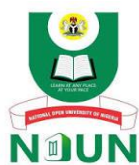


COURSE GUIDE

ARD 503

DIFFUSION AND ADOPTION OF INNOVATIONS (3 UNITS)

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WHAT YOU WILL LEARN IN THIS COURSE

Welcome to this course: ARD 503 with course title: Diffusion and Adoption of Innovations.

You are beginning a course that teaches about how innovations are diffused and adopted. The course is made up of seven (7) modules having several units. Your study time for each unit will vary from one unit to another. The time to spend per unit will vary according to your rate of assimilation and level of understanding. You will find more detailed information about the contents of each unit in the section of this Course Guide entitled "Course Description". Each study unit contains a number of self-tests. These allow you to check your progress as you work through each topic. At the end of each self-test is a question about your own experience. It is advisable that you think very well about these questions. You are requested to apply the course material you have just read to your experience in your Local environment or Local Government Area, State or the Country at large. All the questions are discussed in the final unit and tutorials.

Some of your recommended textbooks are written by non- Nigerians, hence the need for its applicability to your local environment. Your opinion here therefore, matters a lot, as there are various answers to these questions. You will learn some new terms and expressions during the course of the study. You will also learn about how innovations are diffused and adopted in social systems. In addition, you will come into contact with new ideas, that will make the concept of innovations more diversified and possibly more complex to you and such will almost want to make you look at the concept of innovation more from a different perspective.

The study module and corresponding units, textbooks and exercises will help you master the topics over a period of about 18 weeks. Before looking at the study modules units or your textbooks, you should read this **Course Guide** thoroughly. The course guide tells you:

- The aims and Objectives of the course
- What the course covers.
- The components of the course.
- The amount of study time you need to cover the course successfully.
- How your performance in assignments and the examination will be assessed.
- How the tutorial system works and the student is at the end of this course assessed and the different assessment components.

You will probably need to refer to this Course Guide throughout the course to clarify important points about studying with the National Open University of Nigeria (NOUN)

COURSE AIMS

This course, Diffusion and Adoption of Innovations (ARD 503) aims to provide you with the basic introduction to processes of diffusion, adoption and innovation as well as diffusion of innovation along line with the adoption of the innovation. This course specifically throw light on characteristics of innovation, rate of adoption, adopter categories as well as the roles of opinion leadership and Change agents. Later part of the course identified and expatiated the factors enhancing effective agricultural extension in rural areas.

An integrated approach is used in the study of Diffusion and Adoption of Innovations in which both national and locally specific aspects are examined. National and local experiences are highlighted to make clearer certain issues as it relates to the topics under study.

COURSE OBJECTIVES

After the course has been completed, you should be able to:

- define diffusion and enumerate the elements of diffusion.
- explain the processes of adoption and innovation, as well as diffusion of innovation.
- identify characteristics of innovation, rate of adoption and adopter categories.
- explain the concept of opinion leadership as it relates to Agricultural Extension.
- differentiate between leadership and Change agents.
- attempt some theoretical formulation supporting diffusion of innovations and identify Implication of these processes.

COURSE DESCRIPTION

One of the most important functions of this course: ARD 503, Diffusion and Adoption of Innovations is to bridge gap between research centers and the farmers for introduction of improved technologies or new methods of agricultural production. In other words successful communication is the main job of an extension worker. An extension worker's job does not end with merely informing the farmers about improved practices or methods of agricultural production, he as well ensures practical application (by the farmers) of the result of research and field trials. Extension officer's efficiency can be measured:

- by the speed or quickness with which the gap between what is known and what is done by the farmers is bridged.
- by the number of new practices adopted; and
- also by the number of farmers and communities that adopt the new practices or methods of agricultural production.

ARRANGEMENT OF THE COURSE MATERIAL

In describing this course material further, it is made up of seven (7) modules with several units under each module as shown below:

Module 1 Concepts of Diffusion of Innovations

Unit 1	Concepts, Definition and Physical Characteristics of Innovations
Unit 2	Concepts and Definition of Diffusion of Innovations
Unit 3	Elements of Diffusion of Innovation
Unit 4	Stages of Diffusion of Innovation/Innovation Decision Process
Unit 5	Models of Diffusion of Innovation
Unit 6	Types of Innovation, Communication and Communication Channels

Module 2 Concept and Process of Adoption

Unit 1	Types of Innovation – Decisions and Physical Characteristics of Innovation
Unit 2	Concept and Definition of Adoption and Non-Adoption of Innovation
Unit 3	Process of Adoption of Innovation/New Technology
Unit 4	General Factors Affecting the Acceptance of Change

Module 3 Factors Determining the Rate of Adoption

Unit 1	Process of Implementing Change and Rules to Follow when Implementing Change
Unit 2	Rate of Adoption and Speed of Adoption
Unit 3	Factors Determining/Influencing Rate of Adoption
Unit 4	The 7-Rs of Change Management

Module 4 Adopters Categories

Unit 1	Identification of Adopters categories and their Characteristics
Unit 2	Factors Determining the Effectiveness of Agricultural Extension in Rural Areas

- Unit 3 The Concepts of Opinion Leadership Characteristics and Functions of Opinion Leader
- Unit 4 Types of Leaders and Measurement of Opinion Leadership
- Unit 5 Techniques for Identification and Use of Community Leaders

Module 5 Change Agents

- Unit 1 Concepts of Change, Change Agents and Characteristics of Change Agents
- Unit 2 Steps Involved in Carrying Out a Successful Change Activity and Techniques Used by Change Agents in Driving Change
- Unit 3 Functions/Roles of Change Agents and Reasons for Need of Change Agents
- Unit 4 Skills, Qualities and Challenges of Change Agents

Module 6 Theoretical Formulations of Diffusion of Innovations and Factors Influencing the Agricultural System

- Unit 1 Theoretical Formulations of Diffusion of Innovations
- Unit 2 Sectors Related to Different Rate of Adoption of New Agricultural Technology
- Unit 3 Factors for Making Change Work and Consequences of Innovations – Decision
- Unit 4 How to Become a Successful Change Agent

Module 7 Concepts and Basic Principles of Agricultural Extension System

- Unit 1 Concept of Agricultural Extension and Concerns of Agricultural Extension Worker
- Unit 2 Principles of Agricultural Extension and Methods of Motivating the Agricultural Extension Workers
- Unit 3 Factors Influencing Effective Agricultural Extension System in Rural Areas
- Unit 4 How to Measure the Effectiveness of Extension and Challenges of Agricultural Extension System in Nigeria.

The modules and units build on each other to work from explaining what diffusion, innovation and adoption are and unto how you can become a change agent by applying all that you have learnt in this course. If you have completed the pre-requisite courses, you will find certain concepts in some familiar units. On the contrary, if you have not completed the pre-requisite courses, you may need to spend a little extra time

familiarizing yourself with some of the ideas. However, this should not create any problems for you.

In this course, you shall be made to understand that bringing about change requires the organization of an innovation process. The process of diffusion and adoption of innovation has therefore provided an important basis for extension education especially in the fields of agriculture, health services and consumer behaviours.

There are adequate tutorial hours designed to assist you, and all you need to do is to try take full advantage of the tutorial sessions and doing this will help you to be up to date with your study. Tutorials are not lectures but are designed to allow group discussion and inputs from the discussants you are very likely to get the best from a tutorial session if you contribute or share your ideas and opinions. Tutorials do not assist learners well, when they make no contributions or make no inputs. Your tutor will lead discussions and needs your help to make sessions successful.

COURSE CALENDAR

The **Course Calendar** provides an overview of the course. It actually suggests the amount of time you should use to complete the modules and units of the course. The course calendar also helps you to plan your study schedule. It can be adjusted to fit your personal free time and needs.

The time needed to complete the study modules and units, work through the practice exercises and assignments, and complete the other work involved in this course depends on your analytical ability and background. You need to plan your own study schedule carefully. The estimated time you need to spend on this course is about 10 hours per week. This estimate includes time for reading the study modules and units and studying the textbooks, completing self-tests and practice exercises, completing your assignments, attending tutorials, undertaking the suggested reviews arising from tutorials and preparing for your final examination.

You must complete and submit your written assignments on time. To actualize this, you need to plan and distribute your study time accordingly. At the moment, there are three (3) assignments known as Tutor Marked Assignment (TMAs) altogether to be submitted, marked and scored on-line by the configured, automated system. Each of the 3-sets of TMAs is made up of 10 questions, thus making a total of 30 multiple choice questions. Each of the sets is attempted and submitted, they are then simultaneously marked and the student is made to know

his/her score. You can find more information on assignments in a later section of this **Course Guide**.

COURSE MATERIAL

In addition to this Course Guide, is the course material and this forms an important component of the course. At this time, please ensure that you have all of the necessary materials available and that you can identify the various components in the course material. Where you do not have the NOUN-produced materials, you should contact the NOUN centre you did your registration immediately and as well check the Internet for relevant study materials. The textbooks and other related reading materials however, are your own responsibility. These can be obtained from the Internet, Academic and professional book centers. The addresses for the different NOUN centres are in the book list that is sent to you.

STUDY MODULES

The different topics have been structured and organized to be in modules. Care has been taken to ensure that similar topics were arranged in same module. This arrangement helps to ensure and guarantee a good follow-up of the topics and their subsequent understanding by the student.

In line with ensuring proper understanding of the course, the topics are well broken down into study units which makes the course easier for reading and assimilation by the student.

STUDY UNITS

Although we have recommended the amount of time you should spend on each study unit, you may prefer to study material in a slightly different way. There is provision to detour from the pattern of the course, but you must complete the practice exercises, assignments and examination successfully. The course is structured so that each unit builds upon previous knowledge.

Each unit includes at least seven different ways to help you study the course; Diffusion and Adoption of Innovations very well.

The seven different ways that could help you study the course well are:

- Reading the study unit under the module in the course material.
- Reading the textbooks and other related materials
- Testing your comprehension and analytical skills by working through the self- test Questions which appears throughout the units.

- Undertaking the activities that appear throughout the units. These activities will ask you to think, observe, or undertake some activities designed to help you apply your knowledge to your own experience.
- Completing the practice exercises in each unit.
- Preparing and writing problem-solving assignment
- Asking you questions about your own experiences. Your answers help you link your experience to the course material, your surrounding environment and possibly the Nigerian culture.

You must read each unit carefully. It provides a commentary on the textbooks and or recommended materials and introduces you to other related material or practical experience. Each unit also tells you how and when to complete your assignments. If you don't read the study units carefully, you may miss important information. Your study notes are designed to guide you through your textbooks.

You must read both the study notes and the texts. They are not alternatives to each other. It is also helpful to read as widely as possible. Try to read articles in newspapers, conference papers and journals as well as other books on the topic, and related cases. The more wisely you read, the better your appreciation and understanding of the subject will be.

Each unit directs you to read specific pages from chapters in the textbook. You are expected to study and understand the principles and concepts involved. Each unit contains self-test question, usually short ones, providing a check on your understanding of a technique or principle you have just read about. By attempting these short questions, you will have instant feedback on your progress.

You should attempt to answer all the self-test questions before looking at the answers. This will help you to prepare for your assignments and examination. After each self-test there is a question on your own experience!

At the end of each unit there is one or more practice exercise, which covers all areas you have studied in that unit. It is important to complete all the practice exercises. This will expose you to the types of questions you will be required to answer in assignments and in your final examination and also introduce you to some problems encountered the farm, agricultural organizations in business, organizations and real life-situations. The questions reflect the demands of the unit objectives; they are designed to help you understand and apply those principles covered in the unit.

SET TEXT BOOKS

There are no compulsory textbooks for the course: **ARD 503, Diffusion and Adoption of Innovations. *Read as many textbooks, newspaper/journal articles on the subject as possible***

TUTOR MARKED ASSIGNMENT

Assignment questions for the units of this course are contained in this section of the course materials entitled Tutor Marked Assignment. Study them again and again for your own good and improved understanding together with a tutor marked assignment (TMA) that would be done on-line.

COURSE ASSESSMENT

Your assessment for this course is made up of two components. They are:

- Tutor-Marked Assignment (TMAs) and
- A final examination. The final examination could be in the form of e-exam (for year 1 and 2) or Pen-on-Paper (PoP) (for students in year 3 and above).

The practice exercise is not part of your assessment but it is important to complete all of them.

TUTOR-MARKED ASSIGNMENTS

The Tutor Marked Assignments (TMAs) comprised of three-sets of multiple choice questions. These are labelled as TMA1, TMA2 and TMA3. Each set is made up of 10 multiple choice questions. So the 3-sets will make up 30 multiple-choice questions. Important to mention that the University sets out the date the questions will be released or administered to the students' portal for them to answer by the students. These sets either come at the same time or at different times. These tutor marked assignments are administered electronically. The marks for each set is 10 marks, therefore the 3-sets will give a total of 30 marks.

You can write the assignments using the course materials, textbooks or other related materials. But it is preferable in all degree level education to demonstrate that you have read and researched more widely than the required minimum. Using other references will give you a different viewpoint and a deeper understanding of the subject. **But do remember that copying from any sources without acknowledgement is plagiarism and is not acceptable.** You must make reference when you refer to or quote from others' work. The minimum information needed is:

author's name, date of publication, title, edition, publisher and place of publication.

The nature of the assignments varies, but they normally consist of either case studies or as it were in most cases, multiple choice questions. Other questions especially of essay type questions may relate to the case study, short essays or short answer questions. It is useful to illustrate any theoretical points with examples from your own experience. This allows you to demonstrate your understanding of the application of theory to real life situations

FINAL EXAMINATION AND GRADING

This course (ARD 503) being a 3 – unit course, usually involves 3 – hour essay or Pen – on Paper examination to be taken by the student at the end of the semester or course. Use the time between finishing the last unit and the examination to review the whole course. Review your practice exercises and assignments and your tutor's comments on them before sitting for the examination. You will be advised of examination arrangements after you send in your examination registration card.

The final examination for ARD 503: Diffusion and Adoption of Innovations, covers information from all parts of the course and has the same format as the specimen examination paper. The examination will not contain "trick" questions or questions that try to confuse you. The reason is that such is not consistent with the open approach, the NOUN approach is different (that is ensuring that questions are meaningful and objective).

To earn a passing grade for the course you must have attempted the 3 – sets of TMA and sat for the Pen-on-Paper or essay examination. In total, you the student must in all earned a total of 40% or more. The scores are distributed amongst the assignments and final examination as shown below:

Title	Value
3 sets of TMAs =	30%
Final Exam =	<u>70%</u>
Total =	<u>100%</u>

TUTOR AND TUTORIALS

Your tutor is your Lecturer who undertakes or lectures or facilitates the course and marks and comments on your assignments, keep close watch on your progress and on any difficulties, you encounter, and provide you with assistance.

Assignments should be mailed in accordance with the **course calendar**. They will be marked by your tutor and returned to you as soon as possible.

It is a good idea to keep a copy of all the assignments you send to your tutor for marking. The copies will prove useful, should you wish to make reference to them during telephone conversations, or if they are lost in the mail.

Do not hesitate to contact your tutor by telephone if you need help. Here are typical circumstances in which help is necessary. Contact your tutor if:

- You do not understand any part of the study Units or the assigned readings
- You have any difficulty with self-tests or practices exercises
- You have a question or problem with assignments, with your tutor's comments, or grading on an assignment.

Tutors have complete authority on two points. First, they are responsible for the grade you receive on assignments. A situation where you feel dissatisfied with your score, then you have to discuss it with your tutor in order for you (the student) to be on the same page with the Tutor.

Second, they (the tutors) alone decide if you may or may not rewrite an assignment and this consideration is subject to the prevailing circumstances.

To assist you in this course, regular tutorials are organized with your assigned tutor. Very interesting activities are designed for the tutorials. They also give you an opportunity to sort out any problems.

You will be notified of their dates, times, and location, together with the name and phone number of your tutor, as soon as you are allocated a tutorial group.

We strongly recommend that you attend these tutorials and the half-day school. They provide considerable assistance in your study of this course and improve your chances of gaining high marks. They also let you meet other learners studying through the NOUN.

Tutors are required to start tutorial day school sessions on time. If a tutor fails to turn up or start up 30 minutes after the scheduled starting time, students may assume that the session is cancelled or call where necessary and they should report the case to the course coordinator so that a make-up session can be arranged.

TUTOR MARKED ASSESSMENT EXTENSION POLICY

The assignment policy of the University as stated in the student Handbook should be observed. Applications for extension of up to seven days should be submitted to the tutor. For extensions of over seven days, students should note the following:

- Extension of Assignment may be granted in extenuating circumstances, which should be interpreted as circumstances that are unexpected. Note that work commitments and traveling are not regarded as extenuating circumstances unless they are unexpected.
- Supporting documents must be submitted along with the application for extension of over seven days to justify the claim. Applications without supporting documents will not be considered.
- Applications for extension should be submitted either before or on the due date.
- The decision to grant or refuse an extension is made by:
 - ❖ The course coordinator for extensions of up to 21 days;
 - ❖ The Dean for extensions of over 21 days.

If the assignment is posted to the tutor, it is the responsibility of the student to check with their tutor that the assignment has successfully arrived. Extension applications without supporting documents on the ground of postal loss will not be accepted. The University cannot accept any responsibility for assignments that are not received by your tutor due to problems with the post. As a precaution, you are advised to keep a copy of each assignment you submit and obtain a certificate of posting from the post office when you post your assignment.

CONCLUSION

This course: ARD 503, titled “Diffusion and Adoption of Innovations” is a subject that should interest anybody who is concerned about the quality of life in the rural areas either in Nigeria or any Third world Country of Africa and Asia. It has thrown light on concepts and process of Adoption and innovation, stages of adoption and innovation decisions, skills and qualities of opinion leadership. The course has also explained who is, and functions of change agents, some functional theories of innovation decisions and some determinants of functionality of the extension system

in the rural areas in Nigeria, which also is the case of most developing countries. The course has therefore, been designed to help you the most complex problems of the developing nations which is that of modernizing the rural areas. It requires both conceptual and analytical skills. You must analyze and apply concepts to understand the nature and philosophy of Diffusion and Adoption of Innovations.

Hopefully, you will find it fun, interesting and useful as an administrator or a policymaker (or potential ones) interested in the development of your country.

Good luck, and enjoy the course.

**MAIN
COURSE**

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Module 1 Concepts of Diffusion of Innovations

Unit 1	Concepts, Definition and Physical Characteristics of Innovations
Unit 2	Concepts and Definition of Diffusion of Innovations
Unit 3	Elements of Diffusion of Innovation
Unit 4	Stages of Diffusion of Innovation/Innovation Decision Process
Unit 5	Models of Diffusion of Innovation
Unit 6	Types of Innovation, Communication and Communication Channels

Unit 1 Concepts, Definition and Physical Characteristics of Innovations

Unit Structure

- 1.1 Introduction
- 1.2 Intended Learning Outcomes
- 1.3 Concepts of Innovation
 - 1.3.1 Definitions of Innovations
 - 1.3.2 Physical Characteristics of Innovations
- 1.4 Summary
- 1.5 References/Further Readings/Web Resources
- 1.6 Possible Answers to Self-Assessment Exercise(s)

1.1 Introduction

In this unit you will be provided with the general background information by introducing you to the concept of innovation and some basic definitions of innovation. The concept of innovation is coming up first in this course because the course builds on innovations which confronts the farmer in his/her farm(s). Without the existence of innovations which would need to be transferred from either the research centres or from one farmer's farm to other farmers in either the same or different community or social system. Important to mention that the transfer is done in different depending on the prevailing circumstances. Innovation as it were has been variously addressed by different authors but suffice to say that these concepts as variously advanced are not mutually exclusive of one another. To this end in view, innovations in the farm could be seen as the gateway to this course: ARD 503: Diffusion and Adoption of Innovations.

1.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- give two definitions of innovation
- discuss the concept of innovation.

1.3 Concept of Innovation

Innovation in ordinary parlance or language simply means something new or new technology. The something new may be perceived from two different angles. These are, it is either the something new or the technology didn't exist before, or it may have existed before but just had a little change in form. This new form may just be some additions that would help enhance or improve its quality or performance in terms of what it was in the past. This innovation could be something intangible for example an idea or something tangible, say fertilizer, new seeds, chemicals, etc. Again, the newness is a function of time. That is, what is perceived new in one locality may be stale or obsolete in another community. What matters here is the rate at which the community is opened to strangers or to other people outside the community. Suffice to say that community that is open usually and quickly get informed of new technology (i.e., innovations) than community that is closed. Innovations could be new in one place and old to other places, communities, States or Countries.

It is of concern for us to acknowledge the fact that every innovation has its origin or where it started from. In such a place, the technology will continue to be treated and recognized as new until its popularity is overwhelming. To this end in view, the concept of innovation is a description of the newness of the technology and that this newness declines with time and across space until it becomes common and loses the name "new".

Innovations that concern the farm are generated in the research centres, from the farmer's farm or from the social systems/communities where the farmers are domicile.

1.3.1 Definition of Innovation

Innovation has been variously defined by different authors but it is important for us to note that these definitions are not mutually exclusive. An innovation is an idea, practice, or object perceived as new by an individual, a farmer or other unit of adoption. The technologies, practices developed through research are innovations. Innovations could as well be new varieties of crops and plants, new breeds of livestock or fish species,

new farm chemicals and animal medicines, new techniques of cultivating the soil, harvesting and possibly storage of farm products etc. (Adekoya and Tologbonse, 2004)

Ekong (2003) defined innovation as an idea or something or technology that is perceived as new by the individual and that it is essentially the newness that or novelty of the idea that determines the individual's immediate reaction to it. The author went further to explain that when a farmer is newly confronted with a new variety of seed or farm chemicals, he is at once curious and suspicious. His curiosity would stem from the fact that he/she wouldn't know what the outcome would be when compared with the performance of the former technology he/she was used to. At this time the farmer is faced with the risk and uncertainty of likely product of the technology. All of these is as a result of the fact that the technology was new.

Self-Assessment Exercise

1. In what ways can we define innovation?

1.3.2 Physical Characteristics of Innovations

Most if not all innovations that concerned agriculture usually have three (3) components. These components go a long way in helping to describe the nature of the innovation, handling of the innovation and management of the innovation.

The components of the innovation are seen or observed in terms of how the farmer, person in need or adopter can understand and cope with the innovation at hand.

The physical characteristics are arranged in the manner that can ease adoption of the innovation and this same order determine how the innovation is introduced in the process of diffusion. The characteristics are as follows:

- The Material Component:** The material component is also known as the hardware or physical component. Such could be a tractor, sprayer, cutlass, etc.
- Service Component:** This component has to do with the skill that is required to use the innovation. Most important here is how to impact or teach the adopter how to use the innovation.
- The Software Component:** This characteristic is mostly concerned with how the adopter can apply, using his/her knowledge and attitude in operating or using the innovation.

Self-Assessment Exercise

2. Describe the Physical Characteristics of Innovations.

1.4 Summary

An innovation is an idea, practice, or object perceived as new by an individual, a farmer or other unit of adoption. This is mainly from the farmers farm, community or research centres. When a technology is new it is said to be an innovation and that an innovation to one person or place may not be an innovation to another person or place especially if the person has seen or used it before. Understanding the three characteristics of an innovation is very important as it helps in making the adoption process an easy one. From the foregoing, it could be seen that innovation is anything, farm practice or a technology that is new to a particular person and in a particular place and time. These innovations could either be generated from the farmers farm, local communities or from research centres. Innovations would continue to have its place as long as changes continue to occur in our farms and materials including technology. Innovation is saddled with three characteristics and their understanding is vital for ease of adoption of the innovation by an adopter.

1.5 References/Further Readings/Web Resources

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- Leeuwis Cees (2003). *Communication for Rural Innovation: Rethinking Agricultural Ex Rogers, E.M. (1995). Diffusion of Innovations (4th ed.)*. New York: Free Press.tension, CTA, 412p.

1.7 Possible Answers to Self-Assessment Exercise(s)

1. In what ways can we define innovation.

- i. An innovation is an idea, practice, or object perceived as new by an individual, a farmer or other unit of adoption.
- ii. The technologies, practices developed through research are innovations.
- iii. Innovations could as well be new varieties of crops and plants, new breeds of livestock or fish species, new farm chemicals and animal medicines, new techniques of cultivating the soil, harvesting and possibly storage of farm products.
- iv. Innovation as an idea or something or technology that is perceived as new by the individual and that it is essentially the newness that or novelty of the idea that determines the individual's immediate reaction to it.

2. The physical characteristics are arranged in the manner that can ease adoption of the innovation and this same order determine how the innovation is introduced in the process of diffusion. The characteristics are as follows:

- i. **The Material Component:** The material component is also known as the hardware or physical component. Such could be a tractor, sprayer, cutlass, etc.
- ii. **Service Component:** This component has to do with the skill that is required to use the innovation. Most important here is how to impact or teach the adopter how to use the innovation.
- iii. **The Software Component:** This characteristic is mostly concerned with how the adopter can apply, using his/her knowledge and attitude in operating or using the innovation.

Unit 2 Concepts and Definition of Diffusion of Innovations

Unit Structures

- 2.1 Introduction
- 2.2 Intended Learning Outcomes
- 2.3 Concept of Diffusion of Innovations
 - 2.3.1 Definitions of Diffusion of Innovations
 - 2.3.2 Factors Influencing Diffusion of Innovation
- 2.4 Summary
- 2.5 References/Further Readings/Web Resources
- 2.6 Possible Answers to Self-Assessment Exercise(s)

2.1 Introduction

Diffusion of innovation is the flow of information or technology from where such is generated or produced to other places where it could still be of importance to the people of the area. Generally, innovations which could be in the form of ideas or technology like planting materials, seeds, fertilizer etc, when produced in one place like research centres or the farmers farm are needed to be transferred from where it was produced to other places. The spread is usually deliberately or otherwise carried by people. It is the people who communicate the technology or innovation to other people in other places. The spread of the information is what we consider as diffusion. This is why it is said that diffusion helps to make technology in one area to go as far as possible. Diffusion moves with ease when the package is information based and how far the people wish to can go or move. The farther they can go would be the extent the information or technology or idea can go. In where agriculture is concerned, the spread of the information or technology is usually carried out by specialized people called extension agents.

2.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the concept of diffusion
- present two different definitions of diffusion of innovation.

2.3 Concept of Diffusion of Innovations

Due to the increase in population, there has been an increased hunger for increased and improved agricultural production (food and industrial products), improved income and improved life style by the people. All of these are only possible through increased scientific research and improved methods of communication, a great variety of new materials and ideas which needs to be brought to the door step of the rural farmers. The rate at which this information move to the rural people actually differs. Consequently, the rate at which these rural people learn of the new ideas as well differs from place to place and the circumstances that surrounds them.

Diffusion of innovation is a precursor to the adoption process. Diffusion of innovation is the actual entry of an innovation (be it an idea or technology) into a target social system. The information can be passed in the form of information exchange from one person to another person (this is known as passive diffusion). In this case, the movement of the person carrying the information from one place to another is vital. When the exchange takes place, it might then influence the character of the other person who is the target person to practice what he/she has heard.

On the other hand, active diffusion of innovation is the type that is consciously done with a purpose in mind. Active diffusion of innovation involves the use of some communication techniques. Active diffusion of innovations is mainly carried out by extension agents. They are regarded as the source of the innovation or information that is being disseminated to the target community. The extension agents employ their level of professionalism in the course of diffusing the information. Professionalism is required here, hence the requirement of extension agents so that the message is properly disseminated, seen as important by the target persons or community and are adopted by the targeted person(s) or social system. At the point of entry, the extension agent target may be an individual, a group of people or any other medium.

2.3.1 Definition of Diffusion of Innovation

Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication concerned with the spread of messages that are perceived as new ideas. In today's world, information technologies such as the Internet and cell phones – which combine aspects of mass media and interpersonal channels, represent formidable tools of diffusion of innovations. It is this 'newness' of the idea in the message content of communication that gives diffusion its special character.

Ekong (2003) defines diffusion of innovations as the process by which an innovation spreads from its source of invention or creation to its ultimate users or adopters. The author also emphasized on the need of the use of extension agents in the spread of new information especially in where agricultural information is concerned. This emphasis was based on the skill possessed by the extension agents which enable them to do the work very well.

2.3.2 Factors Influencing Diffusion of Innovation

There are some factors that enhance the diffusion process especially at the cultural level. Knowing quite well that every social system has its own abiding culture, this culture spreads or diffuse into other social systems. However, the rate of cultural diffusion has been enhanced or influenced by the following factors:

- i. The availability of more and efficient communication facilities. For example, the availability of network and telephone system would increase the rate of diffusion of innovation.
- ii. The speed at which the people of one social system can travel to other parts of the State, Country or even Abroad.
- iii. The availability or presence of specially trained personnel who would help to diffuse the innovation from its source to other places where such could be needed.

Self-Assessment Exercise

1. State three factors that influence diffusion of innovation.
2. What is Diffusion of Innovation?

2.4 Summary

Diffusion of innovation is a pre-condition that takes place before the adoption of the innovation and it is all that involves the spread of information or technology from one place or person to another person of place. There are basically the passive and the active diffusion of innovation. Both of which involves passing of information but the later involves the use of extension agents due to the specialty that it required. Such requirement makes the extension agents know how to package the information, pass it appropriately and ensure it is adopted. Informations are generated in the research centres or in the farmers farm of the farmers local community. Irrespective of the source, it is important that such information spreads from that source to other place where they are equally need and the appropriate persons who carry out or spread the information are the extension agents. They do this in order to improve on agricultural production, income and welfare of the people in their community. Also,

diffusion is influenced by factors like the availability of trained personnels.

2.5 References/Further Readings/Web Resources

- Adekoya, A. E. |& Tologbonse, E. B. (2005). *Adoption and Diffusion of Innovations In: S. F. Adedoyin (Ed.) Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 28.
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2.6 Possible Answers to Self-Assessment Exercise(s)

1: State three factors that influence diffusion of innovation.

- i. The availability of more and efficient communication facilities.
- ii. The speed at which the people of one social system can travel to other parts of the State, Country or even Abroad.
- iii. The availability or presence of specially trained personnel who would help to diffuse the innovation from its source to other places where such could be needed.

2. Diffusion of Innovation

Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication concerned with the spread of messages that are perceived as new ideas. In today's world, information technologies such as the Internet and cell phones – which combine aspects of mass media and interpersonal channels, represent formidable tools of diffusion of innovations. It is this 'newness' of the idea in the message content of communication that gives diffusion its special character.

Unit 3 Elements of Diffusion of Innovation

Unit Structures

- 3.1 Introduction
- 3.2 Intended Learning Outcomes
- 3.3 Elements of Diffusion of Innovations
 - 3.3.1 The Role of the Elements in Adoption of Innovation
- 3.4 Summary
- 3.5 References/Further Readings/Web Resources
- 3.6 Possible Answers to Self-Assessment Exercise(s)

3.1 Introduction

Most individuals do not evaluate an innovation on the basis of scientific studies of its consequences, although such objective evaluations are not entirely irrelevant, especially to the very first individuals who adopt. Instead, most people depend mainly on subjective evaluation of an innovation, conveyed to them from individuals like themselves who have previously adopted the innovations. This dependence on the experience of peers which indicates that diffusion is a social process and the heart of diffusion process consists of the modelling and imitation by potential adopters of their network partners who have adopted previously. We shall discuss in details the elements of diffusion in this unit.

3.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- enumerate the elements of diffusion
- identify the role of these elements in adoption of innovations.

3.3 Elements of Diffusion of Innovations

The four main elements involved in diffusion of innovation and the elements are as follows:

- The Innovation
- Communication Channels
- Time period
- A Social System

We shall now discuss in details about these four elements of diffusion relate to the adoption of innovation

3.3.1 Role of Elements in Adoption of Innovations

i. The Innovation

An innovation is an idea, practice, or object that is perceived as new or an improvement over the existing one by the individual or members of a social system. If the idea seems new, it is an innovation. The innovation may represent a slight modification of a significant departure from, the existing idea or practice. The “idea” constitutes the central element of an innovation which often manifests itself in a material or behavioural form. Most agricultural innovations manifest a material form, which includes improved implements, high- yielding and disease resistant seeds, hardy and fast-growing fish, bio-fertilizers, botanical pesticides and herbicides. Some innovations manifest themselves in behavioural forms such as improved cultural practices, farm ideas, etc.

A good or needed innovation will quickly be adopted by the adopter, while an innovation whose needs are not too important or pressing would take a longer time to be adopted by the target audience. It therefore suggests that innovations that address farmers or people’s immediate needs should be more pursued or of interest.

ii. Communication Channels

Communication is the exchange of ideas, skills between persons or other living things. A communication channel is the means or medium by which messages get from one individual to another. Communication channels can be through person – to – person (interpersonal communication), through group contact or through mass media.

Mass media channels are all those means of transmitting messages from one source to its target. Such medium involves the use of gadgets like radio, television, newspapers magazines, pamphlets, etc which enable a source of one or a few individuals to reach an audience of many individuals.

On the other hand, Interpersonal channels involve a face-to-face exchange between two or more individuals. Interpersonal channels are more effective in persuading an individual to accept a new idea, especially if the interpersonal channel links two or more individuals who are similar in socio-economic status, education, or other important ways. But the method can only involve communication between few persons at a time.

Group Contact method is another method where communication is carried out through an established group. The group is usually made up of few persons with almost if not same socio-economic characteristics and it is this group that are been addressed with the innovation.

Communication channels play a vital role in the adoption of an innovation. It is relevant for the extension agent or the disseminator of the innovation to know the kind of technology he/she is introducing and also know the best channel to use to convey it to the target person or persons. The use of a wrong channel of communication may make the innovation difficult to adopt while the use of an appropriate channel may make the innovation interesting and simple for its adoption.

iii. Time period

The third element in diffusion process is time period. Time is involved in diffusion of an innovation to get to its target audience. Generally, all the following concepts require time factor to have them achieved:

- The innovation – decision process
- Innovativeness
- Innovations rate of adoption

The innovation – decision process is the mental process through which an individual or other decision-making unit passes from first knowledge of an innovation to forming an attitude towards the innovation, to put up a decision to adopt or reject the innovation, to implement or not to implement the new idea, and to confirmation of this decision. We conceptualize five steps in this process. They are: knowledge, (ii) persuasion, (iii) decision, (iv) implementation, and (v) confirmation. An individual seeks information at various stages in the innovation – decision process in order to decrease or reduce uncertainty about innovation's expected consequences. The decision stage leads to adoption, a decision to make full use of an innovation as the best course of action available, or to rejection. We shall discuss this in the future unit under the adoption process. What is most basic about the innovation –decision process is that each of the stages require an ample quantity of time period for good decision to be made whether to adopt or not to adopt an innovation. Costly mistakes can be made by the adopter if not given or taken proper time to make his/her decisions to or not to adopt the innovation.

Innovativeness is seen as the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system. In this circumstance, time is also a factor. The time is considered as either long or short. A situation where an adopter takes a short time to adopt an innovation, such an adopter is described as being more innovative. While that adopter that takes more time before he/she decides to adopt is described as being less innovative.

Based on innovativeness (which involves describing an adopter as either being more or less innovative), the adopters can be classified into five

categories: (i) innovators, (ii) early adopters, (iii) early majority, (iv) late majority (v) laggards. These adoption categories shall be discussed later.

Rate of adoption is the relative speed with which an innovation is adopted by members of a social system. The rate of adoption is usually measured by the length of time required for a certain percentage of the members of a system to adopt an innovation. It is a system perspective rather than an individual as a unit of analysis. There are differences in the rate of adoption for the same innovation in different social system. So the rate at which a social system adopts an innovation is either slow or fast. The rate of adoption is fast when it takes the people of the social system a short time to adopt. On the contrary, rate of adoption is slow when it takes the people a long time to adopt an innovation. Adopt. The various criteria that influence adoption rate will be later.

iv. Social System

A social system is defined as a set of interrelated units that are engaged in joint problem solving to accomplish a common goal. The members or units can be individuals, informal groups, organizations, or sub systems. The sharing of common objectives binds the system together. Diffusion occurs within a social system.

The social structure of the system influences what innovation/technology that is needed by the people and in the form the innovation/technology that is needed. The social structure also influences how and what information is disseminated to meet their needs. Knowledge of the social structure is important to consider while studying diffusion of innovation. A village as a social system is made up of a variety of individuals and groups with distinctive statuses, roles, norms and goals all of which functionally relate to each other to attain its major goals and objectives. The structure of a social system constitutes a set of boundaries within which innovation diffuses. The differences in the adoption of agricultural innovations at the village level can often be explained in terms of their differences in structural characteristics.

The degree to which a village is structurally homogeneous or heterogeneous, affects the rate of diffusion of agricultural innovations within its boundaries. The information can be distributed through formal (Government) and informal communication structures (peers, groups etc.).

Self-Assessment Exercise

1. Briefly describe the role of communication channels in the adoption of innovation.
2. What is rate of adoption?

3.4 Summary

We have been able to identify the four elements of diffusion. These are the innovation, communication channels, time and the social system. The social structure of the system influences the rate of adoption of innovation by members of a social system. The same social structure as well determine how and what information is disseminated that would enable the people meet their needs. The four main elements involved in diffusion of innovation are innovation, communication channels, time period and social system. These elements affect the level and rate at which an innovation is adopted by members of a social system. The rate of adoption is usually measured by the length of time required for a certain percentage of the members of a system to adopt an innovation. Based on innovativeness, the adopters can be classified into five categories.

3.5 References/Further Readings/Web Resources

- Adekoya, A. E. & Tologbonse, E. B. (2005). *Adoption and Diffusion of Innovations In: S.F. Adedoyin (Ed.) Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 27
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<http://www.manage.gov.in/pgdaem/studymaterial/manage102/manage%20book%20102-block1.pdf>

3.6 Possible Answers to Self-Assessment Exercise(s)

1: Briefly describe the role of communication channels in the adoption of innovation.

Communication is the exchange of ideas, skills between persons or other living things. A communication channel is the means or medium by which messages get from one individual to another. Communication channels can be through person – to – person (interpersonal communication), through group contact or through mass media.

Mass media channels are all those means of transmitting messages from one source to its target. Such medium involves the use of gadgets like radio, television, newspapers magazines, pamphlets, etc which enable a source of one or a few individuals to reach an audience of many individuals.

2. **Rate of adoption** is the relative speed with which an innovation is adopted by members of a social system. The rate of adoption is usually measured by the length of time required for a certain percentage of the members of a system to adopt an innovation. It is a system perspective rather than an individual as a unit of analysis. There are differences in the rate of adoption for the same innovation in different social system. So, the rate at which a social system adopts an innovation is either slow or fast. The rate of adoption is fast when it takes the people of the social system a short time to adopt. On the contrary, rate of adoption is slow when it takes the people a long time to adopt an innovation. Adopt. The various criteria that influence adoption rate will be later.

