

AGRICULTURAL WORKERS' PERCEPTIONS OF APPROPRIATENESS  
AND USAGE OF SELECTED PROGRAM DEVELOPMENT  
CONCEPTS FOR THE NIGERIA  
EXTENSION SERVICE

By

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## CHAPTER I

### INTRODUCTION

The increasing critical nature of the world's food scarcity, particularly among developing countries, has brought wider recognition for the need to reform agriculture production machinery in these countries. Many of these countries are intensifying vigorous campaigns aimed at increasing farming output through development of educational programs for farmers.

Ahmadreza (1984) stressed the need to step up effective educational programs in developing countries as a major direction toward increasing agricultural output. He traced the present scarcity of food in many developing countries to illiteracy, suggesting education as the only means of effecting solution to the problem. Arnon (1981, p. 3) also gave a sound argument in support of increased agricultural production by developing countries, emphasizing that "agriculture must make substantial contributions which will enable national economic growth to take place on a wide front."

Agricultural development cannot, however, be achieved without the support and cooperation of rural farmers through participation in educational programs developed by their local extension units. Apart from helping to solve their problems, such programs provide farmers with the knowledge, attitudes, and skills necessary in keeping up with technological advancement.

Most of the extension workers in the ministry of agriculture are continuously faced with the challenge of developing educational programs or projects for Nigeria farmers. In order to transmit new technologies successfully to farmers and help solve their problems, these workers should possess the ability to develop and execute effective educational programs for their clientele. As the society becomes more technologically advanced, greater demands are shifting to extension workers to apply adequate systems of programming for its clientele.

#### Statement of Problem

In any farming community, problems and needs exist in various phases of farming and farm living. The Extension Service of the federal and state's ministry of agriculture is involved in developing various educational opportunities to help farmers solve their problems. A major challenge confronting many Nigeria extension workers is that of identifying and translating farmers' problems or needs and developing effective educational programs to solve these problems.

One of the major objectives of the Extension Service in Nigeria is the improvement of agricultural production through development of educational programs based on research information for farmers. With greater emphasis on increased agricultural production, the ministry of agriculture in each state has had to broaden its scope of programming to meet increasing demands associated with improved agricultural technology. In order to assist farmers in solving their problems, extension workers should possess the necessary competence to design effective programs for their clientele.

This goal can be achieved through the use of a program model that incorporates a comprehensive procedural system of planning, implementation, and evaluation. The central problem of this study was, therefore, the need to determine the appropriateness and usage of selected program development concepts in planning extension educational programs. It was felt that solution of this problem could lead to the development of effective programs based on the principles of extension education and the andragogical concepts of educational planning.

#### Purpose of the Study

The major purpose of the study was to ascertain perceptions relative to the appropriateness and usage of selected program development concepts for the Nigeria Extension Service, as held by two groups of agricultural and extension students in Nigeria.

#### Objectives of the Study

The following objectives were developed in order to achieve the purpose:

1. To determine the perceptual assessment of the students concerning the extent to which selected program development concepts are appropriate for the Nigeria Extension Service.
2. To determine the extent to which the students perceive each concept is being used by the Extension Service in developing programs for its clientele.
3. To develop a conceptual program planning model for the Nigeria Extension Service, using information obtained from the study as a basis of the framework.

## Hypotheses

In addition to reporting descriptive statistics, the following null hypotheses were tested:

1. There is no significant difference between the perceptions of ordinary diploma and higher diploma respondents regarding the appropriateness and usage of selected program planning, implementation, and evaluation concepts as it relate to the Nigeria Extension Service.

2. There is no significant difference between the perceptions of younger and older respondents regarding the appropriateness and usage of selected program planning, implementation, and evaluation concepts as it relate to the Nigeria Extension Service.

## Assumptions of the Study

The following assumptions were made for the study:

1. All the respondents used in the study provided honest and accurate views of their perceptions of extension program development concepts as it apply to Nigeria.

2. The instrument used was interpreted alike by the respondents.

3. All respondents had been involved directly or indirectly in developing extension programs for Nigeria farmers.

## Scope of the Study

Because of the difficulties envisaged in sending the questionnaire to extension workers in different parts of the country, this study was limited to a purposive sample of agricultural and extension workers currently undergoing in-service training courses at the School of Agriculture, Moor Plantation, Ibadan. The sample consisted of 135

workers who were undergoing either of the ordinary or higher diploma program during the 1984-1985 session. These workers were sponsored by various organizations such as the state ministry of agriculture, the federal department of agriculture, agricultural research institutions, and private agricultural agencies.

Extension programs sometimes need to be tailored to fit prevailing conditions in the area of operation. Although the model developed in this study was designed for the Nigeria context, the researcher was aware of social, religious, economic, ethnic, and cultural diversity of extension clientele in the country. Situations to be encountered by extension workers may differ between and sometimes within each state. This model, or any other model, cannot be regarded as universally applicable or adequate for all situations within the social and cultural context of the society. The model would, therefore, only serve as a useful handbook for extension workers. Some aspects of the design may not be workable in some situations while it would in others. Effort has been made by the researcher in making the model as flexible as possible for use throughout the Extension Service.

#### Definition of Terms

Agricultural Assistant: a contact agent for farmers. Generally possesses the ordinary diploma certificate in agriculture.

Agricultural Superintendent: also a contact agent for farmers, but on a higher level. Generally holds the higher diploma in agriculture.

Resource person: Agriculture specialist trained in a particular subject matter area. Coordinates research work with extension through the extension or contact agent.

Target audience: This refers to the farmers and other people being served by the extension service.

Change agent: The extension worker involved in initiating a change. Agricultural Assistants and Agricultural Superintendents are examples of change agents.

Norm: Established behavior patterns of a group or society.

Culture: refers to the custom or way of life of the society, their attitudes, beliefs, rules, norms, and habits guiding them as members of the same community.

Program: An educational activity or project for a group of people. This could range from a single meeting to a series of activities.

Program Development: A process of identifying problems, setting priorities on the problems, preparing a plan of work to solve the problem, implementing the plan, and evaluating its outcome.

Advisory Council: A group of persons selected to help in planning and advising on matters relating to the program.

Effectiveness of extension program: This refers to the appropriateness or relevance of the program. A program is effective to the extent that it accomplishes the objectives set forth in executing the program itself.

Younger Respondents: Those respondents who were 26 years or less when the questionnaire was administered.

Older Respondents: Those respondents who were above 26 years when the questionnaire was administered.

## Format of the Study

The layout of this study is divided into five chapters. Chapter One presents the reader with an introduction to the study. It also discusses the problem statement, purpose of the study, assumptions made, scope and limitations, and the definition of terms that could be misunderstood.

A review of literature and studies related to the problem is presented in Chapter Two. An overview of agricultural extension work in Nigeria is delineated. Several approaches to extension program development in Nigeria and the United States are reviewed.

In Chapter Three, the methodology for the study is described including the population sample, method of sampling, development of the instrument, method of gathering data, and the statistical analysis of data.

Chapter Four presents results of the research based on the data collected from the respondents.

In Chapter Five, summary and conclusions for the study are given, with recommendations for further research. The conceptual program development model for the Nigeria Extension Service is also presented.

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

The review of literature is a summary of writings and research related to the development of extension education programs. It is divided into the following sections: 1) History of Agricultural Extension Work in Nigeria, 2) The Extension Program Development Process, 3) Program Development in Developing Countries with Special Emphasis on Nigeria, 4) Analysis of Related Studies, and 5) Analysis of Some Program Development Models.

#### History of Agricultural Extension Work in Nigeria

Agriculture is the cornerstone of Nigeria's economy. About half the national income of the country originates in agriculture and live-stock production (Table I). A report in the Federal Republic of Nigeria (1982) indicated that about 70% of the total working population was engaged in agricultural production and business, producing such foods as yam, rice, oil palm, cocoa, rubber, and timber as raw materials for local industries and for export. A great deal of effort to modernize the agricultural enterprise has been intensified during the past decade by the federal and state governments in order to increase its output. According to Williams (1982, p. 259), "Nigeria has experienced a considerable high level of revolution occasioned primarily by a desire



on the part of the various governments to increase food production to self sufficiency."

TABLE I  
CONTRIBUTION OF AGRICULTURE TO NIGERIA'S  
GROSS DOMESTIC PRODUCT AT FACTOR  
COST, 1976

Item	Value (pounds) million	Proportion Percent
Total GPA	1,591	100.0
Agriculture, including livestock	899	56.5
Domestic Consumption	( 791)	
Raw Materials	( 10)	
Exports	( 98)	
Fishing and Forestry	60	3.8
Petroleum	45	2.8
Other	587	36.9
Agricultural Processing	( 60)	

Source: Cownie, John. Nigeria National Income Accounts: Summary and Projections to 1985. CNSRD, pg. 14, July 1969.

Although oil has become the major export and contributor to the country's foreign reserve, the importance of agriculture in the overall development of Nigeria's economy cannot be overemphasized. Like most mineral resources, oil can be regarded as a robber economy that is highly unstable and unpredictable. It is gradually becoming a less reliable main source of economic development in the country. Apart from being a temporary economic resource, the unpredictable world market fluctuations in its prices due to the present oil glut seems to make it a precariously unreliable source of the country's economy.

Since attainment of independence in October, 1960, successive governments of Nigeria have gradually embarked on different development projects to boost agricultural output. Unlike the First National Development Plan (1962-1968) which did not show clear-cut goals for agricultural development, the Second National Development Plan allotted 20% of the entire capital expenditures to agriculture. The Third National Development Plan (1975-1980) and the Fourth National Development Plan (1980-1985) also contained various programs aimed at improving agricultural output for the country (Abu-Uwasu, 1984). Some of these programs included the "Green Revolution" project launched in April 1980, the National Accelerated Food Production program, and the "Operation Feed the Nation" program aimed at increasing food production substantially as a device against malnutrition and a means of improving the standard of living of each citizen (Federal Republic of Nigeria Report, 1982).

Agricultural extension education in Nigeria dates back to the colonial era with the advent of British and the subsequent colonization of the country. Although traditional agriculture had existed prior to this period, modernization of the enterprise through direct involvement of the government began shortly after the country was colonized.

The history of an organized system of agriculture in the country could be traced back to 1893 when a Department of Botanical Research was established in Lagos, with its headquarters at Olokemeji in the former western region of Nigeria (Williams, 1978). The headquarters was later transferred to Moor Plantation in Ibadan which also became the headquarters for the department of agriculture in the southern part of Nigeria. Williams (1978) also indicated that the first agricultural training school was established in Ibadan in 1914, followed by a similar

school in Samaru in 1927, and a third one in Umudike in 1955. Today, almost each of the nineteen states has a school of agriculture for providing vocational training in agriculture.

During the early stages of agricultural development in Nigeria, the colonial government placed much emphasis on the production of export crops meant for overseas market. Research work was mainly focused on improvement of these export crops while grassroots work in agricultural extension and development of the food crops were neglected. Swanson and Claar (1984) also noted that although extension activities began in many developing countries earlier in the twentieth century, the colonial governments sponsored these activities and research mainly for export crops such as sugar, oil palm, groundnuts, and tea, because of their interest in increasing the export of these crops. These pitfalls notwithstanding, the department of agriculture during the colonial era, constituted the basic foundation upon which the country's agriculture and extension service developed.

Following the division of Nigeria into three regions in 1952, a ministry of agriculture was established for each region while a fourth ministry was created for the midwest region in 1963 (Williams, 1978). Each regional government has the major responsibility for agricultural research and extension work through its ministry of agriculture. The four regions constitute the present nineteen states of Nigeria (Figure 1).

Although with some variation from state to state, the pattern of extension organization in each ministry of agriculture is very similar (Figure 2). The agricultural extension service in Nigeria has been undergoing gradual changes since its inception in the colonial era.

