NEW ERA AGRICULTURE MAGAZINE

Pluralistic Role of Information and Communication Technology (ICT) in Extension in India

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Introduction:

ICT (Information and Communications Technology) ICT is one of the pillars of "e-agriculture" and acted as a fulcrum for extension activity. ICT is often used as an extended synonym for information technology (IT) but is usually a more general term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), intelligent building management systems and audio- visual systems in modern information technology. ICT in simple terms can be defined as the basket of technologies, which assist or support in storage, processing of Data/Information, or in dissemination/communication of Data/Information, or both. Information and Communication Technology (ICT) is an umbrella term that includes computer hardware and software, digital broadcast and telecommunications technologies as well as digital information repositories online or offline (Selwyn, 2009), and includes contemporary social networking aspects, read/ read/write interfaces on the web besides file sharing systems online. It represents a broad and continually evolving range of elements that further includes the television (TV), radio, mobile phones and the policies and laws that govern the widespread use of these media and devices. The term is often used here in its plural sense (ICTs) to mean a range of technologies instead of a single technology.

ICTs in the Context of Extension

From the perspective of agricultural knowledge and information systems (AKIs), ICTs can be seen as useful in improving linkages between the research and the extension sub systems. The experience of rural telecenters in the developing world shows that ICT can help in enabling rural development workers to gather, store, retrieve, adapt, localise and disseminate a broad range of information needed by rural families (Davison et al 2005). The ICTs in extension can lead to the emergence of knowledge workers that will result in the realization of a bottomup, demand driven paradigm for technology generation, assessment, refinement and transfer.

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The Need of ICT in Agriculture

Extension agent to farmer ratio in India is estimated at 1:2,000. Public agricultural extension services were criticized for being technically weak, providing insufficient coverage of and contacts with farmers. Less than one-third of the technologies generated by Agricultural Universities and ICAR institutes in India were transferred to the farmer‘s field due to the lack of an appropriate extension model (Katyal, 2001). Direct contact by agricultural experts with all the needed farmer clients cannot be established practically with the available technical manpower and budget in India. Hence the research challenge is to identify an effective means to provide quality and timely technical advice to all the needed farmers using the available experts and their time efficiently. Developments in ICTs offer ample opportunities to accomplish this challenge. Given the complex nature of agriculture and the challenges being faced, the use of multidisciplinary expertise is more appropriate to address agricultural information needs to empower farming community. Project rationale is that technology transfer efforts in agriculture sector must harness the huge potentials of ICT to provide better linkage between agricultural experts and farmers for timely and appropriate technical advice to enhance agricultural productivity and improve living standards of farmers in the region.

Role of ICT in Agriculture

- ICT has a tremendous potential to improve the reach, credibility and impact of Agricultural Extension, if used appropriately.
- ICT expands the role of agricultural extension from transfer of technology to ―Agricultural Information sharing and Building Agricultural Knowledge Networks.
- The type of ICT application needed is decided once we understand the context of agricultural extension *i.e.*, to provide total information and advisory support to farmers on all aspects of farming, marketing and management.

The areas in which ICT can be deployed are

- ✓ On-line services for information on each crop.
- ✓ On line interaction facility to interact with nearest KVK, SAU, ICAR research station, agriculture and allied departments etc. for advice on current schemes, projects, varieties etc.
- ✓ Information on all sources of Agricultural credit and crop insurance and their terms and conditions.
- ✓ Information sharing mechanisms among the farmers, extension workers and Scientists of every district, block and mandal.

- ✓ Question – Answer service (on the lines of kisan call centre) for each district in the country.
- ✓ On-line information on market prices of all commodities at mandal, block, district, state and major national market level.
- ✓ On-line monitoring and information sharing on all Agricultural development projects in the country.
- ✓ On-line sharing of District Agriculture development plans (example- strategic research and tension plans (SREP‘s) of different ATMA districts.
- ✓ On line information on Market prices of all commodities at mandal, block, district, state and major national market level.
- ✓ Market intelligence on major crops.
- ✓ On-line weather forecasting and its impact on major crops, on weekly basis,, including early warning system and on line service on land records.
- ✓ E-commerce for direct linkages between local producers, traders, retailers and farmers.
- ✓ Information on availability and rates of agricultural inputs – seeds, fertilizers, pesticides, machinery etc.
- ✓ Information on all Government and Non-Government Organizations working directly or indirectly for the agricultural sector.

Problems of ICT in India

There are several success stories to the credit of this information revolution initiative in rural areas, but it still lacks the 100% efficacy in implementation and its prime objective of bettering rural lives. Following are the major problem of ICT in agriculture in India:

- ❖ Many times the information provides through the various media is not locations specifics, therefore, farmers feel trouble to accept it.
- ❖ Majority of our farmers are illiterate therefore they are unaware about the latest information and communication systems.
- ❖ Many times messages are complex and untimely therefore farmers could not accept it.
- ❖ Poor updating of information & communication technologies.
- ❖ Slack broadband or wireless connections in internet.
- ❖ Low level of intrusion of telephone lines in rural areas leading to low modem availability.
- ❖ Radio and television though have a deep approach in rural areas, but the service providers have a limited and wanting coverage of issues.
- ❖ The economic Purchasing Power Parity (PPP) of rural people is low as compared to urban people.

- Low motivational parameters among the rural people to acquire the new and advanced information.
- Inadequate and improper training to the extension machinery especially the staff which aids the functioning of ICTs.

Conclusions

Agriculture Knowledge & information systems have to be implemented on priority for rural empowerment and improved livelihoods as Economic growth and industrial growth of India are dependent on productivity in agriculture and allied sectors. Ministry of Agriculture is implementing various schemes for mainstreaming ICT in Agriculture to improve the Agricultural Productivity with emphasis on improving the service delivery at the grass-root level. Though this ICT enabled Extension has made giant strides in the rural development sector but there still lacks the perfect efficiency in delivering what it is meant to deliver or cater to the rural masses. So, there is still great scope to push its mileage to the uppermost limit.

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