



Extension Education: Importance in Agriculture

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ABSTRACT

For efficient and effective extension delivery in all aspects of successful agriculture and rural development to attain food security, poverty reduction, rural empowerment and environment management a well organized extension system is eagerly required. Extension education approaches generally have been visualized from isolated perspectives ranging from philosophical foundations to practical applications. This paper provides a broad analytical framework to describe and examine different scopes, elements, knowledge fields, and change areas relevant to extension education for agricultural and rural development. It Provide efficient and effective need-based extension services to all categories of farmers, to enable them to optimize their use of resources, in order to promote sustainable agricultural and socioeconomic development. The methodology used is literature reviews from books and internet and some virtual portal of Global Forum for Rural Advisory Services. The objective of the paper is to analyze critically the policy intervention in terms of its influence towards delivering the goal of extension. The paper conclude with a recommendation that agricultural extension should be taken as a key in assisting their clients to be capacitated in dealing with issues of sustainability and food security. It also encourages country to develop agricultural extension policies that guide the implementation of accountable programmes to their clients.

KEYWORDS: - Extension, Pluralism, Informal Education, Sustainable Agricultural Development.

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INTRODUCTION

By a way of definition, various scholars, professionals and practitioners have put forward many definitions regarding the concept of Extension Education. Below are some collections of various definitions of Extension Education:

According to J.P. Leagans [5], extension education is an applied science consisting of content derived from research, accumulated field experiences and relevant principles drawn from the behavioural science synthesized with useful technology into a body of philosophy, principles, content and methods focused on the problems of out of school education for adults and youth. Extension education is the process of teaching rural people how to live better by learning ways that improve their farm, home and community institutions.

According to D. Ensminger [4], extension education is a programme and a process of helping village people to help themselves, increase their production and to raise their general standard of living. Whereas, H. W. Butt [1] define extension education as the increased dissemination of useful knowledge for improving rural life.

According to B. Rambhai [6] extension education is a two-way channel; it brings scientific information to the village people, and also takes the problems of the village people to the scientific institution for solution. It is a continuous educational process, in which both learner and teacher contribute and receive.

AGRICULTURAL EXTENSION

According to Y. C. Sanoria [8], agricultural extension is a professional method of non-formal education aimed at inducing behavioral changes in the farmers for increasing their income through increased production and productivity by establishing firm linkages with research for solving farmer's problems ensuring adequate and timely supply of inputs and using proven methods of communication for speeding of the process of diffusion and adoption of innovations."

In lay man language, Agricultural extension is defined as branch of science in which information related to agriculture viz machinery, new cultivation practices, new variety can be disseminate to the farmers at their own field through an extension personal.

Agricultural Extension Education can also be defined as “an out of school educational programme or activity which brings about a desirable change in behaviour (knowledge, attitude, practice and skills-KAPS) of rural people to help improve their social, economic and psychological status”.

TYPES OF EDUCATION

Formal education: Formal education is generally imported in well organized institutions like school, college other research institutions or specially organized school. These institutions have definite procedure of work and are generally governed by various rules and regulations.

Informal education

In this type of education there is no definite course of procedure no rules and regulations. e.g. education given by parent, extension education.

Differences between Formal Education and Extension Education [7]

Extension work is considered as an aspect of adult education which differs from formal or classroom education in that it prepares its clientele to tackle the problems of today and helps them to live here and now. Formal education on the other hand, prepares its students for life after school years. It may, however, be mentioned here that when extension education is put into action for educating the rural people, it does not remain formal education. In that sense, there are several differences between the two. Some of these differences are:

Formal Education	Extension Education
1. The teacher starts with theory and works up to practical.	1. The teacher (extension worker) starts with practical and may take up theory later on.
2. Students study subjects	2. Farmers study problems.
3. Students must adapt themselves to the fixed curriculum offered	3. It has no fixed curriculum or course of study and the farmers help to formulate the curriculum
4. Authority rests with the teacher.	4. Authority rests with the farmers.
5. Class attendance is compulsory.	5. Participation is voluntary.
6. Teacher instructs the students.	6. Teacher teaches and also learns from the farmers.
7. Teaching is only through instructors.	7. Teaching is also through local leaders.
8. Teaching is mainly vertical	8. Teaching is mainly horizontal.
9. The teacher has more or less homogeneous audience.	9. The teacher has a large and heterogeneous audience.
10. It is rigid.	10. It is flexible.
11. It has all pre-planned and pre-decided programmes	11. It has freedom to develop programmes locally and they are based on the needs and expressed desires of the people.
12. It is more theoretical.	12. It is more practical and intended for immediate application in the solution of problems.