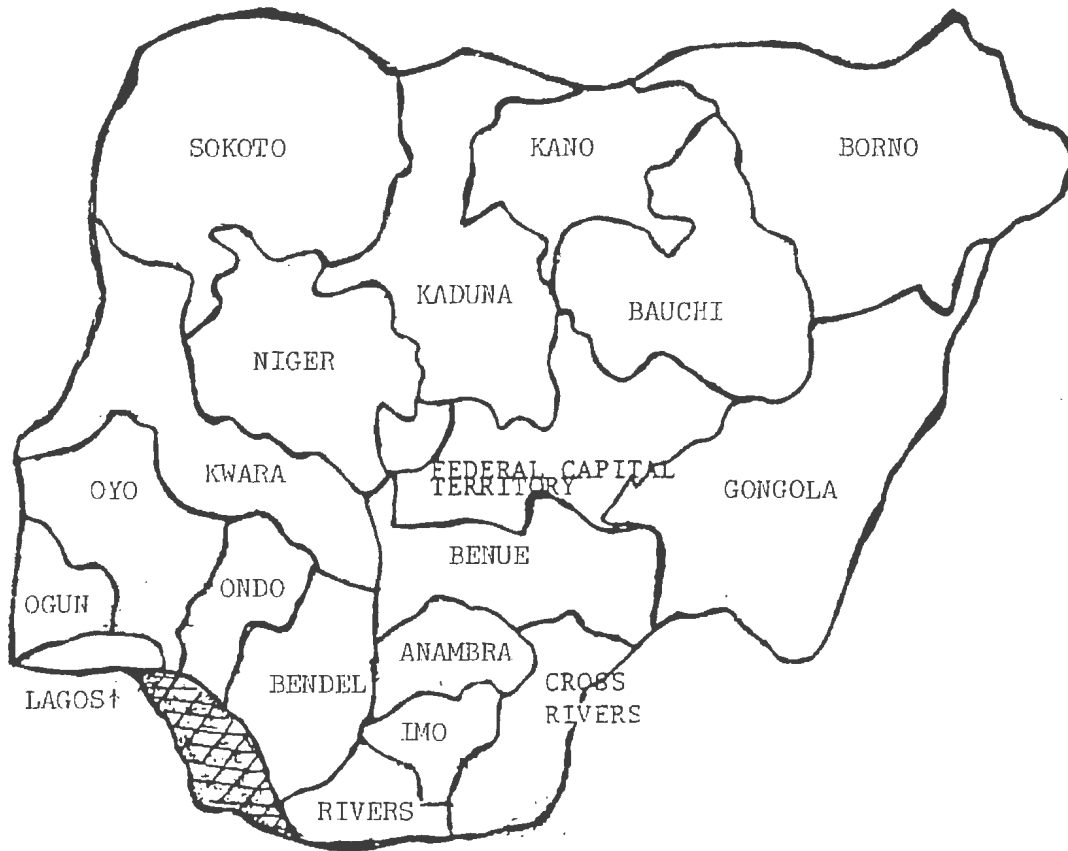


Figure 1. Map of Nigeria Showing the Nineteen States

Olayide and Ogunfiditimi (1980) identified two types of extension systems discernible during the pre-independence and post-independence periods as the Lugardian Extension System and the College Extension System.

The Lugardian Extension System is the most common, established during the colonial administration of Lord Lugard. This system is typical of agricultural extension agencies in most developing countries in which the extension service is organized as a division under the ministry of agriculture. Olayide and Ogunfiditimi (1980) considered this system incapable of offering an effective extension work for the people. This according to them, was due to:

the heavily bureacratized pyramid of power structure that stifles initiation, prevents quick decision making, and employs red-tape in the provision of materials for extension service (p. 261).

The College Extension System is an offspring of the United States' land grant college system of extension work or the Cooperative Extension Service. This system is found among few universities where the colleges of agriculture coordinate agricultural research and extension work with the ministry of agriculture. In advocating for a modified and simplified College Extension System for agricultural extension work in Nigeria, Olayide and Ogunfiditimi (1980) made the following suggestion:

The future agricultural extension in small farming can be guaranteed if the administrative weaknesses, bottlenecks, and inadequate staff of the existing framework are removed. The Lugardian Extension System (LES) must be replaced by a modified Land-Grant College Extension Service (p. 268).

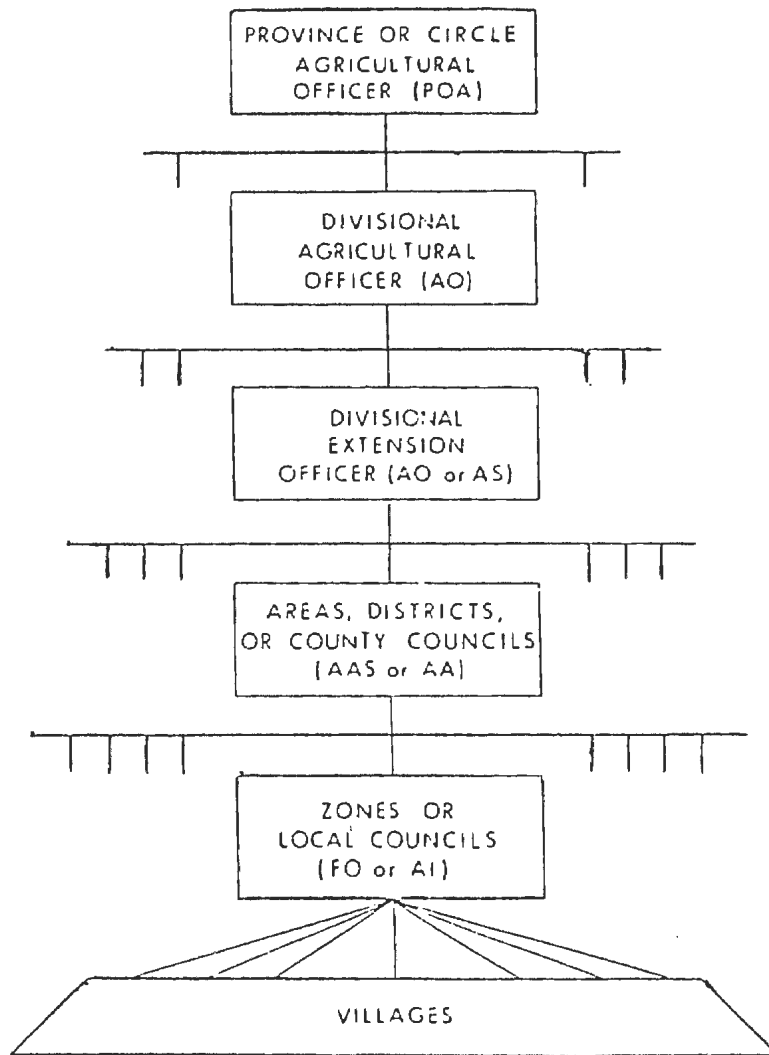


Figure 2. Composite of the Extension Services of the Four Former Regions of Negeria

### The Extension Program Development Process

One of the major goals of an agricultural extension service is the development of educational programs designed to help clientele meet their needs and solve their problems. The success of such programs depends on the extent to which this goal is accomplished. Thanamai (1982) identified three factors influencing decisions about how extension programs should be developed. These are determining:

1. The needs and interests of the people
2. The needs and problems of the community
3. The needs indicated by the Department of Agricultural Extension (p. 25)

In many extension organizations, particularly in developed countries, staff members and clientele are involved in identifying problems, setting priorities, developing plans to accomplish the objectives, and evaluating the results. The involvement of clientele in the planning process is considered essential to sound, productive programs. It portrays the extension programs as "the peoples' programs."

Boyle (1977, p. 10) defined program development as "a continuous process in which a series of actions culminates in the accomplishment of a goal." Maunder (1972, p. 180) referred to it as "a series of processes which includes preparing a plan of work and teaching plan, taking action to carry out the plans, determining and reporting accomplishments."

Program development consists of three important phases: planning, implementation, and evaluation. Ahmad (1981) compared curriculum planning to program development, suggesting that it contributes to extension program development and serves as a base for extension program developers. Program development is similar to curriculum planning

since both are designed to accomplish specific educational objectives although they may differ in some ways depending on the instructional level of the program.

### Program Planning

Planning involves making decisions about what is to be done. According to Blanckenburg (1984, p. 52) it "aims at clarifying possibilities for future action by formulating objectives, assessing resources, establishing possible alternatives, and making decisions about future lines of action." Hunter (1977) identified three major types of planning as executive, enabling, and intermediate planning. Executive planning involves actions decided and executed by the government such as the decision to build a power station. In enabling planning, action cannot be directly implemented because it depends upon the consent and cooperation of others. Intermediate planning is partly executive and partly enabling. This is the case in agricultural extension where program planning is carried out by extension workers and the community.

Axinn (1972) also classified the planning of an organization's program into four sub-groups. These were: programs planned by the organization's central administration, by others within the organization, by the clientele of the organization, or by some combination of the first three groupings. These four sub-groups can be further classified into two categories: "top-down" and "bottom-up" kinds of program planning.

In the "top-down" system of program planning, someone toward the top of the organizational hierarchy does the planning which is then communicated downward to those responsible for implementing it. The reverse is the case in "bottom-up" planning where most of the planning



takes place at the lower level of the organizational hierarchy to determine the needs and interests of the community.

Program planning is a decision-making process which is usually directed toward change in the behavior of the client system. Boone (1984) suggested that planning should be guided by the following five basic assumptions:

1. Planning is a futuristic activity.
2. The planning behavior of the adult education organization is proactive rather than reactive.
3. Planning enhances efficiency in the adult education organization.
4. Planning is sequential or stepwise, involving collecting and analyzing related information, and identifying, assessing, and analyzing needs.
5. Planning is collaborative; that is, it includes representatives of all who are affected by it (p. 81).

As Boone (1984) noted in his second assumption, the emphasis on programming has shifted more toward a proactive dimension. This is the case of the extension organization in several countries where programming was first reactive in nature either in an effort to solve an immediate problem such as shortage of food caused by war or sudden outbreak of disease such as boll weevil on cotton fields.

Planning of extension programs should be viewed as a democratic activity involving the program planners, subject matter specialists, members of the advisory committee, and the target audience. According to Williams (1980):

The adoption of a democratic approach to program planning and implementation makes it more apparent that a program development with and not for the people stands the best chance of a success. A good extension program should result from joint efforts of extension agents, subject matter specialists, and the farmers. Most of the programs that are developed are government projects with little or no consultation with the farmers who are to accept and operate such programs. A *modus operandi* must be found for involving farmers if their cooperation is

essential for successful implementation of the agricultural programs (p. 12).

Boyle (1981) indicated that the program planning phase can be divided into the following steps:

1. Study facts and trends.
2. Identification of problems and opportunities based on these facts and trends.
3. Prioritizing problems and opportunities.
4. Establish objectives or recommendations for future economic and social development of the community through educational programs (p. 117).

#### Program Implementation

Program implementation is the process of executing decisions made in the planning phase. The implementation process is aimed at translating the identified needs into hierarchies of objectives, sequencing plans of action for implementing the planned program, and executing educational strategies for the program (Boone, 1984). This phase involves transformation of the program objectives as set forth in the plan of work into action by executing the plan.

A plan of work is a written procedure of activities to guide the extension worker in implementing the program. It serves as a guide in executing the entire program activities by identifying the clientele, content to be covered, resource personnel, expected learning outcome, and other activity guidelines.

The plan of work is a direction or goal of where the program planner or extension worker wants to reach. Although most extension plans of work are developed to cover a calendar period of one year, long range plans of work are not uncommon. The extension annual plan of work usually consists of several components including the objectives of the program, methods to accomplish the objectives, time schedule, people to

be involved, allocated time, and evaluation. The objectives should include specification of the target audience, subject, and desired outcome for the year.

The program implementation phase involves development of the learning experiences and making the instructional plan. This process step calls for organization of the teaching-learning situation by extension workers to make the learning more relevant and meaningful to the learners. It also includes preparation of an activity planning sheet or instructional plan which stipulates a specific plan that will be used to provide the educational program. A report by the FAO in the Guidelines for Agricultural Training Curricula in Africa (1982) listed the following as components to be used in the program:

1. The specific list of projects and activities (what is to be done).
2. The timing (order and duration of each project).
3. Resources (items, money, personnel required).
4. Areas of cooperation (involvement of the people and the community, and rural development personnel in the program development and implementation).
5. Arrangements for outside assistance from government and private agencies.
6. Selected indicators for monitoring and evaluation (p. 148).

The primary goal of program developers in this phase is to establish learning experiences aimed at providing individuals with the knowledge, skills, and attitudes necessary to achieve the objectives developed in the planning phase. In implementing the educational program, the method of presentation is contingent upon several factors such as the educational level of the people, objectives of the learning experiences, size of the group, time factor, and costs. McCarthy (1981) suggested that every effort be made to accommodate the various learning styles preferred by each individual.

