

FUNDAMENTALS OF AGRICULTURAL EXTENSION AND RURAL DEVELOPMENT



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THE DEPARTMENT OF AGRICULTURAL
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EDITED BY:
SIDIQAT ADERINOYE-ABDULWAHAB, Ph.D. (Reading)

About the Book

The Fundamentals of Agricultural Extension and Rural Development has been carefully crafted to give the basics of agricultural extension and rural development and to align with the latest curricula approved by the National Universities Commission for Agricultural Extension and Rural Development. The authors have conducted an extensive and meticulous analysis of the contents to ensure compliance with the curriculum standards. While the book is an eye-opening experience for students and intending researchers in the field, it is a full introduction and knowledge-building platform to any reader who picks it up. It is reader-friendly and an easy guide into the human angle of agriculture. This is a book that is of great use to learners from their first year in the university up to Master's and PhD levels. The contributors' wealth of knowledge, with the aim of ploughing back into the society, is a credit to the production of the book and a gift to the benefit of young learners.

About the Editor

Sidiqat Aderinoye-Abdulwahab (B. Agriculture, Ilorin; M.Sc. Agricultural Extension, Sokoto; Ph.D. Livelihoods (International Development and Applied Economics), (Reading). She is a Reader and the current head of the Department of Agricultural Extension and Rural Development, University of Ilorin where she has been a lecturer since 2008. Her area of expertise is agricultural extension and rural development with specialisation in rural empowerment, livelihood sustainability, vulnerabilities and coping strategies from climate change impact, and gender issues. She is committed to quality education for students and her passion to enhance staff capacity, undertake cutting edge research, as well as facilitate extension outreach motivated the publication of this instructional material. She is dedicated to proficiently facilitating the learning process and also sees this as a way of giving back to the society that groomed her. She hopes to continue to apply the passion she has for developmental research to infuse her modest knowledge and experience into the global education space.



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4. Innovativeness: If opinion leaders are to be accepted by their peers as competent and trustworthy, they should adopt new ideas before their followers. Hence, they are more innovative than their followers.
5. They conform to system norms: Opinion leaders conform to the societal norm of their system.

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CHAPTER FOUR

APPROACHES IN AGRICULTURAL EXTENSION

DOLAPO, T. A.

What is Agricultural Extension?

Various definitions of agricultural extension have been suggested. It has been described as an informal educational process aimed at helping rural people solve their problems. It also aims to improve the skills of agricultural households, increase production, and generally improve the living standards of agricultural households. The main goal of agricultural extension is to change farmers' perspectives on their difficulties. Therefore, agricultural extension is not only related to material and economic achievements but also to the development of rural households themselves. Therefore, extension officers discuss problems with rural people, helping them have a clearer view of their problems and sharpening their decision-making skills to be able to decide how to fix these problems.

Agricultural extension is a procedure for interaction between rural people and extension workers in a bid to improve their rural livelihoods. This involves helping farmers increase agricultural productivity and at the same time develop the capacity to guide their future development. These descriptions emphasize expansion, and this suggests that agricultural extension is a process that occurs over a period rather than as a single, one-time activity. It is also emphasized as a method of learning from and working with rural people, supporting them, and organizing them to face their problems more successfully.

Agricultural extension demonstrates its expansive nature under four main characteristics:

Knowledge and skills: farmers have indigenous knowledge as a fundamental source of information and knowledge base. Extension provides them with the relevant farming techniques and practices within their environment. For instance, they know the general principles of fertilizer application. In addition, some of the skill and knowledge introduced to farmers may require farmers to be trained on the new expertise. Knowledge and skill transfer to rural households is an important aspect of extension and extension professionals need to be adequately equipped.

Support system of technical advice and information: extension requires its agents to provide guidance and beneficial statistics to rural people and farming households to assist them in their decision-making ability.

Farmers organization: Organizing farmers is as important as all other elements because this helps them to have a voice and be heard and represent their interest. It also enables them to take decisions regarding which technologies will help to improve their production.

Motivation and self-confidence: Extension agents are to work with farmers by creating motivation and self-confidence in them. Extension agents are to support farmers to have the confidence to deal with all risks associated with agriculture.