Unit 4 Stages of Diffusion of Innovation/Innovation Decision Process

Unit Structures

- 4.1 Introduction
- 4.2 Intended Learning Outcomes
- 4.3 Insight into Diffusion of Innovation
 - 4.3.1 Push Factors to Diffusion of Innovations
 - 4.3.2 Stages of Diffusion of Innovation/Innovation Decision Process
- 4.4 Summary
- 4.5 References/Further Readings/Web Resources
- 4.6 Possible Answers to Self-Assessment Exercise(s)

4.1 Introduction

In this unit you the student will be provided with the general background information on diffusion and innovation Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. The origins of the diffusion of innovations theory are varied and span multiple disciplines. Rogers defines an innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption. To adopt an innovation means to acquire a new product or behavior in practice to our farm activities. Important to note that innovation does not just diffuse into an area or social system just like that. It actually takes place in stages and to targeted persons or societies.

4.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- understand the role of farmers perception to the diffusion and adoption of innovations in a social system
- they should be able to know the factors that really promote or otherwise regarded as push factors to the diffusion of innovations
- they should be able to know and understand the stages/process of the diffusion of innovation.

4.3 Insight into Diffusion of Innovation

Diffusion of innovations refers to the spread of those innovations generated from one source or the other through a population, and is simply the result of a host of individual adoption decisions. According to Rogers 1962 the diffusion process can be explained as “the spread of a new idea from its source of invention or creation to its ultimate use of adopters”. The process by which an innovation spreads within a social system is called “diffusion”. An innovation diffuses within a social system through its “adoption” by individual and groups.

An innovation does not diffuse at the same rate across different societies and persons. An innovation which represents only a slight modification of an existing idea or practice will obviously diffuse at a faster rate than the one which represents a significant departure from it or that is entirely new. The factors that influence diffusion of innovation are based on the perception of the farmers rather than being the inherent qualities of an innovation. Perception is an activity through which an individual becomes aware of objects around oneself and of events taking place. Some of the important traits of an innovation which influence the rate of adoption are relative advantage, compatibility, complexity, trial ability and observe ability. These factors shall be discussed in details in unit this unit.

The diffusion process is such that the innovation when gotten from its source of invention, it is directed to the ultimate users in a social system, which may be a village, Ward, Local Government Area or a State. As it gets to the social system or community, a few highly innovative members of a social system first adopt it who turn to influence other people in the society to adopt. Thereafter it trickles to other members of the system.

4.3.1 Push Factors to Diffusion of Innovations

Diffusion studies have demonstrated a mathematically consistent sigmoid pattern (the S-shaped curve) of adoption for consequential innovations over time when the decisions to adopt are voluntary (Figure 1). A predictable pattern over time has been observed when an innovation spreads as the now familiar S-shaped cumulative adoption curve.

According to Dearing (2008) diffusion occurs through a combination of some factors which are here considered as push factors. These push factors combine to make it possible for diffusion of innovations to take place in a social system:

- i. The need for individuals to reduce personal uncertainty when presented with new information. In other words they need to be certain or positive that the information or innovation would offer

- a more positive result. Such thought will always encourage them to want to adopt innovations they are confronted with.
- ii. The need for individuals to respond to their perceptions of what specific credible others are thinking and doing, and
 - iii. General felt social pressure to do as others have done.

Uncertainty in response to an innovation typically leads to a search for information and, if the innovation is perceived to be important in terms of having consequences for a potential adopter, a search for evaluative judgments of trusted and respected others

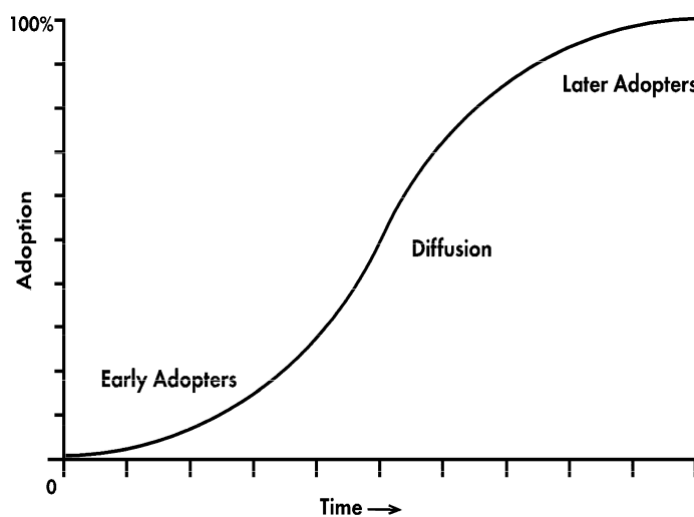


Fig. 1: S-shaped Cumulative Adoption Curve

4.3.2 Stages of Diffusion of Innovation/Innovation Decision Process

The diffusion of innovation otherwise known as the innovation decision process is known to occur in stages and these stages are not only five in number but all of them have their own significance. The stages are as described below:

- a) **Knowledge stage:** This is the first stage in the innovation decision process. The stage involves the exposure of the existence of the innovation or technology to the farmer or the target person or social system. In addition, the function or importance of the innovation is also made known to the target person(s). It is at this stage that the awareness of the innovation is made known for the first time. An early knower generally is more highly educated, has higher social status, is more open to both mass media and interpersonal channels of communication, and has more contact with change agents. Mass media channels are relatively more

important at the knowledge stage, whereas interpersonal channels are relatively more important at the persuasion stage.

- b) Persuasion stage:** Persuasion stage is second stage of the diffusion of innovation. This stage actually involves the movement of the innovation from the extension agent to the farmer, hence there is that need of the extension agent to form a favourable attitude to it. This favourable attitude is necessary as a condition to convince the farmer of potential positive results which the technology or innovation has in stock. The farmer on their part as well develop an attitude that is either positive or negative to the innovation and this is expected to be seen by the extension agent driving the innovation.

Innovation decisions in this stage may be optional (where the person or organisation has a real opportunity to adopt or reject the idea), collective (where a decision is reached by consensus among the members of a system), or authority-based (where a decision is imposed by another person or organisation which possesses requisite power, status or technical expertise).

- c) Decision stage:** This stage being the third, is a commitment to adoption of the innovation. The individual engages in activities which may lead to a choice to adopt or reject the innovation.

Actually, the entire innovation-decision process is a series of choices at each stage. For instance, in the knowledge stage, the individual must decide which innovation messages to attend to and which ones to disregard. In the persuasion stage, he must decide to seek certain messages and to ignore others. *But in the decision function the type of choice is different from those previous; it is a decision between two alternatives, to adopt or reject a new idea.* This decision involves an immediate consideration of whether or not to try the innovation, if it is trial-able. Most farmers will not adopt an innovation without trying it first on a probationary basis to determine its utility in their own situation. The small-scale trial is often part of the decision to adopt and this is usually carried out in a small plot called small plot adoption techniques (SPAT). Such trials are important and seen as a means to decrease the perceived risk of the innovation for the adopter. In some cases, innovation cannot be divided for trial, and so it must be adopted or rejected whole like that. Innovations, which can be divided for trial use, are generally adopted more rapidly than those innovations that cannot be divided or broken into parts. Most farmers who try an innovation then move to an adoption decision, if the innovation has a certain degree of relative advantage. Otherwise, such innovation could be dropped.

- d) **Implementation stage:** Implementation stage is approached by the adopter or farmer when he/she has been convinced and seen some improvement and additional benefits possessed by this innovation or technology over the other in practice before. This is a stage where an individual or other decision-making unit puts an innovation into use.

At this stage the individual is generally concerned with where to get the innovation, how to use it and what operational problems will be faced and how these could be solved. Implementation may involve changes in management of the enterprise and/or modification in the innovation, to suit more closely to the specific needs of the particular person who adopts it. Re-invention often occurs at the implementation stage and that is, if need be, to suit prevailing circumstance.

Re-invention is defined as the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation. Re-invention often is beneficial to the adopters of an innovation. Flexibility in the process of adopting an innovation may reduce mistakes and encourage customization of the innovation to fit it more appropriately to local situations or changing conditions. As a result of re-invention, an innovation may be more appropriate in matching an adopter's preexisting problems and more responsive to new problems that arise during the innovation-decision process.

Recognition of the existence of re-invention brings into focus a different view of adoption behavior, instead of simply accepting or rejecting an innovation as a fixed idea, potential adopters on many occasions are active participants in the adoption and diffusion process, to give their own unique meaning to the innovation as it is applied in their local context. Adoption of an innovation is thus a process of social construction.

- e) **Confirmation stage:** This is the fifth and last stage of the diffusion of innovation process. The stage is one of reinforcement based on positive outcomes from the innovation. Most of the researchers indicated that a decision to adopt or reject is not the terminal stage in the innovation-decision process. Human mind is in a dynamic state and an individual constantly evaluates the situation. If the individual perceives that the innovation is consistently giving satisfactory or unsatisfactory results the person may respectively wish to continue to adopt or reject the innovation as the case may be.

At the confirmation stage, the individual seeks reinforcement for the innovation-decision he has made, but he may reverse his previous

decision if exposed to conflicting message about the innovation. The confirmation stage continues for an indefinite period in time.

Self-Assessment Exercise

- 1: What do you understand by persuasion stage in the diffusion of innovation process.
2. Make some insights into diffusion.

4.4 Summary

In this unit, we have identified diffusion of innovations as the spread of those innovations generated from one source or the other through a population. The push factors which combine to make diffusion occurs in a social system were also discussed. Also examined were the stages involved in the innovation-decision making process. Diffusion of innovations refers to the spread of those innovations generated from one source or the other through a population, and is simply the result of a host of individual adoption decisions. Differences exist between the diffusion process and innovation-decision making. However, diffusion is pushed by a combination of certain factors which make it possible for diffusion of innovation to take place among large group of persons. Also to mention is the fact that diffusion of innovation takes place in five different stages.

4.5 References/Further Readings/Web Resources

- Adekoya, A. E. & Tologbonse, E. B. (2005). *Adoption and Diffusion of Innovations In: S.F. Adedoyin (Ed.) Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 27.
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<http://www.manage.gov.in/pgdaem/studymaterial/manage102/manage%20book%20102-block1.pdf>

4.7 Possible Answers to Self-Assessment Exercise(s)

1. What do you understand by persuasion stage in the diffusion of innovation process.

Persuasion stage: Persuasion stage is second stage of the diffusion of innovation. This stage actually involves the movement of the innovation from the extension agent to the farmer, hence there is that need of the extension agent to form a favourable attitude to it. This favourable attitude is necessary as a condition to convince the farmer of potential positive results which the technology or innovation has in stock. The farmer on their part as well develop an attitude that is either positive or negative to the innovation and this is expected to be seen by the extension agent driving the innovation.

2. Insight into Diffusion of Innovation

Diffusion of innovations refers to the spread of those innovations generated from one source or the other through a population, and is simply the result of a host of individual adoption decisions. According to Rogers 1962 the diffusion process can be explained as “the spread of a new idea from its source of invention or creation to its ultimate use of adopters”. The process by which an innovation spreads within a social system is called “diffusion”. An innovation diffuses within a social system through its “adoption” by individual and groups.

An innovation does not diffuse at the same rate across different societies and persons. An innovation which represents only a slight modification of an existing idea or practice will obviously diffuse at a faster rate than the one which represents a significant departure from it or that is entirely new. The factors that influence diffusion of innovation are based on the perception of the farmers rather than being the inherent qualities of an innovation Perception is an activity through which an individual becomes aware of objects around oneself and of events taking place. Some of the important traits of an innovation which influence the rate of adoption are relative advantage, compatibility, complexity, trial ability and observe ability.

Unit 5 Models of Diffusion of Innovation

Unit Structures

- 5.1 Introduction
- 5.2 Intended Learning Outcomes
- 5.3 What is a Model and what is its Purpose?
 - 5.3.1 Types of Innovation Decision Models
- 5.4 Summary
- 5.5 References/Further Readings/Web Resources
- 5.6 Possible Answers to Self-Assessment Exercise(s)

5.1 Introduction

Diffusion is the “process by which an innovation is communicated through certain channels over a period of time among the members of a social system”. An innovation is “an idea, practice, or object that is perceived to be new by an individual or other unit of adoption”. “Communication is a process in which participants create and share information with one another to reach a mutual understanding”. Models are applied in all situations that require analysis and abstraction from complex phenomena. The objective of such analysis is often to document, understand and enable us to be in a position to influence or alter situations and predict reactions or impact of such attempts to influence or alter reality. A model therefore is any form of abstraction from reality, aimed at enabling us to understand and deal with particular aspects of reality that is of interest.

5.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- understand what a model is
- the purpose of a model
- explain some of the different types of diffusion of innovation models.

5.3 What is a Model and what is its Purpose?

A model is an informative representation of an object, person or system. Models can be divided into physical models and abstract models. A model can also be conceptualized as:

- A usually miniature representation of something.
- A type of product or a design of product.

- A description or analogy used to help visualize something that cannot be observed or difficult to conceptualized or describe.

The purpose of a model is that models are representations that can aid in defining, analyzing and communicating a set of concepts. In science, models are used as representation of an idea, an object or even a process or a system that is used to describe and explain phenomena that cannot be experienced or explained directly. To this end in view, Scientists use models to communicate their explanation.

5.3.1 Types of Innovation Decision Models

There are different types of innovation decision models and these different types are peculiar to the prevailing circumstance of the innovation/technology, the materials or inputs available, the extension agents that convey the innovation/technology and the farmers who are at the receiving end of the innovation. Some of the innovation decision models are explained below:

- i The **Linear Model of Innovation:** Linear Model of Innovation is an early model of innovation that suggests technical change happens in a linear fashion/manner from invention of innovation to diffusion of the innovation. Initially, it was assumed that innovations originate from scientist, who then transfer the innovations via communication workers and other intermediaries, and finally reaches the agriculturists/farmers who are the end users that put the innovations into use. This model of thinking is called 'the **Linear Model of Innovation** (Kline and Rosenberg, 1986). The model is further characterized by a clear task division between various actors. Some actors are supposed to specialize in the **generation of innovations**; others concentrate on their **transfer**, while the farmers' role is merely to **apply the innovations** as shown in Figure 2.

The scenario changed when Scholars started to analyze in retrospect how successful innovations came into practice, the Scholars soon discovered all sorts of deviations from the linear model. It appeared, for example that researchers often got their innovative ideas from practitioners/farmers, that farmers made significant adaptations to the packages developed by scientist. Many innovations therefore occurred without involvement of scientists, and the function of communication workers was not so much to transfer knowledge and information from scientists to farmers, but rather the other way round or even to a role only in knowledge exchange among farmers (Leeuwis, 2003).

In view of such findings, it was concluded that innovation requires close co-operation in a net-work of actors, who all contribute to the 'generation' and 'transfer' of knowledge, and to its 'integration' into viable innovations. In adoption and diffusion research, the active and creative role of farmers in innovation process has been overlooked. Very few, if any, studies have focused on the adoption of farmers' ideas by researchers and change agents. Apparently, studying adoption 'the other way round' was not considered worthwhile, which is indicative of the limited value attached to farmers' knowledge and ideas by 'adoption and diffusion of innovations' researchers. Below is the schematic line of chat that depicts the Linear Model of Innovation.

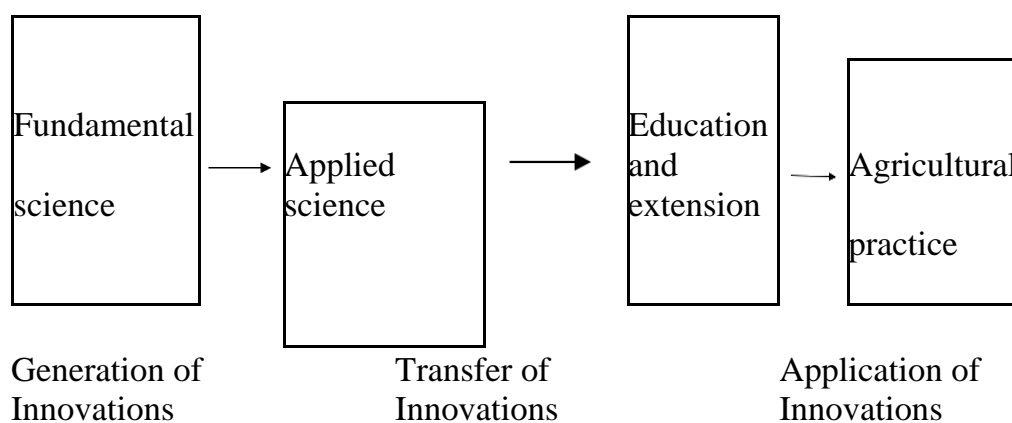


Fig. 2: The Linear Model of Innovation

- ii. **One Step Flow Model:** The One Step Flow Model is one model where there is innovation to be passed or conveyed to the people, there is also the extension agent as well as the farmers who are out there to receive the innovation. In this case, the model is here designed to communicate the information/innovation to every member of the social system. So, there is no preference. The communication is done in a way that every member of the system gets the information at the same time.

As the innovations are being practiced, there will be rein-enforcement through interactions among the people (farmers) and such interactions will give room for further clarifications. Doing this will be subject to the importance and quality of the innovation to the people.

All the change agent/extension agent does is just to ensure that there is the employment of appropriate means of communication that would ensure or guarantee an even reach out of the innovation/technology among the people.

- iii. **Hypodermic Needle Model:** This is another model of diffusion of innovation. The model is such that assumes that there is lack of

effective or influential leader or leadership. In this case, the extension agent introduces the innovation/technology into the system through any individual chosen by him/her, hence the name hypodermic needle model. Thereafter, the innovation enters the social system via that one chosen person by targeting the mass audience and amongst them there is free flow of information about the innovation/technology.

The introduced innovation/technology/information is then subjected to a natural flow amongst the people in the system. However, the rate of flow of the technology/innovation/information depends on the level of interaction of the people in the system. The model ensures that there is no further intervention or rein-enforcement of the innovation.

- iv. Two Step Flow Model:** The Two Step Flow Model as the name implies, is a type of diffusion information model that bases its principles of lack of equality among the people of the social system. These people are placed on two hierarchies which are the leaders and followers. In such a case, the information/innovation cannot get to all the people at the same time. The model does promote interaction amongst the people, and importantly, it determines capacity of the people and follows order.

This calls for why the leaders are more at an advantage to access and examine new innovations/information/technologies before other people in the system. To this end in view, every information/innovations/communication is directed to the leaders who after examining the content, will eventually flow same to the other members of the system. This is why much effort is levied on the leaders to understand the innovations/information/technologies. This is the model being adopted by the Agricultural Development Programme that uses the Contact farmer to reach out to other farmers.

- v. Multi Step Flow Model:** This model of diffusion of innovation is different from all others because it uses or adopts several channels to convey information/innovations/technologies to the people of a social system. This kind of approach creates a lot of reactions on a particular issue (information/innovations/technologies) among dynamic and vibrant groups. The people are therefore left with their choice they consider right for adoption. The planning of this model depends on several factors like:

- availability of channels,
- ability to use the channels,
- nature of message, etc

<p>Self-Assessment Exercise</p> <ol style="list-style-type: none"> 1. Explain the Linear Model of Innovation. 2. What is two step flow model?
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5.4 Summary

In this unit, students have learnt about the model of diffusion of innovation which involves Generation of innovation, transfer of innovations and application of innovations, Diffusion model has three dimensional phases namely; Antecedents, Process and Consequences. Additionally, different models exist and are adaptable to different situations as deem fit by the extension agents. Hence, we have the Linear Model of Innovation, One Step Flow Model, Hypodermic Needle Model, Two Step Flow Model and Multi Step Flow Model. Diffusion of Innovation model is a form of abstraction from reality, aimed at assisting us to understand and deal with particular aspects of authenticity that is of concern. Such analysis is often to document, understand and enable us to be in a position to influence or alter situations and forecast reactions or impact of such attempts to influence or alter reality. However, it is of note that several models do exists and they are adoptable to different situations. Not one model fits all situations, hence the extension agents study situations and then know which to apply to particular situations.

5.5 References/Further Readings/Web Resources

- Adekoya, A. E. & Tologbonse, E. B. (2005). *Adoption and Diffusion of Innovations In: S. F. Adedoyin (Ed.) Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 29 and 30.
- Kline, S. J. & Rosenberg, N. (1986), "An overview of innovation." In R. Landau & N. Rosenberg (Eds.). *The Positive Sum Strategy: Harnessing Technology for Economic Growth*. Washington, D.C: National Academy Press, pp. 275–305.
- Leeuwis Cees (2003). *Communication for Rural Innovation: Rethinking Agricultural Extension*, CTA, 412p.
- Rogers, E. M. (1995). *Diffusion of Innovations* (4th ed.). New York: Free Press.

5.6 Possible Answers to Self-Assessment Exercise(s)

1. Explain the Linear Model of Innovation.

Linear Model of Innovation: Linear Model of Innovation is an early model of innovation that suggests technical change happens in a linear fashion/manner from invention of innovation to diffusion of the innovation. Initially, it was assumed that innovations originate from scientist, who then transfer the innovations via communication workers and other intermediaries, and finally reaches the agriculturists/farmers who are the end users that put the innovations into use. This model of thinking is called 'the **Linear Model of Innovation** (Kline and Rosenberg, 1986). The model is further characterized by a clear task division between various actors. Some actors are supposed to specialize in the **generation of innovations**; others concentrate on their **transfer**, while the farmers' role is merely to **apply the innovations**.

2. Two Step Flow Model: The Two Step Flow Model as the name implies, is a type of diffusion information model that bases its principles of lack of equality among the people of the social system. These people are placed on two hierarchies which are the leaders and followers. In such a case, the information/innovation cannot get to all the people at the same time. The model does promote interaction amongst the people, and importantly, it determines capacity of the people and follows order.

Unit 6 Types of Innovations

Unit Structures

- 6.1 Introduction
- 6.2 Intended Learning Outcomes
- 6.3 Types of Innovation
 - 6.3.1 Communication
 - 6.3.2 Communication Channels
- 6.4 Summary
- 6.5 References/Further Readings/Web Resources
- 6.6 Possible Answers to Self-Assessment Exercise(s)

6.1 Introduction

Innovations are ideas, practices or objects that are perceived as new by an individual, organization, or other units of adoption. These technologies are either developed in research centres or in the farmers farms, in which case it taken to the research centres for modifications or for better adaptability. These innovations could be new varieties of crops, improved breeds of animals, new chemicals for farming our crops or new feeds for feeding our animals. Important to mention that these innovations either directed to the angle of crops, animals or fishery, they are usually of two major types and they include knowledge based and material innovations or technologies.

When these innovations are developed, they are then communicated to the targeted persons who stand to make use of the technologies.

6.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- know about the types of innovation that exist
- they should also be able to describe the types of innovations
- they should able to describe communication as a concept.

6.3 Types of Innovation

There are two basic types of innovation/technology. They are:

- i. Knowledge based innovation/technology, and
- ii. Material technology

i. Knowledge based innovation/technology

Knowledge based technology is one of the types of technology and which is known as the software component of the technology under consideration. Knowledge based technology could be in the form of idea that involves technical knowledge linked to mental reasoning concerning planting date, planting distance, harvesting date or cropping period, etc. In where animals are considered, Knowledge based technology may include vaccine to administer to animals, how to service animals, time to service the animals, how, when and the period to feed the animals, etc. Knowledge based technology is a little more difficult to transfer from the extension agent to the farmers (end users) for adoption due to some challenges confronting the farmers. These limitations may include the mental reasoning, training and management skills, most of these the resource poor illiterate farmers may not have in his/her possession.

ii. Material technology

Material technology is also known as hardware component of the technology/innovation under consideration. Material technology can be in the form of improved seeds, improved breeds of animals, improved feeds, sprayer, farm machines, improved agronomic chemicals like fertilizers, herbicides, insecticides, etc. In fact, material technology includes all tangible improved farm materials.

Material technology complements knowledge-based technology in that a material technology that has to do with the emergence of an improved crop variety, can only do well or meet up with its potentials (expected results) when it is merged with a knowledge-based technology that could do with improved agronomic practices like planting date, planting distance, heaping or ridging the soil, etc.

Going further, material technology is described as being easier, simpler and more-straight forward to transfer from the technology holder (extension agent) to the farmers for adoption. This is as a result of the fact that it is hardware that is involved that majorly requires just instructions that needed to be complied with.

6.3.1 Communication

Communication is defined as the exchange of ideas, skills or information between two or more persons. Communication between persons is usually conceptualized with some terms in place. The terms are; source, channel, content, target and feedback. Every communication from person A (e.g. extension agent) to person B (like farmers) would always demand a feedback from the farmer. Feedback from the person B tells the extent the message passed by person A was understood. Feedback is given in different ways. It could be in words, eye or hand movement, etc.

Communication and diffusion of innovation have a point where the share some similarity. This is in the area of seeing both of them having to do with transform of information with expectation of response. Although, diffusion involves greater activity because it is goal driven and usually evaluated or appraised in line with expected returns or results.

6.3.2 Communication Channels

These are the different media through which communication is or messages pass from its source to its receiver. The channels include:

- i. **Mass media channels:** Mass media method is a method of communicating information from one person to another. This medium of communication is relatively more important at the knowledge stage where awareness is first created to the people about the innovation that is being brought to them. This stage also has the advantages of reaching so many people together at the same time and the message can be recorded and played at the adopters/receiver's convenience as long as it was recorded. For successful technology transfer programme, the extension agents have to plan their communication strategy based on the actual information needs of the client system. Example of mass media channel include are: radio, television, newspapers, magazine, pamphlets, and so on. It is mainly the elite, educated and more exposed travelled that are more privileged to harness this channel of communication.
- ii. **Interpersonal Channel:** Interpersonal channel involves of information a face-to-face exchange of information between two or more individuals. Localite sources of information belong to the same social system as that of the receivers. Their knowledge about objects and events are restricted, generally confined to the local system. Examples are relatives, friends, neighbours etc.

On the other hand, cosmopolite sources of information are from outside the social system of the receivers. Their knowledge about objects and events are wider, and as such, they can bring new ideas to the receivers. Examples are extension agents who bring information from outside to give information on a one-on-one means to the farmers who are the end users of the information.

Interpersonal channels are relatively more important and more convincing in the persuasion stage in the innovation-decision process.

- iii. **Hybrid Media:** Hybrid Media is almost a new type of medium of disseminating information to farmers. It involves the use of the

Internet. Through this means or medium of communication, a large number of people in many locations, and at the same time can be reached. It is important to add that the number of people that can be reached is much higher than that which can be reached through conventional mass media (television, radio, prints). Many of the hybrid media are based on technology that is often referred to as Information and Communication Technology (ICT). Examples are CD-ROM (Compact Disc-Read Only

Memory, electronic conferencing, Internet, FaceBook, WhatsApp, e-mails etc.

- iv. Nature of the Social System:** Nature of the Social System is to some extent a medium through which information is passed from one person to other people in a social system. Nature of the Social System is connected largely with social influence and societal characteristics that shape diffusion. Knowledge and perception of the people are subject to social influences and related to social interests. Nature of the Social System are guided by the people's:
- a) Social Norms which have to do with people's social background, socio-cultural values and beliefs.
 - b) Pattern of network interconnectedness in social networks - political contexts and group interest, individual; interest in specific interaction settings

v. Extent of Change agent's promotion efforts

Greatest response to change agent effort occurs when opinion leaders adopt, which usually occurs somewhere between 3 and 16 % adoption in most systems. The effort of the change agent in effecting adoption rate will go a long way in encouraging other farmers in the system to adopt the innovation that is been brought to them in the social system. To this end in view, the change agent is now seen as one means through which innovation is communicated to the people.

Self-Assessment Exercise

1. Differentiate between communication and communication channels.
2. What is hybrid media?

6.4 Summary

In this unit we have been able to study the types of innovations which we saw to be two and they include Knowledge based technology and Material technology. They are respectively classed as software and hardware in

nature and they both complement each other as far as the farm operation is concerned. Communication which is synonymous to diffusion is vital for technology to be disseminated to the farmers and such can be handed to the extension or change agent through different channels like mass media channel, interpersonal channel, hybrid media channel, the nature of social system and extent of change agent's promotion effort. We have studied innovation and types of innovation which was shown to be of two types. These two types are Knowledge based technology and Material Technology and are respectively known to be software and hardware technologies in nature. The knowledge-based technology is more difficult to adopt due to some of the challenges that may be confronting the farmers while the material technology is easier to apply because it only requires fixing and abiding to instructions. However, they both complement one another. Communication has been as the exchange of ideas, skills or information between two or more persons as it is vital for technology/innovation to be disseminated to the farmers. The innovation/technology is communicated through different channels to the end users – farmers

6.5 References/Further Readings/Web Resources

- Adekoya, A. E. & Tologbonse, E. B. (2005). *Adoption and Diffusion of Innovations In: S.F. Adedoyin (Ed.) Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 28.
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6.7 Possible Answers to Self-Assessment Exercise(s)

1. Differentiate between Communication and Communication Channels

Communication is defined as the exchange of ideas, skills or information between two or more persons. Communication between persons is usually conceptualized with some terms in place. The terms are; source, channel, content, target and feedback. Every communication from person A (e.g. extension agent) to person B (like farmers) would always demand a feedback from the farmer. Feedback from the person B tells the extent the message passed by person A was understood. Feedback is given in different ways. It could be in words, eye or hand movement, etc. Communication Channels are the different media through which communication is or messages pass from its source to its receiver. Examples are radio, television, phones, newspapers etc.

2. **Hybrid Media:** Hybrid Media is almost a new type of medium of disseminating information to farmers. It involves the use of the Internet. Through this means or medium of communication, a large number of people in many locations, and at the same time can be reached. It is important to add that the number of people that can be reached is much higher than that which can be reached through conventional mass media (television, radio, prints). Many of the hybrid media are based on technology that is often referred to as Information and Communication Technology (ICT). Examples are CD-ROM (Compact Disc-Read Only

Memory, electronic conferencing, Internet, FaceBook, WhatsApp, e-mails etc.

Module 2 Concept and Process of Adoption

Unit 1	Types of Innovation – Decisions and Physical Characteristics of Innovation
Unit 2	Concept and Definition of Adoption and Non-Adoption of Innovation
Unit 3	Process of Adoption of Innovation/New Technology
Unit 4	General Factors Affecting the Acceptance of Change

Unit 1 Types of Innovation–Decisions and Physical Characteristics of Innovation

Unit Structures

- 1.1 Introduction
- 1.2 Intended Learning Outcomes
- 1.3 Types of Innovation Decision
 - 1.3.1 Physical Characteristics of Innovation
- 1.4 Summary
- 1.5 References/Further Readings/Web Resources
- 1.6 Possible Answers to Self-Assessment Exercise(s)

1.1 Introduction

This unit examines the different types on innovation-decisions and the physical characteristics of innovation. Innovation as we know is anything that is thought of as “new” to particular persons and time. Innovation at this time looks at the position of the person at the receiving end, who is likely to be the farmer and his/her decision to adopt or not to adopt the innovation that has been brought to him by the convener who is the extension agent. On this note we have four major types of innovation-decisions.

Also examined are the characteristics of innovation. These are actually those factors that either encourage or discourage the adoption of innovations.

1.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the different types of innovation decisions
- discuss the different characteristics of innovation.

1.3 Types of Innovation-Decision

Type of Innovation-Decision- refers to the number of people involved in the process of adoption of the innovation. It also has to do with who exactly makes the decision, that is, either the direct user is making the decision by and for himself or someone is making the decision for him/her. The decision maker can exist of individuals or in groups. Nonetheless, there are outstanding four major types of innovation decisions. Namely:

- i. **Optional innovation decisions:** This is one of the type of innovation decision that has to do with the possibility of an individual (farmer) deciding on the type of innovation to adopt. Such decision is out rightly regardless of the social system he/she belongs. That is to say, whether the social system want the people to adopt or not is not of consideration by the adopter. The individuals take their decision independent of other people in the system. In most cases however, optional innovation decisions operates when the innovation being considered is in line with the values of the society, but the innovation cannot or is not forced on any one to adopt. Summarily, there is freedom for the people of the system of either to or not to adopt the innovation.
- ii. **Collective innovation decision:** Collective innovation decision, is a types of innovation decision that adopts the participatory approach where the people of the group or social system need to come together to decide whether or not to adopt the innovation brought before them. This system involves the enlisting of the support and agreement of all members of the group or the social system to arrive at a mutual decision that must be conformed to by the people. A major disadvantage of this type of innovation decision is that the adoption process is slow since a consensus needs to be sought. Collective innovation decision is achieved by going through the different stages:
 - a - Stimulation of the people's interest
 - b - Initiation and discussion of ideas
 - c - Legitimation of idea,
 - d - Decision and plan to act, and
 - e - Action
- iii. **Authority innovation decisions:** Authority innovation decision is a type of innovation decision where there are two major class of people in the social system. A particular class of people or group likely to be in authority exist in the social system. In most cases, these people or group in authority are usually few in number relative to the entire people that exist in the system. These people

possess power, status, or technical expertise and they use these qualities in them to decide on adoption or rejection of an innovation while the other group of people in the same system follow the decision made by a collective decision.

Collective and authority decision types are much more common than optional. A major advantage of the authority innovation decisions is that it has the fastest rate of adoption, but can be circumvented during their implementation.

- iv. **Contingent innovation decision:** Contingent innovation decision is the fourth type innovation decision in which choices to adopt or reject an innovation can be made only after a prior innovation – decision. Such innovation decision is made in where two related enterprises are concerned. Take for example, a situation where we have a milking enterprise and the production of dairy animals. So the decision to adopt a milking technology will depend on that of raising ruminant animals like cattle. The system is such that one innovation decision is made before the other can be made, what this means is that the second decision is contingent on the first

1.3.1 Physical Characteristics of Innovation

Every innovation is endowed by one or more characteristics and for the innovation to be adopted, some but not necessarily all of these characteristics or attributes must be evident in the innovation and must be perceived or observed by the potential adopter. Rogers identifies seven critical attributes that greatly influence the rate of adoption. They are:

- i) **Relative Advantage:** Relative advantage has to do with the feature that is observed in the innovation by the potential adopter. In addition, the potential adopter also compares what he/she has observed in the new innovation and measures it with what exists before. The innovation must be perceived to be better than the status quo or what exist before. This will result in expanding the number or geographical reach of users for the new innovation. The advantage of the new technology over the old one may be in terms of improved application, performance (in terms of early maturing, disease/pest resistance, yield, ability to withstand drought, etc), and cost saving, etc. A situation where the advantages are obvious over the previous technology, the people will quickly adopt the technology/innovation.
- ii) **Compatibility:** Compatibility is the degree to which an innovation is perceived as consistent or not deviating from the existing values, past experiences, and needs of potential adopters. Compatibility is

strongly connected with the adoption process and this is governed by individuals operating within a social structure. First, the new thing must be technically compatible. Second, the new product or service needs to be organizationally compatible. The more all of these aforementioned are in line with the technology, the more the potential adopters will be willing to adopt the innovation. On the contrary, any innovation that is at variance or disagreement with the people's value, culture and tradition will be resisted by the people.

- iii) **Complexity:** This is the degree to which an innovation is perceived as difficult to understand and use. Complexity could be in terms of practicing the technology, could as well be in the quantity of what and what is being involved in the technology/innovation, the explanation that could be difficult to straighten as far as the technology is concerned, etc. However, a more complex innovation is more resisted by the people while less complex innovation is highly adopted by the people.
- iv) **Trialability:** Trialability is linked to practicability. Meanwhile, trialability is the degree to which an innovation can be experimented with a limited basis. When a technology is introduced, it actually needs to be tried by the people. The ease with which the innovation can be tried has great influence to the quick adoption of the innovation. The innovation will not be adopted or may be slow to adoption when it is difficult to try at the introduction stage.
- v) **Observability:** This has to do with the degree to which the results of an innovation are visible to others. The advantages and results of an innovation needs to be seen by the people if reasonable level of adoption is expected. As we move to innovations with more observable performance and cost improvements, it becomes easy to know and see the qualities or features associated with the innovation and all of this will encourage the adopters too quickly adopt the innovation.
- vi) **Divisibility:** This is the degree to which an innovation may be experimented in small units. There are innovations that are packaged in whole while others are packaged in fragments. Those innovations that are packaged whole means they will need a holistic application and approach. Such innovations may here be termed as complex and so, difficult to practice. On the other hand, innovations that are in small fragments and can be practiced in same small fragments (like separating planting practice, irrigation practice, fertilizer application practice, harvesting and storage

practice, etc) are more welcomed, easily practiced and more adopted by the people.

- vii) **Accessibility:** This is the degree to which an innovation is readily available with minimum effort. There is little need for change agent to push farming inputs that farmers either cannot afford or for which infrastructure does not exist for its distribution. More accessible technology/innovations are readily more welcomed by potential adopters than technology/innovations or its inputs are difficult to reach. Accessibility is a major consideration in where adoption of innovation is concerned.

Self-Assessment Exercise

1. List out and describe the different types of innovation decisions.
2. Collective innovation decision is achieved by going through the different stages. Enumerate.

1.4 Summary

This unit studied the different innovation decisions that could be advanced by the end users and the factors that surround the decision-making process. Also, the adoption of innovations is governed by some characteristics that include the innovation/technology relative advantage, complexity, compatibility, accessibility, divisibility, observability and trialability. There are actually different innovation decisions made by potential adopters and these decisions are determined by the person who is introducing the innovation or the persons (farmers) who are the receiving end. The position of the introducer of the technology is also a factor. However, this unit saw innovation decisions to include optional innovation decision, collective innovation decision, authority innovation decision and contingent innovation decision. Additionally, the adoption of innovations are influenced by different factors such as the innovation relative advantage, its compatibility, complexity, ease of trialability, observability, divisibility and the innovations accessibility.

1.5 References/Further Readings/Web Resources

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1.6 Possible Answers to Self-Assessment Exercise(s)

1. List out and describe the different types of innovation decisions.

- i. **Optional innovation decisions:** This is one of the type of innovation decision that has to do with the possibility of an individual (farmer) deciding on the type of innovation to adopt.
- ii. **Collective innovation decision:** Collective innovation decision, is a types of innovation decision that adopts the participatory approach where the people of the group or social system need to come together to decide whether or not to adopt the innovation brought before them.
- iii. **Authority innovation decisions:** Authority innovation decision is a type of innovation decision where there are two major class of people in the social system. A particular class of people or group likely to be in authority exist in the social system.
- iv. **Contingent innovation decision:** Contingent innovation decision is the fourth type innovation decision in which choices to adopt or reject an innovation can be made only after a prior innovation – decision. Such innovation decision is made in where two related enterprises are concerned.