Boyle (1981) indicated that this phase requires good program communication, promotion, time, and resource management on the part of the program developer. According to Knowles (1980), educators designing and implementing learning experiences should demonstrate certain competencies. These include:

1. Ability to establish a warm, mutually respectful, and facilitative relationship with learners.
2. Ability to engage learners responsibly in self-diagnosis of needs for learning.
3. Skill in using a broad range of materials, methods, and techniques and in inventing techniques to fit new situations.
4. Ability to design learning experiences for accomplishing a variety of purposes while taking into account individual differences among learners.
5. Ability to evaluate learning procedures and outcomes and to select or construct appropriate instruments and procedures for this purpose (pp. 257-258).

#### Program Evaluation

Program evaluation is the assessment of a program's effectiveness in terms of its achievement of objectives. Evaluation helps to provide information necessary for making decisions concerning present and future programming. In extension programming, evaluation is regarded as a continuous process embracing the other two phases of program development.

Neno (1983, pp. 117-118) viewed evaluation as a "systematic description of educational objectives and/or an assessment of their merit or worth." He categorized its functions as:

1. Formative (for improvement)
2. Summative (for selection and accountability)
3. Sociopolitical (to motivate and gain public support)
4. Administrative (to exercise authority) (p. 118)

The educational objects can be programs, projects, curricula, instructional materials, students, educational and administrative personnel.

Wentling (1980) gave a different classification system by Stufflebeam based on the context of curriculum development, but which can also apply to extension programs. These are: context, input, process, and product evaluation. Context evaluation serves to define the educational environment, problems to be solved, and needs to be met. Input evaluation is used in determining how available resources can be used in achieving goals and solving problems identified. Process evaluation is concerned with observing the program's process and monitoring its operation. Product evaluation is used to assess program outcomes and relate it to measures taken in the context, input, and process information.

According to Compton (1984), program evaluation in extension usually takes two forms, formative and summative. The formative evaluation is conducted during the development phase of a program in order to identify and correct any shortcomings. This form of evaluation is similar to the context, input, and process stages of Stufflebeam's model. Summative evaluation determines the worth or value of the program after it has been completed and appears to be analogous to the product phase of Stufflebeam's model. Compton (1984) explained that the information obtained from this form of evaluation is used by the extension agency to justify the continuation of the program, to request for new additional inputs, or to modify the program's scope.

Evaluation is an important phase of extension programs. Unfortunately, it is often not adequately carried out by many program planners in developing countries. Williams (1978, p. 115) indicated that the common method of evaluation in many developing countries is the progress report, "which may be published monthly, quarterly, or annually, and is

usually based on the hunches of the reporting officer." Blanckenburg (1984) also regarded monitoring and evaluation as the two major activities that were often neglected by extension services in African and Asian countries. He recommended that an indepth evaluation aspect of programming be seriously considered by extension agencies in developing countries in order to improve its effectiveness.

Knowles (1980) suggested involvement of as many people capable of evaluating the extension program. He recommended involvement of one or more of the following groups, depending upon the type of program:

1. Participants
2. Leaders or instructors
3. Program director and staff
4. Outside experts
5. Supervisory and management personnel, community representatives, and representatives of the various program committees (p. 204)

#### Extension Program Development in Nigeria

A review of the limited literature relating to extension program development in Nigeria shows that while the Extension Service has made much progress in developing educational programs or projects to help solve farmers' problems, there is still much to be done to improve the present system of programming. Compared with extension organizations in some developed countries, such as the United States, the Extension Service in Nigeria could be regarded as a young organization that is developing. This is reflected in its centralized approach to developing programs for the people.

Most of the programs are planned at the top by senior government officials, and then sent down to contact agents for execution. As Williams (1984) indicated, the procedure being used in developing most

extension programs is dictated by the government to extension agents who are then requested to sell it to the farmer (Appendix A).

A report by Blanckenburg (1984) confirms Williams' view that extension agencies in many developing countries are not autonomous in their program planning. Although the programming takes place at national, regional, and local levels, Blanckenburg asserted that the local level had the weakest link. This was traced to the centralistic top-down approach prevailing in extension program planning and other development planning. Blanckenburg (1984) concluded by noting that in view of the unsatisfactory results of this one-sided approach, most extension services had started encouraging a better balance between the top-down and bottom-up system.

More recently, with increased awareness on the part of extension specialists, the procedure is becoming less centralized. Despite these shortcomings in programming, the various state ministries of agriculture are making efforts to improve upon the system. Training of extension agents is being intensified to improve their proficiency on the job. Participation by the local people and extension staff is being gradually encouraged by each extension unit.

#### Analysis of Related Studies

Some studies have been conducted relating to extension program development in many developing countries. In a study of extension education as perceived by educators and international students of extension education, Kouzenkanani (1983) found out that both groups agreed on some factors as being necessary for extension programs to be

successful. These factors, which were originally identified by Axinn and Thorax (1972) were:

1. Simple recommended practices
2. Low cost of recommended practices to farmers
3. Immediate benefit to farmers
4. High benefit of recommendations to farmers
5. Front line agents should be selected by local people  
(p. 189)

Williams (1970) investigated the methods used by extension officers in western state of Nigeria in planning programs and activities for the people. The findings indicated that 84% of the agents relied on programs formulated by the ministry of agriculture as the main source of information to obtain needs of the farmers. When asked if programs planned reflected the needs of the farmers, 40% of the agents answered in the negative. The study confirmed reliance by extension agents on the government for information relating to the needs of the farmers. This result indicated the need to formulate a better communication channel between the farmers and extension staff.

A similar study was conducted by Janelid (1966) to analyze the perceptions of extension administrators in Western and Eastern Nigeria on the use of selected planning principles in developing extension programs. The findings showed a relatively high degree of consensus among administrators in both regions regarding the influence of socio-cultural factors in planning and implementing programs. Environmental factors were generally perceived as having a more positive than negative influence in planning and implementing these programs. Family values, demographic, and ecological factors were perceived as obstacles to change. The investigator was quick to point out that respondents' perceptions of socio-cultural factor reflected their own frames of reference rather than an objective assessment of the actual situation.



Ayewoh (1983) conducted a study to identify the professional competencies needed by extension agents in the Bendel State of Nigeria Ministry of Agriculture and National Resources, as perceived by the extension personnel. The results obtained indicated a need by the extension agents in this state to be professionally competent in the following areas: a) administration and supervision, b) program planning, c) program execution, d) program evaluation, e) teaching, f) communication, g) understanding human behavior, and h) young farmer's club.

The results also indicated a significant relationship between extension personnel's title of current position and their perceptions of the need for competency in program planning. The higher the agents were in the organizational hierarchy, the higher was their perceptions of the need for competency in program planning.

#### Analysis of Some Program Development Models

There are several program models that could be used in developing educational programs, each varying in its effectiveness to meet desired objectives. Thanamai (1982) suggested that Tyler's four basic questions were the underlying structure of extension program models developed by various writers for use in the United States' Extension Service. The four basic questions, as identified by Tyler (1970), were:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained? (p. 1)

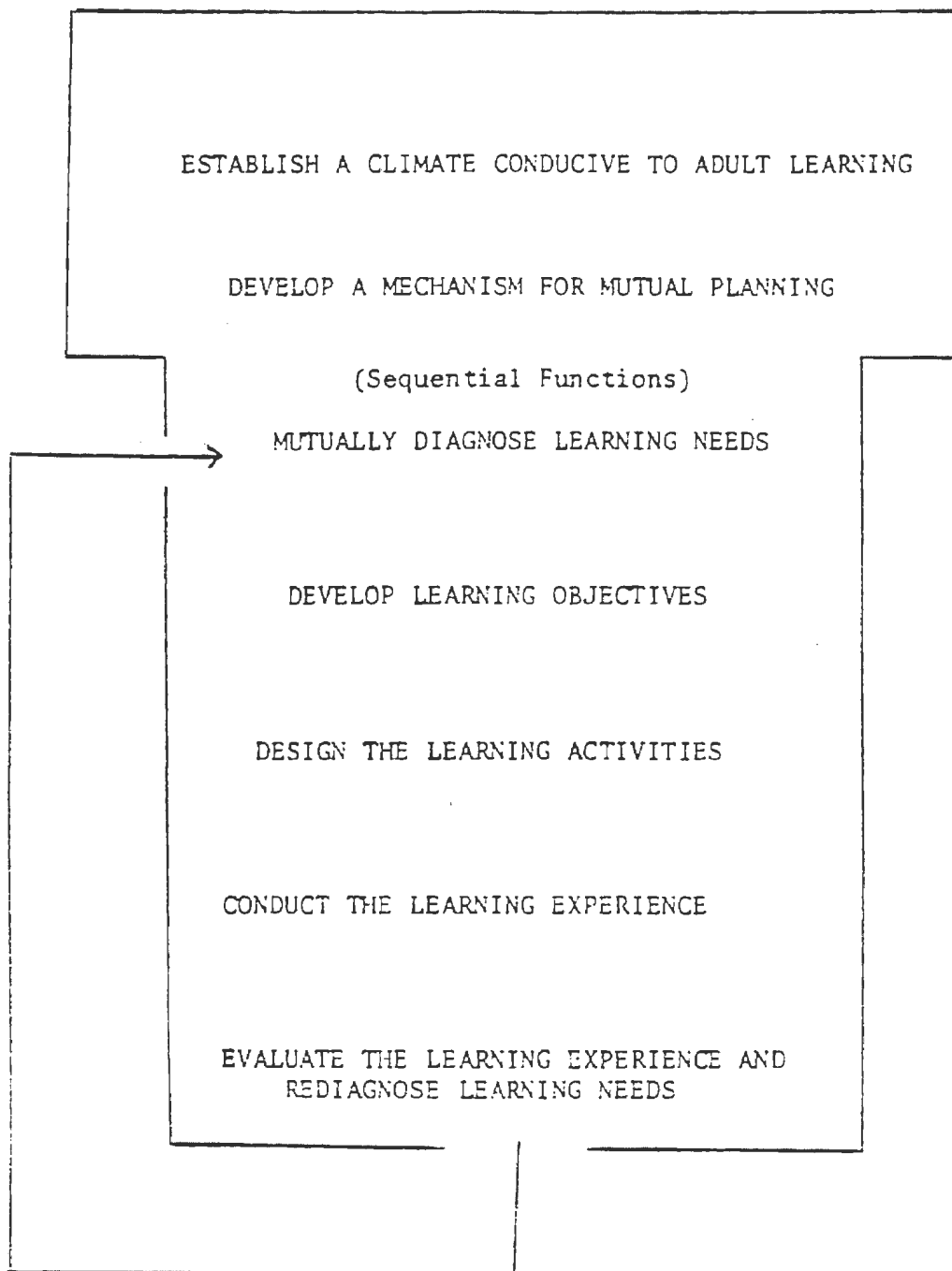
A review of literature on some models for programming in the extension service were examined to provide a framework for the researcher's conceptual model. The following program development models for adult and extension education were reviewed in this study:

1. Knowles' (1980) andragogical process of program development,
2. Boone, et. al (1971), conceptual schema for programming in the Cooperative Extension Service, and
3. Florell and Vitzthum (1978), model of program development.

#### Knowles' Andragogical Model

Knowles' (1980) model of program development (Figure 3) is based on his theory of andragogy which views an adult's orientation to education as problem-centered unlike that of pedagogy which is basically subject-centered. His model indicates that programs must be developed through a democratic process whereby people for whom programs are developed are allowed to participate actively in the planning process.

Knowles (1980) suggested that the process of planning and implementing various program development activities should be a mutual one between the learners and the teacher. Some of these program activities could include translating identified needs into specific educational objectives, designing and conducting the learning experiences, and evaluating the extent to which the objectives are accomplished. His model would appear to be effective for adult clientele in Nigeria where age consciousness is well pronounced.



Source: Knowles, M.S. The Modern Practice of Adult Education: Andragogy Versus Pedagogy. New York: Ass. Press, 1970. p. 54.

