Barriers for E-agriculture in Rural Areas with Special Reference to Jhabua District Madhya Pradesh, India

Anand Kumar Patel*, Swadesh Kumar Saxena, Avnish Chauhan*
*IRADe, New Delhi, India.
FDRA, Bhopal, MP, India.
avnishchauhan_in@yahoo.com

Abstract: Perhaps this is the first type of research study from India especially focused on tribal communities from very remote areas in western part of MP (Madhya Pradesh) state, India. India is predominantly agriculture based country, agriculture employs about 60-70% and contributes about 20% of GDP in India and it is growing at around 2% per annum. ICT (Information and Communication Technology) is a potent tool in various sectors of activities in agriculture. Demand and supply, monitoring of inputs, dissemination of cheaper technologies relevant to Indian farming community through various user friendly techniques, marketing information, and input information at grass root level and selection of right crop are some of the promising usage of ICT in agriculture which has potential to boost crop production at middle and small farmer's level. Jhabua is a predominantly tribal district (more than 85% population is tribal like Bhil, Bhilalla and Patelia) located in the western part of Madhya Pradesh. It is one of the most underdeveloped regions of the MP on almost all the indicators of socio-economic development.
[World Rural Observations 2010;2(1):61-65]. ISSN: 1944-6543 (print); ISSN: 1944-6551 (online)
Key words: E-agriculture, E-bridge, ICT, Spatial gap, Regional broad cast, Socio-economic engines, Barriers

1. INTRODUCTION

The development of agriculture has been had the history of ten thousand years. It has experienced the primitive agriculture, traditional agriculture and modern agriculture. The long history of agricultural development (Xi Ding, 2009). ICT provides huge, advance information on just a click of the computer mouse. The rural masses are largely disconnected with the outer world due to lack of ICT facilities, ICT can be used as catalyst for positive change in rural underdeveloped hinder land like Jhabua district of MP. The major challenges is to provide ICT based service to the rural masses at an affordable cost with the ultimate objective of making IT a part and parcel of their daily lives for sustainable future. ICT can play an important role in many aspects of rural development, can also help to better govern various aspects of rural development. The working definition (used by the British Council) emphasizes that governance involves interaction between the formal institutions and those in civil society. Governance refers to a process whereby elements in society wield power, authority and influence and enact policies and decisions concerning public life and social upliftment.

2. STUDY SITES

This study was conducted in two blocks (Sondwa and Alirajpur) of Jhabua district. The Jhabua District located in the western part of Madhya Pradesh (21°55' to 23°15' North latitudes& 74°2' to 75°12' East longitudes). It is one of the most underdeveloped regions of the MP on almost all the indicators of socio-economic development like low literacy, high drop-out rate, high infant mortality rate, low longevity, difficult geographical regions, scattered habitation, and lack of communication facilities, health facilities, market linkages and several other such parameters.

The total population of the district Jhabua is 1,396,677 (as per 2001 census), spreads over 1370 revenue villages (612 gram panchayat), across 8 tehshils and 12 development blocks. Nearly 90 percent populations live in rural areas and the scheduled tribes comprise approximately 86 per cent, scheduled castes 3 per cent and others 11 per cent. There are three major tribes in Jhabua-Bhil, Bhilala and Patelia. The decadal population growth rate of MP is 37% with sex ratio of 977 per 1000 and urbanization is about 9%. It has a high Infant Mortality Rate (IMR) of 144 per thousand (as per 2001census). Jhabua region is in terms of natural resources highly degraded region. The topography of the area is undulating with proliferation of an unending sea of short, sharp hillocks. It is surrounded by Panchamahal and Baroda districts of Gujarat State, Banswara district of Rajasthan State. Jhabua also known as Dear and Rattle districts of Madhya Pradesh, River Narmada forms the southern boundary. The terrain is hilly, undulating typically

consider as "Jhabua hills topography", the difference between the highest and the lowest points is varies between 20 to 50 meters. The Jhabua is blessed with skeletal soils with shallow to very shallow depth and erratic rainfall, high temperature. The area comes under Indian Agro Climatic Zone no. 12 is Jhabua hills covering an area of 0.68m ha. (1.5 % of geographical area of MP). The district Jhabua has three distinct sub zones namely Petlawad (Malwa), Jhabua (Low rainfall) and Katthiwada (High rainfall also known as Charapunji of Jhabua) zones. A brief about Jhabua demographic profile at a glance.