2. **Collective innovation decision** is achieved by going through the different stages:

- a - Stimulation of the people's interest
- b - Initiation and discussion of ideas
- c - Legitimation of idea,
- d - Decision and plan to act, and
- e - Action

Unit 2 Concept and Definition of Adoption and Non-Adoption of Innovation

Unit structures

- 2.1 Introduction
- 2.2 Intended Learning Outcomes
- 2.3 Concept and Definition of Adoption of Innovation
 - 2.3.1 Concept of Non-Adoption of Innovation
- 2.4 Summary
- 2.5 References/Further Readings/Web Resources
- 2.6 Possible Answers to Self-Assessment Exercise(s)

2.1 Introduction

Adoption of innovation has to do with making use of innovation that has been brought to the people of a particular social system. It first starts with what information the extension agent has brought to the farmer. Where the information is considered worthy to the farmer, he then adopts the innovation for the growth of his/her farm. This is done with the expectation of improving his productivity and income which will consequently lead to improved income. Non-adoption simply implies that the innovation that was passed to the farmer was not adopted due to one reason or the other.

2.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- write note on the concept of adoption.
- define adoption of innovation.

2.3 Concept and Definition of Adoption of Innovation

Adoption is regarded as a decision to make full use of an innovation or technology as the best course of action available. Adoption of an innovation is the decision of an individual or group to use or apply an innovation. When an innovation is generated from the farmers farm or from research centres it is taken to the farmer who is expected to make use of it. Most farmers often times go through a logical problem-solving process known as adoption process when considering any innovation or new technology. When an innovation is introduced to a farmer, his/her decision about whether to accept or not to accept the innovation usually takes time and never instantaneous. Adoption process is a mental process through which an individual passes from hearing about an innovation to final adoption. That is to say that adoption decision usually takes time.

Ekong (2003) expressed that an adoption is a decision to continue full use of an innovation while adoption process is the mental process through which an individual passes from first hearing about an innovation to the final stage. Agricultural extension effectiveness is judged by the rate of farmers adoption of improved technologies/innovation.

Van den Ban and Hawkins (2001) indicated that the adoption process consists of five steps or stages that an individual goes through from hearing to adopting an innovation.

2.3.1 Concept of Non-Adoption of Innovation

Non-adoption of innovation is something that has been observed in some cases where the farmers are. Non-adoption of innovations/technologies by the farmers can take place from any of the two below perspectives:

- i. Where there are non-innovations to use.
- ii. Where there are innovations but not adopted by the farmers.

Non-adoption of improved technologies or innovations has been advanced as a major reason for low farm productivity of the resource poor rural farmers.

Some of the reasons advanced for non-adoption of innovation are:

- i. Most of the process of developing the innovation or technology are finalized before the farmers get to see them. In this case, they are not informed and almost don't know how to go about it. In such a case they would have no choice but to refuse the technology.
- ii. Some of the developed technologies don't fit into the farmers situation or circumstance or condition.
- iii. In some cases, the farmers are unable to change and so just feel like rejecting the change/innovation or new technologies.
- iv. Poor transfer of information between research and the extension agent has also been identified as a reason for the non-adoption of innovation. The reason is not unconnected to lack of understanding of the innovation which consequently will hinder the transfer process.
- v. Another basic reason for the non-adoption of improved technology is inappropriateness of available technology will cause non-adoption of innovation. This is because the advanced technology may not suit the purpose and so preferred to be ignored by the farmers.
- vi. In some other cases, non-adoption of innovation may be as a result of non-technological factors like economic, cultural and social

- problems. Some of these problems may be related to changes in incomes and risks associated with the innovation which may make the farmers not to adopt the innovations.
- vii. There are some situations where the technology/innovation may be an interesting one but would not be adopted because of unfavourable agricultural policies which may accompany the technology.
 - viii. Poor communication process or inadequate information feedback may as well account for non- adoption of innovation. On the contrary, reverse would have been the case if the process was fitted with adequate feedback mechanism.
 - ix. Farmers also refuse to adopt technology because researchers make blank recommendations which do not take into account the diversity of farmers circumstances.
 - x. Often times researchers are technology-oriented rather than being problem-oriented.

Self-Assessment Exercise

1. Adoption decision is never spontaneous. Explain.
2. Non-adoption of innovations/technologies by the farmers can take place from any of the two below perspectives, mention them.

2.5 Summary

In this unit, we have studied adoption and seen it as the stage that comes after the development of an innovation and diffusion of the innovation. It was also conceived to be very important as it helps to boost farmers productivity and increased income. Failure to carry the farmer and his problems along in the development of the technology would result to non-adoption of the innovation. Adoption of innovation has to do with making use of innovation that has been brought to the people of a particular social system. Adoption is a process that comes after the development of an information and diffusion of the innovation. Farmers adopt innovation when the farmers conceive the innovation to possess advantages or benefits that out-weigh the former technology and it finally leads to increase in productivity and increased income. Non-adoption does occur when the innovation produced does not address the farmers problem along line with some other problems.

2.5 References/Further Readings/Web Resources

- Adekoya, A. E. & Tologbonse, E. B. (2005). Adoption and Diffusion of Innovations In: S.F. Adedoyin (Ed.) *Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. PP. 28 - 36.
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2.7 Possible Answers to Self-Assessment Exercise(s)

1. Adoption decision is never spontaneous. Explain.

Answer:

Most farmers often times go through a logical problem-solving process known as adoption process when considering any innovation or new technology. When an innovation is introduced to a farmer, his/her decision about whether to accept or not to accept the innovation usually takes time and never instantaneous. Adoption process is a mental process through which an individual passes from hearing about an innovation to final adoption. That is to say that adoption decision usually takes time.

2. Non-adoption of innovations/technologies by the farmers can take place from any of the two below perspectives:

- i. Where there are non-innovations to use.
- ii. Where there are innovations but not adopted by the farmers.

Unit 3 Process of Adoption of Innovation/New Technology

Unit Structures

- 3.1 Introduction
- 3.2 Intended Learning Outcomes
- 3.3 Process of Adoption of Innovation/New Technology
 - 3.3.1 Deficiencies of the Adoption Process
 - 3.3.2 Assumption of the Adoption Process
- 3.4 Summary
- 3.5 References/Further Readings/Web Resources
- 3.6 Possible Answers to Self-Assessment Exercise(s)

3.1 Introduction

The decision to adopt an innovation is not normally a single, instantaneous act. It is a decision-making process that takes some time, which may long or short. During this time, the individual or farmer goes through a number of mental stages of reasoning the benefits or advantages of the new technology or innovation at hand over the former one before making a final decision to adopt an innovation. This situation is better explained in terms of stages in adoption of innovation decision process. Technologies/innovation are developed as a result of observed deficiencies in a current way of doing things or emanates from new discoveries about things being in existence before. Hence technologies are either completely or partly new and are often expected to replace existing practice all things being equal. Technologies are meant to be incorporated into farming systems of farmers that is adopted. The farming innovations are seen to follow a sequence of steps if expected results are to be achieved. Having the adoption process to follow a sequence of steps is plagued with some deficiencies. Some assumptions were also advanced to give the adoption process its standing.

3.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- identify the stages involved in the process of adoption of innovation
- discuss the various stages or steps involved in adoption process as identified in above.

3.3 Process of Adoption

Diffusion of innovation with-in a social system takes place through its adoption by individual or groups. Adoption is a decision to make full use

of an innovation as the best course of action available. The decision to adopt an innovation, involves a process composed of learning, deciding, and acting over a period of time. The adoption process, as a decision-making process goes through a number of mental stages before making a final decision to adopt an innovation. Decision making is a process comprising a sequence of stages with a distinct type of activity occurring during each stage. Five stages have been more widely accepted to be the number of stages of the adoption process. These five stages include; Awareness stage, Interest stage, Evaluation stage, Trial stage and Adoption stage (AIETA) and they have been discussed below:

a) Awareness Stage

This is the starting or the first stage of the adoption process. This is the stages where the individual(s) or farmer(s) come to know and learn about the existence of the innovation or new idea. The information he/she has about the innovation/technology is still partial and not full or complete. The information may have been told to him/her by family members, friends, neighbours, change agents, cooperative members or heard from the mass media. What is important here is that he farmer or individual may want to go further in knowing about the innovation and but this is subject to how important he/she perceives of the innovation and how it meets with his/her needs

b) Interest Stage

This is the second stage of the adoption process. The farmer develops interest in the innovation and seeks additional information about it either from extension officer or from fellow farmers or from any source, which he feels credible. The farmer may be assisted by the amount of information accessible by his source of information. The information spells out to him the general merits of the innovation. That means the farmer acquires more information about an innovation or idea by wanting to know what the innovation/idea is, how it works and what its potentialities are. The source of information (family members, friends, neighbours, change agents, cooperative members or heard from the mass media) of the innovation at this stage vital role in either raising or damping the farmers/individual's interest.

c) Evaluation Stage

Evaluation is an assessment of an event or project. At this evaluation stage, the farmer makes mental application of the new idea in the present and anticipated future situations and decides whether or not to try it. He judges the utility or usefulness of the innovation to his situation, makes an assessment of the innovation's applicability to the solution of his own particular problem or the fulfilment of his needs. He would want to know the cost of the innovation and how it works and if spare parts exist (where technology and machines are involved). The individual actually mentally

tries the innovation at this stage and as well mental compare the advantages and the disadvantages of the innovation/technology against what existed before. Where the advantages of the innovation stand out, then he may proceed to the next stage.

d) Trial Stage

This is the stage where the individual/farmer actually applies or practices the innovation. The trial is not carried out on a large scale but on a small scale known as small plot adoption techniques (SPAT) reason being that he/she doesn't want to take big risk even though the potential of the idea has been proved. The farmer may be assisted at this stage by the change agent or the person who stands as his/her source of information. The new idea is applied on a small scale in order to determine its utility or feasibility and applicability in own situation. A situation where the farmer is pleased with the innovation, before he will proceed to practice the innovation on a larger scale.

e) Adoption Stage

This is the final or last stage of the adoption process. Where the farmer is satisfied with the performance of the innovation/technology which has been tested on small scale and found suitable and applicable to the farmer's own problem or situation, the farmer is now compelled to use the new idea continuously on a full scale. The innovation then becomes a part of his normal farming activity. It provides the advantage of the innovation and hence the farmer takes final decision and applies the innovation in a scale appropriate to own situation on a continued basis.

3.3.1 Deficiencies of the Adoption Process

The adoption process as good as it looks and as orderly as it appears is not without some deficiencies. These deficiencies point to the fact that the process does not exactly go as it purports. In other words, the dynamics of the process does not apply the same in all situations. Some of the deficiencies are stated below:

- i. The adoption process is viewed as a process that always results in the adoption of the innovation/technology under consideration. Whereas, there are situations or cases where the process may result to the innovation/technology not being accepted or rejected. So the fact that the process may end up not adopting the innovation creates a deficiency to the process.
- ii. The adoption process presents it in a step-by-step manner that appears in a sequential order. In real life situation, some of the steps may either be skipped or may occur in a simultaneous order. That is more than one of the steps may take place at the same time.

- iii. The process presents evaluation to take place at a particular stage. Whereas, in real situation, evaluation occurs at all the stages and not in one particular stage. It is the conviction from one stage arising from an evaluation that permits progression to another stage.
- iv. The adoption process once again presents the farmer as being in isolation and therefore taking his/her decision in isolation. In real situation this is not the case. Often times farmers are usually in groups where the information meets them and then they end up influencing one another on the need to adopt the innovation.
- v. This model of adoption process seems to have handled all technologies/innovation to go through the same process. That is not the case as it is supposed to be. Technologies are different and so the process of adoption is supposed to be different. Someone who is looking at adopting the use of tractor is likely not to go the same adoption process like someone who is considering an agronomic practice like ridging.

3.3.2 Assumption of the Adoption Process

The adoption process is carried out with some basic assumptions in mind. These assumptions allow the process to be considered to apply in almost all situations and environment. The assumptions are:

- i. Awareness of the innovation/technology is assumed as the first stage or starting point of the adoption process. This may not be so in all cases or scenarios. The narrative may be different in some situations. There are cases where a farmer may just see a technology in another person's farm and just take it to his/her farm to go and adopt. In such a case, so many stage including "awareness" may have been skipped. Most importantly, the assumption of awareness as the starting point holds.
- ii. The process also holds that certain values are common in all societies. These values could promote or frustrate the adoption process. Importantly, the assumption is that the values assumed to exist in societies are those ones that affect practices and ideas that increase production, raise profits, ensure greater efficiency, etc. The existence of these values are those factors that make the adoption process to follow the sequence it does follow.
- iii. The adoption process also assumes that the farmers have access to farm resources and relevant information. This condition may be correct in where advanced countries are but it is not correct in where developing countries like Nigeria is.
- iv. The adoption process also assumes that the changes required for the adoption of an innovation is insignificant. More would have been expected to make the innovation to be properly adopted in our Nigerian society.

- v. The process further assumes that there is sufficient infrastructure to support the new practice/innovation/technology. In real life situation, the narrative is quite different being that there is insufficient and inadequate infrastructure to support innovations as they are developed and disseminated.
- vi. Further assumption has it that the new practice/innovation is suitable for adoption in the particular region. This is one reason why innovations have always failed. Innovations are developed without carrying the farmers and their farm problems along. So when innovations are developed in most cases, it does not fit into the farmers situation and so such is bound to fail. It is putting a round peg in a square hole.

The process also assumes that the social gap between the change agent and the farmers is not far. In other words, that the farmers are easily reached by the change agents. That is not true because there is a great or wide social gap between elites who bring the innovations and the farmers who adopt those innovations. The social distance has often blocked communication between the change agent and the client (farmer)

Self-Assessment Exercise

1. Distinguish between awareness and interest stage in the adoption of innovation.
2. Write short notes on the deficiencies of adoption of innovation.

3.4 Summary

In this unit, we have learnt that adoption of specific practices is not the result of a single decision to act but series of actions and thought decisions. The thought of decisions involves five ideal and acceptable processes. Some of the deficiencies of the adoption process together with the assumptions underlining the process were considered. Adoption of innovation as a process composed of learning, deciding and acting over a period of time. The adoption of a specific practice is not the result of a single decision to act but series of actions and thought decisions. The process was also seen to be plagued by so many deficiencies and assumptions that have not really taken the Nigerian situation into consideration.

3.5 References/Further Readings/Web Resources

Adekoya, A. E. & Tologbonse, E. B. (2005). Adoption and Diffusion of Innovations In: S. F. Adedoyin (Ed.) *Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. PP. 32 - 34.

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3.7 Possible Answers to Self-Assessment Exercise(s)

1. Distinguish between awareness and interest stage in the adoption of innovation.

Awareness Stage: This is the starting or the first stage of the adoption process. This is the stages where the individual(s) or farmer(s) come to know and learn about the existence of the innovation or new idea. The information he/she has about the innovation/technology is still partial and not full or complete. The information may have been told to him/her by family members, friends, neighbours, change agents, cooperative members or heard from the mass media. What is important here is that he farmer or individual may want to go further in knowing about the innovation and but this is subject to how important he/she perceives of the innovation and how it meets with his/her needs

Interest Stage: This is the second stage of the adoption process. The farmer develops interest in the innovation and seeks additional information about it either from extension officer or from fellow farmers or from any source, which he feels credible. The farmer may be assisted by the amount of information accessible by his source of information. The information spells out to him the general merits of the innovation. That means the farmer acquires more information about an innovation or idea by wanting to know what the innovation/idea is, how it works and what its potentialities are. The source of information (family members, friends, neighbours, change agents, cooperative members or heard from the mass media) of the innovation at this stage vital role in either raising or damping the farmers/individual's interest.

2. Deficiencies of the Adoption Process

The adoption process as good as it looks and as orderly as it appears is not without some deficiencies. These deficiencies point to the fact that the process does not exactly goes as it purports. In other words, the dynamics of the process does not apply the same in all situations. some of the deficiencies are stated below:

- i. The adoption process is viewed as a process that always results in the adoption of the innovation/technology under consideration. Whereas, there are situations or cases where the process may result to the innovation/technology not being accepted or rejected. So, the fact that the process may end up not adopting the innovation creates a deficiency to the process.
- ii. The adoption process presents it in a step-by-step manner that appears in a sequential order. In real life situation, some of the steps may either be skipped or may occur in a simultaneous order. That is more than one of the steps may take place at the same time.

- iii. The process presents evaluation to take place at a particular stage. Whereas, in real situation, evaluation occurs at all the stages and not in one particular stage. It is the conviction from one stage arising from an evaluation that permits progression to another stage.
- iv. The adoption process once again presents the farmer as being in isolation and therefore taking his/her decision in isolation. In real situation this is not the case. Often times farmers are usually in groups where the information meets them and then they end up influencing one another on the need to adopt the innovation.
- v. This model of adoption process seems to have handled all technologies/innovation to go through the same process. That is not the case as it is supposed to be. Technologies are different and so the process of adoption is supposed to be different. Someone who is looking at adopting the use of tractor is likely not to go the same adoption process like someone who is considering an agronomic practice like ridging.

Unit 4 General Factors Affecting the Acceptance of Change

Unit Structures

- 4.1 Introduction
- 4.2 Intended Learning Outcomes
- 4.3 General Factors Affecting the Acceptance of Change
 - 4.3.1 Characteristics of Innovations in Terms of Receivers Demand
- 4.4 Summary
- 4.5 References/Further Readings/Web Resources
- 4.6 Possible Answers to Self-Assessment Exercise(s)

4.1 Introduction

Talking about “change”, it is anything new or a new thing done in a new way. Change as they say is inevitable. This change is quite needed by us and in our society. It actually creates room for improvement in the way things are done and thus gives room for improvement and better standard of living. The acceptance of the so much talked about change in our societies is affected by different factors. These factors either improve or join to resist the change as they are being advanced. Some of the factors are treated in this unit.

4.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the different factors that affect the acceptance or otherwise rejection of change
- examine the necessary questions required to be addressed by the community residents or farmers who are desiring change.

4.3 General Factors Affecting the Acceptance of Change

Change is inevitable and it is required for persons and community to move forward for the better. There are factors that affect the acceptance or rejection of the change in a particular system. The factors are as follows:

- i. **The role of the change agent:** Change is driven or carried to the people by the change agent, otherwise called the extension agent. Their role in pulling change to the people cannot be overemphasized. As far as human is concerned, everyone has an identity and this identity really matters in acceptability or rejection of the change. As much as possible, identity such as respect for the people, technical competence of the change, attention for the

people, trust of the target system, belonging to a prestigious organization and the command of lots of credibility make it possible for the acceptance of a change in a social system. The change agents must make the change appear harmless and attractive so that it can gladly be accepted by the people. Again, the change agent when penetrating the communities, should try to identify the prestigious persons and pass it to them first. Believing that if those prestigious people at the top agree to adopt it first, it will quickly be accepted to be adopted by many others in the system.

- ii. **Community characteristics:** Every community has a mix up of people with diverse characteristics. Communities that have people who are ethically and religiously heterogeneous tend to accept innovation or change much more than communities whose people are majorly homogeneous in their characteristics. These characteristics may be in the area of level of education, farm size, household size, level of income. etc. Community with people who have more of these characteristics accept change more than communities that is majorly made up of people who are illiterates, poor, have small farm sizes, etc.
- iii. **Inertia:** Inertia is actually the inability to move. In this scenario, it is the inability of change to come into the social system unless the people move or ask for it. It therefore goes to say that people have to desire change or feel a need for it. When a change is introduced under such scenario of need, it will be accepted more than when the same change is introduced to them without the people asking for it.
- iv. **Habit:** Habit is a way one chooses to behave and it is a product developed over a long period of time. Habit of a man creates a kind of fixed person in him/her. As far as change is concerned, habit becomes very dangerous thing when man ties his habit to society's custom, values, traditions and norms. Such a habit is very difficult to break and would not welcome or accept change easily. On the contrary, where a man's habit is not tied to any of the society's characteristics, it becomes easier to accept change by the people of the social system.
- v. **Fear, suspicion and anxiety:** There are people in a social system who fear change and such people constantly remain suspicious of change agents and the change they drive to the people. Such fear and suspicion may have stemmed from their odd experiences that have been incurred in the past. It could be true that some people in the system may be in an advantaged position before and due to the unknown, such persons would resist the change. On the other hand, people who perceive the change as a good one and better than what existed before, such persons would gladly accept the change more.

- vi. **Vested interest:** There are vested interest in the people and the community itself. A situation where the change to be introduced threatens the vested interested of the people, such change would be resisted by the people. A scenario where the change introduced by the people is in the interest or in vested interest of the people, such will be well accepted by the people. A change that would threaten community people's income, personal ambition, interfere with conducive life style would be resisted by the people. But if all of the aforementioned is in the people's favour, they will well accept the change.

Self-Assessment Exercise

1. Discuss the role of the change agent as a factor affecting the acceptance of change.
2. What is vested interest?

4.3.1 Characteristics of Innovations in Terms of Receivers Demand

Adopters are people who are considered as the most rational persons who are driven by situations necessitating or welcoming changes in their social system. They necessitate these changes in order to meet up with some set goals in their system.

The adopters of the change acknowledge the fact that some things have to be taken by them in this direction and are usually as forth coming as possible.

Some of the questions confronting the adopters in their system are to estimate what is required of them (the adopters) and whether they, the adopters, can cope with the change they seem to accept. Some of the questions being asked are:

- i. **How much change is required?** How much change is required involves what are the demands that are needed to meet the terms of knowledge, skill, perception, value adjustment, etc?

How much of the change is in line with the extent of the change required. This extent will be in line with the capacity of the adopter (farmer) that will adopt the change and try to see it work. The farmer will be motivated and accept change and see it work well, when the extension agent provides the necessary condition that is needed by the farmer.

- ii. **What kind of change is demanded?** This has to do with the physical activities that must be accomplished in taking steps to actualize the change. The physical activities deal with allocation

of resources currently existing in the farm. This can be in the following terms:

- a. Substitution: usually based on comparison between relative advantages of new and old systems. The system involves a complete replacement of an existing practice with a new one.
- b. Alteration: This involves the change in part without replacing everything.
- c. Addition: This has to do with the case of adding a new idea to the existing system which implies expansion.
- d. Restructuring: This involves the rearrangement of working place, land use patterns, personnel, etc.
- e. Elimination: This involves the complete removal of practices to be undesirable in the course of new light without taking on any new thing.

The study examined the factors influencing the acceptance of change in our social system and came to the finding that several factors do add-up to influence change being advanced by change agents to the people (farmers) of a social system. The favourability of the factors to the disposition of the farmers results to acceptance of change, while the contrary results to rejection of change. The adopters of the change acknowledge the fact that some questions like; how much of the change is required and what kind of change is demanded needed to be asked as a guide for the people to accept or not to accept the change.

4.4 Summary

The unit studied the factors that are capable of influencing the acceptance of change in our social system. It was however pointed out that some factors do influence the acceptance or rejection of change in a system. The acceptance of the change in the system is subject to answering some questions like: how much of the change is required and what kind of change is demanded. It is hoped that such questions will help to guide both the change agent and the farmers in their level of acceptance of the change being brought to them.

4.5 References/Further Readings/Web Resources

- Adekoya, A. E. & Tologbonse, E. B. (2005). Adoption and Diffusion of Innovations In: S. F. Adedoyin (Ed.) *Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 30 and 31.
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- Leeuwis, Cees (2003). *Communication for Rural Innovation: Rethinking Agricultural Extension*, CTA, 412p.

4.7 Possible Answers to Self-Assessment Exercise(s)

1. Discuss the role of the change agent as a factor affecting the acceptance of change.

The role of the change agent: Change is drive or carried to the people by the change agent, otherwise called the extension agent. Their role in pulling change to the people cannot be over emphasized. As far as human is concerned, everyone has an identity and this identity really matters in acceptability or rejection of the change. As much as possible, identity such as respect for the people, technical competence of the change, attention for the people, trust of the target system, belonging to a prestigious organization and the command of lots of credibility make it possible for the acceptance of a change in a social system. The change agents must make the change appear harmless and attractive so that it can gladly be accepted by the people. Again, the change agent when penetrating the communities, should try to identify the prestigious persons and pass it to them first. Believing that if those prestigious people at the top agree to adopt it first, it will quickly be accepted to be adopted by many others in the system.

2. **Vested interest:** There are vested interest in the people and the community itself. A situation where the change to be introduced threatens the vested interested of the people, such change would be resisted by the people. A scenario where the change introduced by the people is in the interest or in vested interest of the people, such will be well accepted by the people. A change that would threaten community people's income, personal ambition, interfere with conducive life style would be resisted by the people. But if all of the aforementioned is in the people's favour, they will well accept the change.

Module 3 Factors Determining the Rate of Adoption

Unit 1	Process of Implementing Change and Rules to Follow when Implementing Change
Unit 2	Rate of Adoption and Speed of Adoption
Unit 3	Factors Determining/Influencing Rate of Adoption
Unit 4	The 7-Rs of Change Management

Unit 1 Process of Implementing Change and Rules to follow when Implementing Change

Unit Structures

- 1.1 Introduction
- 1.2 Intended Learning Outcomes
- 1.3 Concept of Change
 - 1.3.1 Process of Implementing Change in Agricultural Organization
 - 1.3.2 Principles of Change Management
 - 1.3.3 Rules for Successful Change Management
 - 1.3.4 Types of Change
 - 1.3.5 Factors Affecting the Rate of Change in a Society
- 1.4 Summary
- 1.5 References/Further Readings/Web Resources
- 1.6 Possible Answers to Self-Assessment Exercise(s)

1.1 Introduction

Change is one thing that is described as inevitable, in that man must in one way engage or carry it out either consciously or unconsciously. Change is actually about doing something new or exercising a deviation from what was known before. The people who bring change to the people are the change agents, otherwise called the extension agents. They bring change to the people just to exact some level of positive influence on the people of the system. These change as it were could end up bringing about changes in the attitude, knowledge, skills, outputs, income, etc expectations in the people in one way or the other.

1.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain change
- explain some of the types of change that can take place in the Agricultural Ministry Process of Implementing Change in Agricultural Organization
- analyze the methods involved in the implementation of change
- discuss the rules to follow in order to accomplish a successful change in our society or organization
- mention the principles of change management.

1.3 Concept of Change

Change occurs everywhere in all organizations. It has been said, change is inevitable, no wonder it is said that change is something nobody can do without. Basically, change is a variation or a deviation from the common way(s) of doing things. Whenever people perform a task in a particular way, they soon get used to the way and soon get accustomed to that way. As time changes, so does change occur in the social system where man lives. Change is mainly carried out to meet up with challenges of the time. In achieving change, people of the system develop methods which they can use to implement or execute it well and to achieve the tasks that are expected. Basically, there are different types of change that can take place in the social system and the organization.

1.3.1 Process of Implementing Change in Agricultural Organization

Implementation of change simply means moving the change that has been conceptualized to actions or reality. So, in implementing change in an organization, it means that one is shifting the way things were done before to a new style of doing the same thing. This could be in the new breeds of animals or varieties of crops or the involved practices that have been produced either from the research centres or from the farmers farm or any other source. Implementing change effectively requires change management, which is a process that helps employees/farmers prepare for a change. Through planned process, change brings about greater efficiency in meeting farm goals and to adjust to new processes that can complement organizational objectives or farmers output/income. However, there are basically eight steps in the implementation of change in agricultural and other work organizations. The steps are:

- i. **Identify the change and perform an impact assessment:** This is the first step of change implementing process. In this stage, there is need to first identify the necessary change that is necessary and

- make sure that it aligns with your organization's overall objectives. As soon as that is assured, an assessment is carried out to be sure that it helps to improve performance of the farmers in terms of output and income. The assessment will as well identify where training would be required as far as the change is concerned.
- ii. **Develop a plan:** Haven identified the change that is required, a plan is now developed that would potentially bring about the expected change that is anticipated at the end of execution/implementing the change. The plan should be able to address the farmers needs or issues and how to actualize the necessary changes. The plan should also have in place an assessment scheme to measure whether the changes were successful or not. The developed plan as well needs to include any type of support or training that these farmers may need from the change agents.
 - iii. **Communicate the change to farmers:** At this stage, there is effectively communication of the change to the farmers and the orientation on them about the benefits/advantages of the change. The communication needs to be appropriately carried out, through adopting adequate communication strategies, otherwise it will lose its purpose. In this communication strategy, there should be an outline of the main message of the change, identify the targeted farmers and determine what medium will appropriately deliver this information.
 - iv. **Provide reasons for the change:** In order for the change plan to gain the support of farmers or rural people, there is a need for the managers of the change to demonstrate the necessity of the change. Often, the best way to achieve this is to present data that supports your decision of the change. The reasons advanced for the change should include the goals of the farmers and the goals of the agricultural organizations. Having all of these attributes in the plan would go a long way in motivating the farmers towards the change.
 - v. **Seek farmers/employee feedback:** This is a stage that has to do with getting feedback from the farmers/employees. It is important that after communicating the change and the reasons for the change to farmers/employees, there should be feedback to the organization to know how the farmers/employees have agreed with the change. The feedback enables or allows the farmers/employees to voice their opinions about the change and as well makes them feel like part of the decision or conversation. Sometimes, such feedback may provide opportunities or suggestions on how to improve the implementation plans.
 - vi. **Launch the change:** This stage involves the execution of the change as planned and this should be carried out in stages. It is important that the simple aspect that are sure to be completed

easily should come up first during execution. Most likely this may have to do with acquisition of inputs, employing personnel for the programme of change, training of the farmers and important persons needed for the programme, etc. It's again important to set a deadline for when you want to evaluate the implementation process and determine whether it achieved your intended goals or anticipated change. In launching the change, this can be first done on a small scale (on small plot adoption techniques, SPAT) before executing on a large-scale, so that any error could have been corrected on the small-scale, and any risk could have been reduced to the barest minimum.

- vii. **Monitor the change:** As soon as execution takes place, there is a need for the owners/executors of the change to continue to monitor the process to ensure all of the farmers/employees follow proper implementation procedures. This is necessary in order for the programme not to elude its goals or expectations. The monitoring may be carried out through the executor, directly observing farmer/employees or delegate the tasks to other supervisors. The monitoring should be done at a regular time period, say daily, weekly or monthly, etc. depending on the nature of the programme. Monitoring the change process will help you fix any mistakes you hadn't anticipated and gauge any other unexpected outcomes from the change.
- viii. **Evaluate the change:** Evaluation is all about assessing the extent of work by the target farmers/employees. The evaluation will measure level of success made as far as the change is concerned. Evaluation results could be measured in quantitative or qualitative terms. In whatever terms, success is measured and the executors would be able to know if to adjust, continue or change the programme.

1.3.2 Principles of Change Management

Change that takes place in our social system or in agricultural organizations are often times guided by some principles that make it possible for the programme to achieve its goals. Some of the principles are:

Principle 1: Understand Change: For any change to be successful, the executor and the target audience (farmer) must need to understand the change very well. The understanding will create room for the make it possible for the change to achieve its benefits. The understanding will focus on areas like: why the change is needed, what are the key objectives of the change, what are the benefits of the change to the target audience and possibly to the society at large, how will it impact people positively, and in what way will the change be enhanced positively. Generally, for

change to work, there has to be sufficient dissatisfaction with the old way of doing things. But people also need to feel confident that the new approach will be better,

Principle 2: Plan Change: An effective change doesn't just happen by chance, but has to be planned and any plan you make has to be right for your target audience or the organization. It is important that the plan is good enough to be able to the goals of the target audience, while still meeting with organization's goals. The plan could be flexible or rigid depending on the situation at hand. The plan may also incorporate sponsorship of the change or programme, who is best positioned to help you to design and implement the change?, how can as many of the persons be involved in the change process and the impact in terms of success of the change should look like and how this success can be achieved.

Principle 3: Implement Change: This principle involves how the change can be executed of how the change can be made to happen. Implementation has to be done through applying the best among different strategies that strategy that can see to the achievement of organizations and farmers goals. In the course of implementation of the plan, there should be consideration of people's feelings in line, with addressing training needs, appointing "change agents," providing support for people across the organization, and setting specific success criteria. Considerations of these nature will go a long way in determining the anticipated outcome of the change.

Principle 4: Communicate Change: Communicating the change is an important aspect of the change process. It involves sharing or letting people (farmers/employee) know what is to be done and how it should be done. The change that you want to implement has to be clear and relevant in all terms, so that the concerned people can understand what you want them to do and why they need to do it, as well as the expected/anticipated benefits. What is to be communicating should also involve the organization's goal and the benefits that are expected at the end of the day.

Self-Assessment Exercise

1. Explain how to launch a change in the society.
2. Examine the concept of change.

1.3.3 Rules for Successful Change Management

There are rules that must be followed if change must be successful. These rules may not all apply in all situations but some of them should play out. Some of the rules are:

- i. Do not delegate large-scale organizational change to middle management.** Large-scale change needs to be handled by senior leaders due to the complexity and the intricacies involved that would be needing expertise of the senior leader. The senior leaders are the only ones with the perspective to solve the complicated problems that arise during major change initiatives. Senior leaders are more likely to handle and solve issues that may arise and as well can best explain the economic factors behind the change and add clarity to the situation. All of the aforementioned cannot be handled by middle or low ranked staff if handed over to them. An attempt to do that, may likely make the change to fail.
- ii. Actively solicit feedback from employees before change occurs.** Executors of the change process should try to get feedback from the farmers/employees at all levels and have "pre-change" conversations to understand the farmers/employees' key priorities (needs) and concerns. An understanding of prevailing issues and concerns before implementing change can may help to promote success and reduce failures in the change. Leaders should use multiple communication channels to have these "pre-change" conversations with employees and be sure to respond to employees' questions and concerns.
- iii. Respect for organizational culture:** Every organization has her own culture and this generally has to do with how the organization is made to do her things. This culture has to be well respected by the stakeholders of the change process. When leaders appreciate and consider the organization's culture which may have to do with employees' expectations, norms, and behaviors, it can make the organization to achieve a large level of success in the course of driving the change. As change and culture meet, a natural friction is likely to occur, but then leaders should need to apply skill to get out of the dilemma while ensuring that success about the change is still achieved.
- iv. Clearly communicate your strategy and your reasoning behind the change:** This rule has to do with the leaders doing the needful of clearly communicating the strategy to be adopted in achieving the change. The reasoning behind the change also need to be communicated to the people. The leaders of the programme

of the change need not to assume that the organization's strategy is clear to the stakeholders, and that the stakeholders understand "why" and "how" the company will be changing. The strategy should be made relevant on a day-to-day basis. Leaders also need to define the problem, be honest about the challenges, and show that the strategy they build will be able to address the challenges and make the change really achieved.

1.3.4 Types of Change

Change that takes place or happen in organizations are of different types and variously relate to the change in different ways. While some of the changes are borne out of the change itself, some changes are leading to the change, still others are emanating from the change. Some of the types of change are:

- i. **Happened Change:** This kind of change is the type that happens without expecting it, that is why this type of change is described as being unpredictable in nature and it usually takes place due to the impact of the external factors. ...
- ii. **Reactive Change:** This is the kind of change that takes place when the targeted people are giving their response to the change. Reactive change can be positive or negative report of the change. Most importantly, reactive change gives a line of action that would be followed going by the nature of response given. The response may call for adjustment in the execution strategy or make it remain it was.
- iii. **Anticipatory Change:** This is a type of change that has to do with expectations from the change. At this point the results is not known but expected to be a good one. However, it goes, it will give a new line or a continuation of same line of action.
- iv. **Planned Change:** Planned as the name implies, is a type of change that is planned to achieve by the executors of the change programme. This is the desired targeted change that is actually wanted by the programme executors.
- v. **Incremental Change:** This is another type of change that is planned and the results are not all expected to come at once. Just like the name sounds, the results or expectations are expected in small bits and then expected to increase gradually and with time.
- vi. **Operational Change:** Operational change are those changes that could be planned for and be found to be functioning and ready for use. Operational change is targeted to solve particular problems at hand because it is developed after a problem has emanated. Operational change is developed to solve existing problem(s).
- vii. **Strategic Change:** This is a plan of action that is designed to a particular issue at hand or an anticipated issue. Strategies are built

in to see how the change can address the problems at hand. In this case, different strategies are applied to accomplish or drive different change in the society.

- viii. **Directional Change:** This is one particular type of change that has a focus to solving particular problem. Such a change is not a multi-purpose change but a change that is designed and made to approach particular issues.

1.3.5 Factors Affecting the Rate of Change in a Society

Change regularly takes place in societies and the rate at which this change occurs and the magnitude at which these change takes place varies from one society to another society. The changes that take place are caused by different factors that are either within or outside. The factors include:

- i. **Physical environmental factors:** the physical environmental factors are those factors that include climate changes, wind, soil erosion, floods, earthquakes, etc. When any of these factors occur or take place, they cause some level of change among the people of the society. In as much as they affect lives when they occur, man must adjust or give way when they occur, thus causing a change in man. The extent or magnitude of occurrence will determine the level of change that will be exhibited by man.
- ii. **Migration and population changes:** Migration is the movement of people from one place or locality to another. When people move from one place to another, they move from their culture, traditions, values and customs. As they get to other places, they meet new cultures, tradition, values and ways of life which they would have no choice but to begin to cope with. By so doing they will begin to change in their ways from what was to new ways.
- iii. **The culture and structure of the society:** Every society has its own culture and they as well have a system of that has its peculiar structure. A person in one kind of society with a peculiar culture and structure would have adapted to that style of his/her place. A kind of movement to another place with a different culture and structure will though find it difficult to change but would have no choice and adjust thereby bringing a change to what he/she was used to before.
- iv. **Occurrence of great men:** Some societies have great men and, that is talking about men that have strong mission, vision, strong heart and charisma. Where such men exist, they have a way of driving change and bringing changes into their society and the people will have no choice but to adjust or change and begin to live with the change until they themselves will now change. Example of such occurs in African Countries like Nigeria, Ghana, Libya, etc. Even at local levels, some kings have caused their

- people to accept change and thereby change the people along the line.
- v. **Prevailing attitudes and values:** A society is either liberal or rigid to external forces. As earlier mentioned, every society has its own culture, norms, traditions, values, etc. A society that is liberal to open access of external culture, values, traditions, norms, etc will quickly find its system changing fast unlike that kind of society that is rigid to external forces.
 - vi. **Perceived needs:** There is usually a need being driven by every society. The types of changes which a society emphasizes is determined by the needs it perceives. When something they perceived as a need is brought to them, they will just adopt it. In adopting the perceived need, it will make the society to shift to that direction. A society where the people are keen on producing a particular crop like cassava, the people will be interested in innovations that are on cassava and most of the people soon will be leaving the other crops they were producing to the cassava.
 - vii. **Relative isolation and contact:** While some communities are in contact with other communities, others are in isolation, that is, located far from others. Those communities that are close to themselves are very likely to change and want to be like the community that is near to them. Sooner or later, there don't seem to be major changes between these near communities. On the other hand, communities that are in isolation are rigid and don't change easily. At all, their change is very slow.

