

Innovative Agricultural Information Services by ICT Projects in India

Tajdar Mohammad Qaisar, Mohd. Motasim Ali Khan, and Dr. Shahid Alam

Abstract—In recent years farmers attitude to access to agricultural information have been changed because of very fast networking of information and communication technology. Especially rural marketing exploring in a new ways as farmers access to market information. Various projects have been developed that integrate ICTs into the dissemination of agricultural information to farmers. This paper discusses a number of innovative projects that utilize ICTs in delivering information to farmers, focusing its analysis on mobile telephony, internet kiosks, like ITC e choupal, Tata kisan kedras etc. internet portals, which has become more widespread in recent years as a means of disseminating agricultural information to farmers and offers various means of providing agricultural information. The objective of the study to evaluate different ICT projects running in India and to provide an overview of the types of services and projects that are in existence or being designed to disseminate information to Indian farmers in a new ways.

Index Terms—Agriculture, Farmers, ICT projects, Information, Innovative.

I. INTRODUCTION

A new concept about Agricultural informatics that has arisen following the rapid development in information and communication technologies (ICTs) and of the internet. Referred to as e-agriculture, agricultural informatics is an emerging field which combines the advances in agricultural informatics, agricultural development and entrepreneurship to provide better agricultural services, enhanced technology dissemination, and information delivery through the advances in ICT and the internet. The e-Agriculture concept, however, goes beyond technology, to the integration of knowledge and culture, aimed at improving communication and learning processes among relevant actors in agriculture at different levels i.e. locally, regionally and globally.

The dissemination of information to farmers has become increasingly integrated into ICTs. Rural telecentres provide information on education, agricultural and health issues and equip rural citizens with skills on how to use computers and provide basic literacy. Also Radio and TV programmes feature agricultural information. Many of the organizations like government, private, cooperatives, and public have also

attempted to facilitate technology transfer in the agricultural sector. Information and Communication Technologies (ICTs) are crucial in facilitating communication and access to information for agricultural and rural development. Since agriculture is the national priority sector, it is one of the potentially beneficial areas for the application of ICTs for economic transformation. Development of networks and use of low-cost ICTs enhance timely access to accurate and reliable information. It therefore calls for investment of part of the country's limited resources for ICT development.

Information and communication technologies are making tremendous impact on the rural economy due to its wide application and appeal. It may seem paradoxical that modern lets associated with developed country markets and capital intensive methods of production, has any relevance for country like India where many millions of people lack in basic needs. Nevertheless, there are many efforts in India and other developing countries to demonstrate the concrete benefits of ICT for rural population and to carry out the same in a manner that makes economic sense. (Singh, Nirvikar, 2004).

A large numbers of initiatives has been made and are being made in rural India, to deploy ICT as a developmental tool for creating awareness among farmers and rural artisans, and for their betterment. Both public and private sectors have initiated many projects for enhancing the rural livelihoods and improving the status of agriculture in the country. These can be grouped under central government sponsored, state government initiated, corporate sectors undertaken and NGO sponsored projects.

The number of extension workers has been going down while that of farmers has been growing, hence the need for innovative information systems to address this gap. Seeking information from these and other platforms becomes an onerous task for the farmers as surfing a large number of web-pages. With the widespread use of mobile phones, voice and SMS solutions should find more use as they offer easy accessibility. They offer services marketing, storage, transportation etc. to compete farmers in the market. ITC e choupal, Warana Model, i Kisan, Tata Kisan Kendras are some models that are offering informational, transactional and extension services to farmers.

II. METHODOLOGY AND DATA COLLECTION

It is focused on projects/services that provide agricultural training and information to farmers directly, through the use of ICTs. Entries include projects using ICT solutions or implementing ICT-based activities, institutions/groups providing services using ICTs as well as ICT solutions

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software providers both at the national and regional level. While many of the entries are projects with a definitive beginning and end date providing one or two services others are national or regional information systems providing many agricultural services using ICTs. Study based on the following aspects of ICTs project initiatives area penetration, target group, implementing agencies, sponsoring agent and duration of the projects, technology penetration. Some results are analyzed on the basis of these parameters.