Agricultural Extension Approaches

Agricultural extension approaches are a style of actions, expressing the philosophy of an extension system which largely determines the course and procedure of the varying branches of that system such as the framework, the organizational modality, content, procedure, techniques, and connection. The approaches give ideas of the possibilities and opportunities that exist for extension planners and policy makers at all levels. Major agricultural extension approaches include:

1. **The general extension approach:** it assumes that information, technologies, skills, and knowledge that can assist rural households in improving their farming practices, production, and income, exist, but they do not put them into practice. The methodology of the approach is government-controlled and centralized. This approach is characterized by being government funded through the Ministry/Department of Agricultural Extension. The importance of technology is determined at the national level, where the selection of innovations to be disseminated to rural farmers are decided. This approach aims to improve the productive output of farmers and their income through the dissemination of improved technology.

Program planning and implementation: government is fully responsible for planning and implementation of the agricultural programmes; its agencies are key determinants of the practices to put forward to the farmers while farmers are not consulted in this approach.

Resources requirements: it usually require high cost of operation, and this is typically borne by the central government.

Implementation Strategy: Standardized techniques resulting from a combination of extension and communication approaches are commonly used in technology transfer under this approach. To achieve a nationwide coverage, field staff are thus assigned all over the nation, based on political subdivision of the country.

Measure of success: the measure of success of a programme under this approach is through the rate of adoption of recommended practices and an increase in the national agricultural production of the country which showcases an underlining aim of this approach which is to increase farmer's production.

2. **Commodity specialized approach:** This extension approach generates fairly centralized extension programmes, with its focus solely on a commodity, crop, or livestock. Extension agents are laden with many functions outside technology transfer. The approach works on several aspects of the commodity, over laden the extension agent with activities on marketing, input supply, research etc. all aimed at increasing the quality, quantity and production of the commodity, e.g. coffee board, cashew board etc. This approach has the basic purpose of working to increase the quality, quantity, and production of that commodity.

Characteristics: the approach is highly specialized; this it achieves by focusing on only one crop.

Program planning and implementation: Commodity organization controls the planning for the purpose of increasing production of a certain commodity. It requires farmers' teamwork to sternly follow the prearranged package of the technology.

Resource Requirements: This approach uses highly trained scientific personnel to deploy the recommended techniques and is expected to produce financial assistance for farmers. This approach entails the training of the workforce, operating credit and marketing schemes, as well as local supervision. Measure of success is through the total Quantity and Quality of a particular crop.

3. **Training and visit approach:** The Training and Visit Approach (T&V) of extension, was propounded by Daniel Benor and was first developed in the early 1970s. It was encouraged during 1975-95 in more than 70 countries by the World Bank. The T & V was distinguished by the transfer of specific agricultural knowledge to target groups who in turn transfer such knowledge to farmers to increase their skills and production. Several studies resulted in the fact that this method had its limitations. For example, in Nigeria, an increase in cost and lack of transportation as well as implementation difficulties were found. The T&V system is a fairly centralized approach, that utilizes vigorous training of extension agents and subject matter specialists along with a strict schedule of programme of visitation to farmers as a key component to achieve its set objectives. This approach relies heavily on a close link between research and extension in getting innovations disseminated to farmers for adoption. Extension agents are basically used for technology transfer and the success of this approach is determined by increase in production of crops and commodity of which innovations or technologies have been transferred to the farmers.

Assumption: This approach has underlining believe that field extension workers are poorly taught, backward and are field cautious, hence they rather stay in their offices than go for farm, home or any other visit with farmers, and that the management and supervision to ensure job accomplishment of the extension workers are not adequate.

Program planning and implementation: It is a centralized system with a top-bottom mode of technology dissemination. The innovations to be transferred, how and when to disseminate are as determined by professionals in the research institute and the government agencies. Resources required by the system such as manpower and research innovation are high, thus cost of execution is high and majorly born by the government or agency propagating the approach.

4. **Agricultural Extension Participatory Approach:** The participatory extension method is also used in some areas, for example: participatory research which overlaps with several traditional social science methods, especially participant observation, focus group discussion, ethnography, and intensive interviews, all of which rely on repetitive interpretation of prevalent knowledge and daily experience that directs scholars to be involved with the people being studied, not disconnected from them.

Participatory research: participatory research (PR) incorporates research designs, methods, and structures that use methodical inquiry in direct association with those affected by an issue being studied for the purpose of action or change. PR engages all arms of stakeholders especially those without the educational background of research but are the beneficiaries of the programme or research. To achieve this, researchers choose research approaches and tools that have the participatory or democratic mode of application. Several tools are available to avail research with a participatory element if the tools allow the involvement and expression of multiple actors or stakeholders. This includes covering a variety of forms of expression: oral communication, written communication, and schematic representation (participatory modelling/mapping, mind map, rich pictures, focus group discussion, cognitive map, etc.). These different modes of expression enable the shift from a passive attitude of learning to an active and creative attitude. Involving stake holders in the process of co-building supports the feeling of involvement and thus the partaking of participants in its implementation.