1.4 Summary

This unit examined change as what regularly happens in organizations and amongst persons because it is an inevitable action often carried out in organizations and our farms. Change follows due process in the course of its execution, guided by principles and rules for the purpose of successful change to take place and targeted to needy persons and farmers. The factors that cause changes in society are also treated in this unit. Change is an inevitable action that is carried out by different people and in different organizations. It is doing something new, as in, deviating from what the people are used to. For change to be successful, it has to be executed in following a sequence of steps and it is targeted to address or solve particular problems in the farm and in our society. Important to mention that change is adequately guided by rules and principles that ensures that addresses what it is meant to address. Every society change in one way or the other but the changes are majorly cause by some factors.

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1.7 Possible Answers to Self-Assessment Exercise(s)

1. Explain how to launch a change in the society.

To Launch the change: This stage involves the execution of the change as planned and this should be carried out in stages. It is important that the simple aspect that are sure to be completed easily should come up first during execution. Most likely this may have to do with acquisition of inputs, employing personnel for the programme of change, training of the farmers and important persons needed for the programme, etc. It's again important to set a deadline for when you want to evaluate the implementation process and determine whether it achieved your intended goals or anticipated change. In launching the change, this can be first done on a small scale (on small plot adoption techniques, SPAT) before executing on a large-scale, so that any error could have been corrected on the small-scale, and any risk could have been reduced to the barest minimum.

2. Concept of Change

Change occurs everywhere in all organizations. It has been said, change is inevitable, no wonder it is said that change is something nobody can do without. Basically, change is a variation or a deviation from the common way(s) of doing things. Whenever people perform a task in a particular way, they soon get used to the way and soon get accustomed to that way. As time changes, so does change occur in the social system where man lives. Change is mainly carried out to meet up with challenges of the time. In achieving change, people of the system develop methods which they can use to implement or execute it well and to achieve the tasks that are expected. Basically, there are different types of change that can take place in the social system and the organization.

Unit 2 **Rate of Adoption and Speed of Adoption**

Unit Structures

- 2.1 Introduction
- 2.2 Intended Learning Outcomes
- 2.3 Rate of Adoption
 - 2.3.1 Attributes or characteristics of an innovation that affect the rate of adoption include
 - 2.3.2 Speed of Adoption
 - 2.3.3 Innovativeness
- 2.4 Summary
- 2.5 References/Further Readings/Web Resources
- 2.6 Possible Answers to Self-Assessment Exercise(s)

2.1 Introduction

Rate of adoption has to do with the number of persons that have adopted a particular technology as it is being introduced. The rate is though affected by different factors that are prevalent in the society of the farmers or the target persons. Speed of adoption on the other hand is the time period it takes for the technology to be adopted by the target persons. The speed, which is time period can be short or long.

2.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the rate of adoption of improved technology
- determine the factors that affect rate of adoption
- analyze the formular for calculating rate of adoption
- understand the concept of speed of adoption.

2.3 Rate of Adoption

The rate of adoption of innovation or technology is the pace at which a new technology is acquired and used by the public. This rate can be represented by the number of members of a society who start using a new technology or innovation during a specific period of time. The rate of adoption is useful for making comparisons between those that have adopted and the number of persons that entirely make up the society. The rate of adoption can be described as either low or high

The rate of adoption is the third area in the diffusion of innovations that involves time. Adoption of innovations is slow and gradual at the start. This is evident with the introduction of new technology as it concerns new crop variety or new breeds of animals and the necessary farm

chemicals that are used to run the technology. The farmers are usually reluctant to adopt at the first time of the introduction of the technology, this of course do change as time goes on when the technology is beginning to be known by the people of the society.

However, there is a change in the climate and more and more farmers are accepting technological improvements in the farm. This is essentially to meet up with food demands, increased income, eliminate poverty and improve their standard of living. The adoption of farm technology is growing rapidly, which is consistent with the rate of adoption theory. The rapid growth will taper off eventually and decline slightly. The cumulative frequency distribution over time will resemble a s-shaped curve. Rate of adoption of innovation will definitely increase as more advantages is perceived by the farmers.

Rate of adoption has greatly been influenced by the use of Information and Communication Technology (ICT). Researches have shown that innovation has spread more from where they are produced to other places and the use of ICT has really contributed to this success. The different ICT gadgets that have contributed to this success (increased rate of adoption) include phones, televisions, internet services, radio, etc.

2.3.1 Attributes or characteristics of an innovation that affect the rate of adoption

Attributes or characteristics of an innovation that affect the rate of adoption include:

- a. The advantages associated with the technology/innovation
- b. The ease with which it can be added to daily life, that is the ease of the technology's/innovation's applicability is another factor that contribute to rate of adoption.
- c. Furthermore, the ability of other members of society to see those who have already adopted the innovation.
- d. The expense/cost associated with trying the innovation also impact the adoption rate. and;
- e. Another major factor that influences the rate of adoption is the type of society that is being introduced to an innovation. Closed cultures and societies without clear communication between adopters and non-adopters are less likely to take on a new technology. While an open cultures and societies with communication networks are more likely to take a new technology.

The formula for calculating rate of adoption

The formula for calculating adoption rate is:

Adoption rate = number of new users (adopters) / total number of users.

For example, if you have a total of 1,000 users, of which 250 are new, then your adoption rate is 25% (250/1,000)

2.3.2 Speed of Adoption

The speed is usually measured by the length of time required for a certain percentage of the members of a social system to adopt an innovation. It also means the number of members of a society who start using a new technology or innovation during a specific period of time. The rate of adoption is a relative measure, meaning that the rate of one group is compared to the adoption of another, often of the entire society.

Speed of adoption can be high or low. It is high when the number of people who adopted the new technology are many compared to the total number of people in the society. On the contrary, when the number of persons or farmers that have adopted the technology is low in number, then we say the speed is low.

2.3.3 Innovativeness

This is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system. The people or farmers are described as being innovative if they are fast in adopting the technology. They are on the other hand described as less innovative when they are slow to adopt the innovation/technology

Self-Assessment Assessment Exercise

1. Differentiate between rate of adoption and speed of adoption
2. What is innovativeness?

2.4 Summary

The rate of adoption has been seen as the pace at which a new technology is acquired and used by the public. On the other hand, the speed is usually measured by the length of time required for a certain percentage of the members of a social system to adopt an innovation. In both cases, they are influenced by certain factors which either slow or hasten the process. The willingness to adopt an innovation varies among people in a given society. Certain social characteristics have been observed to influence rate of adoption and speed of adoption. Why some individuals adopt innovation early, while others are delay the rate at which they which to adoption the innovation brought before them. So, while rate of adoption is seen as a relative concept, the speed of adoption is something that is timely in nature.

2.5 References/Further Readings/Web Resources

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Rate of Adoption – Investopedia [https://www.investopedia.com › terms › rate-of-adoption](https://www.investopedia.com/terms/r/rate-of-adoption)

2.7 Possible Answers to Self-Assessment Exercise(s)

1: Differentiate between rate of adoption and speed of adoption

Rate of Adoption: The rate of adoption of innovation or technology is the pace at which a new technology is acquired and used by the public. This rate can be represented by the number of members of a society who start using a new technology or innovation during a specific period of time. The rate of adoption is useful for making comparisons between those that have adopted and the number of persons that entirely make up the society. The rate of adoption can be described as either low or high. The rate of adoption is the third area in the diffusion of innovations that involves time. Adoption of innovations is slow and gradual at the start

Speed of Adoption: The speed is usually measured by the length of time required for a certain percentage of the members of a social system to adopt an innovation. It also means the number of members of a society who start using a new technology or innovation during a specific period of time. The rate of adoption is a relative measure, meaning that the rate of one group is compared to the adoption of another, often of the entire society. Speed of adoption can be high or low. It is high when the number of people who adopted the new technology are many compared to the total number of people in the society. On the contrary, when the number of persons or farmers that have adopted the technology is low in number, then we say the speed is low.

2. Innovativeness

This is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system. The people or farmers are described as being innovative if they are fast in adopting the technology. They are on the other hand described as less innovative when they are slow to adopt the innovation/technology.

Unit 3 Factors Determining/Influencing Rate of Adoption

Unit Structures

- 3.1 Introduction
- 3.2 Intended Learning Outcomes
- 3.3 Factors Determining/Influencing Rate of Adoption
- 3.4 Summary
- 3.5 References/Further Readings/Web Resources
- 3.6 Possible Answers to Self-Assessment Exercise(s)

3.1 Introduction

An important concern in the adoption and diffusion research tradition was to explain and predict the eventual rate of adoption of particular innovation. This unit examines the factors that do influence the rate of adoption of innovation as well as the consequence of each of the factors. The consequence of course implies the implication of the factors under consideration that affect the adoption rate.

3.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- identify the factors that affect/influence the rate of adoption
- explain the factors that have been mentioned as those influencing the rate of adoption

3.3 Factors Determining/Influencing Rate of Adoption

Perceived characteristics of adoption of innovations can be seen from different perspectives. And these perspectives vary from one place to another and among individuals or groups. However, the case may be, this unit spells out a detailed account of the factors and their implications are as follows:

A. Relative advantage: This is the first and most concerned factor among other factors to the factors influencing the rate of adoption of innovation. In the course of addressing this factor, other attributes that would be considered are:

- i) Relative advantage considers the degree to which an innovation to be adopted is perceived as being better than the technology or idea it supersedes. Often times the farmers' considerations bother on the following:

- ii) **Cost:** In the case of cost, some monetary implications are brought to book. So, the farmer compares what he was offering in terms of money in the use of the former versus adopting the new technology. The farmer also considers what the output and incomes are likely to be. At the end, he makes a cost-benefit analysis and know which to adopt – whether the new or continue with the old technology.
- iii) **Status aspect – evidence-based practices.** This has to do with what the first adopters have benefited. Should in case they have benefited much, that will now compare the other farmers in the society to adopt.
- iv) **Over-adoption:** This involve situations where there is the adoption of an innovation by an individual, it becomes an over-adoption when the farmer or adopter adopts it very well due to the advantages that are associated with the innovation.
- v) **Generalization –** The relative advantage of an innovation, is considered from the perception of members of a social system. The better of positively rated the technology is by members of the social system, the more will be the rate of adoption by members of the social system.
- vi) **Preventive Interventions:** This is that type of innovation that has to do with a technology whose relative advantages are not too visible. For this shortcoming, the farmers would now become reluctant to adopting the technology. We therefore say that the technology adoption will now be slow or low.
- vii) **Communication campaign:** Communication campaign takes place when the specific effects of a technology or innovation is appropriately communicated to members of a social system. In the case where the advantages of a technology have been well communicated to the people of a social system, such will make the people to adopt the technology more than when the relative advantage was not properly communicated to the people.

B. Compatibility: Compatibility of the technology is viewed from the angle of level of comfortable the people are with the introduced technology. This may also be considered as the level of satisfaction. A high of satisfaction will imply that they are comfortable with the technology. This is however addressed using the following indicators:

- i. The values, traditions, norms and customs are of consideration here. The degree to which an innovation is perceived as consistent with the exiting attributes like: beliefs, values, past experiences, and needs of potential adopters. The more compactable the aforementioned are with the new innovation(s), the more the level of adoption of the technology by the farmers.

- ii. An innovation may be compatible with deeply embedded cultural values and possibly with old or with previously adopted ideas. If this is the scenario, the less compatible an innovation would be with norms and values, and this will result to less change in behavior it represents and as well the less the adoption.
- iii. Innovation negativism: This refers to the negative or unwelcoming factors that associates with a particular technology. This as well defines the negative factors and perhaps the extent or degree to which the potential adopters feel about the technology. Based on the innovative negativism, the potential adopters would feel reluctant to ask or adopt the innovation. They would rather prefer to stay away from the new technology and stay glued to the one they knew most things about
- iv. Compatibility with needs of farmers: The needs of the farmers are those inputs or desires of the farmers. Such needs are usually what they are interested in. So, it is important for the innovation or technology to serve the farmer's needs. When such is the case, the technology is very much likely to be quickly adopted by the farmers whom have been confronted with. To this end in view, change agents seek to determine the needs of their clients, and then to recommend innovations that fulfill these needs. Empathy is required.
- v. Technology cluster: Technology cluster has to do with the development and advancement of many technologies at the same time. Developing many technologies at the same time may get the farmers even confused about which to adopt and which not to. The change agents and researchers are thus advanced to develop and advance one technology that meet farmers needs at a time before moving to another technology. Maintaining this tempo would help improve on the status quo of making farmers be willing to adopt technology faster than when there is a cluster.
- vi. Naming an innovation: Selection of a name is a delicate and important matter. Words are the thought-units that structure perceptions. The name given to an innovation should be in line or conformity or compatibility with the technology. A technology with this kind of similarity with its name is much welcome and adopted than the type of technology whose name is in variance with its name.
- vi. Positioning an innovation: An individual will behave toward a new idea in a similar manner to the way the individual behaves toward other ideas that are perceived as similar to the new idea. Positioning research can help identify the ideal niche for an innovation relative to perceptions of existing ideas in the same category.
- vii. Indigenous knowledge systems: Innovations are most times evaluated by clients in terms of their prior experience with

something similar. Indigenous knowledge of the people needs to be carried along when developing a technology. This has become necessary so that a technology does not entirely look too strange to the people it is meant for. If it does, such a technology will not be fast adopted by the people it was meant for. Contrarily, it will be fast adopted when the innovation incorporated a little of the people's indigenous technology.

C. Complexity: Complexity has to do with how easy or simple the technology is to be adopted for use by the target farmers. A simple technology is more easily adopted than a complex one. In simpler thoughts, complexity of an innovation would be taking into consideration the following:

- i) The degree to which an innovation is perceived as relatively difficult to understand and use, and;
- ii) The more complex an innovation is perceived, the slower the rate of adoption

D. Trialability: The trialability of an innovation is very paramount in where technology adoption is concerned. An innovation may be packaged in whole or in small fragments. When it is in small fragments, it makes it simpler to be tried by the farmers. However, the following holds:

- i) The degree to which an innovation may be experimented with on a limited basis
- ii) The more trailable, the greater the rate of adoption

E. Observability: Every technology comes out with a product. The product is what is been observed by the farmers. The product of the technology is what is been assessed or evaluated by the farmers and a product that is good enough for them will be more adopted by the people than if it were to be the other way round. Summarily, an innovation will be more adopted if:

- i) The degree to which the results of an innovation are visible to others
- ii.) Observability is positively related to the rate of adoption

F. Accessibility: No matter how important or beautiful an innovation may be, it will be useless if the innovation cannot be accessed or if the inputs of the innovation cannot be accessed. It therefore implies that an innovation would be quick to be adopted by the farmers if the inputs or its inputs are well accessible to the farmers or the target audience.

Self-Assessment Exercises

1. Relative advantage influences rate of adoption among farmers. Discuss.
2. Complexity of an innovation would be taking into consideration the following...?

3.4 Summary

We have been able to define the factors that actually influence the adoption and the rate of the adoption of innovation as they are brought to meet the farmers in need of the technology. This unit as well considered the different implications of the different factors as they unravel out. In conclusion, individuals who first adopt an innovation require a shorter adoption period (adoption process) than late adopters. Attributes of an innovation that affect the rate of adoption include the advantage created by adopting the innovation, the ease at which the innovation can be adopted into daily life to meet farmer's needs, the ability of other members of society to see those who have already adopted the innovation and the expense associated with trying the innovation.

3.5 References/Further Readings/Web Resources

Ban, A. W. Van den & Hawkins, H. S. H. (1996). *Agricultural Extension*, Blackwell Science, Second edition, 294p.

Leeuwis Cees (2003) *Communication for Rural Innovation: Rethinking Agricultural Extension*, CTA, 412p.

3.6 Possible Answers to Self-Assessment Exercise(s)

1. Relative advantage influences rate of adoption among farmers. Discuss.

Relative advantage: This is the first and most concerned factor among other factors to the factors influencing the rate of adoption of innovation. In the course of addressing this factor, other attributes that would be considered are:

- i) Relative advantage considers the degree to which an innovation to be adopted is perceived as being better than the technology or idea it supersedes. Often times the farmers considerations bother on the following:
- ii) Cost: In the case of cost, some monetary implications are brought to book. So, the farmer compares what he was offering in terms of money in the use of the former versus adopting the new technology. The farmer also considers what the output and incomes are likely to be. At the end, he makes a cost-benefit analysis and know which to adopt – whether the new or continue with the old technology.
- iii) Status aspect – evidence-based practices. This has to do with what the first adopters have benefited. Should in case they have benefited much, that will now compare the other farmers in the society to adopt.
- iv) Over-adoption: This involve situations where there is the adoption of an innovation by an individual, it becomes an over-adoption when the farmer or adopter adopts it very well due to the advantages that are associated with the innovation.
- v) Generalization – The relative advantage of an innovation, is considered from the perception of members of a social system. The better of positively rated the technology is by members of the social system, the more will be the rate of adoption by members of the social system.
- vi) Preventive Interventions: This is that type of innovation that has to do with a technology whose relative advantages are not too visible. For this shortcoming, the farmers would now become reluctant to adopting the technology. We therefore say that the technology adoption will now be slow or low.
- vii) Communication campaign: Communication campaign takes place when the specific effects of a technology or innovation is appropriately communicated to members of a social system.

2. Complexity of an innovation would be taking into consideration the following:

- i. The degree to which an innovation is perceived as relatively difficult to understand and use, and;
- ii. The more complex an innovation is perceived, the slower the rate of adoption.

Unit 4 The 7-Rs of Change Management

Unit Structures

- 4.1 Introduction
- 4.2 Intended Learning Outcomes
- 4.3 The 7-Rs of Change Management
- 4.4 Summary
- 4.5 References/Further Readings/Web Resources
- 4.6 Possible Answers to Self-Assessment Exercise(s)

4.1 Introduction

The 7-Rs of change management are those factors that actually guide the change management process. It is assumed that, while holding every factor constant, a genuine and strict adherence to these factors will lead to a successful implementation of the change that is driven to the target audience in the community or social system.

4.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- know what the acronym, 7-Rs stand for or represent
- know the 7-Rs of change management process
- explain the 7-Rs of change management.

4.3 The 7-Rs of Change Management

The 7-Rs of change management is a management technique that is held as a guide the implementation of a change process. It was development by experts in the field of management to help those change agent out there dispensing change or innovation in one society or the other. The 7-Rs maintained that a follow of the process will help to eliminate conflict either in the process of developing and implementation of the change or among the people the change is designed to serve. To this end in view, the 7-Rs of change management involves the following:

- i. Who RAISED the change request?
- ii. The REASON behind the change?
- iii. RESOURCES required to deliver the change?
- iv. RETURN required from the change?
- v. RISKS involved in the requested change?
- vi. Who is RESPONSIBLE for creating, testing, and;
- vii. Who is RESPONSIBLE for implementing the change

It is of note that the 7-Rs mentioned above are usually asked in question forms. And it is in this question form that the true and quick meaning is driven out. They are however explained as follows:

- i. **Who RAISED the change request:** The question as to who raised the change, could be the business of any person in the process. Such person(s) may be the farmers who are in need of the change or the change agent who serves the farmers needs or even the researchers developing the change or seeking solution to problems. Precisely, the person who raised the change is much likely to be the person who desired the change and as such would likely be more interested and thus promote the process and the change itself.
- ii. **The REASON behind the change:** The reason for driving or wanting or promoting the change is never farfetched. The reason may always be according to how he/she feels important the change would be to him/her. It therefore suggests that the change would be to address certain issues that are limiting the farmer in his/her farm activities. It could also be an anticipation of a better way out of the existing scenario. However, it may be, the reason for the change would be the direction of the change.
- iii. **RESOURCES required to deliver the change:** Resources are inputs that are used in the change process. In the process, the form of the inputs or resources are changed from their original form to other forms that would permit the actualization of the desired result or change. At this time, the resources could be capital, in form of cash or goods, personnel (manpower) and whether skilled or unskilled, land, which is very important because without it production cannot take place; and lastly management or entrepreneur. These resources are combined appropriately to give the desired change that is looked forward to see.
- iv. **RETURN required from the change:** Return from the change is the gains or results that are expected from the change. The return can be negative or positive, advantages or disadvantageous to different people, pending on the area it is been viewed from. To the person who raised the change, it is expected that the change will be advantages to him/her. Again, the change should be able to address or solve the problem that led to its formation. Still to mention, the return should be more superior to what existed before because that is what makes it a change or innovation.
- v. **RISKS involved in the requested change:** Every change process is accompanied by one risk or the other. The risk in this instance could be rated as disadvantages that are inherent in the process. What is important is to weigh the risk as it were. If the risk is too heavy, as in, if the risk outweighs the benefits to be derived from the change, then it will be assumed that the change is not worth it and so has to be dropped. On the other hand, if the risk is just little relative to the desired result, then the change would need to be carried out as long as it meets the change agents or farmer's needs.
- vi. **Who is RESPONSIBLE for creating and testing the change:** This stage is a very important stage where the hand or expertise of the change is needed. This stage involves the design of the change and putting the whole thing (change) into perspective. All of these as we may need to

know would need the bringing the change into existence. The testing of the change would still be needed to be done by the same person or people who have been in the front burner. This stage is crucial because it will be followed by a decision if to continue or if not to continue with the change process. The decision to want to continue would be the case if the change process was done well and address the problems and as well solves it

- vii. **Who is RESPONSIBLE for implementing the change:** Implementing the change is also a crucial stage of the change management process. The implementation has to be done by an expert and someone who has been not only a stake holder but has also part taken in the process all the while. The reason is that such person will be properly informed of how to go about the process and be able to do it well while ensuring that compromises are not shortchanged for quality of the change process.

Self-Assessment Exercise

- 1 Explain the reason behind the change in the 7-Rs of change management.
2. Who is RESPONSIBLE for implementing the change in extension?

4.4 Summary

This study was concerned with the 7-Rs of change management process. It spells out the necessary stages of the process while would need to be followed to actualize the desired outcome or result. The 7-Rs of the change management process reflects that the process involves seven stages and that these stages are very important to ensure that change is properly and adequately carried out by the people or farmers or change agents who actually need the change. Following the stages is an assurance that the expected results will be met or achieved by the people who are in charge.

4.5 References/Further Readings/Web Resources

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[https://esj.com › articles › 2007/01/30 › the-seven-rs-of-c...](https://esj.com/articles/2007/01/30/the-seven-rs-of-c...) Retrieved on 13th January, 2021.

4.7 Possible Answers to Self-Assessment Exercise(s)

Explain the reason behind the change in the 7-Rs of change management.

The REASON behind the change: The reason for driving or wanting or promoting the change is never farfetched. The reason may always be according to how he/she feels important the change would be to him/her. It therefore suggests that the change would be to address certain issues that are limiting the farmer in his/her farm activities. It could also be an anticipation of a better way out of the existing scenario. However, it may be, the reason for the change would be the direction of the change.

- 2. Who is RESPONSIBLE for implementing the change:** Implementing the change is also a crucial stage of the change management process. The implementation has to be done by an expert and someone who has been not only a stake holder but has also part taken in the process all the while. The reason is that such person will be properly informed of how to go about the process and be able to do it well while ensuring that compromises are not shortchanged for quality of the change process.

Module 4 Adopters Categories

- Unit 1 Identification of Adopters categories and their Characteristics
- Unit 2 Factors Determining the Effectiveness of Agricultural Extension in Rural Areas
- Unit 3 The Concepts of Opinion Leadership Characteristics and Functions of Opinion Leader
- Unit 4 Types of Leaders and Measurement of Opinion Leadership
- Unit 5 Techniques for Identification and Use of Community Leaders

Unit 1 Identification of Adopters categories and their Characteristics

Unit Structures

- 1.1 Introduction
- 1.2 Intended Learning Outcomes
- 1.3 Identification of the Adopters Categories
 - 1.3.1 Listing of the Characteristics of the Adopters Categories
 - 1.3.2 Factors Influencing Farmers into Particular Categories they Belong
- 1.4 Summary
- 1.5 References/Further Readings/Web Resources
- 1.6 Possible Answers to Self-Assessment Exercise(s)

1.1 Introduction

Innovations as we have said before is anything new or an old thing reinvented to function in a new way. These innovations no matter how beautiful it may be, are not adopted by everyone at the same time. Specific innovations are used more quickly by some and taken up later by others, while others in the society never adopt the same innovations at all. Adoption research suggested that there was a pattern in the rate at which people adopted innovations. It is inferred that some adopt early, while others will adopt late. An adoption index was usually used local extension workers to assess the local people of a social system and thus used the assessment (based on their scores) to place them or classified them (adopters) into five different categories and these categories of people are noted for the same identical characteristics they possess. Expressed in Fig 2 is the graph showing.

1.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- identify the different categories of the adopters' categories
- discuss different types of people in every community based on their reaction to changes
- identify 3 characteristics in each case of the different adopters categories.

1.3 Identification of the Adopters Categories

The people of a social system adopt innovations at different rates. Amongst the people, while some of them are always on the lookout for new innovations or technology, others in same system only accept innovations after much persuasion and benefits of the innovation have been told to them. Again, in same system, some other people adopt innovations when everyone in the system have adopted the innovation. Based on this different rate of adoption of innovation otherwise regarded as innovativeness, five categories have emerged. They include: innovators, early adopters, late adopters, early majority, late majority and the laggards. These adopter categories are explained below:

- Innovators:** The innovators are the first group of people to adopt an innovation. They actually do not wait for the innovation to be tried before they adopt. They do constitute 2.5% of the individuals in a social system to adopt an innovation. The innovator's interest in new ideas leads them out of a local circle of peer networks and into more cosmopolite social relationships. Communication patterns and friendships among a clique of innovators are common, even though the geographical distance between the innovators may be considerable. Several qualities or prerequisites are demanded for someone to be noted as an innovator. These include: Control of substantial financial resources is helpful to absorb the possible loss from an unprofitable innovation. The ability to understand and apply complex technical knowledge is also needed. The innovator must be able to cope with a high degree of uncertainty about an innovation at the time of adoption. Though an innovator may not be respected by the other members of social system, the innovator plays an important role in the diffusion process.
- Early adopters:** The early adopters are the first to use the technology but they are NOT the first to try the technology/innovation. In representation, they constitute about 13.5% of the individuals in a system to adopt an innovation. Early adopters are a more integrated and are therefore closer to the people of the social system than the innovators. Early adopters as it were are people who have high level

of education and participate in quite a number of formal organizations. Whereas innovators have urban contacts (cosmopolitanism), early adopters live within the local communities. The early adopters has the greatest degree of opinion leadership than other adopter categories in most systems. Potential adopters look to early adopters for advice and information about the innovation.

This adopter category is generally sought by change agents as a local missionary for diffusing and speeding the diffusion process. Due to some unique characteristics possessed by the early adopters, they serve as a role-model for many other members of a social system. The early adopter is respected by his or her peers and is the embodiment of successful, discrete use of new ideas. The early adopter decreases uncertainty about a new idea by adopting it, and then conveying a subjective evaluation of the innovation to near-peers through interpersonal networks. All of these characteristics they possess make them to command a good level of respect from their contemporaries in the same society.

- c) **Early majority:** This group of adopters make up about 34% of the individuals in a system to adopt an innovation. The early majority adopt new ideas just before the average member of a system. The early majority interacts frequently with their peers, but seldom holds positions of opinion leadership in a system. The early majority's unique position between the very early and the relatively late to adopt, makes them an important link in the diffusion process.

This category of adopters makes up one third ($\frac{1}{3}$) of the members of a system. They provide interconnectedness in the system's interpersonal networks. The early majority may deliberate for some time before completely adopting a new idea. They follow with deliberate willingness in adopting innovations, but seldom lead.

- d) **Late majority:** Just like the early majority, the late majority are as well people who make up 34% of the individuals in a system to adopt an innovation. This category does follow the early majority in the adopter's category. The late majority adopt new ideas just after the average member of a system. Like the early majority, the late majority make up one-third of the members of a system. This category of people agrees to adopt an innovation due to the result of increasing network pressures from peers. Innovations are approached with a skeptical and cautious mind set, and the late majority do not adopt until most others in their system have done so.

The weight of system norms must definitely favor an innovation before the late majority is convinced. The pressure of peers is necessary to motivate adoption. Their relatively scarce resources mean that most of the

uncertainty about a new idea must be removed before the late majority feel that it is safe to adopt. The late majority are not oriented to their social system. They are isolates, traditional bound and do not encourage any adoption. Their participation in community social systems or organizations and activities is very low. They are low in their education, change agent contact and media exposures.

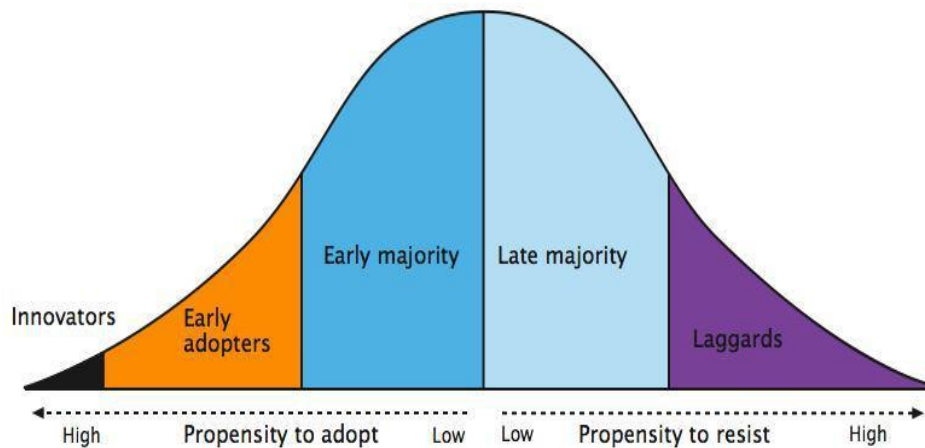


Fig. 1: Categorization of Adopters of Innovation

e) **Laggards:** The Laggards are the very last to adopt an innovation. They are usually isolates and suspicious of the innovation and the change agents who come with the change. They make up the last 16% of the individuals in a system to adopt an innovation. They possess almost no opinion leadership. Laggards are the most traditional minded of all adopter categories; many are near isolated in the social networks of their system. Similar to the late majority, the laggards' participation in community social systems or organizations and activities is very low. They are low in their education, change agent contact and media exposures. The point of reference for the laggard is the past. Decisions are often made in terms of what has been done previously. Resistance to innovations on the part of laggards may be entirely rational from the laggard's viewpoint, as their resources are limited and they must be certain that a new idea or innovation will not fail before they can adopt. The innovators and laggards are generally regarded as deviants in the society because while the innovators under-conform, the laggards over-conform to societal norms, traditions, customs and other accepted pattern of behaviours.

1.3.1 Listing of the Characteristics of the Adopters Categories

The different categories of the adopters have been differentiated based on the characteristics they possess. Some of the characteristics of the different categories are shown below as postulated by Rogers (1995):

- i. The Innovator:** The innovators are the people who are characterized accordingly; (i) They are venturesome (ii) High risk takers (iii) They are usually younger in age (iv) They are highly educated (v) They have good exposure with the outside society (vi) They are highly social members of the society (vii) Operates larger farms and are therefore rich people in the society (viii) They are in close contact with the social media from where they get latest information on agricultural practices
- ii. Early Adopters:** (i) Integrated part of the local social system, (ii) Greatest degree of opinion leadership in most systems, (iii) Serve as role model for other members or society, (iv) Respected by peers, and (v) Successful in their farming operations and also rich in farm income
- iii. Early Majority:** (i) Interact frequently with peers, (ii) Seldom hold positions of opinion leadership, (iii) One-third of the members of a system, making the early majority the largest category, (iv) Deliberate before adopting a new idea;
- iv. Late Majority:** (i) They form one-third of the members of a system, (ii) Pressure from peers, (iii) Economic necessity, (iv) They are usually skeptical, and (v) They are also cautious;
- v. Laggards:** (i) Possess no opinion leadership, (ii) They are isolates in the society (iii) Point of reference in the past, (iv) Suspicious of innovations, (v) Innovation-decision process is lengthy, and (vi) Their resources are limited

Self-Assessment Exercise

Write short notes on the following terms:

- i. innovator
- ii. Early adopter
- iii. Late majority
- iv. Laggards.

1.3.2 Factors Influencing Farmers into Particular Categories they Belong

There are particular factors that actually influence farmers into the groups where they are classified into. These factors range differently among these farmers hence its possibility to rate the farmers differently into different categories. Some of the factors are; farmers age, level of education, Level of social participation, level of income, level of media exposure and extent of extension contacts. These factors are thus explained below:

- i. **Farmers age:** Farmers age varies widely, but they are generally group into old and young. The young are sometimes farmers less than fifty years while those above and considered as old. Several studies have showed that most risk in the farm are taken by the young farmers while the old don't like to indulge in risk. This accounts for why the most of the innovators and early adopters are young farmers. Sad to mention, most of our Nigerian farmers belong to the old age bracket hence they find it difficult to take risk, and so find themselves amongst the late majority and laggards.
- ii. **Farmers level of education:** Level of education greatly influence the farmers in the adopters' category. Studies have showed that farmers with high level of education are bound to take more farm risk than their counterparts with low level of education. To this end in view, the more educated farmers based on their willingness to take risk are found to be amongst the innovators or early adopters while the less educated farmers and illiterates are categorized amongst the late majority and laggards in respect with their level of education.
- iii. **Level of social participation:** There is a unique positive correlation between level of social participation and level of adopters' category to which the farmers belong. Level of social participation of the farmers in groups exposes them to interactions with their peers about innovations and anything that is new about farming activities. So, the more they get interacted in social groups, the more they adopt innovations and this act get them into higher categories of adoption (innovators or early adopters or possibly the early majority). On the contrary, those farmers who don't interact find it difficult to adopt innovations because they are well eluded of innovations and information.
- iv. **Level of income:** Talking about level of income, studies have again showed that there is a positive relationship between level of income and level of adoption of innovation. It therefore implies that the richer or more well-to-do farmers seemed to adopt innovations more than their counterparts with lower farm income. This is not unconnected with the fact that the poor are afraid to loss what they have. This is why it could be said that the farmers with higher income are high in the adopter's category while their counterparts with lower income are found in the lower categories.
- v. **Level of media exposure:** It is a fact that farmers often get information from different sources like neighbours, friends, relations and the local groups they belong. It is important to note that the better farm information is sought from the media like radio, television, agricultural newsletters, newspapers and agricultural pamphlets. Farmers with higher level of exposure to the media sources of information get information faster and

quickly adopt information or innovation and then find themselves on the higher level of the adopters category. Those with lower level of exposure to the media often find themselves at the lower level of the adopters category like late majority and laggards.

- vi. Extent of extension contacts:** Farmers are expected to be served by the extension agents assigned to the area they belong. The extension agents often reach out to the contact farmers who in turn reach out to the other farmers in the area. Those farmers who are more often and in close contact with the extension agents are known to adopt innovations more quickly because they are more informed. This makes them to be found amongst the innovators and early adopters. On the other hand, those farmers who are not in close contact with the extension agents often find themselves adopting innovations late and so find themselves amongst the late adopters and laggards.

Self-Assessment Exercise

1. How does farmers' education affect extension?

1.4 Summary

In this unit, the adopters of innovation have been classified. Under each category, we have identified the characteristics possessed by members of the same category. Also looked at was how some of the social characteristics influence the farmers into particular adopters' category. The willingness to adopt an innovation varies among people in a given society and that the people of the same category possess similar characteristics. Certain social characteristics have been observed to influence the rate of adoption of innovations amongst the farmers of a particular social system. This accounts for why some individuals adopt innovation early, while others are delay.

1.5 References/Further Readings/Web Resources

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1.6 Possible Answers to Self-Assessment Exercise(s)

1. Write short notes on the following terms:

- i. innovators
 - ii. Early adopters
 - iii. Late majority
 - iv. Laggards.
- i. **Innovators:** The innovators are the people who are characterized accordingly; (i) They are venturesome (ii) High risk takers (iii) They are usually younger in age (iv) They are highly educated (v) They have good exposure with the outside society (vi) They are highly social members of the society (vii) Operates larger farms and are therefore rich people in the society (viii) They are in close contact with the social media from where they get latest information on agricultural practices
 - ii. **Early Adopters:** (i) Integrated part of the local social system, (ii) Greatest degree of opinion leadership in most systems, (iii) Serve as role model for other members or society, (iv) Respected by peers, and (v) Successful in their farming operations and also rich in farm income
 - iii. **Late Majority:** (i) They form one-third of the members of a system, (ii) Pressure from peers, (iii) Economic necessity, (iv) They are usually skeptical, and (v) They are also cautious;
 - iv. **Laggards:** (i) Possess no opinion leadership, (ii) They are isolates in the society (iii) Point of reference in the past, (iv) Suspicious of innovations, (v) Innovation-decision process is lengthy, and (vi) Their resources are limited.
2. **Farmers level of education:** Level of education greatly influence the farmers in the adopters' category. Studies have showed that farmers with high level of education are bound to take more farm risk than their counterparts with low level of education. To this end in view, the more educated farmers based on their willingness to take risk are found to be amongst the innovators or early adopters while the less educated farmers and illiterates are categorized amongst the late majority and laggards in respect with their level of education.