III. RESULTS AND DISCUSSION

The detailed study of the projects from secondary data explains valuable facts but also in the absence of valuable information about the projects evaluation seems to be difficult for analysis of the project's status and its beneficiaries.

TABLE I: PROJECT IMPLEMENTERS/PARTNERS

Type of organization	Project Implementer/initiator	Project Partner/Funder
International Organization	4	22
Local/National NGO/ Cooperatives/NPO	17	7
Central Government Department/Agency	11	16
State Government Department/Agency	14	15
National Agricultural Research Centre/other institutions	8	7
Private Company	15	8

The figures in Table 1 demonstrate that the majority (22) of projects were funded or implemented by or in partnership with international organizations. Local or national NGOs, NPOs (17) are major groups of implementing agencies, followed by private companies, state government agencies and central government agencies also playing a large part in many projects.

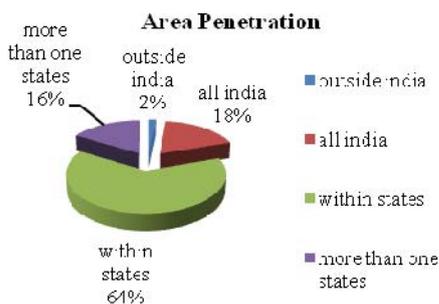


Fig. 1. Area Penetration

Fig.1. demonstrates about the projects as 64 percent are working in within state showing information availability penetrating towards roots of the districts. However there are very few projects (only 18 percent) are working all over India, needs a nationalized policy to cover up. Although information is largely not available about languages, rural pockets etc. about the projects.

Fig.2. reveals that more than half of the projects established range from 4-6 years are in the pilot phase. But in comparison to other developing countries 30 percent are in developed phase showing a prominent figure but still needs to be more. Due to unavailability of resources and proper

handling and financial support to be given the organizations. Clearly indicating 54 percent would emerge as a whole to meet the desired requirement for community.

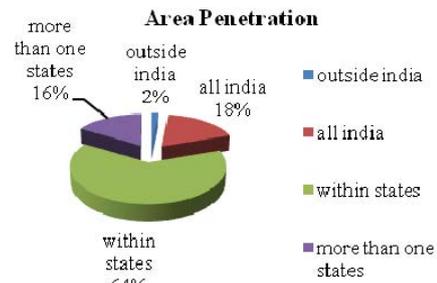


Fig. 2. Duration of Projects

Study reveals that 39 percent initiatives target farmers followed by rural population 23 percent and women 15 percent. Some projects also provide beneficiaries to agricultural organisations, traders/processors etc. like e-Krishi / Agri-Business centers, ASHA, Agriwatch Portal. Community Information Centres (CICs), Computers on Wheels, Digital Payment System (Rural communities of Baramati and western Maharashtra) provide various services to rural population.

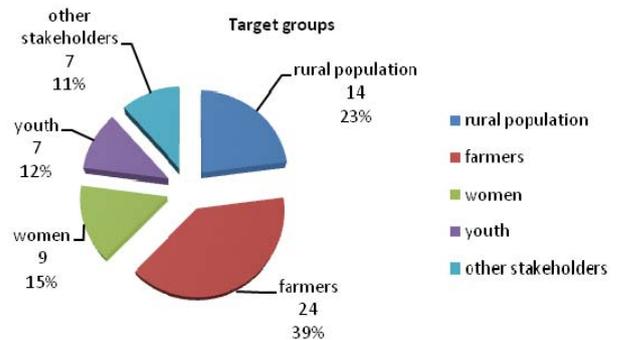


Fig. 3. Types of target groups

Most of the projects concentrate only one community majority focused on farmers. Clearly indicating a proper direction of project objectives. Also some of them operating mainly rural population and women. Around 10 projects in which Indian Agribusiness Systems Pvt. Ltd. (IASL), AGRISNET (Agricultural Informatics and Communications Network), e-Krishi / Agri-Business centers are prominent projects that are providing more than two communities.