Why Extension?

Society they say is dynamic, in reality it is seen that what was applicable in the past may be obsolete at present and likewise it can be said that techniques and methods prevalent at present may not be applied in future. The nature of problem is changing day by day, therefore, in order to scientifically tackle new problems, it is necessary that there should be such an institution, which should act as a bridge between scientists and farmers to ensure a continue transmission of technology or new techniques and method to the farmers and on the other hand address the problems of farmers to the scientists.

Extension system and Extension Personnel

Such an institution, which mediates between farmers and scientists was established and is called “Extension system”. The people working in this institution are called “Extension personnel”

Why Study Extension

It is more important to lay emphasis on “How to teach” instead of on “What to teach” so that the people can be encouraged to adopt new research techniques easily. In other words, if a person is very knowledgeable of various methods and techniques but does not know how to explain them or express them, then his knowledge has no meaning. Therefore, the power to express knowledge and viewpoint also plays a crucial role. Extension Personnel should not only be aware of objectives the programmes but

should also be aware of prevalent conditions, problems, requirements and circumstances. After analyzing, the situation then extension personnel should give information about scientific techniques, to their clients according to their needs and requirements. Therefore, the study of extension education is necessary for extension personnel, so that they can encourage the adoption of new techniques.

Importance of Extension Education in Agriculture:

1. Extension uses democratic methods in educating the farmers.
2. Extension helps in adoption of innovations.
3. Extension helps in studying and solving the rural problems.
4. Extension increases farm yields and improve the standard of living of farmers
5. Extension makes good communities better and progressive.
6. Extension contributes to national development programmes

Scope of Extension Education in Agriculture:

It includes all activities of rural development. So extension programmes should be dynamic and flexible. The areas indicating scope of Extension are listed below:

1. Increasing efficiency in agricultural production.
2. Increasing efficiency in marketing, distribution and utilization of agricultural inputs and outputs
3. Conservation, development and use of natural resources.
4. Proper farm and home management
5. Better family living.
6. Youth development.
7. Leadership development.
8. Community and rural development.
9. Improving public affairs for all round development.

Objectives and Principles of Extension

Extension education has now developed as a full-fledged discipline, having its own philosophy, objectives, principles, methods and techniques which must be understood by every extension worker and others connected with the rural development. It might be mentioned here that extension education, its principles, methods and techniques are applicable not only to agriculture but also to veterinary and animal husbandry, dairying, home science, health, family planning, etc (Duvel,1996). Based upon its application and use, various nomenclatures have been given to it, such as agricultural extension, veterinary and animal husbandry extension, dairy extension, home science extension, public health extension and family planning extension.

Objectives of Extension Education (Ray, 2012)

The objectives of extension education are the expressions of the ends towards which our efforts are directed. In other words, an objective means a direction of movement. Before starting any programme, its objectives must be clearly stated, so that one knows where to go and what is to be achieved. The fundamental objective of extension education is the development of the people.

Extension is concerned with three basic tasks:

1. The **dissemination of useful and practical** information relating to **agriculture** and home economics;
2. **Practical application of such knowledge** to help farmers/farm families and rural people analyse their problems. These are carried out in an informal atmosphere, with adults as main clientele and
3. Assisting farmers/farm families and rural people in using the technical knowledge gained to better solve their own problems. Thus helping people to in order to help themselves.

Agricultural Extension in India is primarily concerned with the following main objectives:

1. The dissemination of useful, newly developed technology for the betterment and practical information relating to agriculture to enable farmers farm more efficiently to increase incomes.
2. The practical application of useful knowledge to farm and home
3. Encourage farmers to grow their own food, eat well and live well
4. Help rural, people appreciate opportunities, beauties, and privileges of rural life and the world around them
5. Promote better social, cultural recreational, intellectual and spiritual life among rural people
6. Develop citizens proud of their occupation, independent in thinking constructive in outlook, capable, efficient self-reliant and patriotic.
7. To improve all aspects of the life of the rural people within the framework of the nation's socio-economic **policies**.