Unit 2 Factors Determining the Effectiveness of Agricultural Extension in Rural Areas

Unit Structures

- 2.1 Introduction
- 2.2 Intended Learning Outcomes
- 2.3 Factors Determining the Effectiveness of Agricultural Extension in Rural Areas
 - 2.3.1 Problems and Solutions of Agricultural Extension Services in Developing Countries
- 2.4 Summary
- 2.5 References/Further Readings/Web Resources
- 2.6 Possible Answers to Self-Assessment Exercise(s)

2.1 Introduction

Farmers in rural areas view agriculture extension as a form of assistance to help improve their know-how, efficiency, productivity, profitability, and contribution to the good of their family, community, and society. Agricultural extension therefore aims to enhance and accelerate the spread of useful know-how and technologies to rural people. These activities are expected to lead to increased and sustained productivity, increased income and well-being of farm people, and to the promotion of national food security and economic growth. But poor infrastructures, lack of agreement on the functions of extension, the clientele to be served, how extension will be financed, frequent changes in organizational structure and programme priorities, rapid turnover of the extension staff, and the proliferation and lack of coordination between different organizations that undertake extension work are some of the common problems of agriculture extension in Nigeria. Though the system still has some prospects ahead of time.

2.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- identify and explain the factors required for effective agriculture extension in rural areas
- the students should be able to know the problems affecting agricultural extension system in developing countries
- they should also be able to know about the prospects of agricultural extension system in developing countries.

2.3 Factors Determining the Effectiveness of Agricultural Extension in Rural Areas

The ultimate role of agriculture extension is the impact that extension is having on the productivity of all major groups of farmers, including their incomes and quality of life. An effective extension should contribute to sustainable agricultural development in rural areas. The factors below focus on innovation diffusion and improving agricultural extension system in Nigeria according to FAO (1998).

- a) **Need for a Change in Agriculture Extension Policy, Mission and Goals:** Nigeria is largely an agricultural economy with the majority of the population deriving their income from farming especially in the rural communities. Most policy interventions have focused on “food security”, a term that is used to cover key attributes of food such as sufficiency, reliability, quality, safety, timeliness and other aspects of food necessary for healthy and thriving populations. Agricultural extension mission and goals may need to be adjusted according to national objectives and the context and stage of agricultural and rural development in a given country. This mission should be reflected in a statement of goals and objectives that are agreed upon and assigned to extension in a supporting policy document. This document should be periodically reviewed by policy makers and representatives from stakeholder groups based on their needs.
- b) **Technological Advancement:** Agriculture in Nigeria is faced with enormous technological challenges. But they also have access to a much larger pool of scientific and technical knowledge that was not available when the Green Revolution was launched. This exploration will also include an examination of local innovations as well as indigenous knowledge. It will cover fields such as information and communications technology, genetics, ecology and geographical sciences. It will emphasize the convergence of these and other fields, and their implications for Nigerian agriculture.
- c) **Enabling Infrastructure:** Enabling infrastructure (covering public utilities, public works, transportation and research facilities) is essential for agricultural development. Infrastructure is defined here as facilities, structures, associated equipment, services, and institutional arrangements that facilitate the flow of agricultural goods, services and ideas. Infrastructure represents a foundational base for applying technical knowledge in sustainable development and relies heavily on civil engineering. Provision of an enabling infrastructure for agricultural development is very important. Modern infrastructure facilities will need to reflect the growing concern over climate change and food insecurity.

Nigeria's poor infrastructure represents a unique opportunity to adopt new approaches in the design and implementation of infrastructure facilities.

- d) **Agricultural Innovation Systems:** The use of emerging technology and indigenous knowledge to promote sustainable agriculture will require adjustments in existing institutions. New approaches will need to be adopted to promote close interactions between government, business, farmers, academia and civil society. Positioning sustainable agriculture as a knowledge-intensive sector will require fundamental reforms in existing learning institutions, especially universities and research institutes. Most specifically, key functions such as research, teaching, extension and commercialization need to be much more closely integrated.
- e) **Extension Approach and Functions-**National extension systems can pursue one of several different extension approaches in implementing extension policy. An example of a technology transfer approach is the Training and Visit (T&V) extension system that has been promoted by the World Bank through its lending programme. The T and V system main focus has been on increasing the skills and knowledge of farm families, who have become very effective consumers of agricultural technology. There is need to enhance the T&V approach with participatory activities that will involve the farmers such as the farmer-field school.
- f) **Geographical Coverage:** Geographical coverage can be an important policy issue because of both political and cost implications. If extension funding is to be provided by different levels of government (cost sharing), then the structure of extension must reflect these different sources of funding. Extension personnel will tend to be more responsible to those levels of government that provide extension funding. For example, if Local Governmental Authority (LGA) provides some extension funding, then extension personnel will tend to be more responsive to the needs of farmers and political leaders within these LGA, than they are if all funding comes from the national government. Therefore, having multiple sources of funding, especially from different levels of government, will increase the number of shareholders and result in an extension system that has a broader base of support and that is more responsive to stakeholders at the local level. Investing in resource poor farm families may increase their technical, management, and leadership skills, thereby enabling them or their children to move into higher paying, nonfarm jobs.
- g) **Clientele or Target Beneficiaries:** A common criticism of extension services in developing countries is their neglect of the

vast number of small-scale farmers in favour of fewer numbers of large farmers, or the very limited attention given to women farmers. The inclusion of women and rural youth in agricultural extension programmes is generally recognized in terms of their numbers and contribution to farming. Rural youth may account for up to 60 per cent of the population in developing countries, therefore they should be specially recognized for their crucial role in achieving sustainable agricultural and rural development.

- h) Organizational Issues:** The extension organization embodies different aspects of an extension system, and it provides the management framework for the extension service. This affects the scope, magnitude, and structure of the extension system, including factors such as control, cost-effectiveness, and the impact of the extension service. Government project/policy should be bottom-up approved in order to feel the pulse of the farmer before deciding on what to do for the farmers. Four different forms of extension organization include centralized organization, decentralized organization, centralized extension and funding; and pluralistic forms of a national extension system. In Nigeria, almost an invisible national extension office exists because extension programming, management, and the control of activities and resources are vested with state governments that may not provide fund. Many publicly and/or privately funded organizations, including nongovernmental organizations (NGOs), ministry of agriculture, state-funded agricultural colleges and universities, commodity boards, agro-business firms (contract extension), farmer organizations, cooperatives and commodity associations are beginning to conduct agricultural extension programmes in an integrated manner so that the little available could make a little impact.
- i) Extension Funding:** The most difficult and challenging issue facing extension today is to secure a stable source of funding. The government has the impression that public extension is both expensive and a drain on the government's limited resources. Studies carried out in both developed and developing countries indicate that the returns to extension expenditures are high. Therefore, increased level of public funding is necessary to support extension in relation to the needs of farmers in the country. In Nigeria, absolute levels of extension funding are very low. The Federal Government must believe in long term benefits that can be derived from investing in extension services. Extension should therefore provide constant/periodical reports of the various activities, including progress and limitations. The funding for extension should be increased to levels that reflect the anticipated economic rates of return and the social benefits when public funds are properly invested and managed.

- j) Extension Staffing Issues:** By the nature of the mission and work that an extension system carried out; its worth to society is largely reflected by the quality and number of the technical and professional staff in the organization. Based on the scope of and available resources, qualification, number of extension staff to be employed by the extension system; proportion of subject-matter specialists to field extension workers; proportion of field extension personnel to the number of farmers, farm households, or other target groups; deployment method of extension staff, frequency of transfer, incentives to be provided in order to ensure that they work closely with all groups of farmers are crucial issues to be considered. The government should recruit more extension personnel and make all available working materials available to them, but at the right time. As senior officers are retiring, new ones must be employed to ensure that knowledge is transferred. Provision of incentive for the field officers and Subject Matter Specialist to have motor cycle and vehicle respectively to facilitate movement to their various cells is important. Payment of allowances and kilometer claims regularly at the right time to enhance adequate visits to farmers, prompt payment of allowances and remuneration to extension personnel will be necessary and important, if agriculture is to move forward. Extension personnel must be encouraged to stay with the farmers in the rural areas and facilities to make them comfortable should be provided. There is also need for training and re-training within the field officers to up-date their knowledge for effective dissemination of extension messages.
- k) Stability:** A good extension policy promotes extension system stability and also needs to allow sufficient flexibility to reflect the dynamic nature of the agricultural sector. Extension should not be rigid but should be responsive to all major groups of farm people and sufficiently inclusive to allow public, private, and non-governmental organizations to contribute fully to the agricultural development goals of the country. Frequent organizational changes within extension, such as being transferred from one government agency to another, directly impact the organization's effectiveness. Such instability is costly in that trained staffs are poorly utilized and opportunities for improved productivity are forgone. Extension policies in some countries have been successful in preventing disruptive and destabilizing. All bottleneck bureaucracies from the Government (Federal, State and Local government) must be removed to prevent late release of fund.
- l) Business Development:** The creation of agricultural enterprises represents one of the most effective ways to stimulate diffusion and adoption of Innovations. These will include direct financing,

matching grants, taxation policies, government or public procurement policies and rewards to recognize creativity and innovation. New tools such as information and communication technologies can be harnessed to promote entrepreneurship.

Self-Assessment Exercise

1. How does extension funding determine the effectiveness of agricultural extension in rural areas.
2. What is the implication of technological advancement in extension?

2.3.1 Problems and Solutions of Agricultural Extension Services in Developing Countries

The agricultural extension service in developing countries have been known to be plagued by different problems and these problems vary from one country to another due to the varying ways it is being carried out in these countries. The problems have been summarized in broad categories, although the problems can hardly be exhaustibly treated at a time. However, each problem treated here is accompanied with suggested solution. Some of the problems and corresponding solutions are as follows:

- i. **Inadequate and instability of funding:** Inadequate and instability of funding is a major problem plaguing extension services in most if not all developing countries of the world. Agricultural extension programmes adequate funding for it to be successfully carried out. Every aspect of the agricultural extension programmes is very expensive in terms of recurrent budget and poor funding has not allowed the programmes to be adequately carried out well. Funds are needed to purchase the necessary communication gadgets like audio visual aids computers, radios, television, etc. Going further, the funding system has been described as erratic and for years, the agricultural extension system is said to be grossly underfunded. It is against this background that most of these countries have sourced for funding from international organizations. Although this has not been stable and consistent hence the dwindling situation of the agricultural extension system of the present day.

To ameliorate this problem of poor funding in developing countries, the government need to demonstrate the political will and be able to commit adequate funds that will be sufficient to carryout agricultural extension programmes in their countries. In addition, the nature and structure of the of funding of the agricultural extension service in developing countries is

that they need to ensure a more sustainable funding arrangement that is not dependent on temporary or occasional international assistance from donors.

- ii. Poor logistic support for field staff:** Poor logistic support has to do with problem of planning and organization that is needed to carry out large and difficult operations in the agricultural extension service. The major problem here is that of transportation of agricultural extension agents to the different locations where they are expected to do their work on daily basis. Mobility means that is good and efficient is very important for successes to be recorded in agricultural extension work. Poor transportation services of the agricultural extension agents to where they are supposed to do their work has made it impossible for them to be able to effectively and efficiently carry out the task expected of them. The issue of poor and inadequate transportation means has resulted to poor timeliness or lateness in providing working materials for mounting on-farm demonstrations on farm fields. Regular field visits to farmers as expected from the agricultural extension agents has also not been regular and possible. All of these have resulted to a sharp decline in production output of the farmers.

Addressing this ugly scenario, government needs to make available an improvement in management of agricultural extension service system that can guarantee an adequate material provision and better service back-up in the field. In addition, government should provide incentives for field staff that can go a long way in encouraging the agricultural extension agents to achieving the overall goal of agricultural development.

- iii. Use of poorly trained personnel at the local level:** Most of the agricultural extension agents used at the village level to serve the farmers are poorly trained and as such they find it difficult to accomplish the task expected of them. The training skill is not there in the people, the requisite knowledge is as well absent in the people. The result expected from such scenarios is poor work. This is not a surprise because according to the saying: you cannot give what you do not have. Poor quality personnel have also stemmed from poor type of pre-service that the staff had prior to joining the agricultural extension service

A bail out from this scenario, would demand institutions that train agriculturists in Nigeria and other developing countries to adequately provide modern facilities in their teaching farms, laboratories, workshop and studios so that products or graduates from such institutions will be well equipped and be in a better position to provide improved quality of agricultural messages to farmers.

- iv. **Ineffective agricultural research-extension linkages:** it is a known fact and a pre-condition that anyone who wants to carry-out an appropriate research programme on farmers problems would need to know the needs of the farmers and have adequate knowledge of the socio-economic environment under which the farmer operates. For agro-technologies to be relevant to farmers, research findings that would bother on farmers' needs, the researchers, extensionists and farmers must play important roles in identifying research problems, adapting recommended innovations to local conditions and providing feedback to researchers about the innovations that have been developed. The linkages between agricultural extension research organizations are weak in the country. The weakness affects the quality of knowledge generation and knowledge management upon which the long-term success of an agricultural extension organization depends.

This situation can be addressed by making some policy changes, institutional re-organization and the strengthening of institutions are required to enhance agricultural research-extension linkages in developing countries. Strengthening the linkage will result to improved research-extension linkage that will bring about improvement in agricultural extension services and better farmers output.

- v. **Insufficient and inappropriate agro-technologies for farmers:** The agro-technologies that are being developed today are to some extent insufficient and inappropriate. Such a development would require appropriate the incorporation of farmers needs and the expertise of the country's agricultural scientists. There are situations where there are specialized researchers and scientists who are ready to work but are constrained due to unavailability of adequate facilities to do the work. The resultant effect is the production of poor products that can hardly stand the test of time, which does not solve farmers problems and are inappropriate to fit farmers situation.

Overcoming this ugly trend, there is need for the government or any other stakeholders to make available from the research system to farmers some more sophisticated, more economically and socio-culturally acceptable technologies that can help to improve the extension work and the farmers output.

- vi. **Disproportionate extension agent to farm family ratio:** This is a critical problem facing the agricultural extension system in Nigeria. This problem is linked to insufficient number of extension

agents that are serving the farmers in the country. This problem is age long and has not been remedied to this present day. In this country, Nigeria, the number of extension agent is so low that we find a ratio of one extension agent serving about 1,500 farmers (i.e., 1:1,500). In some cases, the situation is even worse or wider. The disproportionate extension agent to farm family ration prevalent in the developing countries has led to a situation in which many farmers do not benefit from the services of agricultural extension agents. In meeting with farm needs, the farmers most times depend on public extension workers for information source during trial and acceptance stages of the adoption process.

Since the farmers in most developing countries mostly depend on public extension services, it will be appropriate to employ and increase the number of extension workers so that more farm families can be reached and seem to benefit from the extension agents' services.

- vii. Dilution of extension agent's specific responsibility:** The extension system in most developing countries has witnessed a situation where the extension agents have been saddled with responsibilities different from the dissemination of agricultural information to farmers. Some of these off-line responsibilities are: writing of application for credit on the behalf of the farmers, filling of questionnaire, setting up and maintaining demonstration plots, etc., Such dilution of responsibility leaves the extension agents with no sufficient time to do their work because all their time has been spent on something else. To this end in view, rather than seeing the extension agents performing purely educational functions in the agricultural domain, the extension agents find themselves performing educational, regulatory and supply functions.

To ensure an effective agricultural extension system, it is important for extension workers to focus purely on assisting farmers with utilization of improved farming practices. This is their primary job and they should be left to do just that. By so doing, there will be concentration on the job and that is sure to boost performance both on the extension agents' and farmers part.

- viii. Lack of clientele participation in programme development:** In most developing countries, agricultural programmes for farmers are planned by experts in the extension agency or Ministry of Agriculture and decision are taken by senior staff at the top without the inputs of the local farmers for whom the programmes are designed. The system does not make room for appropriate feedback since the people were not carried out from the start of the

programme formation. A good extension programme planning and implementation will use farm level approach and this will concern itself with: what the farmers want, what are his/her constraints, ways to reduce the constraints, implications for many acts carried out, etc. Carrying the farmers along in the planning and other stages would make the farmers needs be touched and make the farmers see the project as their own and get more committed.

To solve this problem would mean that the developers of the programme should always ensure that clientele participation in the programme planning and implementation stage is always given due consideration.

- ix. Failure of input suppliers to ensure effective and timely distribution to farmers:** Agricultural activities as we know is timely. The inputs that are used in the farming activities are produced by different agro-companies. It has become evident that most of these companies do not produce the inputs as at when needed. Similarly, the suppliers do not always supply or distribute the inputs to the people who actually need them. This gap has resulted to making these inputs only being available at the wrong time and therefore making them unavailable for use. The situation therefore makes farmers to remain in their old position of poor agricultural production and low level of income.

To revamp the situation, farm inputs need to be manufactured at the appropriate time, distributed and supplied at the appropriate time to the farmers so that they can make good and timely use of the inputs for their improved agricultural production and guaranteed increase in farm income.

- x. Irregular evaluation of extension programmes:** Agricultural extension programmes are expected to be subjected to monitoring and evaluation. The monitoring checks what is happening to programme inputs and outputs, shows expected dangers and how they can be checked. In where developing countries are concerned, monitoring and evaluation are not properly and regularly carried out and this has sometimes led to programme failure.

This condition can be changed by ensuring that regular evaluation of agricultural extension programmes is carried out and it should be done on regular intervals. This will go a long way in putting in place corrective measures that would help to avoid current mistakes in the future.

2.4 Summary

Factors enhancing effective agricultural extension in rural areas have been discussed in this unit. It has outlined the need for changes in policies, technology, infrastructure; approaches in innovation system, extension activities and stability development as factors needed to promote agricultural extension in rural areas. The problems affecting the agricultural extension system, extension programmes and the farmers were treated. These problems were found to be responsible for the decline in agricultural production. The scenario can however be changed by simply turning the situation around as made available in the body of the work. Agricultural Extension in developing countries have not been able to meet up with the roles it was established to achieve. Some of the factors that are responsible for this ineffectiveness are numerous but they vary from one country to another. There are so many problems plaguing agricultural extension services in developing countries, Nigeria not left out. These problems are in different nature and magnitude as is prevalent in one country to another. These problems range from ill government policy through irregularities in the extension organizations down to the farmers who are ignored but needed to be carried along in the course of programme planning and evaluation that would lead to doing good work, eliminating constraints and ensuring meeting up with the farm and production potentials.

2.5 References/Further Readings/Web Resources

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2.6 Possible Answers to Self-Assessment Exercise(s)

1. How does extension funding determine the effectiveness of agricultural extension in rural areas.

The ultimate role of agriculture extension is the impact that extension is having on the productivity of all major groups of farmers, including their incomes and quality of life. An effective extension should contribute to sustainable agricultural development in rural areas.

Extension Funding is the most difficult and challenging issue facing extension today is to secure a stable source of funding. The government has the impression that public extension is both expensive and a drain on the government's limited resources. Studies carried out in both developed and developing countries indicate that the returns to extension expenditures are high. Therefore, increased level of public funding is necessary to support extension in relation to the needs of farmers in the country. In Nigeria, absolute levels of extension funding are very low. The Federal Government must believe in long term benefits that can be derived from investing in extension services. Extension should therefore provide constant/periodical reports of the various activities, including progress and limitations. The funding for extension should be increased to levels that reflect the anticipated economic rates of return and the social benefits when public funds are properly invested and managed.

2. **Technological Advancement:** Agriculture in Nigeria is faced with enormous technological challenges. But they also have access to a much larger pool of scientific and technical knowledge that was not available when the Green Revolution was launched. This exploration will also include an examination of local innovations as well as indigenous knowledge. It will cover fields such as information and communications technology, genetics, ecology and geographical sciences. It will emphasize the convergence of these and other fields, and their implications for Nigerian agriculture.

Unit 3 The Concepts of Opinion Leadership, Characteristics and Functions of Opinion Leaders

Unit Structures

- 3.1 Introduction
- 3.2 Intended Learning Outcomes
- 3.3 The Concepts of Opinion Leader and Leaderships
 - 3.3.1 Characteristics of Opinion Leader
 - 3.3.2 Functions of Opinion Leaders
- 3.4 Summary
- 3.5 References/Further Readings/Web Resources
- 3.6 Possible Answers to Self-Assessment Exercise(s)

3.1 Introduction

Key aspect of understanding how the social system operates and affects diffusion of innovation is that social systems have prestige hierarchies. These hierarchies are headed by people in position of influence. It is a known fact that some persons/organizations are more influential than others and are being headed by people. These people who are in position of influence and of course influence the social system are regarded as opinion leaders. To effectively gain adoption of a new technology, the change agent should know how to identify opinion leaders in the social system. In this unit we shall discuss the role of the opinion leader in adoption of innovation. So that they can influence it on other persons of the society.

3.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the concept of opinion leaders
- identify the characteristics of opinion leaders
- state the functions of opinion leaders
- understand the role of opinion leaders in adoption of innovation.

3.3 The Concepts of Opinion Leader and Leaderships

A leader is first defined as: (a) person initiating interaction with other members of a group, (b) person who initiates interaction more frequently than anyone else in a group, and (c) person who moves the group towards group goal. When such leader originates from a consensus he or she now becomes an opinion leader. Opinion leaders are informal leaders that are able to influence others. This informal leadership is most times not a function of the individual's position or status in the system, but is earned

and maintained by individuals' technical competence, social accessibility, and conformity to the system's norms. By their close conformity to the system's norms, opinion leaders serve as a model for the innovation behaviours of their followers.

Opinion leaders have more exposure to external communication, higher social status greater mass media exposure, greater change agent contact, greater social participation, more urban contact and innovativeness. Opinion leaders are individuals who receive information from the media and pass it along to their peers. They are individuals who are knowledgeable about various topics and whose advice is taken seriously by others. The opinion leader is the agent who is an active media user and who interprets the meaning of media messages or content for lower-end media users.

Typically, the opinion leader is held in high esteem by those (followers) who accept his or her opinions. Opinion leadership tends to be subject specific, that is, a person that is an opinion leader in one field may be a follower in another field.

Opinion leaders are seen to have more influence than the media for a number of reasons like trustworthiness and being non-purposive, the media can be seen as forcing a concept on the public and therefore less influential. Opinion leaders have a more changing or determining role in an individual's opinion or action, while the media can act as a reinforcing agent.

Opinion leaders can be found in all types of groups: occupational, social, community, and others. They often tend to be very socially active and highly interconnected within the community. Effective opinion leaders tend to be slightly higher than the people they influence in terms of status and educational attainment, but not so high as to be in a different social class. This way, the leaders are still a part of their audience's reference group. It is important to remember, that social power, educational attainment, and public are not absolute requirements for opinion leadership. Despite the existence of opinion leaders, it is not always easy to distinguish them from the other members of groups. This is because opinion leadership is not a trait, but rather a role taken by some individuals under certain circumstances. In other words, anyone can be an opinion leader at any given time. Such leadership changes from time to time and from issue to issue. Opinion leaders also play important roles in movements of social change and can bring legitimacy to a social movement. This is because they tend to be similar to those, they influence based on personality, interests, demographics, or socio-economic factors. These leaders tend to influence others to change their attitudes and behaviors.

3.3.1 Characteristics of Opinion Leader

Some of the characteristic's opinion leaders are known for are as follows:

- i. External Communication: Opinion leaders have greater exposure to mass media than their followers
- ii. Accessibility: They are socially accessible and have greater social participation than their followers.
- iii. Socio-economic Status: They usually have higher socio-economic status than their followers. Socio-economic status may include educational qualification, age, income, farming experience, farm size, household size, etc.
- iv. Innovativeness: They are usually known to be highly innovative. They are quick to accept innovations brought by the extension agents and then become a role model by letting their followers learn from their experience. For this reason, they are regarded as competent and trust worthy.
- v. They conform to system norms: Opinion leaders conform to the societal norms, customs and traditions of their social system. They are not seen as deviants.
- vi. Ability to dominate others: There are people who attain this position of opinion leaders by being able to dominate others in the system. The domination may stem from possession of desirable characteristics that he would use to force him/herself on the group.
- vii. Ability to influence people: An opinion leader should be able to possess or have the ability to influence other people of the group he belongs. The influence may be derived from personal characteristics like height, personal appealing appearance, ability to speak, high educational level, higher income status, etc.
- viii. In some other cases, people assumed leadership position on the assumption of having a divine call or revelation to lead others. This divine call may be assumed to have come from one Prophet or the other, religious leader, or appointment from the gods of their land.

Self-Assessment Exercise

1. List any four characteristics of an opinion leader.

3.3.2 Functions of Opinion Leaders

The functions of an opinion leader in our contemporary society cannot be over emphasized. They perform many roles and through these roles the community is able move from where it was to where it is and it is still going forward. Some of the functions are:

- i. **He is a guide:** Opinion leaders act as a guide to the members of his/her group. He is always in front of the group, so he leads in trying to see to the people's needs and always at the forefront in planning to see how these needs can be actualized. He guides the people who are his followers on the direction that will attract many advantages to the people and he does that more effectively on the direction it chooses to move. This he is able to do based on his expert knowledge.
- ii. **He is a group harmonizer:** The opinion leader is the one who keeps interpersonal relations with other members of the group and encourages cohesion among members. He provides encouragement among members of the group and do well to settle disputes where such arises. He also helps to create room for the minority to be heard and increase interdependence amongst members of a group. Opinion leader in this same line, unravel areas of dissatisfaction amongst members and see to how such can be settled.
- iii. **He is an enabler:** Opinion leader as an enabler strives to make group realize her potentials and help them to know their strength in cooperative work towards achieving certain goals. He stimulates insights rather than providing all the answers and as well provides encouragement and support for others who may want to share in group's action.
- iv. **He acts as group's spokesman:** He is seen and acknowledge as the mouth piece of the people of the group he belongs. He is expected to know the aspirations and needs of the people and channel such to the necessary quarters for action.
- v. **He is a group educator:** Opinion leader is seen and acknowledged as the people's educator. He brings to the people's knowledge what they are supposed to know. This is why the people of the group bring to him problems that they are encountering for solutions. He may end up providing technical competence, resource material, expert knowledge, etc to the people, pending on the prevailing issue at hand.
- vi. **He is a symbol of group ideals:** The opinion leader is able to discern the underlying aspirations of the people he leads. And for this reason, the people on their part are willing and able to submit to the control of the leader. He has passion for the people he leads and he is also loyal to the ideals and aspirations of the group. For these qualities, people look up to him for direction.
- vii. **He is an agent of control:** Many groups that exist today stray because they don't have people to lead them well or don't even have leaders at all. An opinion leader excises control over his followers through the use of particular qualities they possess. These qualities nourish and maintain favourable sentiments like courage, self-sacrifice, hatred of vices, etc. Such control is usually

in the right direction that will help in the attainment of groups goals.

Self-Assessment Exercise

1. Explain the Functions of Opinion Leaders.

3.4 Summary

The study of this unit was able to unravel the meaning of who a leader is and who an opinion leader is. It also establishes the fact that certain characteristics are expected of someone before such a person can be respected and be seen as an opinion leader. It is these opinion leaders that help align the group towards the attainment of group's goals. A leader is a person initiating interaction with other members of a group while an opinion leader is one who attains the position of leadership by consensus of the people in the group. Such a consensus is reached based on certain qualities possessed by the leader in question. However, certain characteristics are expected to be domiciled in any one that is chosen to be a leader and it is these characteristics that the people look up to which make them agree to be followers. The opinion leader is not just there but to help carry out some functions in the group and to the people which are aimed at attaining group's goals.

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3.6 Possible Answers to Self-Assessment Exercise(s)

1. List any four characteristics of an opinion leader

- i. External Communication: Opinion leaders have greater exposure to mass media than their followers
- ii. Accessibility: They are socially accessible and have greater social participation than their followers.
- iii. Socio-economic Status: They usually have higher socio-economic status than their followers. Socio-economic status may include educational qualification, age, income, farming experience, farm size, household size, etc.
- iv. Innovativeness: They are usually known to be highly innovative. They are quick to accept innovations brought by the extension agents and then become a role model by letting their followers learn from their experience. For this reason, they are regarded as competent and trust worthy.
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- viii. In some other cases, people assumed leadership position on the assumption of having a divine call or revelation to lead others. This divine call may assumed to have come from one Prophet or the other, religious leader, or appointment from the gods of their land (Any four).

2. Functions of Opinion Leaders

The functions of an opinion leader in our contemporary society cannot be over emphasized. They perform many roles and through these roles the community is able move from where it was to where it is and it is still going forward. Some of the functions are:

- i. **He is a guide:** Opinion leaders act as a guide to the members of his/her group. He is always in front of the group, so he leads in trying to see to the people's needs and always at the forefront in planning to see how these needs can be actualized. He guides the people who are his followers on the direction that will attract many

advantages to the people and he does that more effectively on the direction it chooses to move. This he is able to do based on his expert knowledge.

- ii. **He is a group harmonizer:** The opinion leader is the one who keeps interpersonal relations with other members of the group and encourages cohesion among members. He provides encouragement among members of the group and do well to settle disputes where such arises. He also helps to create room for the minority to be heard and increase interdependence amongst members of a group. Opinion leader in this same line, unravel areas of dissatisfaction amongst members and see to how such can be settled.
- iii. **He is an enabler:** Opinion leader as an enabler strives to make group realize her potentials and help them to know their strength in cooperative work towards achieving certain goals. He stimulates insights rather than providing all the answers and as well provides encouragement and support for others who may want to share in group's action.
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- vi. **He is a symbol of group ideals:** The opinion leader is able to discern the underlying aspirations of the people he leads. And for this reason, the people on their part are willing and able to submit to the control of the leader. He has passion for the people he leads and he is also loyal to the ideals and aspirations of the group. For these qualities, people look up to him for direction.
- vii. **He is an agent of control:** Many groups that exist today stray because they don't have people to lead them well or don't even have leaders at all. An opinion leader excises control over his followers through the use of particular qualities they possess. These qualities nourish and maintain favourable sentiments like courage, self-sacrifice, hatred of vices, etc. Such control is usually in the right direction that will help in the attainment of groups goals.

Unit 4 **Types of Leaders and Measurement of Opinion Leadership**

Unit Structures

- 4.1 Introduction
- 4.2 Intended Learning Outcomes
- 4.3 Types of Opinion Leadership
 - 4.3.1 Opinion Leadership Based on Power and Influence
 - 4.3.2 Measurement of Opinion Leadership
- 4.4 Summary
- 4.5 References/Further Readings/Web Resources
- 4.6 Possible Answers to Self-Assessment Exercise(s)

4.1 Introduction

Opinion leadership are people who are being able to influence people towards an action. The opinion leaders are of different types and these originate from the source and functions performed by the leader. Opinion leadership is purely based on ability to display power and ability to influence her followers. The leaders are identified following certain criteria which qualifies him/her to be regarded as a leader.

4.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- know the types of opinion leaders that exist
- know the sources of leadership
- be informed of how to measure opinion leadership.

4.3 Types of Opinion Leadership

There are different types of opinion leaders that can be identified and this follows certain criteria like; path of attaining leadership position, legitimacy and scope of influence, and orientation. Important to mention, one leader may be found to fall into the different types of leadership. In other words, the types are not mutually exclusive. They are however explained as shown below:

1. **Types of Leadership by Path of attaining leadership position:**

Under this type of leadership which originates from path of attaining leadership position, we have:

- a. **Situational Leader:** A situational leader is one which originates from taking initiative from a given situation. Such condition could

be an emanating crisis situation where a leader emerges to calm the situation or a depressed situation where someone now emerges to sensitize the people on the need to stand for their right or freedom or any of such nature. Situational leaders persist until the situation that brought them on board is taken care of.

- b. **Dictatorial Leader:** This is another type of leader that originates from the situation of dictating to the people who are his/her followers. In the first case after the emergence of leadership borne out of a given situation, the leader then decides to go or stay after the situation that brought him/her on board has been taken care of. From that point, he/she may now begin to dictate affairs of the group to the people. Such a leader uses his/her initial advantage to paralyze initiatives amongst the followers. So he would want to control the phases of life in the community and takes no suggestion from anyone. Generally, they stand to oppose ideas of those that would not favour their own ideas.
 - c. **Traditional or Hereditary Leader:** This is a type of leader who is born into a hereditary leadership position which custom and tradition recognize. The leadership position is therefore ascribed and not achieved. In that case, the tradition affords him an unlimited loyalty and unquestioned obedience from the community members. Examples of this kind of leadership is what we see as Oba's, Obi's, Seriki's, etc.
 - d. **Charismatic Leader:** This is connected to the kind of leadership that originates from a divine or spiritual power. It can still be seen as someone who is able to control his followers due to some personal characters or quality possessed by the leader. These personal characters could be good looks, intelligence, ability to speak well, ability to lead people as always showing responsibility, etc. This type of leader mostly originates at times of crisis or when a distress condition comes up.
 - e. **Professional Leader:** This is a type of leadership position that is earned by the leaders by virtue of his/her expertise or level of competence displayed in his/her job or work position. The display of competence is the sure consideration for allowing him/her the leadership position. Such leader may have earned the position due to the fact that he is a Doctor, good Nurse, an Agricultural Officer or competent Extension agent, etc. The people control their actions to be in line with the expectations of the organization they represent.
2. **Types of Leadership by Visibility, Legitimacy and scope of influence:** This is another major source of leadership which originate from the people being recognized by leaders and non-leaders. They are determined through nominations and ranking of

non-leaders. This type of leadership attained through ranking by non-leaders has produced the following type of leaders:

- a. **Visible Leaders:** These types of leaders are visible as in, being seen by the community people in what they do and so are able to ranking and rate them by leaders and non-leaders as leaders that deserve followership. They play roles that are known and seen by people in the community, hence the name 'visible'.
- b. **Concealed Leaders:** These are leaders assigned more prestige by leaders than non-leaders. They are able to influence the people in the leadership circle and ultimately in the entire community.
- c. **Symbolic Leaders:** As the name goes, symbolic leaders do not command as much influence in the community as the masses in the community think they do. This type of leadership is that which are assigned more prestige by non-leaders than by leaders in the community.

3. Types of Leadership by Orientation: Leadership from this consideration stem from whether the leaders are cosmopolitan or local in their orientation. This implies the extent to which the leaders are interested in either matters operating in the community or outside the community. On the basis of this consideration, we have:

- a. **Local Leaders:** These are leaders whose interests are centered on matters taking place within the community. They join local organizations for purpose of making contacts, they tend to participate in politics but at the community level and the one that can read usually are interested in reading newspapers.
- b. **Cosmopolitan Leaders:** Leaders who belong to this category are interested in looking outside the community they come from. They function on behalf of the communities because of their outside contacts. Their skills and knowledge are exhibited through organizations membership. They may not be interested in political offices. They simply read newspapers just to keep up with developments generally and for self-empowerment generally in their abode.

4. Lay Leaders: Lay leaders are those leaders whose leadership has nothing to be with professionalism or expertise, hence the name lay. The lay leaders give rise to the following types of leadership style:

- a. **Action Leaders:** They are those leaders who are active and they take part in the planning, execution and evaluation of community programmes. These group of people as well take active part in the organization of the community as volunteer subject matter specialist teaching specific subjects to others, as activity leaders,

as programme planners, etc. They are needed by the community for the training of the people in community programmes.

- b. **Opinion Leaders:** These are lay people who live in the community and they are able to influence the other people in the community. They are able to do this influence due to the social positions like age, educational level, income level attainment, political dispositions, etc. possessed by them. They may hold formal or informal positions in the community and it is from where they operate that they display their leadership position from.

4.3.1 Opinion Leadership Based on Power and Influence

Power as it were, is the ability to execute one's will irrespective of opposition. Opinion leadership that originates from power and influence is the type of leadership that involves the ability to use of power to influence, direct and control others in the direction they want them to go. The power may originate from within or outside the group or community they belong. Based on power and influence, we have the following types of power:

- a. **Reward Power:** Reward power is that type of power imposed on someone. It is derived from the belief of the followers that they will be rewarded in one way or the other for reason of complying to certain rules or expectations.
- b. **Coercive Power:** These are leaders that originate from the use of power on the people. The people are coarsed to accepting certain rules, laws or certain persons in positions. The people try to comply with the conditions at hand. They also do this by force. Failure to comply may attract some punishment.
- c. **Expert Power:** Expert power is the type imposed on someone by virtue of the kind of knowledge or skill he/she has. Such power to lead must be domiciled in the person and have been seen and felt around the person by the people of the community. Meanwhile expert power is displayed from the point of expertise which the person in question must possess.
- d. **Referent Power:** Referent power is the type of power a leader must have by virtue of the fact that he possessed certain qualities and these qualities are liked, admired and want to be identified with by the people of the social system. The members of the system submit to this leader and accept him/her as a leader because of the so-called qualities they have seen in him/her.
- e. **Legitimate Power:** This kind of power is achieved by a leader and is derived from the office or official position which the individual in question has. This position he/she occupies gives him/her the role of leadership position, and he/she draws rights from the position he/she occupies to control the people and as well compels

them to comply to the rules. Such power are found amongst tax collectors and the police to do the job expected by them.

Self-Assessment Exercise

1. How does a situational leader defer from a dictator?

4.3.2 Measurement of Opinion Leadership

There are four approaches to identifying opinion leaders. They are: sociometric methods, key-informant methods, self-designating methods, and observation.

1. **Socio-metric method:** The word *sociometry* comes from the Latin “socius,” meaning social and the Latin “metrum,” meaning measure. Sociometry is a way of measuring the degree of relatedness among people. *This kind of measure can be useful both in the assessment of human behavior within groups, for interventions to bring about positive change and for determining the extent of change amongst the people.* For a work group, sociometry can be a powerful tool for reducing conflict and improving communication because it allows the group to see itself objectively and to analyze its own dynamics. It is also a powerful tool for assessing dynamics and development in groups devoted to therapy or training. Sociometry is a methodology for tracking the energy vectors of interpersonal relationships in a group. It shows the patterns of how individuals associate with each other when acting as a group toward a specified end or goal.

Sociometry is based on the fact that people make choices in interpersonal relationships. Whenever people gather, they make choices on the area of: where to sit or stand; choices are made in the group about who is perceived as friendly and who is not, who is central to the group, who is rejected, who is isolated. It is immaterial whether the motivations are known to the chooser or not; it is immaterial whether [the choices] are inarticulate or highly expressive, whether rational or irrational. They do not require any special justification as long as they are spontaneous and true to the self of the chooser. They are facts of the first existential order.” *Sociometric:* As noted by Rogers, opinion leaders typically are located at the center of communication networks. Sociometry is the mapping, usually using sophisticated network analysis software, of contacts among a potential list of opinion leaders (usually those identified by the reputational approach). This mapping of contacts helps the change agent locate persons who are at the center of communications about the issue area. A question asked of reputational leaders to map contacts might be,

"How often do you contact person X about school-related issues in this community?"

