

A Study on Application and Role of ICT in Rural Development

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Abstract - Information and communication technology is the powerful and productive systems that transform all human activities, including rural economy. ICT acts as a catalytic intervention for empowering rural India as it accelerates economic development in rural areas by helping the people in accessing the information in order to bridge the gap. In developing country like India, ICT revolution renders rural population to become an active participant in growth of our country. The purpose of this study is to explore the relevance of ICT on rural development ICTs stand for Information and Communication Technologies. ICTs refer to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums to enhance capabilities of people. The rural development is one of the important factors for the growth of Indian economy. Combining ICT in rural development can speed up the development process. Access to relevant information and knowledge is crucial and ICTs can be useful in this process to a great extent. . ICT has been seen as major tool for rural development as it has the potential to effectively address issues like health, Education, Agricultural productivity, Agribusinesses- Governance, risk management, access to knowledge, women empowerment etc. This paper focuses on scope and role of ICTs in rural development

Keywords - ICT, Rural development, Empowerment, Economy, Information Technology, Communication mediums. Economic development

I. INTRODUCTION

Rural areas and villages are among those areas that need information technology development. Information technology can have an important role in promoting the prosperity in economics, social, cultural, and political aspects of rural areas. Information and Communication Technology (ICT) is a well-known service sector in world which can be utilized by India in acquiring Top position as Indian minds have been appreciated since the beginning. In order to achieve the targeted GDP of India it is necessary to accelerate the rural development rendering the rural mob to become active participant in the course of development of India as a whole. There are several problems in rural areas and several policies combating around 600,000 villages for rural development. But still all the policies are not directly meeting the needs of rural people due to lack of information and awareness. . Information and Communication Technology (ICT) represents a broad and continually evolving range of elements that further includes computer hardware and software, television, radio, mobile phones, personal computers, kiosks and policies that govern these media and devices.

ICT has helped in infusing the knowledge with the technology rendering the easy accessibility to information by the rural population. Knowledge is information for an individual but it is asset for whole society. Information sharing on new production processes with farmers was prominent in the sixties which was the key to the success of the green revolution. Rural economies can be benefitted from ICT by focusing on social production, social consumption and social services in rural areas (Malhotra, 2001). However Sen (1999) argues persuasively that the development is not just about macroeconomic growth. He provides an alternative definition of development as an increase in the overall number and quality of choices available to the individuals in pursuing their lives and livelihoods. The principle of equity further states that everyone should get and be provided equal and fair chances to choose their own way of livelihoods. The rural people should be empowered to make their own decisions regarding their future prospects.

ICT is not related with only item like the internet, computers, or telecommunications but it is a convergence of different electronic tools that facilitate the functions of information processing and communication, including transmission and display. Nowadays most devices like digital camera, mobile telephones, personal digital assistants, slide projectors can be linked for sharing and exchanging information with other. Now all these devices are also categorised as part of ICTs. It is a fact that access to information holds the key for successful development. Improved communications and information access is directly related to socio-economic development of any nation.

II. REVIEW OF LITERATURE

The focus here is on the role and importance of ICTs in rural development. The context of rural development has changed rapidly in recent years (Ashley and Maxwell, 2002). Around three-quarters of the world's poor still live in rural areas. In case of India rural development becomes most important because India is basically agriculture based country and almost 70% of Indians live in rural areas.

Comprehensive training in agriculture, livestock and natural resources through promotion of ICT for rural residents and optimizing their decision making, and above all of these their participation in developing programs seems essential (Naghavi, 2002, p.331).

In 1986, National Informatics Centre introduced IT to facilitate planning, monitoring and exchange of information between various agencies in the area of Rural Development administration.

Development is not simple or straight forward linear process. It is a multi-dimensional exercise that seeks to transform society by addressing the entire complex of interwoven strands, living impulses, which are part of an organic whole". (Haqqani 2003)

Duncombe and Heeks (1999) describe ICTs as an "electronic means of capturing, processing, storing and disseminating information".

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III. OBJECTIVE OF THE STUDY

- To analyse the role and scope of ICTs in rural development.
- To suggest course of actions that should be taken so as to utilise ICTs in better way for rural development.
- To study the ICT and its relevance to rural development.
- To examine the current status of ICT in India.
- To find out the conclusion and a suitable suggestion to a better implementation of ICT in rural areas.

