



Role of Extension Education in Transfer and Adoption of Agricultural Technologies

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The technology transfers" is actually a structural process of learning. The key components of a transfer can be identified as knowledge, derives from real world experience together with human expertise capable of transforming that knowledge into action. Technology transfers include a range of formal and informal cooperation between technology developer and technology seekers. In addition, technology transfers involve the transfer of knowledge and technical-knowhow as well as physical devices and equipment. The term "agricultural technology transfer" is used to describe the process of formally transferring new agricultural discoveries, improved practices or innovations that may result from research institutions into the agricultural sector. Agricultural extension is the process of carrying the technology of scientific agriculture to the farmers in order to enable the farmers to utilize the knowledge and a better economy. Agricultural extension services seek to impart the necessary skills to the farmers for undertaking improved agricultural operations, to make available to them timely information, improved practices in an easily understandable form suited to their level of literacy and awareness and to create in them a favorable attitude for innovation and change.

The process of transferring and adoption agricultural technology

Agricultural extension is aimed to transfer of agricultural technology and for persuading farmers to adopt and use these technology on their farms, because farmers need those new and modern technology to increase agricultural production in various types of agricultural crops and the quantities and qualities of consumer goods on the market These agricultural innovations and new agricultural technologies must be good and superior to the old agricultural techniques used by farmers in order to be adopted . Process of agricultural technology transfer is done through two basic stages. The first one is the transfer and dissemination of agricultural technology to farmers and the second one is to convince farmers to adopt these technologies on their farms The process of transfer of agricultural technologies and of persuading farmers to apply them on farms needs to be done by specialists in agricultural extension who have practical experience in the dissemination of agricultural technologies and know how to deal with farmers.

This is done through training courses in various areas of agricultural extension and communication. The process can be defined as a transfer of technologies integrating and interconnecting a series of subprocesses, which include

- A transfer or delivery of the new technology from the source to the target area,

- A process of localization or harmonization of technology, which is intended to make the technical fit with the environmental conditions in the target area and is compatible with the prevailing agricultural systems in the region through a test and confirmatory tests of the technique in the target and promotion of the region,
- Persuading farmers to adopt new technology,
- Enabling the targeted farmers to apply the technology in their farms and giving them the knowledge and skills necessary to do so,
- The provision of technical application requirements,
- A diagnosis and treatment of problems that may arise during the application and dissemination of the new technology; the new technologies do not have the impact on the increase of productivity or producers living in rural areas if is not published between producers and farmers and teach them how to use it.
- Agricultural extension plays an important role in the transfer and dissemination of agricultural technologies among farmers and producers.
- Explains the transfer cycle of agricultural technologies to farmers.
- After the transfer of agricultural technologies (agricultural technology) to farmers, which is based on their needs for those techniques, it becomes necessary to convince them to adopt these new agricultural techniques. It is the responsibility of people working in the agricultural extension to persuade farmers to embrace the new technology and agricultural technology processes.
- The adoption is a mental process which consists of several stages and relates to the farmer's decision to accept or reject a particular technique.
- The adoption process as a mental process through which an individual, when hearing about the new idea for the first time, embraces and makes it a part of his behaviour, and thus the adoption process differs from the technology transfer process as the adoption process occurs within the individual thinking and adopting a special resolution of the individual, and the transfer process or deployment comes before adoption.

The adoption process, according to the results of research and studies conducted in this area, it can be divided into five stages (stage of awareness, stage of interest, stage of evaluation, stage of trial, stage of adoption). The five stages do not always occur in the same image and some of them may not take place such as the stage of experimentation. The stage of assessment going on more than being one of the five stages, in the face of this criticism he has found it best to use more general term (The innovation decision process) and defined it as the mental process by which an individual passes through from the initial idea to know the updated even taken the decision of the adoption or rejection then install or maintain this decision, This process has several components or stages and they are the following:

Stage of Knowledge: At the knowledge stage the farmer will receive information about the new technology because farmers tend to adopt those agricultural technologies that are compatible with their needs for agricultural techniques.

Stage of persuasion: After the farmer gets sufficiently familiar with the new agricultural knowledge, a stage of Persuasion starts. It comprises an analysis and mental evaluation of the available information on the technology. If the results of the analysis are positive, the farmer will first use it on a small scale, and then expand its application. On the other hand, if the results of the mental evaluation are negative, the farmer will reject the new technology.

Stage of decision: Stage of decision: At the decision stage, which means an individual's choice to adopt or reject the new idea or new agricultural technology, if the farmer has found the technique not useful, the farmer will reject the new technology and if the farmer has stated that the new technique is good at raising agricultural production, he will accept the new agricultural technology.

Stage of confirmation: At the stage of confirmation, knowing that the decision is not the end of the adoption process, an individual tries to verify the choice he has made and obtain information whether it was a good decision.

Stage of consequences: According to information obtained by the individual in the previous four stages in the individual phase consequences, he will make the decision whether to adopt the agricultural techniques for good, or reject them.

Not all farmers are equal in the adoption of agricultural technologies. They usually behave differently, and in this respect they are classified according to the way they use new agricultural techniques. Explains the categories of farmer adopters for modern agricultural techniques.

The role of extension worker in agricultural technology transfer

The extension workers' role is to teach the farmers about how to use new technologies. Knowledge and application of extension education principles, the extension workers help a lot in determining the needs constraints, priorities and opportunities for farmers. They also helps in teaching farmers the value of improved agriculture, recommending suitable crops, encouraging adopting of appropriate technologies, and evaluating farmers' reaction and attitudes toward development projects. Extension workers are also help in encouraging farmers in involvement in project identification, planning, implementation, and evaluation as well as support viable development projects The role of extension workers in agricultural technology transfer

- Extension worker create awareness of innovation, something new or perceived to be unknown before to his clients.
- Persuasion of the usefulness or importance of the new technology.
- Reinforcement of continued use of technology that is created. The interest to continue to practice the new idea that was introduced is sustained through supporting services like input.
- Intermediary between the researchers and farmers. This is done by creating awareness to the farmers, and also taking of farmer's problem to the researchers.
- Diagnose problems by telling them the way out.
- Extension workers stabilize change and attempts to prevent discontinuance, individuals tend to seek confirming information for the decision they may make.
- Extension workers can effectively stabilize new behaviour by directing, and reinforcing messages to those clients who have adopted innovation.
- Extension workers act as catalyst to speed up the rate at which his clients accept changes or innovation.
- Extension worker is a solution provider that is he or she has an idea about effective solution to farmers problems.
- Extension worker play a role of resource linker that is linking them with necessary a agricultural inputs, to locate source of finance for their farms.
- Strengthening and supporting farmer organization