One interesting use of sociometric analysis is the identification of cliques of leaders. Personal histories or acquired characteristics such as skin color or gender can underlie the formation of leadership cliques in a community. Sociometric maps can help identify "natural" boundaries among cliques of opinion leaders. Sociometric maps also can help identify interstitial persons, who link leadership cliques. Interstitial persons might be somewhat marginal to their respective cliques, but because they are connected with other cliques, they can provide the change agent with access to cliques that might otherwise be difficult for the change agent to gain rapport. Interstitial persons might have a "weak" tie to one another (i.e., they might not contact one another very often). But the strength of this weak tie is that, it gives the change agent access to different cliques of opinion leaders.

The typical process for a sociometric intervention in an organization follows these basic steps:

- i. Identify the group to be studied,
- ii. Develop the criterion,
- iii. Establish rapport / warm-up,
- iv. Gather sociometric data,
- v. Analyze and interpret data,
- vi. Feed-back data, either:
 - (a) to individuals, prior to group meeting, or
 - (b) in a group setting,
- vii. Develop and implement action plans,
- viii. Post-test (optional).

If the sociometric analysis is conducted using reputational leaders, an important leader might have been left off of the map altogether.

2. **Key informant rating.** The key informant rating is a method that is based on obtaining information, over time, from a community resident who is in a position to know the community and its residents well. The person or persons selected to be key informants must therefore have a broad knowledge of the community, its services, and its people. It is an excellent way to recover information about past events or ways of life that are no longer observable. The process involves:
 - i. Collect qualitative, in-depth information from a wide range of people
 - ii. Collect information about a pressing issue or problem in the community

- iii. Understand beliefs and motivations
 - iv. Understand sensitive topics and
 - v. Get the story behind a participant's experiences
3. **Self-Designating:** In the case of self-designating, the change agent asks selected individuals to identify themselves as being influential on school-related issues. That means to say that the people have the choice of choosing leaders for themselves via certain attributes and this is based on what attributes they have been able to spot on themselves. The approach has the advantage of getting input on influence from community members, and therefore is more accurate than the positional approach.

The method is a bit more expensive in that the change agent typically will travel to the community to interview persons for the needed information. A potential pitfall of the self-designating approach is that persons might over or under-estimate their influence on others. Self-designated techniques are achieved by someone who has perceived self-efficacy. This allows people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Such beliefs produce these diverse effects through four major processes. They include cognitive, motivational, affective and selection processes. A strong sense of efficacy enhances human accomplishment and personal well-being in many ways. People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an efficacious outlook fosters intrinsic interest and deep engrossment in activities. They set themselves challenging goals and maintain strong commitment to them. They heighten and sustain their efforts in the face of failure. They quickly recover their sense of efficacy after failures or setbacks. They attribute failure to insufficient effort or deficient knowledge and skills which are acquirable. They approach threatening situations with assurance that they can exercise control over them. Such an efficacious outlook produces personal accomplishments, reduces stress and lowers vulnerability to depression.

4. **Through Observation:** Observation method involve the personal observation of the community and her subjects when wanting to choose a leader. This method does not allow any person to stand as a substitute or representative for observing social action within the community when carrying out this method. Some opinion leaders are not located at the center of a communication network. In this circumstance, the opinion leaders may want to prefer to use the people's personality in choosing the leader. The so-called personality trait may be located a bit outside the everyday communication pattern. Also, reputation can be misleading.

Observation, because of costs related to lodging, food, and travel, is the most expensive of the techniques described here, but it is also the most accurate

Self-Assessment Exercise

1. Outline the processes involved in key informant rating.

4.4 Summary

The study showed that there are different types of opinion leaders and these types emerge from the means the leadership position was attained. Opinion leaders possess some form of power and it is the power possessed by them that they use to control and influence the people in the direction they want them to go. Going further, opinion leaders can be measured through the use of different methods. It is through adapting a measure that rates someone as an opinion leader. Throughout the diffusion process there is evidence that not all individuals exert an equal amount of influence over all individuals. There are Opinion Leaders, who are influential in spreading either positive or negative information about an innovation. It therefore takes one to be a leader to be able to exert certain force on them. To this end in view, types of leaders have emerged and this is on the basis of path of attaining leadership position, through visibility, legitimacy and scope. Other means of emergence of leadership are through orientation and lay leaders. In addition, opinion leaders may emerge based on power and influence. Through this we have the reward, expert, coercive, referent and legitimate power. We also saw that opinion leadership can be measured through different means like socio-metric, key-informant rating, self-designating and observation.

4.5 References/Further Readings/Web Resources

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4.7 Possible Answers to Self-Assessment Exercise(s)

1. How does a situational leader defer from a dictatorial leader?

Situational Leader: A situational leader is one which originates from taking initiative from a given situation. Such condition could be an emanating crisis situation where a leader emerges to calm the situation or a depressed situation where someone now emerges to sensitize the people on the need to stand for their right or freedom or any of such nature. Situational leaders persist until the situation that brought them on board is taken care of.

Dictatorial Leader: This is another type of leader that originates from the situation of dictating to the people who are his/her followers. In the first case after the emergence of leadership borne out of a given situation, the leader then decides to go or stay after the situation that brought him/her on board has been taken care of. From that point, he/she may now begin to dictate affairs of the group to the people. Such a leader uses his/her initial advantage to paralyze initiatives amongst the followers. So he would want to control the phases of life in the community and takes no suggestion from anyone. Generally, they stand to oppose ideas of those that would not favour their own ideas.

2. **Key informant rating.** The process involves:
 - i. Collect qualitative, in-depth information from a wide range of people
 - ii. Collect information about a pressing issue or problem in the community
 - iii. Understand beliefs and motivations
 - iv. Understand sensitive topics and
 - v. Get the story behind a participant's experiences.

Unit 5 Techniques for Identification and Use of Community Leaders

Unit Structures

- 5.1 Introduction
- 5.2 Intended Learning Outcomes
- 5.3 Techniques for Identification of Community Leaders
 - 5.3.1 Reasons for Use of Community Leaders
- 5.4 Summary
- 5.5 References/Further Readings/Web Resources
- 5.6 Possible Answers to Self-Assessment Exercise(s)

5.1 Introduction

Local or community leaders are members of the community where they live but are different in the way they comport themselves and in the ways, they conduct their activities. In addition, they are also different due to some inherent characteristics that they possess. It is some of these attributes that differentiate them from the others. It is also these characteristics that other people see which make them to recognize them as leaders and are accorded what it takes to place them in such positions. Outside these characteristics, there are other techniques which are considered by the people of a community which makes them consider these the few persons talked about as leaders. This unit X-rays these techniques.

5.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- understand the different techniques adopted by people of a particular community in categorizing some people as leaders
- state some of the reasons for the use of local leaders in communities and community organizations.

5.3 Techniques for Identification of Community Leaders

Community or local leaders have been identified through the use of different techniques. The techniques are identified through formal meetings, informal meetings, observation and leader's development meetings. These aforementioned methods may involve any of the following techniques explained below:

- i. **Positional technique:** This technique involves the identification of those individuals in the community who are in one position or

the other and are expected to exercise power as a result of the formal or informal position or offices they hold in the affairs of the community or in some kind of organizations that exist within the community. The disadvantage of using this technique is that the technique does not take into consideration persons who do not hold official positions in community organizations or in the affairs of the community. On the other hand, this method such influential people even when not in official positions can still influence outcome of most community issues.

- ii. **Decisional technique:** This is a method that involves the identification of community leaders through the spotting people who get engaged in community issues occurring in the past or at present. In the course of the people's engagement, decisions are made to identify them as leaders because; they display certain qualities, made effective public statements, voted on many issues, merely attended the crucial meetings, display interest in the issues pressing the people, etc. to involvement of people in the. This method ensures that leaders can only be people who show active engagement or are instrumental in the resolution of specific community issues.
- iii. **Reputational technique:** This is another technique of identifying community/opinion leaders. It involves a socio-metric study in which informants (that is people who offer information in the community) are asked to identify and rank the most influential people in the community when it comes to solving issues or getting things done. This technique is carried out in steps. The first step is getting the list of all potential leaders. The second step is sending the list got from the first step to knowledgeable community informants to be re-evaluated with the aim of narrowing the list or ranking its members and from this a leader would emerge. The short comings of this technique are that using reputation for power may not be related to actual power. Again, the reputational power may not accurately identify leaders for reasons such as inaccuracies, wrong perceptions, problem of validity, etc. On a better note, this method may help to identify past, present and anticipated leaders.
- iv. **Traditional technique:** This is a technique that is very simple to use and identify leaders in the community. The method actually follows a lay down procedure by the community people. This lay down procedure could either be through inheritance from ancestral lineage or choosing the leader from a ruling family within the community. Traditional technique involves the handing over of mantle of leadership from the present leader to the next either by birth or through the ruling family arrangement where there is arrangement of who takes over the seat of ruler-ship or rules or leads next at the demise of the incumbent. The leaders emanating

from this technique are called traditional leaders who are from the communities and are most times, unless when unavoidably necessary live in the communities where they rule. They legitimize most of the decisions affecting the entire community. To this end in view, good community leaders will lead well while purported bad community leaders will lead poorly.

5.3.1 Reasons for Use of Community Leaders

- i. The community leaders are most time regarded as influential people in many ramifications and for this reason. They can still influence outcome of most community issues.
- ii. The people of the community depend on the community leaders for one reason or the other.
- iii. The local leaders help in the legitimation (lawful or authorization) of externally generated community change programmes that would go a long way in impacting on community people in particular and bringing community development in general.
- iv. Community leaders do well in helping the community people and the community in general in the area of project execution and continuation. If not for the leaders, some of the projects wouldn't have had support and could have been destroyed by the subjects (who are not in support of the project) of the community.
- v. Community leaders are known for the blessings of change programmes and as well join hands in the actual execution of the programmes. They also ensure that what they do is in line with standards.
- vi. Community leaders help the people to identify some of their unidentified needs/problems. The needs may be something that affect all or just particular persons in the community. They also advance the possible way or ways and the organization of local residents for the purpose of meeting these certain needs or solving common problems. It is assumed that solving such needs would take them to the next level of development.
- vii. Community leaders help to guide the community subjects against any kind of social vices and deviation from the norm. They do this by setting certain standards as benchmark that the people should not deviate from, there by maintaining their culture and tradition.
- viii. Community leaders are people who again by virtue of their position help to guide the community against any form of undesirable influences, possibly from neighboring communities or wherever it chooses to infiltrate from. It is the function of the leader who sensitizes the community people of the undesirable behavior and as well make them know the consequences and the need why it should be avoided.

- ix. Coordination of groups and their activities is carried out by the community leaders. Since various groups exist in communities, an effective community organization effort is needed to establish an accommodative relationship between them and to coordinate their efforts in the attainment of specific goals.

Self-Assessment Exercise

1. Explain positional and decisional techniques as tools for identification of community leaders.
2. Community leaders help the people to identify some of their unidentified needs/problems. Discuss.

5.4 Summary

This unit considered the techniques of identification of community leaders and the reasons for use of these community leaders. There are different techniques used in the identification of community leaders and these techniques include the positional, decisional, reputational and traditional techniques. Also advanced was the fact that there are many reasons why community leaders, are used in the execution of change programmes in the community. Most important among the reasons is the legitimization which community leaders bestow on these community programs.

5.5 References/Further Readings/Web Resources

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5.6 Possible Answers to Self-Assessment Exercise(s)

1: Explain positional and decisional techniques as tools for identification of community leaders.

Positional technique: This technique involves the identification of those individuals in the community who are in one position or the other and are expected to exercise power as a result of the formal or informal position or offices they hold in the affairs of the community or in some kind of organizations that exist within the community. The disadvantage of using this technique is that the technique does not take into consideration persons who do not hold official positions in community organizations or in the affairs of the community. On the other hand, this method such influential people even when not in official positions can still influence outcome of most community issues.

Decisional technique: This is a method that involves the identification of community leaders through the spotting people who get engaged in community issues occurring in the past or at present. In the course of the people's engagement, decisions are made to identify them as leaders because; they display certain qualities, made effective public statements, voted on many issues, merely attended the crucial meetings, display interest in the issues pressing the people, etc. to involvement of people in decision making. This method ensures that leaders can only be people who show active engagement or are instrumental in the resolution of specific community issues.

2. **Community leaders** help the people to identify some of their unidentified needs/problems. The needs may be something that affect all or just particular persons in the community. They also advance the possible way or ways and the organization of local residents for the purpose of meeting these certain needs or solving common problems. It is assumed that solving such needs would take them to the next level of development.

Module 5 Change Agents

- Unit 1 Concepts of Change, Change Agents and Characteristics of Change Agents
- Unit 2 Steps Involved in Carrying Out a Successful Change Activity and Techniques Used by Change Agents in Driving Change
- Unit 3 Functions/Roles of Change Agents and Reasons for Need of Change Agents
- Unit 4 Skills, Qualities and Challenges of Change Agents

Unit 1 Concepts of Change, Change Agents and Characteristics of Change Agents

Unit Structures

- 1.1 Introduction
- 1.2 Intended Learning Outcomes
- 1.3 Concept of Change
 - 1.3.1 Change Agents
 - 1.3.2 Kinds of Change Agents
 - 1.3.3 Characteristics of Change Agents
- 1.4 Summary
- 1.5 References/Further Readings/Web Resources
- 1.6 Possible Answers to Self-Assessment Exercise(s)

1.1 Introduction

Change often occur at most times in the communities or social systems where the people live. These same communities have change agents that play important roles in ensuring that change get to the people when they are brought introduced. The change agents are known to positively influence innovation decisions, by mediating between the change agency and the relevant residents in the social systems. Change agents are individuals who influence change in attitudes, knowledge and skills of their clientele in direction that will ensure the adoption of innovations brought to them. The change agents are in position to develop the need for change and to help clientele to translate the innovations into action (adoption).

1.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- define change and change agents
- explain the different kinds of change that exist in extension organization
- know what features that must be possessed by extension agents as characteristics expected of them.

1.3 Concept of Change

Change is a general transition of something or phase to another state condition. It is usually from the undesired to a desired state or form. Change is basically a variation in the common way of doing things. Whenever people perform a task in a certain way, they get accustomed to them. They develop methods which they can implement routinely to achieve these tasks. Any variation in these methods is nothing but change. Change is carried out by extension agents who transform how it operates by inspiring and influencing others. The social system includes several players such as the change agent. A change agent is an individual who influences clients' innovation decisions in a desired direction. As members of the social system who have early knowledge of an innovation, they can educate clients about how it can be adopted to reduce uncertainty in the cause-effect relationships involved in achieving a desired outcome

1.3.1 Change Agents

A change agent is the individual or group that undertakes the task of initiating and managing change in an organization. Change agents can be managers or employees, they can be internal, such as managers or employees who are appointed to oversee the change process. Change agents also can be external, such as consultants from outside the firm, who are hired to facilitate initiatives. Internal change agents have the advantage of being familiar with an organization's history, operations, and people, while external change agents can provide a fresh perspective without the influence of a firm's traditions and culture.

A change agent, also known as an advocate of change, is a person who acts as a catalyst for the change management process. They help an organization, or part of an organization, transform how it operates by inspiring and influencing others. A change agent will promote, champion, enable, and support an organization's effort. The social system includes several players such as the change agent. A change agent is an individual who influences clients' innovation decisions in a desired direction. As

members of the social system who have early knowledge of an innovation, they can educate clients about how it can be adopted to reduce uncertainty in the cause-effect relationships involved in achieving a desired outcome.

The change agent usually seeks to ensure the adoption of new ideas, but may also attempt to slow down diffusion and prevent the adoption of undesirable innovations. In order to succeed in the transfer of innovation, the Change agents usually use opinion leaders in diffusion campaigns. Change agents ensure that the type of change they introduce to their client's system are the types of changes which are desirable, direct and anticipated, but often some innovations result in some unanticipated consequences that are indirect and undesirable for the systems members.

1.3.2 Kinds of Change Agents

Different kinds of change agents are found in different organization. These of course depends on how the organization is structured and the functions it is meant to carry out. However, some of the known kinds of change agents include:

- i. The first type of change agent is *a consultant or internal researcher*, who is saddled with the responsibility of identifying the kind of changes that are desired by the people of a particular community or in the social system. These kind of change agents are contacted by the Ministry or World Bank for agricultural jobs that will affect the people's lives.
- ii. The second type of change agent is *a leader of a cross-functional stretch team*. The leader is tasked with the responsibility of creating an innovative solution to a complex problem that continues to trouble a social system or the farming in the farming business.
- iii. Another type of change agent is *a learning and development professional*, who is tasked with training and supporting team members during a change. The role of this type of change agent is mainly supportive in nature. Meaning to say he/she should know about the change beforehand.
- iv. The fourth and last amongst the kinds of change agents is *a manager or director*. The manager is made to function in the capacity of implementing a farm innovation that originated from the research centre(s) and directed to the farmer. This is intended to improve the farmer's production or solve a particular farm issue.

Self-Assessment Exercise

1. Change agents are catalysts for the change management process. Discuss

1.3.3 Characteristics of Successful Change Agents

Change is no single event, it takes time to plan for change for change, try new practices and incorporate new programs effectively. Change is a process, which progress ones a period of time. Whilst change itself always carries with it improbability, the process of change should be managed by an effective plan, unambiguous rules, processes, protocol and system.

The role of a change agent has become critical now more than ever as the failure initiatives can result in damaging losses to the farmers, their farmers and even the originating research organization.

Key qualities of a change agent, as well as their relationship with the key decision-makers, ultimately decide the fate of any change initiative. To become a truly effective change agent, the individual should possess the following characteristics and qualities:

- i. **Well Respected:** Change agent should be very well respected by the people the community subjects and the farmers they serve directly.
- ii. **Strong Communicator:** There is a need for the change agents to have strong communicating skills which empowers them to communicate well with their clientele. These skills are needed for proper understanding of the message they will transfer to the client.
- iii. **Organized:** Organization is a managerial skill that enables the change agent to work well with the client and others while managing time and other resources for maximum output.
- iv. **Homophile:** It is the degree of closeness and similarity between the change agent and the client. The closer the relationship, the easier and more successful the change. It is similar to listening to our close friend whom we trust and whose advice we seriously take.
- v. **Empathy:** It involves an understanding of feelings and emotions and thoughts. This sincere understanding leads to improved communications between the client and the change agent which is very helpful in bringing about the desired change.
- vi. **Linkage:** It refers to the degree of collaboration between the change agent and the client. The tighter the linkage, the more likely is the success.
- vii. **Proximity:** The change agent and the client should have easy access to each other. The closer the proximity, the better the relationship between the two and the easier to develop the collaborative linkage.
- viii. **Structuring:** This factor involves proper and clear planning of all activities that are related to change. If these activities are

- planned in clear cut step-by-step sequential elements, then the implementation of change would be easier.
- ix. **Capacity:** This factor refers to an organization's capacity to provide the resources that are needed for successful organizational development effort and implementation. These resources must be adequate and must be available when needed.
 - x. **Openness:** Openness refers to the conceptual environment which is conducive to the development of respect and understanding for each other's ideas, needs and feelings. The degree of openness between the change agent and the client would considerably affect the outcome of the programme.
 - xi. **Reward:** All members expect that the change will bring potential benefits. These rewards should be both in the short run as well as in the long run. The greater the potential for rewards, the more determined the effort would be in making the required change.
 - xii. **Energy:** Energy refers to the amount of effort put into the change process. This effort involves both the physical as well as psychological energy. The client's energy must be well spent and channeled precisely into the change programme itself. The energy of the change agent should not be spread over too many clients, for in that case, each of the clients individually may not receive the needed energy.
 - xiii. **Synergy:** Synergy simply means that the whole is more than the sum of its parts. This means that the previous factors, discussed above, involving a variety of people, resources, energies and activities together result in synergy, if they support the success of the programme, mutually as well as individually, and collectively are as favourable to the programme as possible.

Self-Assessment Exercise

1. Examine the characteristics of successful change agents.

1.4 Summary

We have defined and described what change is and who a change agent is, and in the various forms they exist and function in the society. It was established that certain qualities are expected by the change agents before they can function effectively in conjunction with their clients. Change agents are influential in enhancing adoption of an innovation. They work together with opinion leaders and change aides to achieve this. Though change agents can anticipate an innovation's usefulness, but they may not be able to foresee its meaning for the clients. Different kinds of change agents are found in different organization and these types originate from the structure of the organization and the functions it is established to carry out. Key qualities of a change agent were also unraveled and it was

stressed through the characteristics of the change agents that, to become a truly effective change agent, the individual should possess the aforementioned characteristics or qualities.

1.5 References/Further Readings/Web Resources

Ban, A. W. Van den & Hawkins, H. S. H. (1996). *Agricultural Extension*, Blackwell Science, Second edition, 294p

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[The Four Kinds of Change | Quickbase https://www.quickbase.com](https://www.quickbase.com) › *blog*
› *the-four-kinds-of-ch...*

1.7 Possible Answers to Self-Assessment Exercise(s)

1. Change agents are catalysts for the change management process. Discuss

A change agent, also known as an advocate of change, is a person who acts as a catalyst for the change management process. They help an organization, or part of an organization, transform how it operates by inspiring and influencing others. A change agent will promote, champion, enable, and support an organization's effort. The social system includes several players such as the change agent. A change agent is an individual who influences clients' innovation decisions in a desired direction. As members of the social system who have early knowledge of an innovation, they can educate clients about how it can be adopted to reduce uncertainty in the cause-effect relationships involved in achieving a desired outcome.

The change agent usually seeks to ensure the adoption of new ideas, but may also attempt to slow down diffusion and prevent the adoption of undesirable innovations. In order to succeed in the transfer of innovation, the Change agents usually use opinion leaders in diffusion campaigns. Change agents ensure that the type of change they introduce to their client's system are the types of changes which are desirable, direct and anticipated, but often some innovations result in some unanticipated consequences that are indirect and undesirable for the systems members.

2. To become a truly effective change agent, the individual should possess the following characteristics and qualities:

- i. **Well Respected:** Change agent should be very well respected by the people the community subjects and the farmers they serve directly.
- ii. **Strong Communicator:** There is a need for the change agents to have strong communicating skills which empowers them to communicate well with their clientele. These skills are needed for proper understanding of the message they will transfer to the client.
- iii. **Organized:** Organization is a managerial skill that enables the change agent to work well with the client and others while managing time and other resources for maximum output.
- iv. **Homophile:** It is the degree of closeness and similarity between the change agent and the client. The closer the relationship, the easier and more successful the change. It is similar to listening to our close friend whom we trust and whose advice we seriously take.

- v. **Empathy:** It involves an understanding of feelings and emotions and thoughts. This sincere understanding leads to improved communications between the client and the change agent which is very helpful in bringing about the desired change.
- vi. **Linkage:** It refers to the degree of collaboration between the change agent and the client. The tighter the linkage, the more likely is the success.
- vii. **Proximity:** The change agent and the client should have easy access to each other. The closer the proximity, the better the relationship between the two and the easier to develop the collaborative linkage.
- viii. **Structuring:** This factor involves proper and clear planning of all activities that are related to change. If these activities are planned in clear cut step-by-step sequential elements, then the implementation of change would be easier.
- ix. **Capacity:** This factor refers to an organization's capacity to provide the resources that are needed for successful organizational development effort and implementation. These resources must be adequate and must be available when needed.
- x. **Openness:** Openness refers to the conceptual environment which is conducive to the development of respect and understanding for each other's ideas, needs and feelings. The degree of openness between the change agent and the client would considerably affect the outcome of the programme.
- xi. **Reward:** All members expect that the change will bring potential benefits. These rewards should be both in the short run as well as in the long run. The greater the potential for rewards, the more determined the effort would be in making the required change.
- xii. **Energy:** Energy refers to the amount of effort put into the change process. This effort involves both the physical as well as psychological energy. The client's energy must be well spent and channeled precisely into the change programme itself. The energy of the change agent should not be spread over too many clients, for in that case, each of the clients individually may not receive the needed energy.
- xiii. **Synergy:** Synergy simply means that the whole is more than the sum of its parts. This means that the previous factors, discussed above, involving a variety of people, resources, energies and activities together result in synergy, if they support the success of the programme, mutually as well as individually, and collectively are as favourable to the programme as possible.

Unit 2 Steps Involved in Carrying Out a Successful Change Activity and Techniques Used by Change Agents in Driving Change

Unit Structures

- 2.1 Introduction
- 2.2 Intended Learning Outcomes
- 2.3 Steps Involved in Carrying Out a Successful Change Activity
 - 2.3.1 Techniques Used by Change Agents in Driving Change
- 2.4 Summary
- 2.5 References/Further Readings/Web Resources
- 2.6 Possible Answers to Self-Assessment Exercise(s)

2.1 Introduction

This unit studies the steps involved in carrying out a successful change activity and the techniques used by change agents in driving change to the targeted people. It is interesting to note that the introduction of change to the people or a community/social system, is not just haphazardly done but follows a sequence of steps. This has become necessary otherwise, the change may not be effect on the people and the results it was expected to yield. The techniques used by change agents confirms that change is unique, hence its aim might become defeated.

2.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- analyze the different steps and in the ideal sequence change is carried out by change agents in the agricultural sector
- know and understand the different techniques that are used in carrying out change in where the farmer is.

2.3 Steps Involved in Carrying Out a Successful Change Activity

There are steps usually followed by the change agents in the course of carrying out change in where their targeted persons are. These steps are basically five in number. Also to mention is the fact that these steps follow a sequence, otherwise the change being pursued may not be achieved. The steps are as follows:

Five steps to involved in carrying out a successful change

- i. Acknowledge and understand the need for change. ...

- ii. Communicate the need and involve people in developing the change. ...
- iii. Develop change plans. ...
- iv. Implement change plans. ...
- v. Evaluate progress and celebrate success.

i) Acknowledge and understand the need for change:

The first step in any change process is acknowledging and understanding the need for change. This however indicates that even when change is perceived, it should not be responded to immediately. Rather, the change agent should try spend time in understanding the prevailing situation and the change itself. This would definitely involve people coming together to brainstorm on what kind of solution and approach would be desirable for the change to be able to solve addresses the complexity of the problem.

Start by understanding why the change needs to happen. **Responding to Social Change** highlights the change agents in the external environment impacting on an organisation and which are likely to spark the need for change.

ii) Communicate the need and involve people in developing the change:

Once you and those working with you have explored the situation and fully understand what needs to happen, you will then need to communicate this to those who need it. Communicating the needs by the change agent will arouse farmers interest and gives them a sense of belonging to the change been anticipated or pursued. The change agents will through the communication process know what motivates them and how this change will affect them.

Involving beneficiaries has particular challenges and significant time and resources need to be dedicated to ensure this is carried out effectively. This stage can be frustrating because many of the questions they ask you will have already considered back at the beginning of Stage 1. However, it is important to give communication and involvement the time it needs.

iii) Develop change plans:

Having clearly communicated and developed a shared understanding of the change with the farmers, you need to make out your plans for the change. The first aspect of developing a change plan is to detail line-up of questions that need answers. Such questions would include: what you want to do in line with what the people are expecting. You have to be exact. What precisely will be different from what existed before? This is necessary to arouse stakeholder's interest. What are the objectives you want to achieve? In what way do you intend to measure

performance? Specify the change you want to see and understand the change. Take a look at the project planning framework to help guide you along the scheduled activities.

iv) Implement change plans:

This is the stage that follows the after planning has been completed. So this stage is tagged as the change itself. The change agent must make sure everyone knows what has to happen and what their role is. It is the duty of the change agent to provide the support and watch out for stress and proffer solutions. Take a look at team/individual change to understand how the farmers are reacting to the change and how these reactions can be managed by you, the change agent.

v) Evaluate progress and celebrate success:

Evaluation is all about assessing the change/work that is going to determine success. As soon as you can start identifying what is going well, assume it is successful, make sure people are thanked appropriately, their hard work acknowledged and successes celebrated. With that the people will be encouraged to continue.

<p>Self-Assessment Exercise</p>
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- | |
|---|
| <p>1. List 5 steps involved in carrying out a successful change</p> |
|---|

2.3.1 Techniques Used by Change Agents in Driving Change

A good change leader or agent will leverage on various change management strategies/techniques and the combinations of these strategies/techniques to support the anticipated change. Here are a few of the commonly used techniques by change agents.

i. Change Management Exercises

This technique is such that has to do with the change agent, who is the change manager to ensure that he conducts activities and as well carries out exercises that are good enough to encourage the farmers on one hand and other stakeholders on the other hand to understand and embrace change as it were. The exercises to be carried out by the change agent/change manager help to provide an opportunity to communicate about the change to the farmers and other stake holders, gauge the underlying objectives of the change, and understand the benefits to be derived by them of getting on board early on.

ii. Emphasize on Derived Benefits:

Emphasizing on the derived benefits by the change agent to the farmers and other stakeholders is put in another way as WIIFM (What's In It For Me). This is a technique where the change agents adopt a style of appealing to seriously farmers and others involved on the need of the

change and the benefits that hope to get from it. This stage would involve change agent to customize communication on farmers/stakeholder's basis or team's level of involvement in the change and its impact on them. The communication will let them know what to do and what is to be done and the benefits that would emanate from the change. This communication depicts or assures ownership and that is what people want.

iii. Stakeholder/Farmers Analysis:

Stakeholder analysis is a project management technique used to analyze and categorize different stakeholders affected by the change initiative. This analysis provides insights into how change agents can address the stakeholders'/farmers interests, keeps them abreast with the transformation expected to be introduced by the change, and helps to guide against any form of disruption. The change agent should create table to record responses of all stakeholders/farmers. The assessment of the stakeholders/farmers should also be recorded together with their expected attitudes to the transformation brought by the change.

iv. Persuasive Technique

A change agent must put up the skill and courage to be able to compel the stakeholders/farmers through constructive and reliable arguments to influence and convince people on the need of the change and the benefits that are expected from the change initiative. In addition, the change agents should go far again to intimate them of the associated implementation plan required to deliver the change. Also to be made known to the farmers/stakeholders are the specific strategies which are expected to be used by the change agent which would also be different and in line with farmers situation and according to the prevailing activities.

Self-Assessment Exercise

- | |
|--|
| 1. State the need for persuasive technique in extension. |
|--|

2.4 Summary

This unit examined the different steps involved in carrying out a successful change activity. It was emphasized that the steps must go in sequence. The techniques used by change agents in communicating change to the farmers was also spelt out. Whether large or small, every organizational change requires one or more change agents. A change agent, external or internal, has the skill set to guide and facilitate the change effort and set the organization up for success. This the change agent is able to get through certain logical steps and techniques.

2.5 References/Further Readings/Web Resources

- 6 Traits of a Successful Change Agent - Knowledge - Investors
...<https://www.investorsinpeople.com> › *knowledge* › *success*.

2.6 Possible Answers to Self-Assessment Exercise(s)

1. List 5 steps involved in carrying out a successful change

Five steps to involved in carrying out a successful change

- i. Acknowledge and understand the need for change. ...
- ii. Communicate the need and involve people in developing the change. ...
- iii. Develop change plans. ...
- iv. Implement change plans. ...
- v. Evaluate progress and celebrate success.

2. Persuasive Technique

A change agent must put up the skill and courage to be able to compel the stakeholders/farmers through constructive and reliable arguments to influence and convince people on the need of the change and the benefits that are expected from the change initiative. In addition, the change agents should go far again to intimate them of the associated implementation plan required to deliver the change. Also, to be made known to the farmers/stakeholders are the specific strategies which are expected to be used by the change agent which would also be different and in line with farmers situation and according to the prevailing activities.

Unit 3 **Functions/Roles of Change Agents and Reasons for Need of Change Agents**

Unit Structures

- 3.1 Introduction
- 3.2 Intended Learning Outcomes
- 3.3 Functions/Roles of Change Agents
 - 3.3.1 Reasons for Change Agents
- 3.4 Summary
- 3.5 References/Further Readings/Web Resources
- 3.6 Possible Answers to Self-Assessment Exercise(s)

3.1 Introduction

In talking about the functions and roles of change agents in where the farmers and their operations are, we look at the relationship of the farmer and the change agents. This relationship is expressed in different spheres in the where the farmer is. The change agent, or agent of change could be described as someone who promotes and enables change to happen within any group or organization.

3.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the functions of change agents to the farmers
- establish the reasons for the need of a change agent in driving change to farmers.

3.3 Functions/Roles of Change Agents

When dealing with the functions of the change agent, one needs to bear in mind the question like: What is the role of a change agent and how does it ensure that change is achieved ethically?

A change agent **ensures that there are goals, targets, and due dates for the project**. Then they keep people on track to achieve them. In achieving the goals, change agents find ways to hold people accountable for the consequences of the change, and make sure that appropriate rewards are handed out as necessary. Change agents are determined and conscientious. The words responsibilities and functions shall in this context be used interchangeably.

The change agent usually seeks to ensure the adoption of new ideas, but may also attempt to slow down diffusion and prevent the adoption of undesirable innovations.

Change agents are known to use opinion leaders in diffusion campaigns. Change agents usually introduce innovations into a client system that they expect changes which can be desirable, direct and anticipated, but often some innovations result in some unanticipated consequences that are indirect and undesirable for the systems members.

Responsibilities/functions of Change Agents

Key activities or responsibilities that a change agent performs include:

- i. **Diagnose the client problems:** The change agents in some cases are the people who help the farmers to diagnose their needs and expose to them how these needs can be met and the possible consequences that are likely to emanate from it
- ii. **Communicating needs:** The change agents communicating how change is beneficial for both the farmers, other stakeholders and the extension as well as the agricultural organizations. it is the communicated benefits that make the target audience to get interested in the change.
- iii. **Listening to the people:** The change agents do well to get the feelings and thoughts of the farmers and other stakeholders by listening to the people that make up the team and the beneficiaries. The essence is to gain feedback from them and incorporate their suggestions or input (if reasonable) in the implementation process.
- iv. **Create intent to change in the client:** The change agents are the people who help to sensitize the farmers and other stakeholders in the change process of the need to move towards accepting the change. This he does by making them know of the benefits that would come out of the change.
- v. **Cooperation with the target audience:** Change agents are patient people who show understanding to farmers and other stakeholder's reactions to the change and employ necessary skills on reducing resistance to change.
- vi. **Active engagement with the clientele:** The change agents do well to actively engage with farmers, other stakeholders and employees of the concern organizations by conducting change management exercises. Through the management exercise, mind sets are touched, re-orientation and perceptions are changed for the better.
- vii. **Encouraging and supporting employees:** Most change agents find it as a duty to encourage and support farmers and other employees to become change champions and promote the change that have been brought to them which is expected to improve on their wellbeing and welfare.

- viii. **Ability to lead:** The change agent in charge of a particular change, as a matter of duty, help in identifying and leading the farmers, other change agents and change consultants (where available) to success. Being in charge, he tries to take responsibilities and conduct the change and the involved people along the right paths
- ix. **Stabilize adoption and prevent discontinuance:** The change agent does not stop at just introducing change but also go further to ensure the adoption of the change. He encourages and guides the farmers towards the adoption.
- x. **Providing feedback:** The change agents at the end of the process provides feedback to the research centres or management or owners of the change on challenges encountered and facing the change. This is necessary so as to have the process and the change improved towards achieving its goals.
- xi. **Shift the client from reliance on the change agent to self-reliance:** In line with empowerment, the change agent ensures that the farmers after adopting the change is encouraged to develop in it and expand in his/her production and in the long-run move from being assisted to become self-reliant in the process.

3.3.1 Reasons for Change Agents

There are some basic reasons why we need the change agents in our communities, in our societies, and in our agricultural organizations. These reasons are a little different from the functions they perform. The reasons may not be unconnected to one or more needs and requirement of a change project. Below are some of the reasons of Change Agents in an Organization.

i. Consultant

This change agent is needed by the farmers and other stakeholders for the reason that they act like consultants to the entire process of change. They are the advocates of change and so are consulted on the benefits, of how to execute, and how to carry it out. There are cases where without the change agents in place, the change will not work. They also act as a change consultant to ensure a bidirectional flow of data, and then conducts further analysis of the data to provide actionable insights to the team members.

ii. Communicator & Advocator

While implementing change, organizations often focus too much on logistics and not on change communication. The change agent bridges this gap. In the communication, they make change to be understood and supported by the team members for it to be successful – without effective change management communication, the change is destined to fail.

iii. Trainer

One of the reasons why the change agent is needed in our systems is that they act as trainers of the change that are brought to the people. They train the people on capacity building in line with the necessary skills that they needed to possess to make the change work. They help team members act on the insights gained from data analysis and help them acquire new skills to prepare them for the new technological or technical change.

iv. Researcher

As a researcher, a change agent focuses on solving current problems and anticipating future concerns. There are times where the change agent conducts his/her research for the purpose of using it to either train the target audience or to use it as a guide for his/her followers. He also conducts competitive analysis and evaluates the effectiveness of an organization's implementation plan and overall change management strategy.

v. Technological Advancement: The new agricultural technologies that have been developed in the past is now considered as a strategic tool and a reference point that would help to necessitate upgrading of the existing skill sets of employees change as well. The advancement in the information Agricultural technology requires organizations to be able to implement the changes as and at the right time.

vi. Development of an Information Technology (IT) Strategy: Another reason for the need of change agents is to assist in the development of an IT strategy that fully supports, promotes and enables the agricultural extension business strategy to develop new varieties of crops and breeds of animals and as well disseminate the technology to others who are short of the information.

vii. Translator of Needs to Technology: Once again, the change agent should be needed in the area of listening of business needs of the people and also to be able to translate these needs into intent and technology requirements.

i. Creating a Database: The change agent is also needed to help make available a common database available to all in the research centres, Ministry of Agriculture and other stakeholders' organization and agricultural funding bodies. Such database will help the concerned organizations to plan and execute their activities in a hitch-free manner.

Self-Assessment Exercise

1. How does the change agent function as a consultant?
2. Explain the functions of change agents.

3.4 Summary

This unit treated the functions of the change agents, which are quite numerous and important for the change to sail through. The reasons for the need of a change agent were also addressed. Change agents have been seen to be of paramount importance to the audience they serve and to the organizations and as well the society where they are domiciled. The functions are different as it varies according to the type of organization, their interest and the extent to which the change agent is willing to serve. The reason for the need of a change agent in a system can still not be over emphasized.

3.5 References/Further Readings/Web Resources

Ban, A. W. Van den & Hawkins, H. S. H. (1996). *Agricultural Extension*, Blackwell Science, Second edition, 294p.

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6 Traits of a Successful Change Agent - Knowledge - Investors
<https://www.investorsinpeople.com> › knowledge › success...

