of farmers' products, comparison of quality, checking online market price everyday, staying updated with news and many more[9].

Conclusion

As a crux, IT is highly helpful to communicate the knowledge In agriculturally based developing countries like India cannot ignore agriculture in such transformation. Information technology refers to how we use information, compute and communicate information to the people. The need is to recognize information technology in agricultural aspects as a major opportunity for the farmers understanding it from the present scenario of using it for quality & mass production. Development of the technology friendly institution for purpose of knowledge sharing centers for farmers may also help in information dissemination via ICT in remote rural areas.

References

[1] Batchelor, Simon, Simon Hearn, Malcolm Peirce, Susan Sugden, and Mike Webb. "ICT for development: Contributing to the millennium development goals-Lessons learned from seventeen infoDev projects." World Bank Publications (2003).

[2] De Silva, Harsha, and Dimuthu Ratnadiwakara. "Using ICT to reduce transaction costs in agriculture through better communication: A case-study from Sri Lanka." LIRNEasia, Colombo, Sri Lanka, Nov (2008).

[3] Meera, Shaik N., Anita Jhamtani, and D.U.M. Rao. "Information and communication technology in agricultural development: A comparative analysis of three projects from India." Network Paper No 135 (2004).

[4] Maumbe, Blessing M., and Julius Juma Okello. "Uses of Information and Communication Technology (ICT) in agriculture and rural development in sub-Saharan Africa: Experiences from South Africa and Kenya." In Technology, Sustainability, and Rural Development in Africa, pp. 113-134. IGI Global, 2013.

[5] Glendenning, Claire J., and Pier Paolo Ficarelli. "The relevance of content in ICT initiatives in Indian agriculture." International Food Policy Research Institute Discussion Paper 1180 (2012): 1-40.

[6] Muriithi, Anthony Gikandi, Bett Eric, and Ogalleh Sarah. "Information technology for agriculture and rural development in Africa: Experiences from Kenya." (2012).

[7] Ludena, R. Dennis A., and Alireza Ahrary. "A big data approach for a new ICT agriculture application development." In Cyber-Enabled Distributed Computing and Knowledge Discovery (CyberC), 2013 International Conference on, pp. 140-143. IEEE, 2013.

[8] Mittal, Surabhi. Modern ICT for agricultural development and risk management in smallholder agriculture in India. CIMMYT, 2012.

[9] Zhang B, Li S. Agricultural information service models innovation in the construction of socialist new village (in Chinese). Chin Agric Sci Bull 2007;23(4):430–4.