A participatory approach indicates that the beneficiaries of a programme or research result are involved in designing the innovations meant for them. It is important because it brings into play the development of local and indigenous resources and knowledge whether social, natural, or economic ones. Preference for a participatory approach can be backed from a logical point of view and a democratic ideal. Logical reasoning or its objective builds on enhancing, the experience, intelligence, and uncertainty even where science is concerned. The democratic ideal considers participatory approach as a means to give citizens a voice in decisions concerning their development. Development projects for countries, communities and societies can be greatly improved with the use of a variety of developmental and research methods, approaches and tools emanating and associated with the participatory methodology.

Participatory approaches help in the development of a type of relationship different from other extension approaches with the beneficiaries of a project or programme. Participatory approaches or methodologies used or adopted to various locations or situations in various communities are usually location specific. These numerous methodologies of participatory approaches are developed based on conditions or situations and thus impossible to be used exactly in other communities.

Table 1: Different Stages of Participation:

Stages	Characteristics of each stage
Passive participation	The methodology used under this stage is like the one used in the top-bottom approach, where beneficiaries are only informed about what is to happen or what has already happened without seeking responses or contributions from them.
Participation in information giving	in the people provide information that professionals need to prepare or execute some parts of the programme or project. Such information is gotten using tools like questionnaire survey and the likes. People are not able to give opinions or suggestions about such projects.
Participation by consultation	by This stage involved seeking and listening to people's opinions and suggestions. From such discussions, programme planners can identify problems and solutions. Decision making is not a shredded process under this stage and organizers are not under any compulsion to take the people's views.
Participation for material incentives	for The people are needed to provide resources in exchange for cash or other incentives, such as labour for cash. Many on-farm research projects function under this type of involvement as the farmers provide the land and do not get involved in any other aspect of the experimentation, not even to learn from it.
Functional participation	The beneficiaries form groups in line with predetermined objectives of the project. People participate in line with functions already marked out under the set target or objectives of the project.
Interactive participation	This involves the people being in joint analysis, this occurs in projects with multi-disciplinary perspectives and has the beneficiaries coming in with the local decisions. Making it possible for the people to maintain the structure existent in their communities, which leads to action plans and the formation of new local institutions or the strengthening of existing ones.
Self-mobilization	Beneficiaries act as initiators and drivers of change in their societies. They are at the hem of affairs and are the major planners of such projects. They contact and consult for resources and professional advice needed on the project. Such self-initiated mobilization and collective action may or may not contest existing unbalanced distributions of wealth and power.

(Source: Pretty 1995)

Participatory Action Research

Participatory action research is a qualitative research method in which researchers and participants work together to understand social problems and take action to bring about social change. This is a general term for all research methods that involve stakeholders at every stage of the research process. Participatory action research actively engages all stakeholders (participants, communities, and those interested in the issue under study) in defining the research problem, developing the ask questions, collect data, analyze the data collected, and prepare recommendations. In simpler terms, this research involves people close to the problem (participation) while also working to bring about positive change (action).

The goal of participatory action research is to bring about positive social change by engaging participants and making them more aware of their conditions so they can act and enhance it. Thus, researchers and research subjects learn and acquire new knowledge in a participatory action research study. Participatory action research refers to all qualitative research techniques and methods that involve the direct collaboration of researchers and people affected by the social issues being addressed. Some of the methods used to collect data for participatory action research or any participatory research include observations in the field by participants, field notes, group discussions, diaries and personal diaries, surveys, and questionnaires. Community mapping, route walking, group discussions, gender role analysis, use of drawings, posters, role plays, plays and songs are examples of participatory tools. Participatory action research is best suited for research in fields such as social sciences, education, health, community development, etc. This approach is also ideal for research involving marginalized individuals.

What are the challenges of participatory action research?

- PAR exposes the research to the risk of a variety of meanings of the term as people may have different interpretations of the terminology. It is also interchangeably used with other terms such as participatory research. Critics say it can confuse beginning researchers.
- It is difficulty to ensure that stakeholders (research subjects and community members) remain engaged in the research throughout the project.
- Diversity of opinions and values among community members can make it difficult to reach consensus on which social problems need the most attention and how best to address them.
- It requires the researcher(s) to access and gain a deep understanding of a community of interest. This can be difficult, especially when the researcher comes from a different culture.