Principles of extension education: The extension work is based upon some working principles and the knowledge of these principles is necessary for an extension worker (Ray G L 2012). Some of these principles, as related to agricultural extension, are mentioned below.

1. Principle of interest and need: Extension work must be based on the needs and interests of the people. These needs and interests differ from individual to individual, from village to village, from block to block, and from district to district and, therefore, there cannot be one programme for all people.

2. Principle of cultural difference: Extension work is based on the cultural background of the people with whom the work is done. Improvement can only begin from the level of the people where they are. This means that the extension worker has to know the level of the knowledge and the skills of the people, methods and tools used by them, their customs, traditions, beliefs, values etc.

3. Principle of participation: Extension helps people to help themselves. Good extension work is directed towards assisting rural families to work out their own problems rather than giving them ready-made solutions. Actual participation and experience of people in these programmes creates self-confidence in them and also they learn more by doing.

4. Principle of adaptability: People differ from each other, one group differs from another group and conditions also differ from place to place. An extension programme should be flexible, so that necessary changes can be made whenever needed, to meet the varying conditions.

5. The grass roots principle of organization: A group of rural people in local community should show ownership of extension work. The programme should fit in with the local conditions. The aim of organizing the local group is to demonstrate the value of the new practices or programmes so that more and more people would participate.

6. The leadership principle: Extension work is based on the full utilisation of local leadership. The selection and training of local leaders to enable them to help carry out extension work is essential to the success of the programme. People have more faith in local leaders and they should be used to put across a new idea so as to gain acceptance with the least resistance.

7. The whole-family principle: Extension work will have a better chance of success if the extension workers have a whole-family approach instead of piecemeal approach or separate and unintegrated approach. Extension work is, therefore, for the whole family, i.e. for male, female and the youth.

8. Principle of co-operation: Extension is a co-operative venture. It is a joint democratic enterprise in which rural people co-operate with their village, block and district officials to pursue a common cause.

9. Principle of satisfaction: The end-product of the effort of extension teaching is the satisfaction that comes to the farmer, his wife or youngsters as the result of solving a problem, meeting a need, acquiring a new skill or some other changes in behaviour. Satisfaction is the key to success in extension work. "A satisfied customer is the best advisements".

10. The evaluation principle: Extension is based upon the methods of science and it needs constant evaluation. The effectiveness of the work is measured in terms of the changes brought about in the knowledge, skill, attitude and adoption behaviour of the people but not merely in terms of achievement of physical targets.

What is Agricultural Extension

Agriculture is the mainstay of Indian economy. It sustains over 70% of the populations contributes 35.6% to gross national products and adds 39% as it's share towards exports. The growth in population and migration of the people to the city has led to an increasing demand for agricultural products. Agricultural extension efforts in India have made significant strides towards development of the agricultural sector. The report of the national commission on Agriculture (1976) has emphasized the need for massive extension efforts to modernize the outlook of the farmers and to make them more enterprising and willing to adapt readily to innovations so that agricultural production could be increased. Agriculture extension is favorite whipping boy in the agricultural system. It is an applied behavioural science, the knowledge of which is applied to bring farmers or people through various strategies and programme of change by applying the latest scientific and technological innovations. To summarize, agriculture extension viewed as an educational programme to be undertaken by public agencies to activate the process of transferring knowledge, science and technology from laboratories to people or farmer and to help them in farm planning, decision making, record keeping, use of inputs, storage, processing and marketing, ensure supplies and services, increase their production, develop people and their leaders, improve their occupation, family, and community life. Agricultural extension is known as the application of scientific research and new knowledge to agricultural practices through farmer education. The field of extension now encompasses a wider range of the communication and learning activities organized for rural people by professionals from different disciplines, including agriculture, health and business studies.

Four Paradigms of Agricultural Extension

Any particular system can be described both in terms of both how communication takes place any why it takes place. There are four possible extension paradigm.

1. Technology Transfer

This paradigm was prevalent in colonial times, and reappeared in the 1970's when the Training and Visit system was established across Asia. Technology transfer involves a top -town approach that delivers specific recommendations to farmers about the practices they should adopt.

2. Advisory Work

This paradigm can be seen today where government organizations or private consulting companies responds to farmers enquiries with technical prescriptions. It also takes the form of projects managed by donor agencies and NGOs those participatory approaches to promote pre-determined packages of technology.