Figure 3. Knowles' Model of Program Development Process for Adult Learners

### Boone's Conceptual Program Development Schema

Boone, et al. (1971), designed a conceptual program development model which encompassed a reciprocal flow of inputs by the organization staff, volunteer leaders, and the target audience. They developed four microphases, each containing its respective elements in the schema (Table II). The phases were:

1. The institution and its renewal processes
2. Linking the institution to its public through need analysis and leader involvement
3. Program design and implementation
4. Program evaluation and accountability (p. 1)

Like Knowles', Boone's model stressed the need for complementary roles by members of the organization and the people toward whom their change efforts were directed.

### Florell and Vitzthum's Model

The program development model by Florell and Vitzthum (1978) indicated a continuous series of interrelated processes (Figure 4). The essential elements of this model were:

1. Identify the audience to be reached,
2. Determine structure for participation,
3. Determine needs and interests,
4. Establish goals and objectives,
5. Plan learning activities,
6. Implementation,
7. Evaluation.

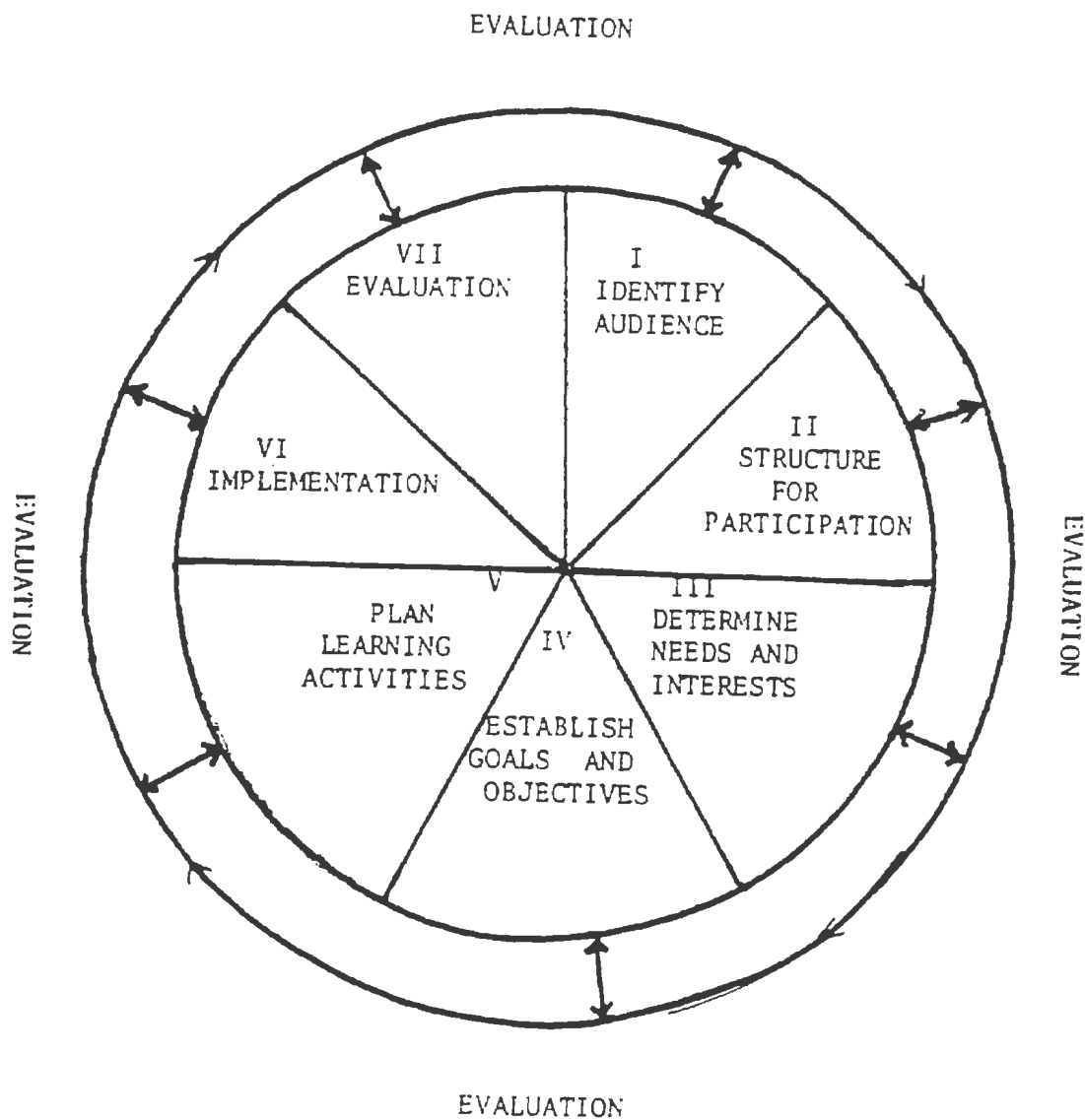
This model is based on the principle of "helping people to help themselves." According to Florell and Vitzthum (1978), this can be

TABLE II

BOONE'S CONCEPTUAL PROGRAM DEVELOPMENT SCHEMA

PLANNING		DESIGN & IMPLEMENTATION		EVALUATION & ACCOUNTABILITY
THE ORGANIZATION & ITS RENEWAL PROCESS	LINKING THE ORGANIZATION TO ITS PUBLICS	DESIGNING THE PLANNED PROGRAM	IMPLEMENTING THE PLANNED PROGRAM	
UNDERSTANDING OF & COMMITMENT TO THE FUNCTIONS OF THE ORGANIZATION: MISSION PHILOSOPHY OBJECTIVES.	STUDY, ANALYSIS, & MAPPING OF THE ORGANIZATION'S PUBLICS.  IDENTIFYING TARGET PUBLICS.	TRANSLATING EXPRESSED NEEDS INTO MACRO NEEDS.  TRANSLATING MACRO NEEDS INTO MACRO OBJECTIVES.  SPECIFYING GENERAL EDUCATIONAL STRATEGIES & LEARNING ACTIVITIES	DEVELOPING PLANS OF ACTION: TRANSLATING NEEDS INTO TEACHING OBJECTIVES. SPECIFYING LEARNING EXPERIENCES FOR EACH TEACHING OBJECTIVE. DEVELOPING PLANS FOR EVALUATING LEARNER OUTCOMES & ASSESSING LEARNING EXPERIENCES.	DETERMINING & MEASURING PROGRAM OUTPUTS  ASSESSING PROGRAM INPUTS
UNDERSTANDING & COMMITMENT TO THE ORGANIZATION'S STRUCTURE: ROLES RELATIONSHIPS.	IDENTIFYING & INTERFACING WITH LEADERS OF TARGET PUBLICS.	SPECIFYING MACRO OUTCOMES OF THE PLANNED PROGRAM	DEVELOPING & IMPLEMENTING STRATEGIES & TECHNIQUES FOR MARKETING THE PLANS OF ACTION.	USING EVALUATION FINDINGS FOR PROGRAM REVISIONS, ORGANIZATIONAL RENEWAL, & FOR ACCOUNTING TO PUBLICS, PARENT ORGANIZATION, FUNDING SOURCES, THE PROFESSION, AND, WHERE APPROPRIATE, THE GOVERNANCE BODY.
KNOWLEDGEABLE ABOUT & SKILLED IN ORGANIZATION'S PROCESSES: SUPERVISION STAFF DEVELOPMENT EVALUATION & ACCOUNTABILITY	COLLABORATIVE IDENTIFICATION, ASSESSMENT, & ANALYSIS OF NEEDS SPECIFIC TO TARGET PUBLICS.		DEVELOPING & FOLLOWING THROUGH ON PLANS TO RECRUIT & TRAIN LEADER-LEARNER RESOURCES.	
UNDERSTANDING OF & COMMITMENT TO A TESTED CONCEPTUAL FRAMEWORK FOR PROGRAMMING			MONITORING & REINFORCING THE TEACHER-LEARNER TRANSACTION	
UNDERSTANDING & COMMITMENT TO CONTINUOUS ORGANIZATIONAL RENEWAL.				

Source: Boone, Edgar J. Developing Programs in Adult Education. Englewood Cliffs: Prentice-Hall, Inc., 1985. p. 61



Source: Florell, R.J. and E.F. Vitzthum. Orientation and Instructional Materials Project. Lincoln: University of Nebraska, 1978. p. 2.

Figure 4. Florell and Vitzthum's Program Development Model for Cooperative Extension Service

achieved through involvement of people in all three phases of planning, implementation, and evaluation.

#### Summary

The literature reviewed indicated several studies and approaches relating to extension program development. There was also an overview of program planning models developed by Knowles, Boone, Florell and Vitzthum. Most of the designs are characterized by three basic components: planning, implementation, and evaluation.

Since attainment of independence twenty-five years ago, successive governments in Nigeria have embarked upon massive agricultural development projects in order to increase agricultural output substantially and effect improvement in the living conditions of the people. The success of these development projects depends to a greater extent on the ability of the various states' ministry of agriculture through its Extension Service to provide effective educational programs for farmers and the entire community.

The Agricultural Extension Service in Nigeria is a relatively young organization that is in a state of development to improve its services to clientele. In order to enhance development of effective educational programs for its clientele, it is recognized that a more concerted effort should be made on the part of the various states' ministry of agriculture to decentralize its present system of programming and create more involvement of the people through their various local leaders and other representatives in the entire planning process. Although the system of extension programming is reflected mostly in a centralized

approach, it is gradually becoming less centralized as a result of increased awareness for a democratic approach by extension specialists.



## CHAPTER III

### DESIGN AND METHODOLOGY

#### Introduction

This chapter describes the design and procedures used in conducting the research study. It includes description of the sample for the study, development of the instrument, collection of the data, and analysis of the data.

#### Population and Sample

The population for this study consisted of agricultural and extension workers in the various states of Nigeria. In view of the envisaged difficulties involved in sending the questionnaires to selected extension workers in all parts of the country, the researcher decided to limit the sample to a representative group through purposive sampling. Kerlinger (1973, p. 129) defined a purposive sampling as one "characterized by the use of judgment and a deliberate effort to obtain representative samples by including presumably typical areas or groups in the sample."

The sample consisted of 135 agricultural and extension workers from different parts of the country. These workers were undergoing a two-year in-service training program at the school of agriculture, Ibadan, during the 1984-1985 session. Both ordinary and higher diploma students were involved in the study. A letter (Appendix B) was sent to the

principal of the institution for approval to involve the students in the study. The method of gathering information was by distributed questionnaires which were handed to the students during one of their class meetings. A cover letter explaining the purpose of the study was also attached to each questionnaire.

The composition of students in this school constituted a representation of the population of the study since the sample involved agricultural workers from different states of Nigeria. Apart from those employed by the states' ministry of agriculture, some of these workers were on educational leave from the various agricultural agencies in the country. These agencies included the federal department of agriculture, agricultural research institutes, and private agricultural organizations.

The educational institution was involved in training agriculture workers for the ordinary and higher diploma programs in agriculture. Upon completion of the ordinary diploma program, students become agricultural assistants in their respective state's ministry of agriculture or other agricultural agencies such as the World Bank and agricultural research institutes. The job of agricultural assistants may vary with each organization, but they serve mainly as contact agents for farmers.

The students who complete the higher diploma program qualify for the agricultural superintendent position. Unlike the ordinary diploma students, most of the higher diploma students have had longer working experience in agricultural related occupations. Many of them have worked as agricultural assistants before embarking on the higher diploma program.

### Development of the Instrument

The instrument for the study was a questionnaire (Appendix C) which consisted of two sections. Section I involved items relating to statements on the three basic components of program development: planning, implementation, and evaluation. This part of the instrument was based on the modification of the Oklahoma Cooperative Extension Service Planning Model developed by Reisbeck (1976), Boone's program development model (1971), and from the personal experience of the researcher. Items 1 to 13 of Part A dealt with program planning concepts, Items 1-13 of Part B were concerned with program implementation concepts, and Items 1-10 of Part C were related to program evaluation concepts.

Section II consisted of five demographic questions relating to information about the respondents. Overall, thirty-six questions were designed to obtain the judgements of respondents concerning the appropriateness and usage of selected program development concepts for the Extension Service in Nigeria.

In order to determine the extent to which these concepts were appropriate for the Extension Service in Nigeria, respondents were asked to rate each statement as it related to the Extension Service, using the following rating scale: Extremely appropriate, Very appropriate, Appropriate, Somewhat appropriate, and Inappropriate (Column I). In addition, respondents were asked to rate the extent to which they perceived each concept was being used by the extension service in developing programs for farmers. The following scale was used: Great deal, Much, Some, Little, and None (Column II).