Table1 Demography of Jhabua

Geographical Area of the Jhabua	6793 Sq.Km.
Forest Cover	645 Sq.Km.
Revenue Tehsils	8
Development Blocks	12
Gram Panchayats	665
Male Population	702053
Female Population	692508
Total Population	1394561
Rural Population	91%
Tribal Population	85.60%
SC Population	3%
Others Population	11.4%

(Source: Indian Census, 2001)

3. OBJECTIVE

Objectives of the study was to find out the existing gaps which are hampering the growth prospect of agriculture due to lack of ICT facilities and find out the scientific solutions to address the challenges to provide ICT based service to the rural masses at an affordable cost for better sustainable livelihood.

4. METHODOLOGY

For primary data collection and field survey structured questionnaire was developed and administered by trained surveyors. Study was conducted in forty villages (twenty villages from each block) of two block of Jhabua district. Villages were selected on basis of simple random sampling techniques. Respondents were selected through purposely keeping in mind the objective of the study. Our sample size was 200, out of 200 respondent 80 female and 120 male were surveyed. 100 small farmers and 100 marginal farmers were surveyed to conduct the study. Non- parametric and Para metric test have been used to analyse the data and draw inferences.

5. EXPECTED OUTCOMES

Expected outcomes of the study were to find existing application and gap of ICT in agriculture practices and suggest the scientific solutions to meet the gap so that ICT can fulfil the ultimate objective of

increasing income level of small and marginal farmers of Jhabua district of MP.