3. Human Resource Development

The paradigm dominated the earliest days of extension in Europe and North America. When universities gave training to rural people who were too poor to attend full time course. It continues today in the outreach activities of colleges around the world. Top-town teaching methods are employed, but students are expected to make their own decisions about how to use the knowledge they acquire.

4. Facilitation For Empowerment

This paradigm involves methods such as experimental learning and farmer-to-farmer exchanges. Knowledge is gained through interactive processes and the participants are encouraged to make their own decisions.

Example of Agricultural Extension agencies:

Agricultural Technology Management Agency (A T M A)

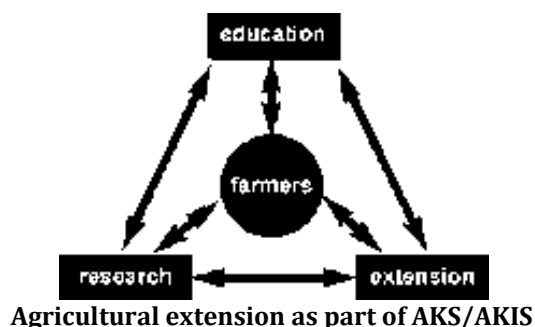
The ATMA at district level would be increasingly responsible for all the technology dissemination activities at the district level. It would have linkage with all the line departments, research organizations, non-governmental organizations and agencies associated with agricultural development in the district (Toness, 2001). Research and Extension units within the project districts such as Zonal Research Stations or substations, KVKs and the key line Departments of Agriculture, Animal Husbandry, Horticulture and Fisheries etc. would become constituent members of ATMA. Each Research Extension (R-E) unit would retain its institutional identity and affiliation but programmes and procedures concerning district-wise R-E activities would be determined by ATMA Governing Board to be implemented by its Management Committee (MC).

Aims and Objectives of ATMA:

1. To identify location specific needs of farming community for farming system based agricultural development
2. To set up priorities for sustainable agricultural development with farming Systems Approach
3. To draw plans for production based system activities to be undertaken by farmers.
4. To execute plans through line departments, training institutions, NGOs, farmers organizations and allied institutions
5. To facilitate the empowerment of farmers/products through assistance for mobilization, organization into associations, cooperatives etc. for their increased participation in planning, marketing, technology dissemination and agro-processing etc.
6. To facilitate market interventions for value addition to farm produce

Agricultural extension: a knowledge system

Agricultural extension operates within a broader knowledge system that includes research and agricultural education. FAO and the World Bank refer to this larger system as AKIS/RD (Agricultural Knowledge and Information Systems for Rural Development). Others describe the three pillars of this system - research, extension and agricultural higher education - as the agricultural knowledge triangle and suggest that since the three pillars involve complementary investments they should be planned and sequenced as a system rather than as separate entities [3]. Linking the triangle's institutions with their common clientèle, namely the farmers, and with each other, also requires systematic planning.



Agricultural information systems for rural development link people and institutions to promote learning and to generate, share and use agriculture-related technology, knowledge and information. In principle, agricultural extension receives relevant information from the agricultural education system and feeds back field observations to this system. Extension is also professionally linked to the agricultural vocational and higher education systems in the sense that these systems also produce the agents who work in extension. The relationship between agricultural extension and agricultural research is even closer, because the knowledge that agricultural extension transfers is usually generated by agricultural research through applied and adaptive agricultural research development. In a strict interpretation, the only purpose of agricultural extension is to disseminate information to raise the production and profitability of the farmers (agricultural production performance).

Agricultural and rural extension: an expanded concept

When agricultural extension is combined with rural extension goals, the extension function ranges even more widely in its purposes. Rural extension, for instance, includes non-agricultural activities such as microenterprise development etc

- **Non-farm rural microenterprise development.**
- **Technical extension.**
- **Marketing extension.**
- **Farmers' associations.**
- **Emerging purposes.**

Alternative extension approaches

- (1) **The general agricultural extension approach.** Success is measured in terms of the rate of take-up of the recommendations, and increases in national production.
- (2) **The commodity specialized approach.** The measure of success is usually the total production of the particular crop.
- (3) **The training and visit approach.** Success is measured in terms of production increases of the particular crops covered by the programme.
- (4) **The agricultural extension participatory approach.** Success is measured by the numbers of farmers actively participating and benefiting, and the continuity of local extension organizations.
- (5) **The project approach.** Short-run change is the measure of success.
- (6) **The farming systems development approach.** Success is measured by the extent to which farming people adopt the technologies developed by the programme and continue using them over time.
- (7) **The cost sharing approach.** Success is measured in terms of farm people's willingness and ability to share some of the cost, either individually or through their local government units.