Some open-ended questions were included in order to elicit respondents' perceptions of major problems they felt were confronting

agricultural extension personnel in developing educational programs for their clientele. The respondents were also asked to list suggestions for improving programming in the Nigeria Extension Service.

A panel of experts consisting of the researcher's committee members checked the questionnaire for clarity. Twelve selected Nigeria graduate students majoring in agricultural-related fields were used in pre-testing the instrument. The main purpose of the pre-test was to check the wording and relevance of each question or statement. Each student was asked to critique the questionnaire and give suggestions for improvement where necessary. The feedback obtained through pre-testing was used in making some vital corrections of the instrument in order to insure its validity.

#### Collection of Data

The method used in collecting data was by distributed questionnaires. The researcher visited with the students during one of their class meetings on June 19, 1985. After explaining the major purpose of the research, the questionnaires were distributed by the researcher to 135 ordinary and higher diploma students. A cover letter explaining the purpose of the study was also attached to each questionnaire.

The students were allowed to take the questionnaires home for careful completion. They were encouraged to submit their completed questionnaires to one of the colleagues who delivered them to a representative of the extension teaching staff of the institution. All completed questionnaires were collected from the staff member on July 29, 1985.

### Analysis of Data

The data analysis of this research was done with the aid of computer facilities at the Oklahoma State University, Stillwater. The questionnaires were coded, key punched, and programmed. Descriptive statistics such as frequency distributions, percentages, and means were calculated using the statistical package for the Social Science developed by Nie, et al. (1975).

A group T-test was utilized in determining if there were any significant differences between 1) ordinary and higher diploma students and 2) younger (26 years and below) and older (above 26 years) respondents regarding their perceptions of the appropriateness and usage of the selected program concepts. In both cases, significance was tested at the 0.05 level of confidence.

In order to permit statistical treatment of the data for the appropriateness and usage categories, numerical values were assigned to each response category as shown in Tables III and IV.

A Likert type scale ranging from one (1) to five (5) was used to measure the degrees of perceived appropriateness and usage. A score of one on the scale represented "Inappropriate" or "None" while a rating of five indicated "Extremely Appropriate" or "Great Deal". The range of absolute values established were 1.00-1.49, 1.50-2.49, 2.50-3.49, 3.50-4.49, and 4.50-5.00. The closer the mean score of each program concept was to five, the more appropriate or the greater this concept was perceived to be used in the Nigeria extension service.

TABLE III  
 ASSIGNED VALUES FOR STATISTICAL TREATMENT  
 OF THE DATA FOR APPROPRIATENESS  
 CATEGORIES

Response Categories	Scale Numerical Value	Range of Absolute Values
Extremely Appropriate	5	4.50 - 5.00
Very Appropriate	4	3.50 - 4.49
Appropriate	3	2.50 - 3.49
Somewhat Appropriate	2	1.50 - 2.49
Inappropriate	1	1.00 - 1.49

TABLE IV  
 ASSIGNED VALUES FOR STATISTICAL TREATMENT  
 OF THE DATA FOR USAGE CATEGORIES

Response Categories	Scale Numerical Value	Range of Absolute Values
Great Deal	5	4.50 - 5.00
Much	4	3.50 - 4.49
Some	3	2.50 - 3.49
Little	2	1.50 - 2.49
None	1	1.00 - 1.49

## CHAPTER IV

### PRESENTATION AND ANALYSIS OF DATA

#### Introduction

The purpose of this chapter is to describe the perceptions concerning selected program development concepts as held by two groups of agricultural and extension students in Nigeria. The respondents were agricultural and extension workers from various states of the country undergoing either the higher or ordinary diploma program at the school of agriculture, Ibadan, during the 1984-85 session. The perceptions under study were the appropriateness and usage of selected program development concepts as viewed by the ordinary and higher diploma students.

#### Characteristics of the Respondents

The entire sample for the study consisted of 135 students studying either for the ordinary or higher diploma program in agriculture at the school of agriculture, Ibadan, during the 1984-1985 session. A total of 110 (81%) students responded to the survey instrument. The characteristics of the respondents are shown in Table V.

The ages of the respondents ranged from 20 to 42. Twenty-six students (23.6%) were between 20-24 years and 52 (47.3%) were in the age group of 25-28 years. Twenty-one students (19.1%) were in the age group

TABLE V  
DISTRIBUTION OF CHARACTERISTICS OF  
THE RESPONDENTS

Variable	Frequency	Percent Responding
A. AGE		
20 - 24	26	23.64
25 - 28	52	47.27
29 - 32	21	19.09
33 - 36	6	5.45
37 - 42	4	3.64
Total	<u>109</u>	<u>99.14</u>
B. RANK		
Agricultural Assistant	36	32.73
Agricultural Superintendent	45	40.91
Technical Officer	2	1.82
Higher Agricultural Superintendent	17	15.45
Senior Agricultural Superintendent	10	9.09
Total	<u>110</u>	<u>100.00</u>
C. NUMBER OF YEARS EMPLOYED		
1	23	20.91
2	15	13.64
3	19	17.27
4	18	16.36
5 or more	32	29.09
Total	<u>107</u>	<u>97.29</u>
D. STATE OF SPONSORSHIP		
Lagos	3	2.73
Ogun	10	9.09
Oyo	22	20.00
Ondo	22	20.00
Kwara	5	4.55
Bendel	10	9.08
Benue	2	1.82
Federal	9	8.18
Privately Sponsored	26	23.64
Total	<u>109</u>	<u>99.09</u>



of 29-32 years while the remaining 10 students were between the ages of 33 and 42 years. One respondent (0.9%) did not indicate age.

Those students who qualified for the work of agricultural superintendent constituted the largest number of respondents while technical officers made up the least number of respondents. There were 45 agricultural superintendents (40.9%) who completed the questionnaires. The other respondents were 36 agricultural assistants, 17 higher agricultural superintendents, and 10 senior agricultural superintendents.

Of the 110 respondents, 32 (29.1%) had five or more years of working experience, followed by 23 respondents (20.9%) with one year of working experience, and 19 respondents (17.3%) with three years experience. Three respondents (2.7%) did not indicate their years of working experience.

The highest number of respondents consisted of 26 privately sponsored students representing various states of the country. This was closely followed by groups sponsored by Oyo and Ogun states, each having 22 (20%) students. Benue state, sponsoring two respondents (1.8%) had the least number of students. One student (0.9%) did not indicate state of sponsorship.

There were 64 students (58.3%) enrolled in the higher diploma in agriculture program and 41 ordinary diploma students who responded to the questionnaire. Three students (2.7%) indicated other qualifications ranging from higher school certificate to advanced level general certificate of education. One respondent did not indicate educational level. Of the 110 questionnaires returned, only 105 were properly completed for analysis.

Reliability Analysis for Program  
Development Instrument Scale

An internal reliability analysis using the Cronbach's alpha co-efficient method was performed in order to check on the reliability of the respondents' ratings on the instrument scale used (Table VI). The reliability co-efficient alpha for items in each of the three categories was used in determining its internal consistency for respondents' perceptions on the appropriateness and extent to which the concepts were being used in program development.

The reliability alpha was 0.82 for the appropriateness of planning concepts and 0.83 for the extent to which these concepts were being used. For the appropriateness and usage of the implementation concepts, the reliability alphas were 0.84 and 0.78, respectively. Those of the evaluation concepts were 0.85 and 0.78.

Responses to Items Pertaining to the Appropriate-  
ness and Usage of Selected Program  
Planning Concepts

Table VII contains a summary of the data relating to the program planning concepts as the first component of the program development process. The mean rating scores and response categories of perceptions expressing appropriateness and usage for each planning concept are reported. The response categories for the appropriateness scores are as follows: Extremely appropriate (EA), Very appropriate (VA), Appropriate (AP), Somewhat appropriate (SA), and Inappropriate (IN). The response categories for the usage scores are Great deal (GD), Much (MU), Some (SM), Little (LT), and None (NO).

TABLE VI  
 RELIABILITY ANALYSIS FOR PROGRAM DEVELOPMENT  
 INSTRUMENT SCALE

Variable	No. of Items	Item Means Range	Variance	Reliability Coefficient alpha ( $\alpha$ )
Appropriateness of program planning concepts	13	0.44	0.02	0.82
Usage of program planning concepts	13	0.50	0.02	0.83
-----				
Appropriateness of program implementation concepts	13	0.59	0.03	0.84
Usage of program implementation concepts	13	0.48	0.02	0.78
-----				
Appropriateness of program evaluation concepts	10	0.62	0.00	0.85
Usage of program evaluation concepts	10	0.45	0.02	0.79

TABLE VII

A SUMMARY OF RESPONDENTS' PERCEPTIONS OF THE  
 APPROPRIATENESS AND USAGE OF PROGRAM  
 PLANNING CONCEPTS IN NIGERIA  
 EXTENSION SERVICE

Program Planning Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41)		Higher Diploma (n=64)		Ordinary Diploma (n=41)		Higher Diploma (n=64)	
	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category
1. Identify the target audience to be reached.	4.17	VA	4.17	VA	3.51	MU	3.06	SM
2. Analyze the agricultural situation of the district/community.	3.73	VA	4.00	VA	3.02	SM	3.08	SM
3. Obtain information about the social, economic, religious, and cultural background of the community within which educational program is to be effected.	3.73	VA	4.06	VA	3.10	SM	2.84	SM
4. Involve clientele and others such as advisory committee in planning the program.	4.10	VA	3.95	VA	2.95	SM	2.67	SM
5. Recruit volunteers to serve in leadership roles in extension programs.	3.83	VA	3.67	VA	3.20	SM	2.66	SM
6. Reach decisions on problems, concerns, and opportunities.	3.76	VA	3.63	VA	3.02	SM	2.94	SM

TABLE VII (Continued)

Program Planning Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41)		Higher Diploma (n=64)		Ordinary Diploma (n=41)		Higher Diploma (n=64)	
	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category
7. Formulate objectives and procedures for planning the agricultural program.	4.02	VA	4.06	VA	3.00	SM	3.13	SM
8. Set priorities on problems identified.	4.05	VA	3.98	VA	3.12	SM	2.81	SM
9. Develop measurable objectives for solving identified problems.	3.76	VA	3.86	VA	3.02	SM	2.80	SM
10. Identify or help locate resource people who will teach or help in educational programs.	3.63	VA	3.95	VA	3.05	SM	2.81	SM
11. Design and sequence teaching-learning experience to reach educational objectives in each program.	3.63	VA	3.91	VA	3.02	SM	2.81	SM
12. Schedule facilities: meeting or demonstration area.	3.68	VA	4.00	VA	3.32	SM	2.80	SM
13. Prepare and distribute promotion materials for program.	3.59	VA	3.73	VA	2.93	SM	2.58	SM
Weighted Mean	3.82	VA	3.94	VA	3.10	SM	2.84	SM

Overall, both groups of respondents felt the program planning concepts were "Very appropriate" for the Extension Service in Nigeria. The weighted mean score was 3.82 for the ordinary diploma students and 3.94 for the higher diploma students. Item 1 (Identify the target audience to be reached) received the highest mean rating of 4.17 (Very appropriate) by both groups of respondents. The lowest mean appropriateness rating of 3.59 assigned by the ordinary diploma students was on the item "Prepare and distribute promotion materials for the program." The higher diploma group's lowest rating of 3.63 was on the item "Reach decisions on problems, concerns, and opportunities." The higher diploma group of respondents assigned higher appropriateness ratings to eight of the planning concepts than did the other group.

The ordinary diploma respondents perceived that the program planning concepts were being used to a greater extent than did their counterparts. However, the mean response overall of both groups was classified in the "Some" category. The ordinary diploma group perceived the most used item to be "Identify the target audience to be reached" as indicated by a 3.51, or "Much" mean response. The highest rated item by the other group was "Formulate objectives and procedures for planning the agricultural program" which received 3.13 ("Some") perceived use rating. The lowest rated item in terms of perceived use was "Prepare and distribute promotion materials for program" for both groups with a 2.93 and 2.58 rating by the ordinary and higher diploma groups, respectively. The mean and standard deviation obtained for each program concept are reported in Appendix E.