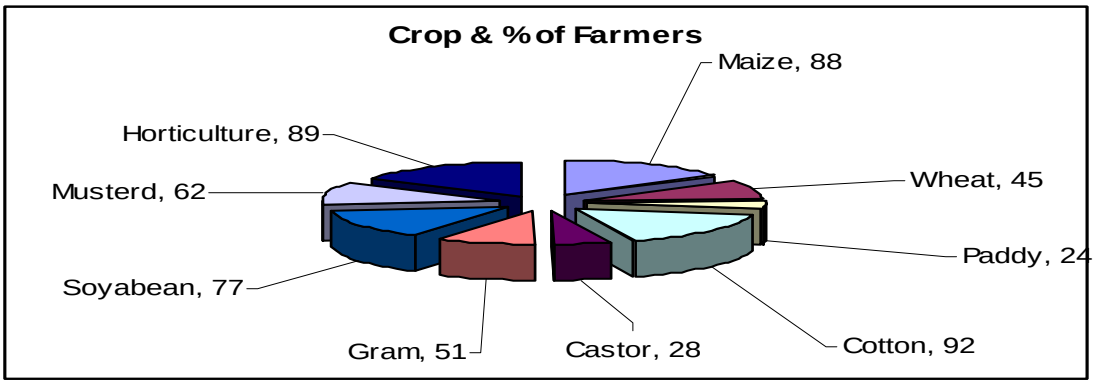

Figure 1 Cropping pattern of farmers

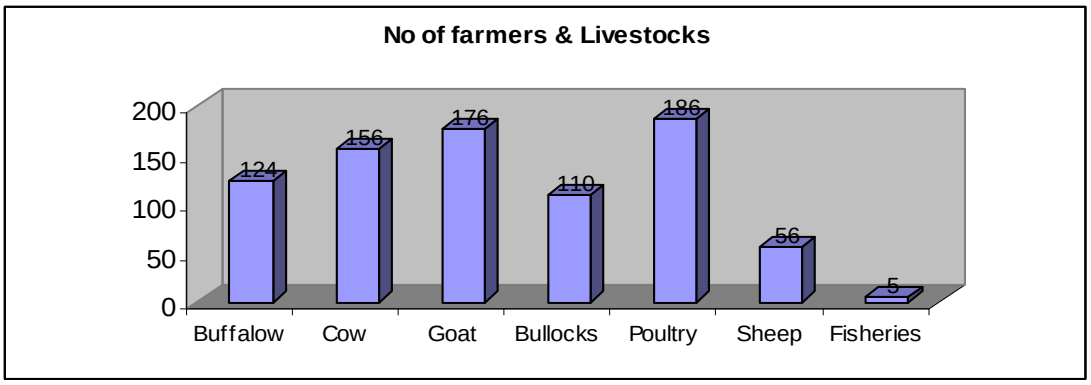

Figure 2 No of farmers having livestock

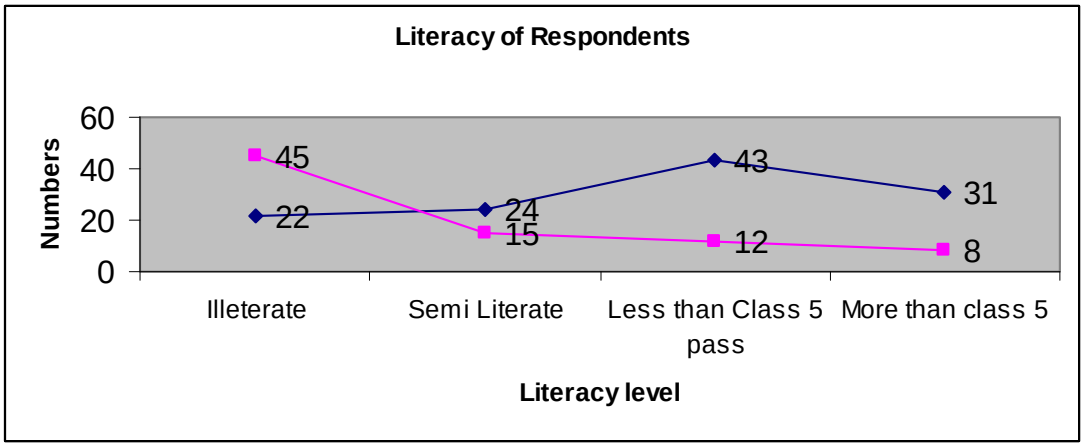

Figure 3 Literacy of respondents

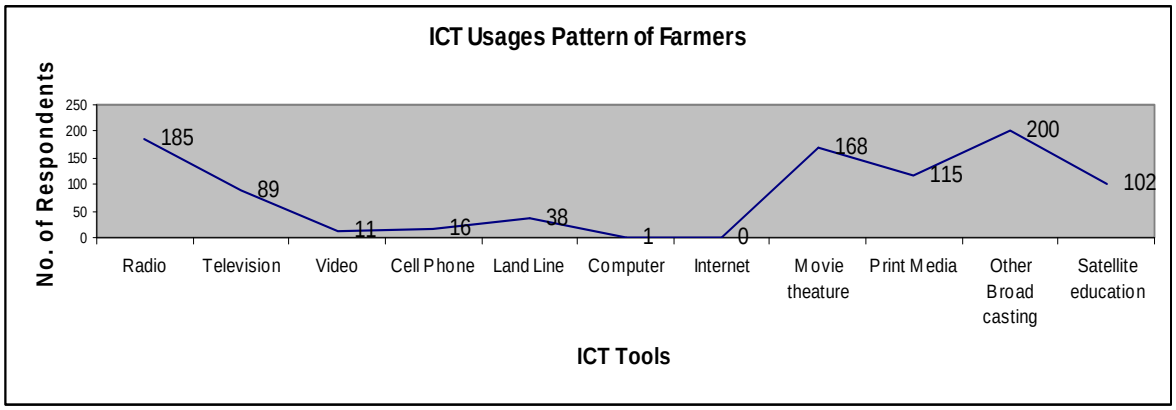

Figure 4 ICT usage by farmers

6. CONCLUSION

In our study we found three major gaps exist among the small and rural farmer's viz. spatial gap, literacy gap and income gap to adopt ICT practices in agriculture. Major barriers to adopt ICT in agriculture are lack of know-how about appropriate technology, uncertainty about market for agriculture produces, lack of storage facilities at village level, lack of credit facilities, and lack of connectivity and challenges of globalisation. These barriers are continuously pushing backward to small and marginal farmers in developmental race. Attempt should be made to generate socio-economic engines which have capabilities to pull forward small and marginal farmers. ICT act as catalyst by minimising input cost, disseminate low cost technologies and providing correct market information at end user groups. By reaching the farmers at doorstep, by increasing literacy level and providing low cost technology we can increase the ICT usages among the farmers. By creating community assets at village level through