3.7 Possible Answers to Self-Assessment Exercise(s)

1. How does the change agent function as a consultant?

This change agent is needed by the farmers and other stakeholders for the reason that they act like consultants to the entire process of change. They are the advocates of change and so are consulted on the benefits, of how to execute, and how to carry it out. There are cases where without the change agents in place, the change will not work. They also act as a change consultant to ensure a bidirectional flow of data, and then conducts further analysis of the data to provide actionable insights to the team members.

2. Functions/Roles of Change Agents

When dealing with the functions of the change agent, one needs to bear in mind the question like: What is the role of a change agent and how does it ensure that change is achieved ethically?

A change agent **ensures that there are goals, targets, and due dates for the project**. Then they keep people on track to achieve them. In achieving the goals, change agents find ways to hold people accountable for the consequences of the change, and make sure that appropriate rewards are handed out as necessary. Change agents are determined and conscientious. The words responsibilities and functions shall in this context be used interchangeably.

The change agent usually seeks to ensure the adoption of new ideas, but may also attempt to slow down diffusion and prevent the adoption of undesirable innovations.

Change agents are known to use opinion leaders in diffusion campaigns. Change agents usually introduce innovations into a client system that they expect changes which can be desirable, direct and anticipated, but often some innovations result in some unanticipated consequences that are indirect and undesirable for the systems members.

Unit 4 Skills, Qualities and Challenges of Change Agents

Unit Structures

- 4.1 Introduction
- 4.2 Intended Learning Outcomes
- 4.3 The Process of How to Manage Change
 - 4.3.1 Skills of an Effective Change Agents
 - 4.3.2 Qualities of a Change Agent
 - 4.3.3 Challenges of Change Agent
- 4.4 Summary
- 4.5 References/Further Readings/Web Resources
- 4.6 Possible Answers to Self-Assessment Exercise(s)

4.1 Introduction

Change as we know is inevitable in all organization including research centres. This accounts for why it is being carried out in all organizations and among persons who sometimes don't even know when they carry it out. However, what is important is carrying it out through the process so that maximum results could be achieved. Emphasis must also be made to be sure that change agents are equipped with the right skills, even there are bound to be challenges to be encountered by the organizations and the personnel's involved in the process.

4.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the process of how to manage change
- state the skills of an effective change agent
- analyze the qualities expected of a change agent
- express some of the challenges faced by change agents and their organizations.

4.3 The Process of How to Manage Change

The process of how to manage change is such that when the change is properly managed, it brings large scale organizational changes which must be managed properly. Employees must strive to appraise the situation so as to identify major barriers and evolve strategies to deal with the new situation. Implementing the change process is as immense as the challenge of creating innovative business process solutions. Change if not properly managed brings destruction as well. Incorporation of both these hard and soft skills will help to win widespread support for process changes and methodologies to execute the solution effectively.

As a change agent in Agricultural organization there should be the following attributes:

Sensitivity Training: Sensitivity Training refers to a method of changing behavior through unstructured group interface T-groups aim at the following:

- a. Understanding one's own behaviour and how one's behaviour affects others
- b. Understanding why people behave the way they do.
- c. Encouraging them to try out new ways of interacting with people and receiving feedback.
- d. Understanding group processes.
- e. Developing tolerance for other people's behaviour.

4.3.1 Skills of an Effective Change Agents

There are different skills or styles adopted by a change or an extension agent in carrying out change in the organization where the people operate from. The adopted skill has much to do with the beneficiaries/followers, the change agent situation and the technology or change to be impacted on the people. The adopted skill is not anything to joke or toil with. Here are some of the skills that could be used to impact change by a change agent:

- a. **Know the benefits the changes will bring:** The change agents will just have to know the bigger picture the change has got to offer both to them and the target audience and even the organization itself. For this reason, the change agents will allow and also have the patience to play along and have the change have its way and impact on the people.
- b. **Stay in touch with the human side of change:** The change agent under this skill will do well to carry members of the team along in the change programme. No matter the nature of the change, the skill to apply here is to carry people along. What it purports is that change agents must remain visible and listen to their team all the time, remaining sensitive to their needs in order to get the most from all the different characters in the room.
- c. **Balance this emotional intelligence with a relentless focus on the bottom line:** The change agents should try to balance their beneficiaries' emotions with what the change come with. Actually, If they care too much about what everyone thinks, nothing will ever get done. Change agents have to use their authority and get things done in driving the change to the people, if financial

performance isn't to suffer. So while they'll take in people's attitudes and emotions, they'll still focus on concrete results.

- d. **Embody the change:** Change agents only get to know their terrain, the nature of where they are going to function and have a general understanding of the area. In taking the nature of the area into consideration, they'll take a risk and expect it to pay off, that is having the change impact on the people. And above all they'll show that they're in it as much as anyone else by walking the talk.
- e. **Open up the process:** This stage has to do with knowing how to get the change across to the target people, which is the beneficiaries. So, the focus of the change agents would be to having an eye on the result – that is the expected change being driven to the people. The change is achieved through brainstorming with the rest of the team and being open to incorporating their knowledge. They should be a catalyst for change that is to facilitate the process rather than shouldering the burden.
- f. **Remember what's great about the business already:** Change is all about stability, so the old ways shouldn't be abandoned entirely for the allure/sake of the new technology. The change agent must try to be consistent in ensuring continuity of the change that is being developed and its impact on the people. They must also try to be stable in the face of all this other change.

4.3.2 Qualities of a Change Agent

Quality in anything we do, and in persons like change agents is key to success. There are however different qualities change agents should possess for change to be get to its beneficiaries and in the expected form while making its impact to the people. A lack of the necessary qualities will make the change not to be conducted smoothly and regularly, and the resultant could become morale disasters full of missed objectives and a lack of commitment from the people necessary to make change happen. In order to become a truly effective change agent, the five qualities explained must be taking into consideration:

- a. **Flexibility:** Flexibility in this circumstance implies being open, share and apply or incorporate yours and people ideas. Such a case of being open to change requires an entrepreneurial attitude. Leaders have to tap into other people's creativity and innovation to find solutions (change technology) to alternative ways to grow and exploit opportunities that will help improve the system. This includes tapping into the creativity of others by connecting with people (inside and outside of the organization) of different generations and backgrounds to gain a deeper understanding of perspectives, experiences and personalities. Flexibility generally gives room for change to thrive.
- b. **Diversified Knowledge:** Successful leaders of change avoid getting stuck in the confines of old knowledge or technology. The leaders have to look at what the old or previous technology was in a particular place, see to what exist in other places and seeing what is working and applicable to their own environment or situation that looks forward for a change, the leaders can gain valuable insights and spot new opportunities for change that will result to growth. To diversify

knowledge, it's vital to develop curiosity as a life-long learner. Besides staying abreast of what is happening both inside and outside of change agent's environment, gaining new knowledge that can help support change agent development.

- c. **Prioritization:** In creating change, it's often helpful to tie specific priorities to the overall goals of the change. These are must-win battles that determine success or failure and are focused on improving the change agent goal. Doing this will streamline decision making and create a clear picture of how the change agent would measure up to expectations. Identifying and understanding external forces of the developed change and disruptors can help to set the internal priorities that determine actions, leading to results. By and large, priorities must not be compromised.
- d. **Accountability and Responsibility:** People respect courage and accountability. In order to lead effectively, executives of the change and the change process need to ultimately hold themselves responsible for their team's performance. They may have to make decisions that go against opinions of majority and which may cause conflicts. What is important is that, they must be sure to be taking this decision with conviction and take responsibility ownership of the consequences that may emanate. Taking such responsibilities, will ultimately demonstrate that their intentions are motivated by the best interests of the organization they represent and thereby gaining the trust of their people.
- e. **Effective Listening Skills:** Effective change agents should be able to listen effectively to the target audience he/she is meant to serve. Such listening can bring about wise contributions that can be taken into account when looking for solutions. Leaders who have the ability and patience to listen will develop stronger relationships with their people by gaining trust. This trust will help in helping to get the audience welcome and accept the change.

Self-Assessment Exercise

1. Enumerate the skills of an effective change agents.

4.3.3 Challenges of Change Agent

Although every change initiative is different, all change agents face similar challenges. The challenges have nothing to do with how much experience the agent of change has, or what type of initiative the change agent is implementing. Boldly speaking, as a change agent, when you start changing a system, there are bold steps and actions that the change agent must take that will make him/her succeed in implementing the results of change. Going along, the change agents can get better and more comfortable at facing these challenges and getting improved results as

they overcome. Challenges will always be there as they are part of the fabric of organizational change.

These are the five challenges that every change agent deals with on a regular basis:

- a. **Navigating politics.** Politics play out in every sphere of live. These actions have so much to do with making compromises and allowing some-not-to-do-things to happen. Playing politics means taking advantage of the system of power and relationships in the organization. While some change agents would want to indulge in politics, others on the other extreme would prefer to ignore politics altogether. However, the effective approach to politics is somewhere between ignorance and exploitation. The challenge is whether or not to play politics with the objectives and goals and the method to be used to actualize the change. Playing politics can facilitate the process of goal achievement on one hand or frustrate the process and goal achievement on the other hand.
- b. **Balancing getting your way with gaining buy-in:** The issue here is balancing what you the change agent wants to do, what the organizational change that is being traded and the target audience opinion. The change expert needs to strike a balance between all of these, while pursuing the goal of the organization. Let's face it; when it comes to your change initiative, you are probably the smartest person in the room. Again, the problem is, you can't just tell everyone what they should do! Instead, they should be allowed to participate and feel ownership, which requires letting them do it their own way at times. The change agents should know when to push and when to relax your requirements can be a tricky balance.
- c. **Speaking the truth.** If change starts anywhere, it starts with the truth. Before people change, they have to acknowledge that change is required, and in order for that to happen, someone -the change agent has to say it out loud. Whether it's saying the thing that no one else wants to say, or sharing personal feedback in a difficult conversation, change agents must speak up. The challenge is choosing when to speak up and selecting the right words, so you can maintain relationships while enabling the change to happen.
- d. **Fighting for attention:** As change organization is doing its best to have the change going on, the change itself will still be working and its impact is still been felt amongst the people. Since you can't do the whole thing yourself, keeping the initiative going is a matter of getting other people to devote time and effort to move it forward. As a change agent, what one needs to do is to figure out how to first gain attention and then influence people to take action or change their behavior in a reasonable amount of time.

- e. **Staying objective.** As a change agent working in an organization that drives change (like Ministry of Agriculture) the change agent knows that he is being guided by the objectives of the organization. To this end in view, the change agent doesn't need to go outside the objectives of the organization and by doing this, goals are easily achieved. Number of years the change agent has worked in the organization is a factor here. That is, the longer the number of years one has worked in the organization, the more he gets acquainted with the objectives of the organization, and so he is bound to be speaking the truth the more. Keeping an objective viewpoint is a difficult yet essential skill for effective change agents.

Self-Assessment Exercise

1. Describe the challenges of change agents.

4.4 Summary

The study acknowledges the fact that certain skills are expected of the change agents. These skills are vital to achieve organizations objectives. This unit acknowledges that change is carried out in stages by change agents who have certain and acceptable qualities for them to be able to carry out the change. We are also made to note that the change agent and the organization is pulled down by some challenges. What are the factors you think would limit you in carrying out the change chosen to impact on the people. The skills, qualities and challenges of change agent was examined in this section. The study acknowledges the fact that certain skills are expected of the change agents and that these skills are needed for the change agent to be able to achieve both his and the organizations objectives. This unit acknowledges that for change to be achieved, the process has to be managed properly. As a matter of fact, every change agent is expected to be equipped with certain attributes, coined as qualities of change agent. Irrespective of the change agent's qualities and equipped level of the organization, he/she is still saddled with some challenges and these do limit the extent to which the organization can achieve her objectives.

4.5 References/Further Readings/Web Resources

- Ban, A. W. Van den & Hawkins, H. S. H. (1996). *Agricultural Extension*, Blackwell Science, Second edition, 294p
- Leeuwis Cees (2003). *Communication for Rural Innovation: Rethinking Agricultural Extension*, CTA, 412p

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4.6 Possible Answers to Self-Assessment Exercise(s)

1. **Enumerate the skills of an effective change agents**
 - a. Know the benefits the changes will bring.
 - b. Stay in touch with the human side of change.
 - c. Balance this emotional intelligence with a relentless focus on the bottom.
 - d. Embody the change.
 - e. Open up the process.
 - f. Remember what's great about the business.

2. **These are the five challenges that every change agent deals with on a regular basis:**
 - a. **Navigating politics.** Politics play out in every sphere of live. These actions have so much to do with making compromises and allowing some-not-to-do-things to happen. Playing politics means taking advantage of the system of power and relationships in the organization. While some change agents would want to indulge in politics, others on the other extreme would prefer to ignore politics altogether. However, the effective approach to politics is somewhere between ignorance and exploitation. The challenge is whether or not to play politics with the objectives and goals and the method to be used to actualize the change. Playing politics can facilitate the process of goal achievement on one hand or frustrate the process and goal achievement on the other hand.
 - b. **Balancing getting your way with gaining buy-in:** The issue here is balancing what you the change agent wants to do, what the organizational change that is being traded and the target audience opinion. The change expert needs to strike a balance between all of these, while pursuing the goal of the organization. Let's face it; when it comes to your change initiative, you are probably the smartest person in the room. Again, the problem is, you can't just tell everyone what they should do! Instead, they should be allowed to participate and feel ownership, which requires letting them do it their own way at times. The change agents should know when to push and when to relax your requirements can be a tricky balance.
 - c. **Speaking the truth.** If change starts anywhere, it starts with the truth. Before people change, they have to acknowledge that change is required, and in order for that to happen, someone -the change agent has to say it out loud. Whether it's saying the thing that no one else wants to say, or sharing personal feedback in a difficult conversation, change agents must speak up. The challenge is choosing when to speak up and selecting the right words, so you can maintain relationships while enabling the change to happen.
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and its impact is still been felt amongst the people. Since you can't do the whole thing yourself, keeping the initiative going is a matter of getting other people to devote time and effort to move it forward. As a change agent, what one needs to do is to figure out how to first gain attention and then influence people to take action or change their behavior in a reasonable amount of time.

- e. **Staying objective.** As a change agent working in an organization that drives change (like Ministry of Agriculture) the change agent knows that he is being guided by the objectives of the organization. To this end in view, the change agent doesn't need to go outside the objectives of the organization and by doing this, goals are easily achieved. Number of years the change agent has worked in the organization is a factor here. That is, the longer the number of years one has worked in the organization, the more he gets acquainted with the objectives of the organization, and so he is bound to be speaking the truth the more. Keeping an objective viewpoint is a difficult yet essential skill for effective change agents.

Module 6 Theoretical Formulations of Diffusion of Innovations and Factors Influencing the Agricultural System

Unit 1	Theoretical Formulations of Diffusion of Innovations
Unit 2	Sectors Related to Different Rate of Adoption of New Agricultural Technology
Unit 3	Factors for Making Change Work and Consequences of Innovations – Decision
Unit 4	How to Become a Successful Change Agent

Unit 1 Theoretical Formulations of Diffusion of Innovations

Unit Structures

- 1.1 Introduction
- 1.2 Intended Learning Outcomes
- 1.3 Theoretical Formulations on the Diffusion of Innovations
 - 1.3.1 Theories of Diffusion of Innovation
- 1.4 Summary
- 1.5 References/Further Readings/Web Resources
- 1.6 Possible Answers to Self-Assessment Exercise(s)

1.1 Introduction

The innovation diffusion theory may be understood from the angle of the innovation-decision process, innovation characteristics, adopter characteristics, and opinion leadership. The innovation- decision process represents the framework on which diffusion research and diffusion is developed. It delineates the process through which a decision maker chooses to adopt, reject, or re-invent (modify) an innovation.

1.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- analyze the theories guiding the diffusion of innovations
- discuss the four theories built to demonstrate the diffusion of innovation

1.3 Theoretical Formulations on the Diffusion of Innovations

Everett Rogers (1995) who has been known for a long time as the father of diffusion of innovation worked and developed theories on which the understanding of diffusion of innovation is based. Everett Rogers theories initially resulted in the collection of knowledge that were gathered from many disciplines like rural sociology and other related disciplines. These then facilitated the transition to communication perspectives, and have last served as the mainstay of what is developing as a more cross-disciplinary focus on innovation diffusion. Everett Rogers (1995) contribution is two-folds:

First was the *gathering and creation of inventories of findings from many disciplines and from many types of innovation*. These inventories provided impetus (force or energy) for the development of a definition of diffusion of innovation which of course was not bound by a single discipline but a combination of disciplines.

The second fold of the work of Everett Rogers was that he *assembled and refined theoretical structures* which were aimed at explaining the principal features of innovation diffusion. The theoretical work has cemented a core of knowledge and principles that are widely identified (and used empirically) as the bases of the diffusion of innovations.

On the basis of the findings of Everett Rogers (1995), four diffusion theories were presented as follows:

1.3.1 Theories of Diffusion of Innovation

- i. **Innovation Decision Process theory:** This theory believes that the adoption of innovation by potential adopters of a technology or innovation progress over time through five stages in the diffusion process. The theory was of the view that innovation is not instant, but takes some time (which could be long or short). The five stages are: the knowledge stage, where the innovation is first brought to the target person or potential adopter. This followed by the second stage known as the persuasion stage, in which the decision maker forms a positive or negative attitude toward the innovation. The third stage is the decision stage. It deals with the decision-makers choice to accept or reject the innovation. Implementation, being the fourth stage, follows a decision to accept and involves putting the innovation into some use (in either its accepted form or some modified form). During the final stage of confirmation stage, decision makers assess an adopted innovation, gather information from significant others, and choose

to continue to use the innovation as it was, modify it (re-invention) if not properly satisfied, or reject it, if not satisfied.

In criticizing this theory, some have indicated that the stages involved in this theory or model are too linear. Even at that, Everett Rogers has convincingly argued that existing formulations afford a degree of interpretative and predictive flexibility that averts any kind of problem(s) that may be associated with any of the stages in the model.

- ii. **Individual Innovativeness theory:** This is the theory that expresses that individuals are risk takers and to this end in view known to be innovative. In being innovative, they will adopt an innovation earlier in the continuum of diffusion. The adoption of innovation is determined by the characteristics of the individuals and to a large extent on the interpersonal influence between the people.

Three issues are addressed in the development of propositions about the role of interpersonal influence in the innovation decision process. These issues are: information flow, opinion leadership, and diffusion networks. Over time, information flow has been seen as a “hypodermic needle” model, a two-step flow (to opinion leaders, then other adopters), and a multi-step flow. Currently, information flows are seen as multi-step in nature and are described in terms of homophily and heterophily—the degree to which pairs of interacting potential adopters is similar or dissimilar in terms of culture and tradition.

Opinion leadership denotes the degree to which one member of a social system can influence the attitude and behavior of others. This concept relates to the power/force of influence, wherein a given person may be a leader or follower depending upon the part of the diffusion network being referenced. The diffusion or communication network is the structural stage upon which people relate and allow social influence to take place.

- iii. **Rate of Adoption theory:** This theory is built on the believe that diffusion of innovation takes place over time. And that the adoption of the innovations goes through a slow, gradual growth period, followed by dramatic and rapid growth, then a gradual stabilization and finally a decline. This theory of adoption of innovation addresses adopter characteristics. Adopter categories are classifications of individuals by how readily they adopt an innovation. Everett Rogers, identified nine socioeconomic variables, twelve personality variables, and ten personal communication characteristics that have been demonstrated to influence the adoption choices of individuals.

In general, the literature holds that early adopters are more likely to be characterized by high socioeconomic status, high tolerance of uncertainty and change, low levels of fatalism and dogmatism, high integration into the social system, high exposure to mass media and interpersonal communication channels, and frequent engagement in information seeking. On the reverse, same literature holds that late adopters are more likely to be characterized by low socioeconomic status and poor educational background and low exposure to the outside environment.

- iv. Perceived Attributes theory:** The perceived theory of innovation is one which is of the view that different innovations have different probabilities of adoption and hence, different adoption rates. The theory is built on the adopter's perception of the innovation. That is, the higher the level of perception of the innovation by potential adopters, the higher or more the level of adoption. The innovation travels through the innovation decision process at varying speeds.

The literature demonstrates that five characteristics of innovations influence the adoption decision process. They are: *Compatibility of the technology* with the prevailing norms, values, and perceived needs of the potential adopter. Higher levels of compatibility are associated with greater likelihood of adoption. *Innovation complexity*, on the other hand, is negatively associated with adoption. The extent to which use of an innovation is visible to the social group is called *observability*, and this has a direct positive relationship with rate of adoption. *Relative advantage* is another characteristic that influence the rate of adoption. Relative advantage has to do with the extent to which an innovation is perceived to be "better" than the idea, practice, or element that it replaces. Higher relative advantage increases the probability of adoption. Finally, *trialability*, which represents the extent to which an innovation may be experimented with. The easier the technology in terms of trial, the higher the rate at which such technology or innovation would be tried by the potential adopter.

Self-Assessment Exercise

1. State the Innovation Decision Process theory.
2. State the views of Perceived Attributes Theory.

1.4 Summary

In this unit we have examine the role of Everett Rogers in formulation of theory on diffusion of innovations. The four theories on the diffusion of innovation were also extensively examined. Diffusion of innovation is an area of extension education that has received most support from empirical

research. The main theories as advanced by Everett Rogers, are products of the research relevant to diffusion of innovations. However, other theories that are relevant also exist but may not have been mentioned. The study examined four main diffusion innovation model or theories. They are Innovation Decision Process theory, Individual Innovativeness theory, Rate of Adoption theory and Perceived Attributes theory.

1.5 References/Further Readings/Web Resources

Rogers, E. M. (1983). *Diffusion of innovations* (3rd ed.). New York: The Free Press.

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press.

1.6 Possible Answers to Self-Assessment Exercise(s)

1. State the Innovation Decision Process theory.

Innovation Decision Process theory: This theory believes that the adoption of innovation by potential adopters of a technology or innovation progress over time through five stages in the diffusion process. The theory was of the view that innovation is not instant, but takes some time (which could be long or short). The five stages are: the knowledge stage, where the innovation is first brought to the target person or potential adopter. This followed by the second stage known as the persuasion stage, in which the decision maker forms a positive or negative attitude toward the innovation. The third stage is the decision stage. It deals with the decision-makers choice to accept or reject the innovation. Implementation, being the fourth stage, follows a decision to accept and involves putting the innovation into some use (in either its accepted form or some modified form). During the final stage of confirmation stage, decision makers assess an adopted innovation, gather information from significant others, and choose to continue to use the innovation as it was, modify it (re-invention) if not properly satisfied, or reject it, if not satisfied.

2. **Perceived Attributes theory:** The perceived theory of innovation is one which is of the view that different innovations have different probabilities of adoption and hence, different adoption rates. The theory is built on the adopter's perception of the innovation. That is, the higher the level of perception of the innovation by potential adopters, the higher or more the level of adoption. The innovation travels through the innovation decision process at varying speeds.

Unit 2 Sectors Related to Different Rate of Adoption of New Agricultural Technology

Unit Structures

- 2.1 Introduction
- 2.2 Intended Learning Outcomes
- 2.3 Differential Rates of Adoption of New Agricultural Technology
 - 2.3.1 Agricultural Technology Adaptation and Appropriateness
 - 2.3.2 Mechanical Agricultural Innovations
 - 2.3.3 Methods of Assessing the Appropriateness of a Technology or Innovation
- 2.4 Summary
- 2.5 References/Further Readings/Web Resources
- 2.6 Possible Answers to Self-Assessment Exercise(s)

2.1 Introduction

As it has increasingly been applied to Agricultural Economics and Extension and some other fields of Science, Agricultural Mechanization embraces the use of tools, implements and machines for agricultural land development, crop production, harvesting, preparation of products for on-farm processing, storage or for sale. Farm production is carried out with the use of three sources of power. These are: human, animal, and mechanical sources. The manufacture, distribution, repair, maintenance, management and utilization of agricultural tools, implements and machines are covered under agricultural mechanization and this is expected to cover areas like how to supply mechanization inputs to the farmer in an efficient and effective manner.

2.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the concept of Sectorial Differential Rates of Adoption of New Agricultural Technology
- know the methods of assessing the appropriateness of a technology or innovation and the possible better alternative(s).

2.3 Differential Rates of Adoption of New Agricultural Technology

The organizational factors that promote and otherwise inhibit successful technological implementation and adoption is critical. At this stage we are more concerned about the factors that actually results in differences in the rate of adoption amongst people and places. Some of the factors causing these differences in the rate of adoption are:

- i. **Existing models of information technology (IT):** The existing models of information technology being used and implemented by the public agricultural officer has so much to do with rate of adoption of agricultural innovation. The information technology used should be able to link technology and productivity and thus result in improved productivity. Adoption rates is bound to differ and this will be as a result of implemented communication methods and technologies. It is believed that the use of appropriate method of communication and implementation of appropriate technology will result in increased agricultural productivity and savings that would otherwise be made available to use in other ways.
- ii. **Top-down bureaucratic approach:** The conventional system adopted by the public agricultural system is the top-down approach. This involves the implementation of decisions at the top and passing it to the people at the bottom for implementation. It is well known that top-down bureaucratic means of transferring technology do work. One factor in support of the top-down bureaucratic approach is the needed administrative support which makes it work very well. The top-down approach helps to ensure the suitability and adaptability of the technology/innovation over large areas of developing countries. If technology is good and provides spectacular results, some farmers do not lag behind in its adoption and adaptation.
- iii. **Availability of skill and resources:** The availability of skill on the farmers part as well as the availability of resources for the farmers either to procure or served as a palliative is crucial to the rate of adoption of the technology under consideration. Where there are resources (in case and or inputs) available to the farmers for use, equipped also with the skill of how to use the technology, such scenarios will experience a higher adoption of improved technology than when the reverse is the case.
- iv. **Prices and input subsidies:** Price and procurement support besides input subsidies have played in diffusion of technology. In situations where the agricultural inputs are reasonable (not expensive) or highly subsidized, such inputs will be more adopted than the other inputs that are likely being expensive and possibly

not subsidized by the government. High expenses and poor internal collaboration often sink provider efforts to implement new technology initiatives.

2.3.1 Agricultural Technology Adaptation and Appropriateness

Rarely does the same technology apply in all circumstances and solve the same problems. Different technologies exist and they are meant to solve different problems and adapt them to different situations. The value of an innovation depends on socio-economic, climatic, and ecological specifics. So, what is important in this case is applying appropriate technologies to appropriate problem situations.

Export of technologies across regions without adaptation may lead to negative environmental side effects and waste. A technology may have several versions to meet needs and capabilities of various users in a region and amongst different groups of people. For example:

- ❖ Large versus small farmers' versions of a machinery use;
- ❖ Labor shortages led to mechanized equipment;
- ❖ Drought conditions led to improved irrigation;
- ❖ Energy crises led to higher efficiency cars;
- ❖ Farmers' cooperatives were established during periods of excessive low farm prices; Environmental regulations trigger cleaner technologies;
- ❖ A tax on carbon will lead to improved stoves and power plants;
- ❖ Universities and start-up companies are becoming major sources of new innovations;

The ownership of a technology and leadership in its applications move between organizations over time. For example:

- i. Incentives for Innovations
- ii. Patents: Awards monopoly rights for 17-20 years.
- iii. Patent protection allows publication of research findings that leads to innovations.
- iv. Patent rights (for certain applications) can be transferred.
- v. Patents are valid only where they are registered.
- vi. Copyright protection: Pertains to books, brand names, and the media.
- vii. Trade secrets: Protects against thefts.
- viii. Plant breeders' right: Allows exclusive sales of varieties and allows farmers to re-use seeds
- ix. Prizes: Awarded to winners of a contest for finding a technical solution to a problem
- x. Indigenous knowledge is poorly protected

2.3.2 Mechanical Agricultural Innovations

The use of tractors and cars have helped in increasing productivity of our farms. It has also helped in improving on the efficiency of the farm. These technologies have been largely adopted by larger farms and richer families. In return, the adoption has kept them on the part of greater success when compared to their poor counterparts.

In where the tractor issue is concerned, variables such as L, a and P are taking into consideration. Where;

L = size of farm

a = saving per acre

P = cost of tractor

Adopt if $P > aL$

$L = P/a$ critical size.

Critical size declines because P declines. As a result of learning by doing, a, increases as a result of learning by using.

Other Examples;

Water-conserving technologies (sprinklers) increase water-use efficiency if:

- a. With traditional technology, 50% of applied water is actually consumed, while 50% is wasted.
- b. But when water sprinklers are used, 25% of the water is used for the purpose of irrigation while 75% of it is saved.
- c. The technology thus results in higher yield and water saving.

Technology adoption occurs in sandy soils and hills where the traditional technology is especially inefficient, and locations where the price of water is high with high-value crops. Green Revolution technologies are high-yield varieties that require complementary inputs (fertilizers and sometimes water). The technologies are adopted when:

- i. They have high yield and cost effects.
- ii. Farmers have access to credit.
- iii. Adoption is easy and Risk-free
- iv. Risk considerations slow adoption.

Self-Assessment Exercise

1. What is top-down bureaucratic approach?

2.3.3 Methods of Assessing the Appropriateness of a Technology or Innovation

One approach in assessing a technology:

- a. Maximize Expected benefits- a , risk
- b. Where a , is a coefficient of risk aversion.
- c. Risk may be measured by a variance of profit.
- d. Policies that reduce risk include
- e. Insurance (crop insurance enhances adoption)
- f. Diversification.

An alternative approach:

- a. Select the technology with the highest benefit given that it yields minimum required benefits at the worst-case scenario.
- b. This approach aims to assure sufficient resource during drought.
- c. good inventories, banking systems, and asset accumulation possibilities reduce the need for protection against risks.

Self-Assessment Exercise

1. What are the Methods of Assessing the Appropriateness of a Technology or Innovation?

2.4 Summary

In this unit, the students learnt that the establishment of an innovative capability starts with a buildup of capacity to support and adopt innovations and new technologies. Innovations respond to need and economic conditions. Inventors, investors, and researchers put effort into solving burning problems, and that leads to innovations. The value of an innovation depends on socio-economic, climatic, and ecological specifics. Mechanization in Agriculture embraces the use of tools, implements and machines for agricultural land development, crop production, harvesting, preparation for storage, storage, and on-farm processing. Top-down bureaucratic means of transferring technology is a sure method of technology transfer. The same technology hardly solves the same problem in different places. This is why the appropriate technology as it suits the environment should be sought. It calls for the need to select the technology with the highest benefit given that it yields minimum required benefits at the worst-case scenario.

2.5 References/Further Readings/Web Resources

Richard, E. J. & David, Z. (1983). "Stochastic Structure, Farm Size, and Technology Adoption in Developing Agriculture," Oxford Economic Papers, Vol. 35, No. 2 (July, 1983), pp. 307-328.

2.6 Possible Answers to Self-Assessment Exercise(s)

1: What is top-down bureaucratic approach?

Top-down bureaucratic approach: The conventional system adopted by the public agricultural system is the top-down approach. This involves the implementation of decisions at the top and passing it to the people at the bottom for implementation. It is well known that top-down bureaucratic means of transferring technology do work. One factor in support of the top-down bureaucratic approach is the needed administrative support which makes it work very well. The top-down approach helps to ensure the suitability and adaptability of the technology/innovation over large areas of developing countries. If technology is good and provides spectacular results, some farmers do not lag behind in its adoption and adaptation.

2. Methods of Assessing the Appropriateness of a Technology or Innovation:

a. One approach in assessing a technology:

- i. Maximize Expected benefits-a, risk
- ii. Where a, is a coefficient of risk aversion.
- iii. Risk may be measured by a variance of profit.
- iv. Policies that reduce risk include
- v. Insurance (crop insurance enhances adoption)
- vi. Diversification.

b. An alternative approach:

- i. Select the technology with the highest benefit given that it yields minimum required benefits at the worst-case scenario.
- ii. This approach aims to assure sufficient resource during drought.
- iii. Good inventories, banking systems, and asset accumulation possibilities reduce the need for protection against risks.

Unit 3 Factors for Making Change Work and Consequences of Innovations – Decision

Unit Structures

- 3.1 Introduction
- 3.2 Intended Learning Outcomes
- 3.3 Factors for Making Change Work
 - 3.3.1 Consequences of Innovations – Decision
- 3.4 Summary
- 3.5 References/Further Readings/Web Resources
- 3.6 Possible Answers to Self-Assessment Exercise(s)

3.1 Introduction

Change as we have learnt is quite inevitable and that is why both the local and modern farmers, the poor and the rich farmers are often engaged in adopting one type of change or the other. Important to know that there are some factors that make the change to work or succeed in where the farmers are. However, these changes are not without their consequences which are either positive or negative in the farmers consideration.

3.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the factors responsible for making change work in the farmers farm
- know the different consequences associated with the adoption of change.

3.3 Factors for Making Change Work

Change is something that comes in different ways to the farmers. As rightly described, Change is inevitable and that accounts for why it is always being adopted especially when it relates or perceived to boost the farmers activities, productivity and income. Several factors relating to managing and making change work have been advanced. Some of these factors have been explained below.

- i. **Demonstrating flexibility and resilience:** This has to do with the extension agent trying to accommodate the say and wishes of the farmers and show good level of positivity about the technology or change he/she has come with or disseminating. Such level of accommodation will make him/her to know about the farmers situation and problems and then in return know what area of the

farmers situation that needs attention and thus render help to that direction. The change is bound to work as long as he shows or displays resilience in the course of his work.

- ii. **Recognizing growth opportunities:** Change is also known to work and achieve success in where the farmer is when he is able to recognize growth opportunities in the work he does, in the change he brings/disseminates to the farmers and even in amongst the farmers themselves. Having such mind-set of recognizing growth will make the farmers to be positively minded and wish to adopt the change, thus making the change to work and be sustained.
- iii. **Striding for results:** As much as possible, the extension worker that is serving the farmers should do well to always look out for results. This should be from his own side as well as the farmers side. Looking out for results will create more focus both on the extension worker and farmers part. This will therefore results to pursuance of their objectives and workability and sustenance of the change.
- iv. **Leading courageously:** The extension worker needs to be quite knowledgeable of the change which he disseminates to the farmers. Having good knowledge will make him to display competence in the process of dissemination. In so doing, he would be able to take ownership of the technology, disseminate it well and lead the farmers to successfully implementing the technology therefore making it work for the people and having it sustained.
- v. **Gaining buy-in:** The extension agent is the one saddled with the responsibility of ensuring that the change reaches the right people and in the most appropriate way and be sure also that it drives out the desired results to the farmers. Based on the results achieved and competences displayed, the extension worker can be able to encourage more and more farmers to buy-in or embrace the change or technology. The characteristics of the technology and good results achieved can be used as advocacies for more patronage of the change.

3.3.1 Consequences of Innovations – Decision

As the use of some new innovation spreads throughout a group or society, concern must ultimately shift away from "how it happened" to "what impact has it had or will it have."

If we desire to possess an understanding of the role and impact of mediated communications in our contemporary society, we must explore the outcomes that have resulted from adoption of innovations. The difficulty surrounding the assessment of consequences is based on a number of inhibiting factors.

First and foremost is the fact that most consequences resulting from some type of innovation occurs over a long period of time. It is hard to measure and track changes of this kind.

Secondly, those who "sponsor" such investigations tend to be the agencies that introduced the innovation. As might be expected, these agencies tend to think only in terms of the beneficial changes that occur. Undesirable consequences, whether direct or indirect, are very often overlooked or never recognized.

Thirdly, it is very difficult to directly identify a resultant effect because they are very often mixed together with other changes that have occurred.

And finally, evaluations of positive versus negative consequences can be a relative or subjective decision. Cultural, political, and personal bias will play a major role in how we view the outcomes of some new innovation. In spite of these difficulties, we must still strive to access the changes that new modes of communication inject into our social environment.

Consequences of change are usually in three dimensions. They are:

i. Desirable/Undesirable Consequences

Desirable consequences are those outcomes which the farmers are expecting or looking up to seeing in the change they have adopted. Desirable consequences are usually positive in nature and as expected. On the other hand, undesirable consequences are those which are seen as having dysfunctional impacts on the farmers, or society. The consequences of an innovation are rarely completely desirable or undesirable, so many times we must weigh and assess the functional contribution of some innovation against the dysfunctional effects. While desirable consequences are seen as bringing forth some benefits to the farmers or society, the undesirable consequences often time hurts the person(s) involved. Increase in output from an adopted technology could be seen as a desirable consequence while the quick deterioration of products as a consequence could be seen as undesirable.

ii. Direct/Indirect Consequences

Direct consequences are the immediate and causally-linked changes that occur due to the adoption of an innovation. The consequence of adopted technology is direct when it is exactly what was expected. The use of inorganic fertilizer in planting is expected to result in increase in yield. To this end in view, an increase in produce then becomes a direct consequence to the fertilizer adopted. Indirect consequences are the changes that occur in association of the expected consequences. The use

of inorganic fertilizer, may result to degradation of the soil and the replenishment of nutrients after a long time.

iii. Anticipated/Unanticipated Consequences

Anticipated consequences are recognized and intended changes that occur as a result of the adoption of a new innovation. Once again, the use of inorganic fertilizer will result to increase in output. The increase was anticipated; hence it could be tagged as anticipated consequences. Unanticipated outcomes are changes brought on by an innovation that are not expected, such may be found in the use of inorganic fertilizer in growing our crops which may result to less quality products in terms of food value.

Self-Assessment Exercise

1. Examine the consequences of innovations decision.
2. What is anticipated consequences?

3.4 Summary

This unit dealt with the factors that make change disseminated to farmers to work and be sustained and an analysis of the consequences of change in the three dimensions that it does exist. The dimensions are: desirable versus undesirable consequences, direct versus indirect consequences and anticipated versus unanticipated consequences. Successful efforts to diffuse an innovation depend on characteristics of the situation and the nature of the change or technology itself. The drive of the change or technology is made to work or sustained mainly from a line factors that bound on the farmers and the change agent. The change brought about is a showed to be associated with some level of consequences.

3.5 References/Further Readings

Rogers, E. M. (1983). *Diffusion of innovations* (3rd ed.). New York: The Free Press.

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press.