Responses to Items Pertaining to the Appropriateness and Usage of Selected Program Implementation Concepts

The mean scores and response categories of perceptions expressing the appropriateness and usage for the program implementation concepts by the two groups of respondents are represented in Table VII. Overall, both the ordinary and higher diploma students perceived the implementation concepts to be "Very appropriate," as indicated by their weighted mean scores of 3.73 and 3.99, respectively. The ordinary diploma group gave its highest mean score rating of 4.07 (Very appropriate) to Item 1 ("Seek out and harness local leadership in delivering programs") and its lowest mean score rating of 3.37 (Very appropriate) to Item 12 ("Distribute hand-out materials at meetings/demonstration plots").

The higher diploma group gave its highest rating of 4.20 (Very appropriate) to Item 4 ("Develop a plan of work for the successful implementation of the program") in terms of appropriateness. The lowest rating of this group was 3.69 (Very appropriate) for Item 12 ("Distribute hand-out materials at meetings/demonstration plots").

Lower mean ratings were obtained from both groups in terms of the extent to which the selected concepts were being used by the extension service. The weighted overall mean rating by the ordinary diploma group was 3.13 (Some) and that of the higher diploma group was 2.97 (Some). "Conduct farm and home visits" received the highest rating by the ordinary diploma students (3.63 or "Much" category), while Item 6 ("Greet and introduce participants/speakers at meetings or demonstration plots") was given the highest rating of 3.42 (Some) by the higher diploma group.

TABLE VIII

A SUMMARY OF RESPONDENTS' PERCEPTIONS OF THE  
APPROPRIATENESS AND USAGE OF PROGRAM  
IMPLEMENTATION CONCEPTS IN NIGERIA  
EXTENSION SERVICE

Program Implementation Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41)		Higher Diploma (n=64)		Ordinary Diploma (n=41)		Higher Diploma (n=64)	
	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category
1. Seek out and harness local leadership in delivering programs.	4.07	VA	4.06	VA	3.44	SM	3.14	SM
2. Develop warm learning climate proper room arrangement, adequate lighting, space, and room temperature) for clientele.	3.56	VA	3.83	VA	2.71	SM	2.71	SM
3. Select and organize teaching-learning activities.	3.63	VA	3.83	VA	2.95	SM	2.86	SM
4. Develop a plan of work for the successful implementation of the program.	3.95	VA	4.20	VA	3.22	SM	3.13	SM
5. Develop basic instructional materials for the educational programs.	3.59	VA	3.98	VA	3.05	SM	2.88	SM
6. Greet and introduce participants/speakers at meetings or demonstration plots.	3.68	VA	3.92	VA	3.51	MU	3.42	SM



TABLE VIII (Continued)

Program Implementation Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41)		Higher Diploma (n=64)		Ordinary Diploma (n=41)		Higher Diploma (n=64)	
	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category
7. Make adequate use of resource people, local leaders, and volunteers in conducting the programs.	3.83	VA	4.06	VA	3.09	SM	3.16	SM
8. Operate audiovisual aids appropriately to supplement and compliment instructional programs.	3.71	VA	4.05	VA	2.88	SM	2.64	SM
9. Design the educational experiences that are appropriate and directed at the objectives identified.	3.54	VA	3.88	VA	2.98	SM	2.89	SM
10. Use demonstration methods and other extension teaching methods in delivering programs.	4.00	VA	4.16	VA	3.56	SM	3.13	SM
11. Use motivation appropriately in educational programs.	3.56	VA	4.02	VA	2.73	SM	2.89	SM
12. Distribute hand-out materials at meetings/demonstration plots.	3.37	AP	3.69	VA	2.88	SM	2.77	SM
13. Conduct farm and home visits.	4.05	VA	4.19	VA	3.63	MU	3.03	SM
Weighted Mean	3.73	VA	3.99	VA	3.13	SM	2.97	SM

The lowest rating of 2.71 (Much) was given to Item 2 ("Develop warm learning climate") by both the ordinary and higher diploma groups.

Responses to Items Pertaining to the Appropriateness and Usage of Selected Program Evaluation Concepts

Table VIX contains a summary of the mean scores and response categories of perceptions of the appropriateness and usage for program evaluation concepts by both groups of respondents. The lowest mean appropriateness rating of 3.42 assigned by the ordinary diploma students was on the item "Make judgements relative to adjustments in the programs, activities, and methods based on the evidence collected." The higher diploma group's lowest rating of 3.73 was on the item "Design for collection and analysis of evidence as regards planned programs."

The highest rated item by the ordinary diploma group was "Collect, analyze, and interpret information to determine the strengths and weaknesses of the program". This item received a 3.93 or "Very appropriate" rating. The highest mean rating of 4.05 was given to the items "Collect, analyze, and interpret data/Perform follow-up evaluation" by the higher diploma group. Overall, the higher diploma group perceived that the program evaluation concepts were more appropriate than the ordinary diploma group, as indicated by their weighted mean ratings of 3.93 and 3.71, respectively.

The overall mean response for usage of the evaluation concepts was 2.83 or "Some" by both groups. The ordinary diploma group perceived the most used item to be "Inform the public of the successes of extension programs," as indicated by a 3.07, or "Some," mean response. The

TABLE VIx

A SUMMARY OF RESPONDENTS' PERCEPTIONS OF THE  
 APPROPRIATENESS AND USAGE OF PROGRAM  
 EVALUATION CONCEPTS IN NIGERIA  
 EXTENSION SERVICE

Program Evaluation Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41)		Higher Diploma (n=64)		Ordinary Diploma (n=41)		Higher Diploma (n=64)	
	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category
1. Establish a criteria upon which evaluation of programs will be based.	3.85	VA	3.92	VA	2.90	SM	2.95	SM
2. Determine the extent to which program evaluation should be based on stated objectives of the program.	3.68	VA	3.83	VA	2.81	SM	2.86	SM
3. Design for collection and analysis of evidence as regards planned programs.	3.56	VA	3.73	VA	2.68	SM	2.73	SM
4. Collect, analyze, and interpret information to determine the strengths and weaknesses of the program.	3.93	VA	4.05	VA	2.66	SM	2.70	SM
5. Help clientele recognize and measure their progress.	3.78	VA	4.03	VA	2.59	SM	2.77	SM

TABLE VIx (Continued)

Program Evaluation Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41)		Higher Diploma (n=64)		Ordinary Diploma (n=41)		Higher Diploma (n=64)	
	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category	$\bar{x}$	Category
6. Make judgments relative to adjustments in programs, activities, and methods based on the evidence collected.	3.42	AP	3.75	VA	2.63	SM	2.81	SM
7. Make effective use of evaluation information to make adjustments in learning experiences or future program planning.	3.61	VA	4.00	VA	2.63	SM	2.75	SM
8. Prepare reports on the effectiveness of extension programs and activities for higher officials.	3.66	VA	4.02	VA	2.32	LT	3.00	SM
9. Inform the public of the successes of extension programs.	3.85	VA	3.92	VA	3.07	SM	2.88	SM
10. Use previous evaluation reports along with other information in subsequent program development. Perform follow-up evaluation.	3.76	VA	4.05	VA	2.98	SM	2.83	SM
Weighted Mean	3.71	VA	3.93	VA	2.83	SM	2.83	SM

highest rated item by the other group was "Prepare reports on the effectiveness of extension programs and activities for higher officials," which received a 3.00 or "Some" mean response. The lowest rated item in terms of perceived use by the ordinary diploma group was "Help clientele recognize and measure their progress", with a 2.59 or "Some" mean response. The lowest rated item by the higher diploma group was for the item "Collect, analyze, and interpret information to determine the strengths and weaknesses of the program", which received a 2.70 or "Some" mean response.

#### Tests of Hypotheses

1. In order to test for possible differences among respondents by level of education, the following null hypothesis was developed: There is no significant difference between the perceptions of ordinary and higher diploma students regarding the appropriateness and usage of selected program planning, implementation, and evaluation concepts as it relate to Nigeria extension service.

A group T-test was used to determine if there were any significant differences between the ratings of ordinary diploma and higher diploma groups with regards to their mean perceptions of the program planning, implementation, and evaluation concepts.

An examination of Table X reveals that while no significant difference was found between both groups in their perceptions of the appropriateness of the program planning concepts, a significant difference was established regarding the extent to which the planning concepts were being used by the Extension Service. A t-value of 3.40 indicated that the higher diploma respondents felt that the program planning

concepts were less used by extension workers than the ordinary level students.

TABLE X  
COMPARISON OF RESPONDENTS' COMPOSITE SCORE  
RATINGS ON THE APPROPRIATENESS AND  
USAGE OF PROGRAM PLANNING  
CONCEPTS

Variable	Group	N	$\bar{x}$	T (df=103)
Appropriateness of program planning concepts	Ordinary Diploma	41	49.63	-1.35
	Higher Diploma	64	51.17	
Usage of program planning concepts	Ordinary Diploma	41	40.27	3.40**
	Higher Diploma	64	36.98	

\*\*P < 0.01.

Table XI also discloses a significant difference between the higher and lower diploma students in their perceptions of the appropriateness and usage of program implementation concepts by the Nigeria extension service. The higher diploma respondents rated the appropriateness of the program implementation concepts significantly higher than the ordinary diploma respondents as indicated by a t-value of -3.07. However, they rated these concepts significantly lower in terms of usage by the extension service as indicated by a t-value of 2.29.

TABLE XI  
 COMPARISON OF RESPONDENTS' COMPOSITE SCORE  
 RATINGS ON THE APPROPRIATENESS AND  
 USAGE OF PROGRAM IMPLEMENTATION  
 CONCEPTS

Variable	Group	N	$\bar{x}$	T (df=103)
Appropriateness of program implementation concepts	Ordinary Diploma	41	48.54	-3.07**
	Higher Diploma	64	51.86	
Usage of program implementation concepts	Ordinary Diploma	41	40.63	2.29*
	Higher Diploma	64	38.55	

\* P < 0.05.

\*\*P < 0.01.

As summarized in Table XII, the appropriateness of program evaluation concepts was rated significantly higher by the higher diploma students with a -2.40 t-value. There was no significant difference between the perceptions of both groups concerning the extent to which the program evaluation concepts were being used. The use of program evaluation concepts received the lowest ratings when compared with program planning and implementation concepts.

2. Another null hypothesis was tested to determine if the age of respondents had a bearing on the perceptions held about certain aspects of the Extension Service. This hypothesis stated as follows: There is no significant difference between the perceptions of younger (26 years and below) and older (above 26 years) respondents regarding the appropriateness and usage of selected program planning, implementation, and evaluation concepts as it relate to the Nigeria Extension Service.

TABLE XII  
 COMPARISON OF RESPONDENTS' COMPOSITE SCORE  
 RATINGS ON THE APPROPRIATENESS AND  
 USAGE OF PROGRAM EVALUATION  
 CONCEPTS

Variable	Group	N	$\bar{x}$	T (df=103)
Appropriateness of program evaluation concepts	Ordinary Diploma	41	37.10	-2.40*
	Higher Diploma	64	39.30	
Usage of program evaluation concepts	Ordinary Diploma	41	28.27	0.02
	Higher Diploma	64	28.25	

\*P < 0.01.

Tables XIII, XIV, and XV contain the results of tests conducted on the comparisons of both groups regarding their perceptions of the appropriateness and usage of the program development concepts in the Nigeria extension service. No significant differences in mean perceptions were discovered between the responses of younger and older respondents in any of the three major components of the program development process in terms of appropriateness and usage.