HISTORY OF AGRICULTURAL EXTENSION EDUCATION IN THE WORLD

The word "*Extension*" was first time used to describe the concept of **taking teaching and learning outside the walls of university in the form of "University Extension" or "Extension of the University"** in Britain in 1840. Many scholars and academics in Europe and elsewhere used the word *Extension* to describe the concept of extending university education to the working masses, who by the virtue of their work could not be on university campus to obtain university education. In his report entitled "*suggestions for the Extension of the university*" in 1850, William Sewell of Britain used the word *Extension* in calling for the need to take teaching and learning outside the boundaries of university campus so as to provide

opportunity for the working population to obtain university education and benefit from knowledge generated in the various universities and other educational institutions of higher learning.

Whereas James Stuart of Trinity College, Cambridge University in 1867-68, used the word *extension* when he was addressing "Women Association and Working Men's Clubs" of North England. Again in 1871, he appealed to the officials of the Cambridge University to establish **Extension centers** under the supervision of university, so that these centres can be used as a platform to deliver lecture to the people. His effort in this field earned him the aculeate "**Father of University Extension**". In a formal way, Cambridge University in 1873, London University in 1876 and Oxford University in 1878 developed Extension system, which worked among people. In 1880, James Stuart work came to be known as "**Extension movement**". According to Webster's dictionary the term "Extension" means "Branch of a university for student who cannot attend the University properly". In other words, the word 'Extension' is used in the context which signifies an out of school system of education."

In the eighth decade of the 19th century, the word Extension was used in the form of Extension education in U.S.A. This was to respond to the problem of rural people migration to urban areas which characterized labour mobility in the latter half of the 19th century. This phenomenon created two major problems in U.S.A.:

(i) The migration of rural people to cities created labour constraint in the rural area and hence, the agricultural sector suffered a setback, and

(ii) The increase of urban population created education, employment and housing related problems.

Therefore, in curtailing this problem, the Philadelphia Committee was established in 1785. The committee recommended the institutionalization of "**Out of school education**" in order to keep rural people in rural areas. Also in 1862 President Roosevelt established a "**county commission**" under the chairmanship of Liverty Hydevelle. Its objectives were:

(i) How to stop migration of rural people to cities?

(ii) How to engage rural people in agricultural and rural development programmes?

The above recommendations were arrived at based on the fact that industrial development is not possible without agricultural development for that matter the rural areas must not be deprived of the needed human resource to help in the agricultural development. The implementation of the above recommendation required institutionalization of out of school educational institution to organize extension education. The passage of Smith Leaver Act (1914) provides the legal framework for the establishment of out of school educational institution to organize and manage the dissemination of knowledge and practical skills to the rural population. The passage of the Act also led to the integration of cooperative Extension service by which out of school education was organized. As a result, rural people were able to bring about developments and progress in farming and housing. This type of education comes to be known as "Agricultural Extension Education".

Summary

Notwithstanding the various viewpoints regarding the definition of extension education there is a growing agreement that extension education can be defined in a broad terms as 'an applied behavioural science, the knowledge of which is applied to bring about desirable changes in the behavioural complex of human beings through out of school educational programmes.

The main task of extension education is the dissemination of practical information to rural people and assist them applied the information in improving their living standards. Extension operates on the principles of needs and interest, cultural difference, cooperation, leadership among others.

Although extension education uses instructional methods and strategies to help influence the behaviour of rural people, it differs from formal education in so many ways. While formal education starts with theory and ends at practicals and extension education start with practicals and may take theory later. Also while formal education is guided by a pre determine curriculum, extension education do not have fixed rigid curriculum its curriculum is farmers problems needs and interest.

Thrust Areas of Agricultural Extension

1. Assessment refinement and demonstration of technology / products.
 2. Training of farmers.
 3. Training of extension personnel areas of technology.
 4. Single window delivery system of technology products, diagnostic service and information through Agricultural Technology Information Centers.
 5. Development of gender-specific technologies.
 6. Creating awareness of improved agricultural technologies among the farmers
- Agricultural Extension aims at improving technology dissemination of farm technologies to the farmers.

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