IV. SCOPE OF ICTS IN RURAL DEVELOPMENT:

We can encourage and enhance learning and their skills in rural people if we ensure communication in local languages, so that rural people can understand easily. The scope of ICTs is wide and it has the potential to play a vital role in the rural development as well as society.

V. RESEARCH METHODOLOGY

This research paper is carried out with the help of only secondary data collected from different sources. These online sources are various databases like Science Direct, Google Scholar, Emerald, and SSRN. Some information is also added from Internet search engine Google, and website like Ministry of rural development of Government of India and department of IT.

VI. ROLE OF ICT IN RURAL DEVELOPMENT

ICT Play a vital role in rural development. Developments in Information and Communication technologies have introduced large number of opportunities in rural areas. ICTs have the potential to facilitate knowledge sharing and information can be easily exchanged by ICTs for rural development. This information could be readily available and used by the policy makers who develop policies for rural development.

6.1 Rural Cordless Telephone (RCT)

This is the Simple and inexpensive equipment that can be put to use in some areas where the villages are very much dispersed and the territory is difficult. One Cordless telephone in each village will be sufficient and an appropriate number of trans-receivers should be provided at the base station (the telephone exchange).

6.2 Line Sharing System (LSS)

It is a metallic pair passing through a number of villages can be used on "line sharing" basis, providing Tele-connections to every village. A number of ICT technologies are primarily designed to provide low cost digital connectivity, easily accessible portable devices, and simple user interface very much suited for rural applications. Some of such technologies are discussed here: ICTs help in providing training and education to rural people regarding latest development and technologies in agriculture. All this develop capacity for decision making in rural people. Rural people are expected to take decision and responsibility of various services, like how to take financial help for their crops from government. ICTs have the potential to facilitate knowledge sharing and information exchange. ICTs offer huge information storage capacity, increases in processing power and speed, with dramatic reductions in costs. ICTs can facilitate the improvement of existing information management processes by improving ease of access, transparency, accountability, efficiency, speed of delivery and providing new information sharing opportunities through affordability, availability and ease of use.

VII. APPLICATIONS OF ICT IN RURAL SECTORS:

7.1 E-Governance

Improved governance by using ICT can have direct impact in reducing poverty and improving the environment. The Information and Communication Technologies (ICT) are being increasingly used by the governments to deliver its services at the

locations convenient to the citizens. The rural ICT applications attempt to offer the services of central agencies (like district administration, cooperative union, and state and central government departments) to the citizens at their village door steps.

7.2 Lokvani Project (Uttar Pradesh)

Lokvani is a public-private partnership project at Sitapur district in Uttar Pradesh which was initiated in November, 2004. The objective of this project is to provide a single window, self-sustainable, e-Governance solution with regard to handling of grievances, land record maintenance and providing a mixture of essential services

7.3 Ministry of Health & Family Welfare (MoH&FW)

MoH&FW has implemented Integrated Disease Surveillance Programmed network which connect all district hospitals with medical colleges of the state to facilitate tele-consultation, Tele-education/ training of health professionals and monitoring disease trends. It has funded few pilot national level Tele-ophthalmology and rural telemedicine projects.

7.4 Tele-Education

Education is a primary right for every citizen of India. By the constitution of India, Article - 45 says education must be provided to children up to 14 years. Even after 64 years of independence some States in India are still struggling to achieve quality education. There are more than one million rural schools among 6,38,000 villages in India. Schools in rural areas are promoted to raise the level of education and literacy in rural India

VIII. GOVERNMENT INITIATIVE FOR RURAL DEVELOPMENT THROUGH ICT

8.1 Radio for Rural Development

Popularly known as "Radio Farm Forum" was one of the earliest efforts in the use of radio for rural development. The experiment was carried out from February to April 1956 in five districts of Maharashtra State by All India Radio (AIR). Rural listener groups were organized, who would listen to radio broadcasts twice a week at 6.30 p.m. for half an hour. The summative impact evaluation indicated positive outcome of radio rural forum. Impressive knowledge gains as a result of radio listening were reported across illiterates and literates, agriculturists and non-agriculturists, village leaders and others.