#### Main Problems Confronting Extension Workers

The respondents were requested to list the main problems they felt were confronting Nigeria extension workers in developing programs for their clientele. The answers were listed under nine broad categories. Table XVI reports the responses in numbers and percentages of respondents. Seventy-two students (65.50%) listed "inadequate inputs and other facilities" as the greatest problem. Audiovisual aids,



TABLE XIII

COMPARISON OF THE PERCEPTIONS OF YOUNGER AND  
 OLDER RESPONDENTS (BELOW AND ABOVE 26  
 YEARS) WITH REGARD TO THE APPRO-  
 PRIATENESS AND USAGE OF  
 PROGRAM PLANNING  
 CONCEPTS

Variable	Group	N	$\bar{x}$	T (df=103)
Appropriateness of program planning concepts	Younger Respondents	61	49.93	-0.75
	Older Respondents	48	50.73	
Usage of program planning concepts	Younger Respondents	61	37.98	-0.08
	Older Respondents	48	38.06	

TABLE XIV

COMPARISON OF THE PERCEPTIONS OF YOUNGER AND  
 OLDER RESPONDENTS (BELOW AND ABOVE 26  
 YEARS) WITH REGARD TO THE APPRO-  
 PRIATENESS AND USAGE OF PROGRAM  
 IMPLEMENTATION CONCEPTS

Variable	Group	N	$\bar{x}$	T (df=103)
Appropriateness of program implementation concepts	Younger Respondents	61	50.50	-0.50
	Older Respondents	48	50.54	
Usage of program implemen- tation concepts	Younger Respondents	61	39.15	0.09
	Older Respondents	48	39.06	

TABLE XV  
 COMPARISON OF THE PERCEPTIONS OF YOUNGER AND  
 OLDER RESPONDENTS (BELOW AND ABOVE 26  
 YEARS) WITH REGARD TO THE APPRO-  
 PRIATENESS AND USAGE OF  
 PROGRAM EVALUATION  
 CONCEPTS

Variable	Group	N	$\bar{x}$	T
				(df=103)
Appropriateness of program evaluation concepts	Younger Respondents	61	38.36	0.31
	Older Respondents	48	38.08	
Usage of program evaluation concepts	Younger Respondents	61	27.45	-0.71
	Older Respondents	48	28.50	

TABLE XVI  
 MAIN PROBLEMS CONFRONTING EXTENSION WORKERS

Problems	Frequency Distribution	
	N	%
Inadequate inputs and other facilities	72	65.50
Lack of adequate knowledge of program development	63	57.30
Lack of incentives	54	49.10
Conservatism and illiteracy of clientele	46	41.80
Bureaucracy and insufficient support by government	33	30.00
Inadequate funding	29	26.40
Evaluation system	20	18.20
Insufficient extension workers	20	18.20
Other (inadequate rural infrastructures, frequent transfers of extension workers, cultural problems)	8	

agricultural implements, and other instructional materials that could facilitate implementation of extension programs were among the inputs listed as inadequate. The facilities listed included vehicles for extension workers and adequate housing.

The respondent listed "lack of adequate knowledge in programming by extension workers for developing effective extension programs" as the second major problem (63 respondents or 57.3%). Fifty-four respondents (41.80%) listed "lack of incentives" as the third major problem for extension workers. Some of the incentives mentioned were low pay and poor status of extension workers. Forty-six respondents indicated "Conservatism and illiteracy of clientele" as the fourth major problem, while 33 respondents listed "Bureaucracy and insufficient support by government" as the fifth major problem.

Twenty-nine respondents indicated "Inadequate funding" as the next major problem, followed by twenty respondents who listed both "Evaluation system" and "Insufficient extension workers" as major problems. Eight respondents listed several other problems which included "Inadequate rural infrastructures," "Frequent transfers of extension workers," and "Cultural problems."

### Suggestions for Improvement of Extension

#### Programming

The students were requested to give suggestions for improvement of programming by extension workers in Nigeria. Table XVII reports the number of responses (N) and percentages (%) of responses for each identified suggestions by the respondents. Seventy-one students (64.5%) suggested involvement of clientele in program development as the basic

need for improving extension programs in Nigeria. While many of the respondents felt this need can be provided by the extension workers, some of them added that the government should approach extension programming from the grassroots level if the desire to encourage clientele participation by extension workers was to be achieved. Sixty-three respondents suggested provision of adequate inputs, required for implementing the program.

TABLE XVII  
SUGGESTIONS FOR IMPROVEMENT OF EXTENSION  
PROGRAMMING

Suggestions Listed	Frequency Distribution	
	N	%
Involvement of clientele in program development	71	64.50
Provision of needed inputs	63	57.30
Increased incentives for extension workers	55	50.00
Increased funding	46	41.80
Improved rural infrastructures	20	18.20
Increased government support	18	16.40
Adult literacy program	16	14.50

Fifty-five of the students (50.0%) listed provision of more incentives to extension workers to carry out extension work in rural areas as the third priority. Some of the incentives listed included increased pay and other allowances for the workers. Other suggestions made in order of priority were: 1) increased funding, 2) improved transportation, and 3) development of adult literacy programs by the

government in order to help rural people adopt innovations more easily. A rather small group, 16 or 14.50%, indicated that mass literacy campaigns of this nature would help reduce conservatism on the part of adults and facilitate extension programming.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

The purpose of this chapter is to present a summary of the study findings related to the following topics: purpose of the study, rationale for the study, objectives of the study, design of the study, and the major findings of the study. A conceptual program development model for Agricultural Extension Service in Nigeria was developed and appropriate conclusions and recommendations are also presented.

#### Rationale for the Study

Faced with the challenge of developing educational programs for Nigeria farmers are extension workers of the Ministry of Agriculture. In order to transmit new technologies successfully to farmers and help solve their problems, these workers should possess the ability to develop effective educational programs for their clientele. The study is intended to determine the perceptions of extension workers concerning the present system of programming and to provide recommendations that would result in development of more effective programs oriented to the needs of the client system.

### Purpose of the Study

The major purpose of this study was to ascertain the perceptions concerning selected program development concepts for Nigeria agricultural extension service as held by two groups of agricultural and extension students in Nigeria.

### Objectives of the Study

The objectives of the study were:

1. To determine the perceptual assessment of the students concerning the extent to which selected program development concepts are appropriate for the Nigeria Extension Service.

2. To determine the extent to which the students perceive each concept is being used by the extension service in developing programs for its clientele.

3. To develop a conceptual program planning model for the Nigeria Extension Service, using information obtained from the study as a basis of the framework.

### Hypotheses

In addition to reporting descriptive statistics, the following null hypotheses were tested at the 0.05 level of significance.

1. There is no significant difference between the perceptions of ordinary and higher diploma students regarding the appropriateness and usage of selected program planning, implementation, and evaluation concepts as it relate to the Nigeria Extension Service.

2. There is no significant difference between the perceptions of younger and older respondents regarding the appropriateness and usage

of selected program planning, implementation, and evaluation concepts as it relate to the Nigeria Extension Service.

#### Design and Conduct of the Study

The population of this study consisted of extension workers in the various states of Nigeria. A representative sample was obtained using a purposive sample of 135 agricultural and extension workers who were on a two-year educational leave at the school of agriculture, Ibadan, during the 1984-1985 session. The two groups of respondents used for the study were ordinary and higher diploma students.

The composition of students in this school constituted a representative of the population since the sample involved agricultural workers from different states of Nigeria. Apart from those employed by the states' ministry of agriculture, some of these workers were sponsored by different agricultural agencies in the country. These agencies included the federal department of agriculture, agricultural research institutes, and private agricultural organizations.

The method used in collecting data was by distributed questionnaire. It consisted of 38 items relating to program planning, implementation, and evaluation concepts based on the modification of the Oklahoma Cooperative Extension Service Planning Model developed by Reisbeck (1976) and from the personal experience of the researcher.

The researcher visited with the students during one of their class meetings on June 19, 1985, during which the questionnaires were distributed. A cover letter explaining the purpose of the study was attached to each questionnaire. The students were allowed to take the questionnaires home and submitted to a representative of the extension



teaching staff of the institution after completion. All completed questionnaires were collected from the staff member on July 29, 1985. The reliability co-efficient alpha obtained for concepts in each of the three program phases was consistently high enough to indicate that the instrument was reliable.

### Major Findings of the Study

The major findings of the study were divided into the following sections:

1. Characteristics of the respondents.
2. Respondents' perceptions of the appropriateness and usage of selected program planning, implementation, and evaluation concept.
3. Determination of significant differences between ratings of both groups of respondents.
4. Major problems confronting extension workers in program development.
5. Suggestions for improvement of extension programming.

### Characteristics of the Respondents

A total of 110 students (81%) responded to the survey instrument. Those students who were enrolled for the higher diploma in agriculture constituted the largest number of respondents, followed by those attending the ordinary diploma course. There were 45 agricultural superintendents who completed the questionnaires. The other respondents were 36 agricultural assistants, 17 higher agricultural superintendents, 10 senior agricultural superintendents, and two technical officers.

It was found that 32 respondents (29.1%) had five or more years of working experience in agricultural related occupations, followed by 23 respondents with one year of working experience. Nineteen respondents had three years of working experience and fifteen respondents worked for two years prior to their enrollment in the school of agriculture.

Respondents' Perceptions of the Appropriateness  
and Usage of Program Planning Concepts

Overall, both the ordinary and higher diploma groups felt the program planning concepts were "Very appropriate" for the Extension Service in Nigeria. The weighted mean score of the ordinary diploma students in terms of appropriateness was 3.82 or "Very appropriate" mean response and that of the higher diploma students was 3.94 or "Very appropriate." The highest rated planning concept by both groups was "Identify the target audience to be reached." The planning concept "Prepare and distribute promotion materials for program" received the lowest mean rating by the ordinary diploma students. The higher diploma students gave their lowest mean rating to the planning concept "Reach decisions on problems, concerns, and opportunities." Although these two planning concepts received the lowest ratings, they still fell in the response scale category of "Very appropriate." The higher diploma group assigned higher appropriateness ratings to eight of the planning concepts than did the other group.

The planning concepts received lower mean ratings from both groups in terms of the extent to which they were being used by the Extension Service in Nigeria. While the respondents considered the

planning concepts to be "Very appropriate," they perceived the concepts were being used on the average at the level of "Some" in the Extension Service. This was at the midpoint of the response scale. The overall weighted mean rating of 3.10 by the ordinary diploma students was in the "Some" category and that of the higher diploma students was 2.84, which was also in the "Some" category.

Respondents' Perceptions of the Appropriateness  
and Usage of the Program Implementation Concepts

The implementation concepts were also rated along the same pattern as those of the planning concepts. The overall weighted mean score in terms of the appropriateness by the ordinary diploma students was 3.73 or "Very appropriate" mean response. That of the higher diploma students was 3.99, also falling in the "Very appropriate" mean response category. The highest rated implementation concept by the ordinary diploma students was "Seek out and harness local leadership in delivering programs" and that of the higher diploma students was "Develop a plan of work for the successful implementation of the program." None of the implementation concepts was rated below the "Appropriate" mean response category.

The program implementation concepts were rated much lower in terms of usage by the Nigeria Extension Service. Only three of the concepts were perceived as having an extent of use greater than "Some" and this was by the ordinary diploma group. The weighted mean rating by the ordinary diploma students was 3.13 or "Some" category and that of the higher diploma students was 2.97 which also stayed in the "Some"

category. For the latter group, no concept was perceived as having an extent of use higher than "Some".

#### Respondents' Perceptions of the Appropriateness and Usage of Program Evaluation Concepts

Program evaluation was the component the respondents felt was used to the least extent in the Extension Service as indicated by their overall weighted mean responses. While both groups of respondents considered the evaluation concepts on the average to be "Very appropriate," they felt these concepts were being used only to the "Some" extent in the Nigeria Extension Service. The weighted mean rating by both groups was 2.83.

The higher diploma students viewed the evaluation concepts slightly more appropriate than their lower diploma counterparts. The weighted mean score was 3.93 or "Very appropriate," and that of the ordinary diploma group was 3.71, which was also in the "Very appropriate" category.

#### Determination of Significant Differences in the Ratings of Respondents

A group T-test was used in comparing the ratings of the higher and ordinary diploma students and that of younger (26 years and below) and older (above 26 years) respondents. While there was no significant difference between both groups in their ratings of the appropriateness of program planning concepts, a significant difference was found in their perceptions of usage of these concepts ( $p < 0.01$ ). The higher diploma students rated the usage of the planning concepts significantly

less than the ordinary diploma students. Significant differences were also established at the 0.05 level between the ratings of both groups for the implementation concepts, with the higher diploma students rating the concepts significantly higher than the ordinary diploma students for the appropriateness category and lower for the usage category. No significant difference was found in the ratings of both groups in terms of usage of the evaluation concepts, although the higher diploma students rated the concepts significantly higher than the ordinary diploma students in terms of appropriateness.

The test of differences indicated no significant differences between the perceptions of younger and older respondents in any of the three major components of the program development process. It was concluded that younger and older respondents viewed the program development concepts in the same way.