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<https://www.investorsinpeople.com/knowledge/successful-change-agent/>

3.7 Possible Answers to Self-Assessment Exercise(s)

1. Examine the consequences of innovations decision.

Desirable and Undesirable Consequences of Innovations Decision:

Desirable consequences are those outcomes which the farmers are expecting or looking up to seeing in the change they have adopted. Desirable consequences are usually positive in nature and as expected. On the other hand, undesirable consequences are those which are seen as having dysfunctional impacts on the farmers, or society. The consequences of an innovation are rarely completely desirable or undesirable, so many times we must weigh and assess the functional contribution of some innovation against the dysfunctional effects. While desirable consequences are seen as bringing forth some benefits to the farmers or society, the undesirable consequences often time hurts the person(s) involved. Increase in output from an adopted technology could be seen as a desirable consequence while the quick deterioration of products as a consequence could be seen as undesirable.

2. Anticipated Consequences

Anticipated consequences are recognized and intended changes that occur as a result of the adoption of a new innovation. Once again, the use of inorganic fertilizer will result to increase in output. The increase was anticipated; hence it could be tagged as anticipated consequences. Unanticipated outcomes are changes brought on by an innovation that are not expected, such may be found in the use of inorganic fertilizer in growing our crops which may result to less quality products in terms of food value.

Unit 4 How to Become a Successful Change Agent

Unit Structures

- 4.1 Introduction
- 4.2 Intended Learning Outcomes
- 4.3 How to Become a Successful Change Agent
- 4.4 Summary
- 4.5 References/Further Readings/Web Resources
- 4.6 Possible Answers to Self-Assessment Exercise(s)

4.1 Introduction

The workability of a change or technology depends to a great extent on the effectiveness of the change agent and the change he carries. To be effective, he needs to be equipped with a reasonable knowledge level of the change, display of competence and be flexible and democratic in nature. All of these qualities are what is wanted in your change agent which makes the change agent to be rated as being successful. This unit however unravels some of determinants that make a change agent a successful one.

4.2 Intended Learning Outcome

By the end of this unit, you will be able to:

- explain the factors that make a change agent a to be rated as a successful change agent.

4.3 How to Become a Successful Change Agent

An effective change agent is otherwise known as a successful change agent and he is expected to carry out the following:

- i. **Know the benefits the changes will bring:** The change agent should be able to know and understand the bigger picture the change carries and the benefits associated with the change if adopted. It is these benefits that the change agent(s) uses to advocate for patronage and adoption of the change by the farmers. Through this, such a change agent haven succeeded in spreading the change could be described as successful.
- ii. **Stay in touch with the human side of change:** Change agents must remain visible and listen to their team all the time, remaining sensitive to their needs in order to get the most from all the different characters of his client. He has to be humane, and act as such. In so doing the change agent will be able to reach the clients

at the points of their needs and he will as well be able to appropriately channel solutions to problems. If able to do this, he is bound to be rated as being successful.

- iii. **Balance this emotional intelligence with a relentless focus on the bottom line:** Farmers are usually emotional and painstaking about their production and families. Though while these emotions should be taken into consideration by the extension workers, they also need **not** to compromise standards and results that would improve the farmers income and standard of living in the long run. If the extension workers care too much about what everyone thinks, nothing will ever get done. Change agents have to use their authority where necessary, to impress on the farmers the needed change that will improve the farmers output, income and living standard. So while they'll take in people's attitudes and emotions, they'll still focus on concrete results.
- iv. **Embody the change:** This simply means putting the change into physical form. That is the only form the change can be meaningful to the farmers it is meant for. In doing this, the change agents will know what is expected of them to do and this is without waiting for permission to do the expected. The risks will as well be taken by them and they will also expect the risk taken to pay off (that is producing good results). And above all they'll show that they're in it as much as anyone else by walking the talk. Doing all of these will make him successful.
- v. **Open up the process:** The change agents are expected to be familiar with their clients and their problems. He also needs to incorporate them in the works he carries out. It is this problem of theirs that he takes to research centres for solutions and brings to them (farmers) back. While having plans on how to get good results (meeting the farmers needs), he also needs to know how such good results can be achieved and the inputs and required know and understanding that would be needed to get there. In all of this, the change agent would steadily need to be brainstorming with the rest of the team and being open to incorporating their knowledge. They should be a catalyst for change, that is facilitating the process of change, rather than shouldering the burden. Once that has been conceived and agreed, it should be brought to the understanding of everyone who are stakeholders to the process.
- vi. **Remember what's great about the business already:** The change that is being brought needs to be stable and sustained. Every change has a former or old way of doing that same thing. So the good sides of the old technology should be incorporated into the new change or technology for better results. Efforts should be made by the extension agent to see how better results can be generated and the process sustained to meet the test of time. The

change agent must manage continuity, valuing stability in the face of all this other change. Any change agent that can do this is rated as being successful.

Self-Assessment Exercise

1. How can one stay in touch with the human side of change
2. How can we open up the process in extension?

4.4 Summary

The factors that make an extension agent successful was examined in this unit. The factors generally help to improve on the expected results of the farmer and improving their standard of living. Change agents function in different ways and earn results according to their performance. A change agent is said to be successful by the way he does his work and the extent or level of results that can be achieved. Achieving good results and meeting the farmers needs while not compromising standards makes the change agent a successful person.

4.5 References/Further Readings/Web Resources

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4.6 Possible Answers to Self-Assessment Exercise(s)

1. Stay in touch with the human side of change:

Change agents must remain visible and listen to their team all the time, remaining sensitive to their needs in order to get the most from all the different characters of his client. He has to be humane, and act as such. In so doing the change agent will be able to reach the clients at the points of their needs and he will as well be able to appropriately channel solutions to problems. If able to do this, he is bound to be rated as being successful.

2. Open up the process:

The change agents are expected to be familiar with their clients and their problems. He also needs to incorporate them in the works he carries out. It is this problem of theirs that he takes to research centres for solutions and brings to them (farmers) back. While having plans on how to get good results (meeting the farmers needs), he also needs to know how such good results can be achieved and the inputs and required know and understanding that would be needed to get there. In all of this, the change agent would steadily need to be brainstorming with the rest of the team and being open to incorporating their knowledge. They should be a catalyst for change, that is facilitating the process of change, rather than shouldering the burden. Once that has been conceived and agreed, it should be brought to the understanding of everyone who are stakeholders to the process.

Module 7 Concepts and Basic Principles of Agricultural Extension System

Unit 1	Concept of Agricultural Extension and Concerns of Agricultural Extension Worker
Unit 2	Principles of Agricultural Extension and Methods of Motivating the Agricultural Extension Workers
Unit 3	Factors Influencing Effective Agricultural Extension System in Rural Areas
Unit 4	How to Measure the Effectiveness of Extension and Challenges of Agricultural Extension System in Nigeria.

Unit 1 Concept of Agricultural Extension and Concerns of Agricultural Extension Worker

Unit Structures

- 1.1 Introduction
- 1.2 Intended Learning Outcomes
- 1.3 Concept of Agricultural Extension
 - 1.3.1 Concerns of Agricultural Extension Worker
- 1.4 Summary
- 1.5 References/Further Readings/Web Resources
- 1.6 Possible Answers to Self-Assessment Exercise(s)

1.1 Introduction

A concept may be conceived as a general idea or group of words put together to make some meanings. Certain concepts can be seen as frequently being used in the field of agricultural extension. The understanding of these concepts is very important in the study of agricultural extension. So, concepts in agricultural extension go a long way in making clearer the intricacies in the study of agricultural extension. To this end in view, the work of the agricultural extension workers is made known and clearer both to the farmers and to the social system where they function.

1.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- understand the concept of agricultural extension
- define agricultural extension
- explain the essence or idea of agricultural extension work.
- know the concerns of agricultural extension education

- know how to build mutual trust between himself and the farmers.

1.3 Concept of Agricultural Extension

Extension education otherwise known as agricultural extension is defined as an out-of-school system of education that is designed to help rural people to satisfy their needs, interests and desires. Agricultural extension is a system of education that involves adult learners, who are farmers being reached by the extension agents on how to improve on their farm production. Agricultural extension is an educational system that differs from formal education system in two major respects. These are: While Agricultural extension education takes place in the farmers farm, formal education takes place in the classroom. Secondly, Agricultural extension education prepares the farmers/clientele to tackle the problem of today (that is, immediate problem), formal education prepares her students life after school. In other words, it prepares the students to tackle future problems.

Extension is a process of working with rural people in order to improve their livelihoods. This involves helping **farmers to improve the productivity of their agriculture** and also developing their abilities to direct their own future development.

In essence, agricultural extension work involves the following:

- i. Agricultural extension work involves working with the rural people along line with their immediate and felt needs, problems and interests that are capable of making a living, improving their living standards and improving their physical environment.
- ii. Agricultural extension workers help to conduct a worthwhile and acceptable activities between themselves and the rural people while maintaining the spirit of co-operation and respect for one another.
- iii. Agricultural extension workers help to utilize support activities to bring to agricultural extension work and extension staff up-to-date through the use of subject-matter specialists, resource persons, in-service training, conferences, etc
- iv. Agricultural extension workers help to utilize certain teaching techniques in attaining the educational objectives of extension.

1.3.1 Concerns of Agricultural Extension Worker

From the foregoing, extension education is an educational process that is directed to bring about planned changes in people (farmers). The system and process are dynamic in that it allows for changes in what people know, what they do and how they do it, how they react to situations and changes in what they can do with their hands. The concern of agricultural extension worker is therefore, to help farmers make a decent living to master the best way to handle their farmers in order to improve their standard of living. In order to achieve this, there must be in place all it takes to build a mutual trust and respect between the extension workers and the farmers he is meant to serve. He does this by:

- i. He should be able to demonstrate competences in showcasing practices and skills.
- ii. He should be able to conduct successful result demonstrations. This is necessary for the farmers to learn from.
- iii. The extension worker should show genuine interest in the farmers and their families. Such interest will go a long way to show mutual interest and respect.
- iv. Extension worker should only promise what he can do and ensures he does what he has promised. This will help ensure more trust.
- i. As a philosophy, the extension worker should do all good to establish and maintain a healthy relationship between himself and the farmers.

Self-Assessment Exercise

1. Outline any four things which agricultural extension work involves.
2. Agricultural extension is an educational system that differs from formal education system in two major respects. Discuss.

1.4 Summary

The unit examined the concepts of agricultural extension as an out-of-school educational system that is designed to improve on farmers standard of living which can be achieved through building mutual trust and respect amongst one another. Agricultural extension education is an out-of-school system of education that is designed to help rural people to satisfy their needs, interests and desires. This system of education is different from the formal type of educational system. The former is directed to solving immediate problems while the latter is directed to preparing students to handle future task. The basic concern of extension worker is to help farmers improve their standard of living and building mutual trust and respect amongst themselves.

1.5 References/Further Readings/Web Resources

Adereti, F. O. & Ajayi, A. O. (2005). Concepts and Basic Principles of Agricultural Extension In: S. F. Adedoyin (Ed.) *Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 13.

1.7 Possible Answers to Self-Assessment Exercise(s)

1. Outline any four things which agricultural extension work involves.

- i. Agricultural extension work involves working with the rural people along line with their immediate and felt needs, problems and interests that are capable of making a living, improving their living standards and improving their physical environment.
- ii. Agricultural extension workers help to conduct a worthwhile and acceptable activities between themselves and the rural people while maintaining the spirit of co-operation and respect for one another.
- iii. Agricultural extension workers help to utilize support activities to bring to agricultural extension work and extension staff up-to-date through the use of subject-matter specialists, resource persons, in-service training, conferences, etc
- iv. Agricultural extension workers help to utilize certain teaching techniques in attaining the educational objectives of extension.

2. **Agricultural extension** is an educational system that differs from formal education system in two major respects. These are: While Agricultural extension education takes place in the farmers farm, formal education takes place in the classroom. Secondly,

Agricultural extension education prepares the farmers/clientele to tackle the problem of today (that is, immediate problem), formal education prepares her students life after school. In other words, it prepares the students to tackle future problems.

Unit 2 Principles of Agricultural Extension and Methods of Motivating the Agricultural Extension Workers

Unit Structures

- 2.1 Introduction
- 2.2 Intended Learning Outcomes
- 2.3 Principles of Agricultural Extension
 - 2.3.1 Methods of Motivating the Agricultural Extension Workers
- 2.4 Summary
- 2.5 References/Further Readings/Web Resources
- 2.6 Possible Answers to Self-Assessment Exercise(s)

2.1 Introduction

The main purpose of agricultural extension is to help the rural farmers through their own efforts to improve on their farm production, income and standard of living. For agricultural extension to function effectively, it has to be guided by some principles which of course differ according to the farmers condition, and the prevailing circumstances in the different areas or places where extension activities are carried out. It is also important that the agricultural extension workers need to be motivated so that they would have a sense of belonging and ownership of the change which they disseminate to the farmers.

2.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain some of the basic principles guiding the success of agricultural extension work in the rural areas.
- discuss the different ways agricultural extension workers can be motivated for improved performance.

2.3 Principles of Agricultural Extension

Agricultural extension workers are saddled with the functions of helping the rural farmers using their own resources and through their own efforts improve their production level and through which their standards of living can then be improved. What is most important is that the process does not just work like that but only come to pass when guided by some laid down principles. These principles are many and are peculiar to farmers environment. Failure to abide by these guiding principles is a sure must that the extension works and the workers itself will fail. Extension principles may be defined as guidelines for the conduct of extension work. Some of these guiding principles are explained below:

- i. **Extension should start from where the people are:** This is the first principle and it states that extension work should start from where the people are. What this means is that, extension work should operate at the farmers level of understanding, knowledge level, interest and their degree of readiness. All of these should be within the farmers extension is designed to serve. Since extension is designed to help the farmers, it then becomes important that the same farmers conditions are first understood by the extension workers before they can be helped through solving problems plaguing their production.
- ii. **Extension work should be based on the needs and interest of the people:** Extension worker should not be personal but needs to be focused on the needs and interest of the people he is directed to. By so doing, the people will show more interest and be ready to imbibe the innovation being brought by the extension worker. These needs and interest differ amongst the people; hence the extension worker should direct innovations to the farmer it fits. In achieving this, the extension worker must try to win the confidence of the farmer by just been interested in the farmers interest, otherwise there would be problem.
- iii. **Extension should assist farmers determine their own problems:** Extension workers need to do well to help the farmers identify their problems and then proffer solutions to these problems. Such an act will go a long way to show care to the farmers from the extension agent. It is after problem identification that solutions can then come from the extension agent and they are adopted for improved output.
- iv. **Programme should start with the people's felt needs:** The farmers needs are sure to be numerous, but the extension worker should start from the felt or pressing needs of the people. There after the extension worker can then proceed to the other needs of the farmers. It is only through this method that attention will be given by the farmers and success is sure. It is assumed that farmers will give more time and energy to pressing needs which of course may differ amongst the people
- v. **Principle of cooperative work:** the principle of cooperative work between the farmers and the extension worker is necessary. Like earlier said, the problems to be solved are those from the farmers, and are to be handled by the extension workers who stand between the farmers and the research centres. There is a need for these group of people to cooperate and work together. Through the cooperation, the real and pressing problems are identified and appropriate solutions are disseminated.
- vi. **Extension should work with all members of the family:** Extension workers should apply the need to work with all members of the family. There should not be any discrimination on

basis of religion, disabilities of any kind, political or otherwise. The family should be seen as the working unit in the field and thus regard them as rational adults who are capable of making their own decisions born out of their ideas which they also feel should be respected. Holding the family in esteemed position will create a conducive environment for adopting innovations brought by the extension workers.

- vii. The use of variety of teaching methods:** The use of a variety of teaching methods in disseminating information to the farmers is another principle that should be adopted by the extension workers. Every method has its own advantages and suitability. Even the farmers to be taught have their own differences that suit different teaching methods. What the extension work needs to do is to understand the farmers situation and the available teaching methods and apply them accordingly. For example, persuading a farmer on a technology would require personal contact method.
- viii. Participation in extension programme is voluntary:** Participation of farmers in extension programme should be voluntary and so no one should be forced to participate in them. This call for why efforts should be made to ensure that programme is designed to meet the different interests of the farmers in their marital status, age, educational level, farm size, economic status, etc. for acceptance of the change and cooperation with the extension workers to see it work.
- ix. Working with local groups:** Extension should take the advantage of working with the existing groups in the social system or community. This will help to make the change get to the people on time and gain quick support. Rural people tend to listen more to the local leaders than even the extension worker himself. So, identifying and working through groups will help to drive innovations faster than working along by oneself.
- x. There should be constant evaluation:** Evaluation involves the assessment of projects to determine level of success made. The extension work should be assessed periodically in line with introducing new changes. This is necessary for the stakeholders to know if the work being carried out is meeting up with the objectives that were defined at the start of the work. After evaluation exercise follows continuity if all is well or an adjustment if things are not in order.
- xi. The use of professionals should be ensured:** The use of professionals in carrying out extension work should be of paramount importance. Professionals in this regard would have the training, skill and knowledge of doing the work in the most appropriate manner. They know what method with which to reach the farmers and so on, thereby making sure that the change are well driven to the people and are accepted by them.

- xii. Learning is a gradual process:** Learning should be seen as a gradual process and the results that are expected should not be expected to manifest too soon. There are cases where learners have to be exposed to new ideas for a long period of time before they will understand and even agree to adopt the innovation. Everything about agriculture takes time so does dissemination of change and the implementation of the change.

2.3.1 Methods of Motivating the Agricultural Extension Workers

Motivation is a process of initiating a conscious and purposeful action. Motivation can as well be said to be a goal directed and needs satisfying behavior. It is important that the extension workers get motivated so that they can get the spirit of belongingness to the extension organization which they serve. Through motivating them, the extension workers get high morale and then the organizations are sure of having good results from the workers and the overall achievements of the goals of the extension workers is assured. The morale of the extension worker can be raised or the extension worker can be motivated through:

- i. Genuine selection and training of workers
- ii. Giving of proper incentives that would be seen as motivating factor
- iii. Development of an effective code of ethics for the extension workers.
- iv. Carrying out an orientation exercise for the new workers about the goals of the extension organization.
- v. Supervision of extension personnel should be periodically carried out and this should be done with standards.
- vi. The extension workers can still be motivated through the development of high morale

Self-Assessment Exercise

1. How can extension work with all members of the family?
2. The morale of the extension worker can be raised or the extension worker can be motivated through?

2.4 Summary

This unit studied the different principles of agricultural extension and the application of the principles to the workability of extension programmes. The motivational factors that are needed to boost the morale of extension workers was also examined. The work of agricultural extension is guided by some principles that make it possible for the expected or anticipated results to be achieved. However, these principles are many and they are

applied as it suits the farmers condition or environment. The extension workers also need to be motivated so that they could have high morale in doing the work expected of them.

2.5 References/Further Readings/Web Resources

Adereti, F. O. & Ajayi, A. O. (2005). Concepts and Basic Principles of Agricultural Extension In: S. F. Adedoyin (Ed.) *Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 16 – 20.

Onwubuya, E. A. (2005). Social and Educational Psychology in Extension. In: S.F. Adedoyin (Ed.) *Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 122.

2.7 Possible Answers to Self-Assessment Exercise(s)

1. How can extension work with all members of the family?

Extension workers should apply the need to work with all members of the family. There should not be any discrimination on basis of religion, disabilities of any kind, political or otherwise. The family should be seen as the working unit in the field and thus regard them as rational adults who are capable of making their own decisions born out of their ideas which they also feel should be respected. Holding the family in esteemed position will create a conducive environment for adopting innovations brought by the extension workers.

2. The morale of the extension worker can be raised or the extension worker can be motivated through:

- i. Genuine selection and training of workers
- ii. Giving of proper incentives that would be seen as motivating factor
- iii. Development of an effective code of ethics for the extension workers.
- iv. Carrying out an orientation exercise for the new workers about the goals of the extension organization.
- v. Supervision of extension personnel should be periodically carried out and this should be done with standards.
- vi. The extension workers can still be motivated through the development of high morale

Unit 3 Factors Influencing Effective Agricultural Extension System in Rural Areas

Unit Structures

- 3.1 Introduction
- 3.2 Intended Learning Outcomes
- 3.3 Factors Influencing Effective Agricultural Extension System in Rural Areas
- 3.4 Summary
- 3.5 References/Further Readings/Web Resources
- 3.6 Possible Answers to Self-Assessment Exercise(s)

3.1 Introduction

Farmers in rural areas view agriculture extension as a form of assistance to help improve their know-how, efficiency, productivity, profitability, and contribution to the good of their family, community, and society. But in the real sense, agricultural extension is an out-of-school system of education where farmers are thought to use their own resources to improve on their production output, income and welfare. In the long run, it results to the promotion of national food security and economic growth. Sad to mention, extension has not been able to function in line with the aforementioned capacity due to a litany of challenges plaguing the system and these have caused some level of ineffectiveness in the system. However, some of the factors that can influence effectiveness in the extension system are examined below.

3.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- identify the factors required for effective agriculture extension in rural areas
- explain the factors required for effective agriculture extension in rural areas

3.3 Factors Influencing Effective Agricultural Extension System in Rural Areas

The ultimate role of agriculture extension is the impact that extension is having on the productivity of all major groups of farmers, including their incomes and quality of life. An effective extension should contribute to sustainable agricultural development in rural areas. The factors below focus on effectively improving the agricultural extension system in Nigeria.

- i. Need for a Change in Agricultural Extension Policy, Mission and Goals:** Nigeria is largely an agricultural economy with the majority of the population deriving their income from farming especially in the rural communities. Most policy interventions have focused on “food security” which indicates insufficiency. Its mission and goals may need to be adjusted according to national objectives of agricultural and rural development in a given country. This mission should be reflected in a statement of goals and objectives that are agreed upon and assigned to extension in a supporting policy document which should be periodically reviewed by policy makers and representatives from stakeholder groups based on their needs.
- ii. Technological Advancement:** Agriculture in Nigeria is though faced with enormous technological challenges. But they also have access to a much larger pool of scientific and technical knowledge that was not available when the Green Revolution was launched. This exploration will also include an examination of local innovations as well as indigenous knowledge. It will cover fields such as information and communications technology, genetics, ecology and geographical sciences. The assembling of these into a single whole will make available an effective extension agricultural system.
- iii. Enabling Infrastructure:** Enabling infrastructure (covering public utilities, public works, transportation and research facilities) is essential for agricultural development. Infrastructure is defined here as facilities, structures, associated equipment, services, and institutional arrangements that facilitate the flow of agricultural goods, services and ideas. Provision of an enabling infrastructure for agricultural development is very important. Modern infrastructure facilities will need to reflect the growing concern over climate change and food insecurity. Nigeria’s agricultural system should provide a unique opportunity to adopt new approaches in the design and implementation of infrastructure facilities that will help promote effective extension agricultural system.
- iv. Agricultural Innovation Systems:** The use of emerging technology and indigenous knowledge to promote sustainable agriculture will require adjustments in existing institutions. New approaches will need to be adopted to promote close interactions between government, business, farmers, academia and civil society. Positioning sustainable agriculture as a knowledge-intensive sector will require fundamental reforms in existing learning institutions, especially universities and research institutes. Most specifically, key functions such as research, teaching, extension and commercialization need to be much more closely

integrated to promote effectiveness in the extension agricultural system.

- v. **Extension Approach and Functions**-National extension systems can pursue one of several different extension approaches in implementing extension policy. One of such approaches is the Training and Visit (T&V) extension system (which is used for technology transfer) that has been promoted by the World Bank through its lending programme. The main focus of the T & V system has been on increasing the skills and knowledge of rural farm families. There is need to enhance the T&V approach with participatory activities that will involve the farmers and promote effectiveness of the extension agricultural system.
- vi. **Geographical Coverage**: This refers to the area extension is to serve. Geographical coverage can be an important policy issue because of both political and cost implications. If extension funding is to be provided by different levels of government (cost sharing), then the structure of extension must reflect these different sources of funding. Extension personnel will tend to be more responsible to those levels of government that provide extension funding and work within these areas for effectiveness. Having multiple sources of funding, especially from different levels of government, will increase the number of shareholders and result in an extension system that has a broader base of support and spread their work to reach the areas providing the funding. Investing in resource poor farm families may increase their technical, management, and leadership skills, and thereby provide the system with more effectiveness and improved production.
- vii. **Clientele or Target Beneficiaries**: A common criticism of extension services in developing countries is their neglect of the vast number of small-scale farmers in favour of fewer numbers of large farmers, or the very limited attention given to women farmers. The inclusion of women and rural youth in agricultural extension programmes is generally recognized in terms of their numbers and contribution to farming. Rural youth may account for up to 60 per cent of the population in developing countries. To this end in view, the inclusion of the rural youths, women and resource poor farmers in the extension reach-out will bring about a better improved agricultural extension system.
- viii. **Organizational Issues**: The issues here have to do with the too much responsibilities the extension organization is saddled with. The extension organization is responsible for the provision of management framework for the extension service and the functioning of the different aspects of an extension system. This affects the scope, magnitude, and structure of the extension system, including factors such as control, cost-effectiveness, and the impact of the extension service. For assurance of effectiveness

of the system, the scope of the extension organization should be reduced.

Government project/policy should be bottom-up approved in order to feel the pulse of the farmer before deciding on what to do for the farmers. In Nigeria, most of the extension services jobs are carried out by the state governments instead of a national extension officer. It is hoped that leaving extension responsibilities for extension officers will bring about more level of effectiveness

- ix. Extension Funding-**The most difficult and challenging issue facing extension today is to secure a stable source of funding. The government has the impression that public extension is both expensive and a drain on the government's limited resources. Notwithstanding, increased level of public funding is necessary to support extension in relation to the needs of farmers in the country. In Nigeria, absolute levels of extension funding are very low, hence ineffectiveness seems obvious. The Federal Government must believe in long term benefits that can be derived from investing in extension services. Extension should therefore provide constant/periodical reports of the various activities, including progress and limitations. The funding for extension should be increased to levels that reflect the anticipated economic rates of return and the social benefits. Such increase will bring about an effectiveness in the agricultural extension system.
- x. Extension Staffing Issues:** By the nature of the mission and work that an extension system carries out; it's worth to society is largely reflected by the quality and number of the technical and professional staff in the organization. Based on the scope of and available resources, qualification, number of extension staff to be employed by the extension system, proportion of subject-matter specialists to field extension workers etc seem to be very poor. The ratio of extension worker to farmer is too poor (ie too wide) and this should not be the case. More extension workers who are qualified should be employed to narrow the existing ratio. It is hoped that when this is done it will help to boost effectiveness of the extension system.
- xi. Poor logistics:** Poor logistics has been witnessed in the extension system for some time. There are almost no vehicles to move from one locality to another and from one farmer to another. This issue creates ineffectiveness in the system. Provision of transportation means (vehicles and motorcycles) makes the extension workers to be able to reach out to their target clients and thereby disseminate the useful information they have. By so doing, effectiveness will be assured.

- xii. **Stability:** While a little flexibility is advocated for to cater for the dynamic nature of the agricultural sector, a good extension policy promotes extension system stability. Frequent organizational changes within extension service, such as workers transfer from one government agency to another, directly impact the organization's effectiveness. Such instability is costly in that trained staffs are poorly utilized and opportunities for improved productivity are forgone. Disruption and destabilization concerning bottle-neck bureaucracies from the government must be removed in order to ensure effectiveness of the extension system.
- i. **Business Development:** The creation of agricultural enterprises represents one of the most effective ways to stimulate diffusion and adoption of Innovations. The business outfit set up will help to improve in the processing of the products that may be produced from the process. Business development will include direct financing, matching grants, taxation policies, government or public procurement policies and rewards to recognize creativity and innovation. New tools such as information and communication technologies can be harnessed to promote entrepreneurship.

Self-Assessment Exercise

1. Explain how technological advancement and enabling infrastructure influence effective agricultural extension system in rural areas.
2. How does poor logistics affect extension?

3.4 Summary

Factors enhancing effective agricultural extension in rural areas have been discussed in this unit. It has outlined the need for changes in policies, technology, infrastructure; approaches in innovation system, extension activities, stability and business development as factors needed to promote agricultural extension work and results in rural areas. There are different various factors that are in place that are capable of causing ineffectiveness in the style of carrying out agricultural innovations. A correction of these factors in the most appropriate direction will result to effectiveness in the way and manner extension work is carried out.

3.5 References/Further Readings/Web Resources

FAO (1998). *Improving Agricultural Extension, A Reference Manual*, Edited by Burton E. Swanson Robert P. Bentz and Andrew J. Sofranko, <http://www.fao.org/docrep/W5830E/W5830E00.htm>

3.7 Possible Answers to Self-Assessment Exercise(s)

1: Explain how technological advancement and enabling infrastructure influence effective agricultural extension system in rural areas.

Technological Advancement: Agriculture in Nigeria is though faced with enormous technological challenges. But they also have access to a much larger pool of scientific and technical knowledge that was not available when the Green Revolution was launched. This exploration will also include an examination of local innovations as well as indigenous knowledge. It will cover fields such as information and communications technology, genetics, ecology and geographical sciences. The assembling of these into a single whole will make available an effective extension agricultural system.

Enabling Infrastructure: Enabling infrastructure (covering public utilities, public works, transportation and research facilities) is essential for agricultural development. Infrastructure is defined here as facilities, structures, associated equipment, services, and institutional arrangements that facilitate the flow of agricultural goods, services and ideas. Provision of an enabling infrastructure for agricultural development is very important. Modern infrastructure facilities will need to reflect the growing concern over climate change and food insecurity. Nigeria's agricultural system should provide a unique opportunity to adopt new approaches in the design and implementation of infrastructure facilities that will help promote effective extension agricultural system.

2. Poor logistics:

Poor logistics has been witnessed in the extension system for some time. There is almost no vehicles to move from one locality to another and from one farmer to another. This issue creates ineffectiveness in the system. Provision of transportation means (vehicles and motorcycles) makes the extension workers to be able to reach out to their target clients and thereby disseminate the useful information they have. By so doing, effectiveness will be assured.

Unit 4 **How to Measure the Effectiveness of Extension and Challenges of Agricultural Extension System in Nigeria**

Unit Structures

- 4.1 Introduction
- 4.2 Intended Learning Outcomes
- 4.3 How to Measure the Effectiveness of Extension
 - 4.3.1 Challenges of Agricultural Extension System in Nigeria
- 4.4 Summary
- 4.5 References/Further Readings/Web Resources
- 4.6 Possible Answers to Self-Assessment Exercise(s)

4.1 Introduction

This unit examines the technique of how to measure the effectiveness of the extension workers or agents and this is done through Awareness, Knowledge, Adoption and Productivity skill. In addition, the major challenges plaguing the effectiveness of the extension system thus preventing it from realizing full potential was considered.

4.2 Intended Learning Outcomes

By the end of this unit, you will be able to:

- explain the technique in the correct sequence used in measuring effectiveness of the extension system
- discuss the challenges affecting the poor agricultural extension services in the Nigeria.

4.3 How to Measure the Effectiveness of Extension

Agricultural extension system is saddled with the responsibility of ensuring the improvement of the farmers standard of living through improved productivity from their farms. While some extension workers have done well in some areas, others have not. One sure *technique to measure effectiveness of the extension worker is the use of conceptual theme sequence* developed by Evenson (1996). This technique is known as: Awareness – Knowledge – Adoption – Productivity (AKAP). By assessment, extension is said to be effective when the following sequence is induced:

A: This refers to farmer's **awareness**

K: This is the farmer's **knowledge**, acquired through testing and experimenting

A: This is the farmer's **adoption** of technology or practices, and

P: Changes in the farmer's **productivity** or output

The AKAP sequence is essentially a modified adoption process with a natural ordering. In order to move along the sequence, the real resources in the form of skills and activities needed by both the extension workers and farmers to function are made available.

The **awareness** of the technology as stated here is not knowledge. **Knowledge** of the farmers on the technology requires awareness, experience, observation and the ability to evaluate data and evidence. Knowledge leads to **adoption** and from adoption there is productivity. **Productivity** to a large extent depends on adoption of improved technology and the institutional and infrastructural support.

4.3.1 Challenges of Agricultural Extension System in Nigeria

A myriad of problems is known to plague agricultural extension services in developing countries like Nigeria. The problems vary from one extension worker's organization to another and from one farmer as it were to another. These problems have generally resulted to reduction of the farm produce. These problems have been majorly captured and discussed below:

- i. **Inadequacy and instability of funding:** Agricultural extension programmes are very expensive to fund because of what is involved like recurrent expenditure and foreign exchange in procuring foreign materials. Due to this expensive nature of agricultural programmes, it becomes difficult for the process to be adequately funded. Funds are required to procure training of personnel, office equipment, audio-visual aids, etc. Since funds are usually not enough it becomes difficult to fund projects and this affects the extension system.

Out of this problem, government should see agricultural programmes as important and try to ensure that it is adequately funded in order to meet with agricultural products like food demands and materials for agro-industries.

- ii. **Poor logistic support for field staff:** This has to do with the problem associated with planning, organization and moving of personnel and materials that are needed to carry out the extension work. The major problem in logistic support is poor transportation of the extension agents from their offices to the field of the farmers abode where they are to carry out their work. Poor logistics support makes it difficult for the people to do their work as expected and so have extension work being affected.

In ameliorating this problem, government should do her best to provided vehicles and motor cycles to help convey the extension workers from one place to another, from their offices to the field where they can meet their clients and then do their work effectively.

- iii. **Use of poorly trained personnel at the local level:** It has been observed that many extension personnel when employed are not trained and so when they are expected to do their work, it becomes difficult for them to do what is expected. In addition, use of under-skilled personnel and poorly educated people to do the same work expected to be done by graduates is almost the order of the day. Such an act will only lead to producing poor jobs because the work would definitely not be properly done. All of these problems will make extension not to produce the real work expected of them.

To this end, government should try to see that both newly employed and the old staff should periodically be seen through training on the job and that only qualified persons are employed for the job so that it can be appropriately done well.

- iv. **Ineffective agricultural research – extension linkage:** The place of extension is between the farmer and the research centres. What he does is that he carries the farmers problems to research centres and then carry back the solutions back to the farmers. It is now a known fact that the extension workers don't even have adequate knowledge of the farmers situation not to talk to taking it to research centres for solutions. It therefore means that there is a disconnect somewhere and this disconnect makes it difficult for the extension to function adequately.

Correcting this anomaly, government should do well to make available an environment where there should be effective agricultural research – extension linkage. This will help promote the capacities of the extension workers and have their work well done.

- v. **Disproportionate extension agents to farmers ratio:** Nigeria has a very low number of extension agents who provide agricultural services to the farmers. It has been documented that the ratio of extension worker to farmers in Nigeria is about 1:1200. This ratio is too wide and it makes impossible for most of the farmers not to be reached by the extension workers. This problem necessitated the use of contact farmers which is still not a solution to the problem. In the long run the services of the extension worker is not felt. Consequently, low agricultural output has continued to be the result.

Making a resolve, government needs to employ more and more extension agents to cater for the farmers contact with agricultural information which would help to boost agricultural output.

- vi. Lack of clientele participation in programme development:** In most cases especially in the Nigerian situation most of the agricultural programmes are planned by experts at the top level without carrying the extension workers who actually know the farmers problems and the clientele (farmers) along. So such plans don't really reflect the farmers problems and as such the solutions the extension workers come with are not in the farmers interest. This scenario leads to the abandonment of the programmes and what they intend to offer.

To overcome this situation, planning should be carried out by a combination of the experts, extension workers and the clientele (farmers). This is necessary so that the extension workers, farmers and their problems should be incorporated in the programme of activities so that when programmes are developed by the people, it will be addressing the real heart felt problems of the people. The interest of the farmers will still not be in doubt.

- vii. Failure of input suppliers to ensure effective and timely distribution to farmers:** Agricultural extension most time succeed when the extension services are linked to research and the organized delivery of farm inputs. Again, it should be of note that most if not all agricultural activities are time bound. It has become common knowledge that most of the company who are suppliers of agricultural inputs do not supply the needed inputs are the right time. It becomes difficult for the extension workers to have these inputs available as at the time they would want to use them to either teach or train the farmers. That be it as it may, the extension workers would not be able to do as expected thus leaving the scenario in where they met it.

Government do go beyond her confines to push the providers of farm inputs and try to make them available st the right time so that it can be judiciously used for improvement of agricultural extension work in particular and increase in product output in general.

- viii. Irregular evaluation of extension programmes:** Agricultural programmes are supposed to be regularly evaluated as the programme progresses. Expectedly, in the course of evaluation any unnecessary deviations are adjusted or corrected. The essence is to be sure that the programme continues towards achieving its

goal. It has come to the know that evaluations hardly takes place during projects and so any one that is going of track can hardly be corrected or adjusted. At the end of the day such projects can hardly achieve its goals. When such is the case, extension is as well assumed to have failed.

Regular evaluation should be carried out on projects as it goes on and till the end to ensure corrections are carried out and the project is led to it expected destination.

Self-Assessment Exercise

1. One sure technique to measure effectiveness of the extension worker is the use of conceptual theme sequence called AKAP. Discuss.
2. Describe the impact of irregular evaluation of extension programmes on its performance.

4.4 Summary

This unit studied some of the numerous problems affecting the agricultural extension system and attributed the problems to be responsible for low agricultural output. It is common knowledge that extension is performing below expectation and this is quite connected to the myriad of problems facing the agricultural system. These problems vary among the extension organization, extension workers and the farmers. Nevertheless, they are not without their associated solutions.

4.5 References/Further Readings/Web Resources

Agbamu, J. U. (2005). Problems and Prospects of Agricultural Extension Services in Developing Countries. In: S.F. Adedoyin (Ed.) *Agricultural Extension in Nigeria*. Agricultural Extension Society of Nigeria (AESON), Ilorin. P. 159 - 169

4.7 Possible Answers to Self-Assessment Exercise(s)

1: One sure technique to measure effectiveness of the extension worker is the use of conceptual theme sequence called AKAP. Discuss.

This technique was developed by Evenson in 1996. ASAP stands for: Awareness – Knowledge – Adoption – Productivity (AKAP). By assessment, extension is said to be effective when the following sequence is induced:

A: This refers to farmer's **awareness**

K: This is the farmer's **knowledge**, acquired through testing and experimenting

A: This is the farmer's **adoption** of technology or practices, and

P: Changes in the farmer's **productivity** or output.

1. **Irregular evaluation of extension programmes:** Agricultural programmes are supposed to be regularly evaluated as the programme progresses. Expectedly, in the course of evaluation any unnecessary deviations are adjusted or corrected. The essence is to be sure that the programme continues towards achieving its goal. It has come to the know that evaluations hardly take place during projects and so any one that is going of track can hardly be corrected or adjusted. At the end of the day such projects can hardly achieve its goals. When such is the case, extension is as well assumed to have failed.

Regular evaluation should be carried out on projects as it goes on and till the end to ensure corrections are carried out and the project is led to it expected destination.