ICT AND AGRICULTURAL EXTENSION FOR TRANSFER OF TECHNOLOGY

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ABSTRACT

The research institutions and universities being donor of research technologies/practices need to have close linkage with industries requiring manpower and farmers requiring technology of ‘know-how’ and ‘do-how’ in order to boost agricultural production and thereby increase their income and level of living. In the present scientific era what is needed is the technology, which is profitable, demonstrable, compatible and its dissemination should be quick. Secondly, the present extension system does not have inherent marketing element, which in fact, is closely associated with the development of agriculture. Information and Communication Technology provides information about any event taking place anywhere in the world, at any time, available to any person anywhere in the world at any time. The Internet and other forms of computer networking can be of much use for exchange of market and other kinds of information with the farmers. The website need to be up-dated periodically in accordance with changed technologies/practices. Besides Internet the agriculture extension system should also be geared to develop CD-ROMs containing useful information package in an interesting and interacting format. In this context, the role of ICT becomes highly essential in order to improve the quality of management. Therefore, the recent advances in ICT can be used effectively in extension education for transfer to technologies by using i. Dial Access; ii. Television; iii. Video; iv. Interactive video, v. Tele-Conferencing; vi. E-mail; vii. Computer; viii. Local Area and Wide Area network (LAN and WAN); ix. C.D.ROM and x. Digital Video Interactive etc. The aforesaid methods, of course are potential to save time, money and energy by eliminating the travel between the sites. In this direction CCS Haryana Agricultural University is creating landmarks by using all technologies of ICT viz; Toll free numbers, Printed publications, Community Radio Station, etc. to increase/improve livelihood and wellbeing of farmers through its Krishi Vigyan Kendra established at all district level Headquarters.

Keyword: ICT, Agricultural Extension, TOT, CCSHAU, Hisar, KVK, Sirsa.

1. INTRODUCTION

There has been spectacular growth in agricultural production which is closely linked with information technology. The role and philosophy of million of small, marginal and large farmers should not be ignored rather need safeguarding. This can better be achieved by empowering the farmers with latest technical “know-how” and “do-how” that fasten sustainable agriculture. Moreover, the present scenario with regard to interest and philosophy between the research institutions, universities, industries and farmers is not encouraging. Relationship in terms of full fledged partnership between these institutions has not yet been established. In other words the research institutions and universities being donor of research technologies/practices need to have close linkage with industries requiring manpower and farmers requiring technology of ‘know-how’ and ‘do-how’ in order to boost agricultural production and thereby increase their income and level of living. No doubt, a trained team of extension specialists all over the country is striving hard to disseminate the available technologies to the farmers but this present extension system consumes more time and money to cover large population of farming community spread all over the country. The farmers also need quick and latest information with regard to marketing trend of different agricultural commodities, which is difficult to pass on through the existing manpower in present extension system because of several inherent limitations/weaknesses. In this context, the role of ICT is very crucial. There is need to have research park innovation centres, information kiosks, computer networking etc. at universities/research institutions and extension workers headquarters as these facilities can dramatically change the course of agriculture in the country.

Information and Communication Technology (ICT) has, in fact, changed the paradigm used in everyday life. Information and Communication Technology provides information about any event-taking place anywhere in the world, at any time, available to any person anywhere in the world at any time. The Internet and other forms of computer networking can be of much use for exchange of market and other kinds of information with the farmers. Such a website should contain each and every information relevant to cultivation of crops, rearing of animals and home economics. Besides Internet the agriculture extension system should also be geared to develop CD-ROMs containing useful information package in an interesting and interacting format. Extension education aims at bringing about changes in attitude, knowledge and skills of farmers, homemakers, etc. It is clear that extension education is mainly concerned with educating clientele not
in letters, alphabets, grammar or language but in the techniques of raising better crops, better animals, better fruit plants, rearing children scientifically taking care of nutrition of family etc.