ITC e-choupal, TATA Kisan Kendra, Kisan Call Centres, e Sagu etc. focused only farmers. Kisan Soochana Kendra (KSK), HP icommunity target only youth and Community Radio - Deccan Development Society for women participants. AGRISNET (Agricultural Informatics and Communications Network), Agriwatch Portal, ASHA, e-Krishi/Agri-Business centers, ICT Intervention for farmers through Query Redress Services, Information Village Centers of MSSRF concentrate on more than one community.

Almost two thirds have been carried out either nationwide or provide services in various countries (see Figure 1) information is largely not available, however, about the ability of these services to reach remote, rural locations and the numbers of users of each service and the language in which the information is being delivered.

Information is provided by different organisations; each offering a specific product some has only web-access and

often is in the English language. Coupled with these challenges, the Indian farmers are faced with poor infrastructure, low literacy and limited language use. Such a model of information delivery has proved to be largely ineffective.

A comprehensive model is needed to address the limitations of existing methods, by offering a holistic, one-stop-shop information service on a variety of carefully integrated platforms. Furthermore, a model is needed that implements farmers' feedback, a resource that is used to further enhance information delivery.

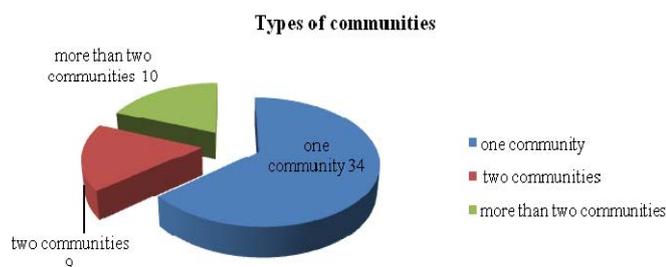


Fig. 4. Types of communities

While some projects have developed that use a variety of services and ICTs to deliver farmer information and are using mobile phone technology at an increasing rate. Most innovative farmer advisory services rely exclusively on the internet to provide online training or transmit agricultural information.

IV. CONCLUSION

ICT projects essentially provide linkages, enhance market access, and improve business process, increase product diversity. There are 48 ICT projects discussed concludes. The agricultural sector requires a well-organized learning community in the form of farmer's associations, cooperatives, women's groups, etc. The inventory entries indicate that many projects are still in the pilot phase or have been of short duration and typically managed or implemented by international organizations thereby revealing the need to move from pilot to mainstream. Clearly indicating 54 percent would emerge as a whole to meet the desired requirement for community. In order to move from the implementation of small pilot projects created in isolation from one another. Private companies and governments need to form partnerships to ensure that the service will not be just another pilot project that ends after donor funding ceases. There should be public private partnership for the long running of the projects and also evaluation of the projects to be done on periodically.

The absence of comprehensive information on the projects suggests that projects needs to be more carefully documented, information on the projects needs to be more readily available and project evaluations need to be shared. Also information and communication partnership among the national, state and district level projects should be in accordance for better coordination that results into the long run and productive functioning.

To monitor the impact of the tool we need to look into: the most effective ways of reaching farmers with timely agricultural information and knowledge (indigenous and

external); mechanisms for harnessing the potential of digital telephony, internet as technologies for communicating agricultural information; options for repackaging agricultural information and knowledge for small scale farmers; and the potential role of an e-repository (of local agricultural content) in India for purposes of disseminating local agricultural content.

There needs to be multi focussed approach by initiatives to cover up needs of rural populace including gender issues, youth, and farmers. A number of ICT projects demonstrated the substantial benefits that they can accrue to the poor. This occurs only when the beneficiaries are identified and involved at the project conceptualization stage. Study also recommends the existence of such a model to cover up all the beneficiaries and services just to one-stop-shop information service.

Customization of the platforms can bring a higher degree of success to ICT projects. Large investment projects will be sustained if they are taken up as private public partnership and these large investment types of ICT platforms should be diversified to transform businesses, create new forms of business delivery and create awareness, create entrepreneurship especially to rural masses, provide better education, healthcare services and generate new wealth for the rural population and create new interaction spaces. These types of products/services diversification meet to the needs of target groups they are targeting.

Thus sustainable economic growth in the rural India can be achieved through public private partnership. The multi service public private kiosks will be the engine of growth in the rural markets and ICT infrastructure is the backbone of this engine.

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