public private partnership will increase the usages of ICT in agriculture and other sectors which have potential to improve the socio-economic conditions of small and marginal farmers. Covering each and every farm family through village Panchayat knowledge centres, Internet and Regional broad cast can solve the ultimate purpose. Successful models of effective communication like regional broadcast centres for the farmers' community through the use of various ICT techniques will help farmers to do advance agriculture practices for sustainable cropping with bio-friendly techniques. In later stage e-health services, e-marketing, e-banking, e-governance, e-panchayat, e-logistic, e-risk insurance, M-commerce etc. will help farmers to improve their socio-economic status as well as help India to achieve vision 2020.

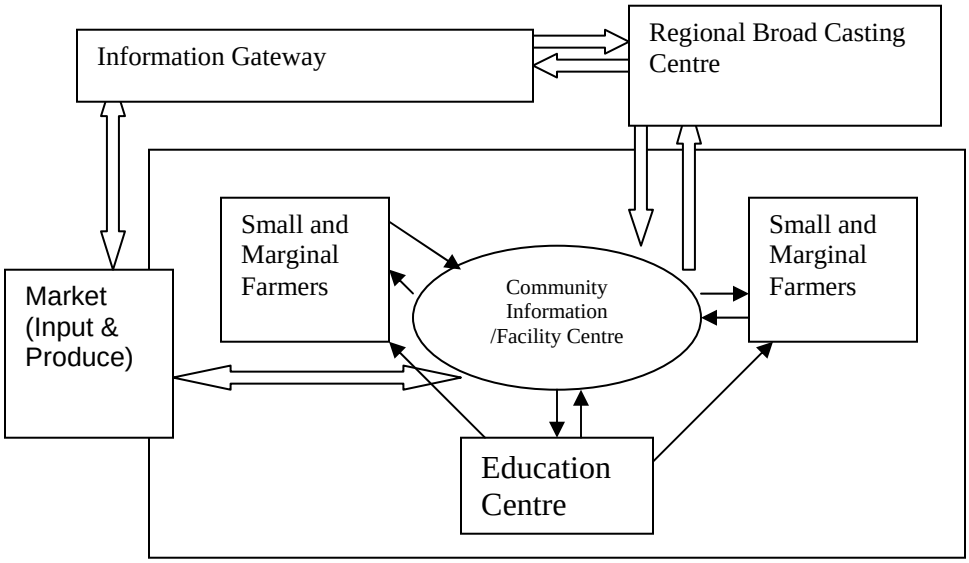

Figure 5 Function approach for integration of ICT with rural community

ACKNOWLEDGEMENT

Authors are thankful to the filed staff of FDRA and villagers of Sondwa and Alirajpur block of Jhabua district without their cooperation this study can not take shape. Actually this region belongs to highly populated tribal people, environmentally extremely conditions and also there is very vulnerable to enter this area.

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19/03/2010