Here are some of the most popular qualitative methods:

- **Observation:** You record what you see, hear, or encounter in detailed field notes.
- **Interview:** You can personally ask people questions in live chats.
- **Focus group:** You ask questions with prompts and spark discussions in a group of people. The facilitator uses prompts of the key questions to open discussions that will lead to actionable ideas.
- **Investigation:** involves the distribution of questionnaires.
- **Secondary research:** the collation of data that have already been generated in the form of texts, images, audio, or video recordings, etc.
- **Discussion groups:** a skilled moderator will bring together representative groups of the community and create an atmosphere in which individuals feel comfortable expressing their views openly.
- **Social map of the neighbourhood:** local women and men created a social map of their whole neighbourhood (smaller and larger communities). People can draw on dirt/sand, draw with their fingers or on paper. The map can be used for a variety of purposes, from the type of toilets families own and use, water sources or hygiene-related skills to knowing whether women and men belong to different strata.

5. **Project approach:** This approach focuses efforts on a specific location, over a specific period, often using external resources. Part of its goal is often to show processes, systems, practices, and methods that can be extended and maintained beyond the life of the project. Short-term change is often the measure of success. The projects undertaken must have public consensus and must be necessary and need-focused because the identified projects must meet the immediate needs of the people.

Target: This approach focuses efforts on a specific location, over a specific period, often using external resources;

- Part of its goal is often to demonstrate techniques and methods that can be extended and maintained beyond the life of the project.

Program planning and implementation: Donors often have tight control which is exercised at central administration and management level and often involves significant financial and technical contribution from an international development agency.

Resource requirements: It uses significant external resources over several years to validate the potential of the new technology. The approach targets specific locations over a specific period, and often uses external resources.

Implementation strategy: It offers project allowance for field staff, transportation, equipment, and sometimes accommodation.

Measuring success: Short-term change is often the measure of success.

6. **Approach to agricultural system development:** the main characteristic of this form of agricultural extension is its systematic or comprehensive approach at the regional level. Close links with research are needed and technology adapted to indigenous needs is developed through an iterative process involving natives.
Features: the main characteristic of this form of agricultural extension is its systematic approach at the local level. A farmer returns to the popular mode of farmer's research. The field staff is highly specialized.
Assumption: this approach assumes that relevant technology suited to the needs of farmers and smallholders, is not easily available and must be created locally.
Target: the extension workers (and through them, the farm) should be equipped with the appropriate technology.
Program planning and implementation: Development planning is slow and may be different for each agro-climatic agricultural ecosystem. The control of the programme is shared by local farming families, extension agencies and researchers.
Implementation strategy: adopts a systems approach through the collaboration of research and extension staff. Analyses and field tests are carried out in farmers' fields and at home.
Measuring success: Success is determined by the degree to which the indigenes use and persists in utilising the technologies developed by the program.
7. **The cost sharing method:** It is a joint venture between the community and an organization, government organization (GO) or non-governmental organization (NGO) in the use and supplementation of resources.
Hypothesis: the cost sharing approach assumes that allocating costs to indigenous people (who cannot afford the full cost) will promote a programme that is more receptive to local situations. It will also help to encourage a programme in which agricultural extension agencies are more responsible for local interests.
Target: it provides advice and information to enable farmers to improve themselves.
Program planning and implementation: the design and plan of the programme is shared by partakers who contributed costs but must be sensitive to local needs to ensure sustainable cooperation from the people.
Resource requirements: it requires minimal government resources because all stakeholders are involved in the full implementation.
Implementation strategy: field staff are often recruited locally and work long-term in the project area.
Measuring success: Success is measured by the willingness and ability of farmers to bear a certain share of the costs, whether individually or through local government.

8. **Educational institution's approach:** is an approach that relies on educational institutions to tap certain technical knowledge and research capacity to provide agricultural extension services to rural people.
- Assumption:** Agricultural educational institutions have technical knowledge relevant to farmers.
- Target:** helps farmers acquire knowledge about scientific agriculture, creating opportunities for students and teachers to interact with farmers and experience practical farming.
- Program planning and implementation:** planning is coordinated by those who control the institutional programme or those who determine the school's curriculum, while its implementation is achieved through informal group or individual teaching in a college or university.
- Resource requirements:** Costs can be high, but if collaborative approaches are applied, costs will be shared between parties.
- Implementation strategy:** this is anchored through informal group or individual teaching in tertiary institutions although extension personnel from other agencies may participate.
- Measuring success:** farmers' participation and level of participation in agricultural extension activities is a measure of success.

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