2. DISCUSSIONS

The increasing concern over the efficiency and effectiveness of extension services, coupled with reduced funding and inadequate staff has created pressure on extension managers to explore alternative methods and techniques of managing people and services with the available resources. In this context, the role of ICT becomes highly essential in order to improve the quality of management. In order to enthuse and motivate farmers/farm women to accept and adopt recommended technologies, new combination of extension methods is essential. Therefore, the recent advances in ICT described as under can be used effectively in extension education for transfer to technologies:

1. **Dial Access**: It is audio technology, which uses in the telephone network. The clientele can access audio cassettes, information relevant to their profession round the clock.

2. **Television**: Educational television is used for education of community of villages having assessed to television; therefore, it can be very effective medium of instructions. Television of course, can inform, entertain and educate on variety of subjects both of the farms and the home.

3. **Video**: It can be successful medium for use in education and training. It is useful for complex practices. Video films can be made in real life situations incorporating dialogue with narration, background music and sound effects.

4. **Interactive video**: This technology combines attribute of sounds, motion colour, audio and tailored information via branching presentation. This is also useful because it allows a viewer to participate in a simulated conversation on a TV screen. It can point to point or point to multi point operation, however, the later configuration is more effective than the former. In a two way configuration, different persons can hear and see each other whereas in one way configuration, the information is transmitted to one location to a number of geographically scattered sites. Hence, the possibility of feed-back is limited.

5. **Tele-Conferencing**: It is new forms of video based communication via telephone lines or satellite broadcast. It is suitable for face-to-face meeting. It is a good medium for subject matter specialist to discuss with various farmers simultaneously or the farmers themselves can conference with other farmers to share experiences and find solution to their problems.

6. **E-mail**: It is non-interactive communication of text, data or voice measures between a sender and receiver by using tele-communication link. E-mail messages are from machine to machine.

7. **Computer**: Computer can become an integral part of information dissemination system. The relevant and up-dated information can be fed to the computer and as a result it can provide answers to the problems raised by the farmers. As and when need arises, the already information fed in the computer can be up-dated and disseminated to the extension agents. Projection systems can be directly connected to such computers for effective display in a large gathering.

8. **Local Area and Wide Area network (LAN and WAN)**: LANs confine to same building whereas WAN span across the globe. Internet is a glaring example for WAN.

9. **C.D.ROM**: (Compound Disc Read only Memory): It is a memory device used to store information of permanent nature. It is useful, efficient and economical medium for storing and publishing large amount of information.

10. **Digital Video Interactive**: It combines video and CD-ROM into one medium.

The aforesaid methods, of course are potential to save time, money and energy by eliminating the travel between the sites. These methods also provide effective learning experiences that enhance user’s morale and thereby increase the organizational productivity. These also offer an interactive learning as in any-personal transaction. Extension worker with the use of these methods can reach a large number of farmers/farm women with the same or less effort, disseminate information quickly and conveniently, reduce travel cost etc. Moreover, these help extension functionaries refreshing and up-dating their own knowledge as well as use them effectively to transfer technology to the farmers/farm women either singly or in combination. These methods, of course, have several advantages but do have dis-advantages like; high establishment cost, deficiency of technical and operational expertise to maintain the equipment, lack of participants' familiarity with the equipments, impersonal in nature i.e. informal one-to-one communication is not possible, greater participant preparation and time consuming. Realizing the potential of these methods, the extension administrator/planners must look forward to integrate these media into extension system.

3. ICT AND AGRICULTURAL EXTENSION

ICT stand for information and communication technology and are defined, for the purpose of this primer, as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.”
These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. In recent years there has been a groundswell of interest in how ICT can best be harnessed to improve the efficiency and effectiveness of agricultural extension services at all levels and both formal and non-formal settings.

In this direction CCS Haryana Agricultural University is creating landmarks by using all technologies of ICT viz; Toll free numbers, Printed publications, Community Radio Station, etc to increase/improve livelihood and wellbeing of farmers through its Krishi Vigyan Kendra established at all district level Headquarters.