8.2 Community Radio Initiative

In post media liberalization phase, Government of India announced the policy for community radio Broadcasting. "Community radio is expected to focus on issues relating to education, health, environment, agriculture, rural and community

8.3 Community Television

Since the inception of INSAT satellite television system, Doordarshan achieved a kind of world record in setting up over 1000 low powered television transmission stations in the country. Each station in theory was supposed to telecast local television program for rural development. A large number of television professional were trained for this purpose. Doordarshan has been planning to introduce local television for rural poor and farmers to achieve the goals of rural Development

8.4 Gyan Sanchar

It is designed to bring affordable and cost effective services to rural India. It is a partnership project, between Bharat Sanchar Nigam Limited (BSNL), Government of Madhya Pradesh (GoMP) India and a Canadian business team comprising IBM Business Consulting Services and Sasktel International. The objective of this project is to develop a model for sustainable expansion of telecommunication services and ICT applications in rural India.

8.5 Rural e-Seva

It was initiated by Andhra Pradesh Government to deliver e-governance facility. The centers are designed with the view to provide better governance facilities to the people of the Rural India. It is related to payment of electricity bills, telephone bills and local governmental bills to provide the benefits at their doorsteps.

IX. ICT EMPOWERING RURAL LIFE

The most important role of ICT in empowerment is providing the accurate and timely information with appropriate quality and cost. In addition to this rural communities benefit from better access to credit and rural banking facilities. Recent mobile banking initiatives help in reduction of costs and stimulate local trade. In India almost 70 % poor people live in rural areas, their livelihoods are directly or indirectly based on agriculture. ICTs can deliver useful information to farmers about agriculture like crop care and animal husbandry, fertilizer and feedstock inputs, pest control, seed sourcing and market prices. Education and literacy rate is one of the important factors of development in rural areas. Appropriate use of ICTs in class room teaching improves overall delivery of education. Emphasis should be given to use the ICTs enabled techniques in rural schools also. Teachers can have access to more educational programs.

It is a basic necessity for economic development that there should be connectivity with outside world and ICTs play a vital role in connecting the rural community to outside world for exchange of information. Proper use of ICTs can help in bringing rural community closer to global economic systems. Information and communications technologies (ICTs) can play a critical role in improving health care for individuals and communities. By providing new and more efficient ways of accessing, communicating, and storing information, ICTs can help bridge the information divides that have emerged in the health sector in developing countries—between health professionals and the communities they serve and between the producers of health research

and the practitioners who need it. Through the development of databases and other applications, ICTs also provide the capacity to improve health system efficiencies and prevent medical errors.

X. ICT IN CAPACITY BUILDING OF RURAL

Communities and farmers use ICTS for strengthening their capacities and their representation becomes better while negotiating input and output prices, land claims, infrastructure projects etc. ICT helps in improving interaction of rural communities with other stakeholders and outside world.

XI. CONCLUSION

In the conclusion of my study, Technological advances in ICTs have reduced the cost and increased the quantity and speed of information transfer dramatically. Of course ICT in rural areas is the solution for gradual elimination of traditional barriers for development by increasing access to information, expanding their markets, increasing job opportunities and better access to the governmental services. India is growing economy in the world and to maintaining its development in different sector including rural development. Urban development is as fast as compare to rural development. Government is running several policies and programmes but rural development is still slow. As per observation it is found that awareness and information about the facilities and schemes is main cause of backwardness of rural areas. India needs to empower its rural people in accessing and using the IT so as to align them with the fast moving economy of the country. Rural people are most important asset of India as the Indian economy is an agrarian one, but rural people are beyond from benefits.

This paper highlighted some ICT technologies specially designed for application in rural sector considering cost, connectivity and knowledge base of potential end user. This paper also discussed the various applications of ICT in the fields concerning rural sector such as e-governance, telemedicine, agriculture, risk management, women empowerment. A survey of various initiatives taken by Indian government at centre and state level to promote the use of ICT for socio-economic development in rural areas was also done for measuring the effectiveness of the schemes.

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