#### Main Problems Confronting Extension Workers

The respondents were asked to list the main problems they felt were confronting Nigeria extension workers in developing effective programs for their clientele. The greatest problem listed was "inadequate inputs and other facilities." Sixty-five percent of the respondents indicated that extension workers were often requested to develop programs for farmers but were not provided with sufficient equipment that would help them implement these programs. Audiovisual aids, agricultural implements, and other instructional materials that would facilitate implementation of extension programs were among the inputs they considered inadequate. The facilities listed included vehicles for extension workers and adequate housing.

"Lack of adequate knowledge in programming by extension workers for developing effective educational programs" was considered the second major problem. Some of the respondents traced the cause of this problem to the "government's lukewarm attitude and red-tape bureaucracy" in administering the Extension Service. They indicated that clients' needs and problems were often determined at the top hierarchy of the administrative level. Programs based on these needs were usually planned and sent to the extension workers for implementation. The result has often been development of programs which are not oriented towards the real needs of clientele.

The third major problem listed by the respondents was "lack of incentives" for extension workers. The cause of this problem was traced to the low pay and poor status of extension workers. Another problem listed was the supplemental assignments performed by these workers which may become dominant over the problem-solving role of the extension worker. One respondent gave the example of an extension worker who was required to visit several farmers in different villages but was not provided with some transportation device to help him cover the assigned area of visit. The respondents indicated that problems of this nature and the negative perception of the extension worker because of the multipurpose role affected the worker's ability to develop effective programs for clientele.

Other major problems mentioned by respondents were:

1. illiteracy and occasional rigidity on the part of clientele,
2. insufficient funding of extension programs,
3. lack of adequate support by the government resulting in administrative red tape,

4. inadequate evaluation procedure, and
5. scarcity of trained and qualified extension workers resulting in higher numbers of clients for each extension worker.

#### Suggestions for Improvement of Extension

##### Programming

The respondents gave some suggestions they felt could greatly improve programming by extension workers. The most important of these suggestions was the need to develop a clientele-centered approach in program development by involving clientele in planning, implementing, and evaluating the program. They emphasized involvement of the people as the basic need for improving extension programs in Nigeria. While many of the respondents felt this need for participation can be provided by the extension workers themselves, some of them added that the government needed to support this grassroots approach if the desire to encourage clientele participation was to be achieved.

Another suggestion made was provision of more incentives to extension workers to carry out extension work in rural areas. Some of the incentives listed included an increase in pay, provision of transport facility through guaranteed loans such as motorcycles and cars to enable the workers to visit all their clients, and allocations of allowances and other benefits to these workers.

Other suggestions made in order of priority were:

1. Increased financial support for the extension service by all levels of government, including the local and state levels.
2. Development of adult literacy programs by the government in order to help rural people adopt innovations more easily. They

indicated that mass literacy campaigns of this nature would help reduce conservatism on the part of farmers and facilitate extension programming.

3. Provision of basic social infrastructures in rural areas which would encourage extension workers to live and work with the people.

4. The role of extension should be to help rural people solve their problems. This problem-solving role should dominate other supplemental activities which are not functions of the extension service.

A Conceptual Program Development Model for  
Agricultural Extension Workers  
in Nigeria

The program planning model presented in this study is aimed at providing for Nigeria extension workers a procedural system for planning, implementing, and evaluating extension programs. It is to be realized that several factors such as societal culture, religion, economic level, ethnic diversity, and other correlates sometimes affect the mode of programming, particularly in a developing country like Nigeria. Situations to be encountered by extension workers may differ between and sometimes within states and the researcher is not aware of any model that can be universally employed.

This model is intended to serve as a guide for extension workers involved in developing educational programs for their clientele. It is recommended that extension workers modify any aspects of the design as deemed necessary. The model, as illustrated in Figure 5, consists of seven procedural steps or components.



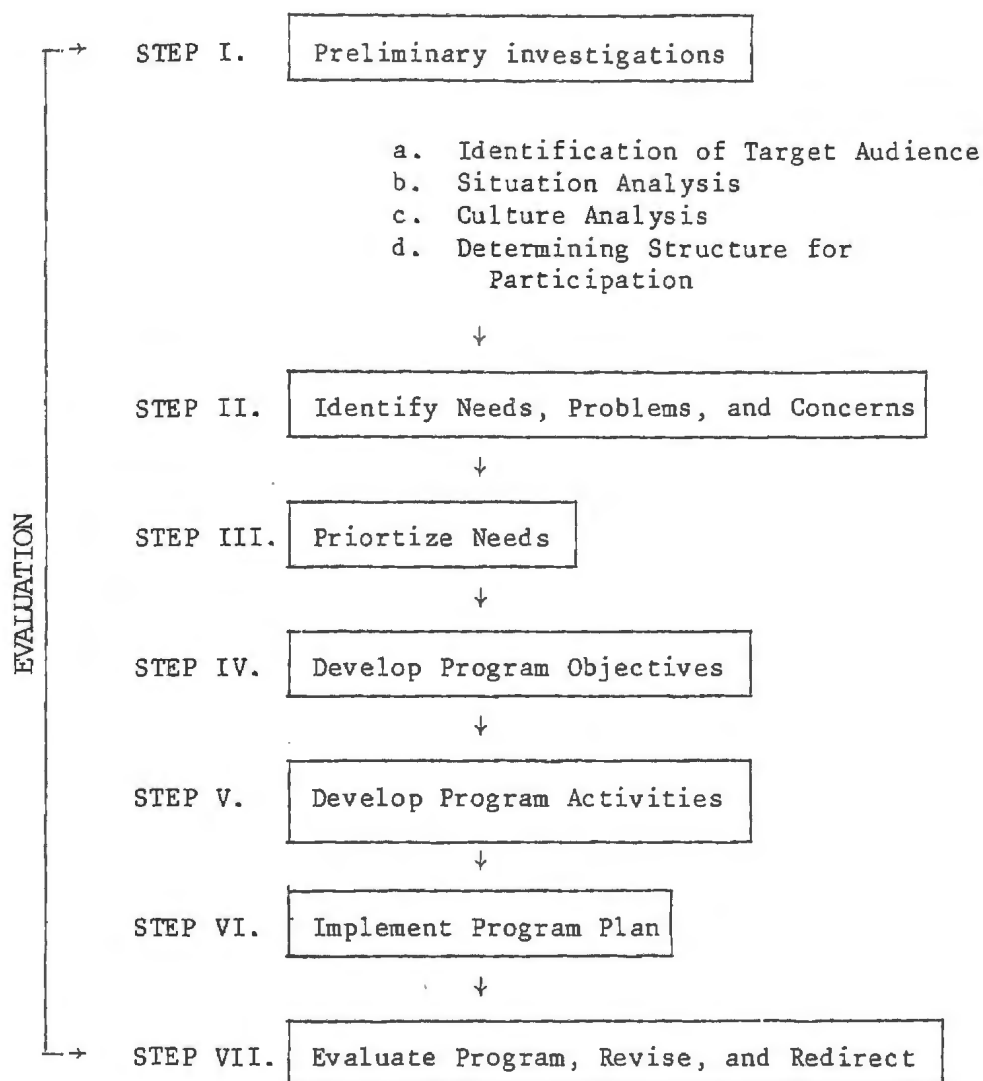


Figure 5. A Conceptual Program Development Model for the Nigeria Extension Service

### 1. Preliminary Investigations

This phase provides the extension worker with the basic knowledge and strategy required to achieve cooperation of the client system. It consists of four sub-divisions as follows:

A. Identification of Target Audience. This involves a thorough identification of the group to be reached, their characteristics, educational background, and interests. A detailed study of the target audience serves as the starting point for program development since not everyone will be interested in each extension program. One major attribute of extension clientele is that they are not a captive audience. The program should, therefore, be oriented only to the audience that wants it. The target audience, for example, could be oil palm, cocoa, or poultry farmers living within a specific district, province, or state.

B. Situational Analysis. This is a brief statement of the available resources such as physical aspects, business and occupation information, human resources, and other vital information about the situation in which the program will operate. A major cause of most program failures can be attributed to lack of adequate knowledge of the situation in which the program is conducted. The situational analysis enables the extension worker to become better acquainted with the area of work, thereby acquiring an in-depth knowledge that would facilitate the decision-making process.

The extension worker can discover through situational analysis some notable local leaders in the community who could serve as "legitimizers" for extension work in the area. In most developing countries, seeking approval from these opinion leaders generally enhances the chances of acceptance of the extension worker since they exert great influence on their people. Some recommended opinion leaders include traditional rulers, religious leaders, and certain influential farmers in the community. Failure to contact these local leaders may lead to rejection of

the extension worker by the entire community. However, the extension worker should avoid concentrating too much attention on a few key individuals while neglecting the other members of the client system for whom the program is intended.

C. Culture Analysis. Adequate knowledge of the people's culture by the extension worker would not only minimize resistance from the community, but facilitate development of cordial relationships with local leaders and the entire people. It affords the extension worker the knowledge about the people, their norms, beliefs, characteristics, needs, customs, and expectations. A complete ignorance of the culture of the client system can lead to rejection of the education program, especially when the extension worker's behavior is considered to be deviant to the people's culture.

Familiarity with the local culture helps the extension worker to avoid developing programs that could readily run counter to strongly held values. This would be the case, for example, when the extension worker introduces a program on pig production to a community where there is a strong norm against raising pigs or eating pork because of religious belief.

D. Determine Structure for Participation. This involves determination of those to be involved in planning, implementing, and evaluating the program. Non-involvement of the people is perhaps one of the most neglected aspects of programming in many developing countries. Extension programming should be based on clientele-centered and grass-roots approach if any success is to be attained. It also helps workers to learn from participants in addition to determining their unmet needs. The people for whom a program is developed should be involved in

the entire planning, implementing, and evaluating phases. This is essential to development of sound productive extension programs. Active participation can be sought from local leaders, volunteers, legitimizers, religious leaders, ethnic leaders, and advisory council members.

## 2. Identify needs, problems, and concerns

The development of any meaningful program for the people will depend on the identification of their needs, problems, or concerns since the main focus of extension programming is on problem-solving. According to Isaac (1984, p. 5), a need can be regarded as the "discrepancy between what is and what ought to be." The client's needs can be identified through various sources and translated into program objectives. Some of these sources include situational analysis, survey instrument, and advisory committee members. While these sources would provide the extension worker with the client's needs, those of the extension organization providing the program should also be considered.

In identifying needs of the clientele, it is, perhaps, necessary to give particular recognition to their felt needs since provision of program based only on the real needs of the people may likely be a waste of time. Felt needs are those that are consciously accepted by the learners and real needs are those assessed by experts such as extension workers and research specialists to be valid (Stevens, 1980).

Some noted scholars of diffusion (Hassinger, 1959; Rogers, 1983) have indicated that people generally tend to expose themselves to ideas that are consistent with their needs, interests, or existing attitudes. As noted by respondents in this study, the chances of identifying the felt needs of the client system are increased if extension workers live

within the community they work. It becomes increasingly difficult for these workers to accurately perceive the felt needs of their clientele if they live in urban areas and only travel down to the villages to identify their needs or concerns.

### 3. Prioritize Needs

After identifying various needs of the clientele, it is necessary to determine the feasibility of meeting these needs. In view of the limited human, physical, and economic resources of the extension service in most developing countries, the organization may not be capable of meeting all the identified needs of the people. It then becomes essential to select those needs that are most urgent or critical for clients.

Various classification systems for setting the program priorities have been recommended. According to Reisbeck and Lessly (1985), all the needs or problems identified should be rated into either high, medium, or low priority.

Boyle (1977) suggested six steps for screening and identifying program priorities. These were: 1) extension staff personal values, 2) organizational statements of mission and philosophy, 3) clients' needs, 4) community problems or needs, 5) political structures, and 6) availability of resources.

Knowles (1980) also recommended three considerations to be used in setting priorities on the identified needs. These were: 1) determining the purposes of the agent system or organization, 2) determining the feasibility of meeting each need, taking into consideration possible constraints such as equipment, time, human resources, and space, and 3) determining the interests of the client system.

Any of the three classification systems described could be used by the extension worker, provided the needs identified are capable of being met within the limited available resources.

#### 4. Develop Program Objectives

This step involves determining what is to be accomplished as a result of providing the program. The objectives should focus on solving the prioritized problems identified in the preceding step. According to Boyle (1981, p. 195), the objective is "an end toward which action is oriented...., an objective which reflects how the situation is to be changed, improved, or mentioned."

The objectives should aim at meeting the needs of the people. The researcher recommends development of measurable objectives that facilitate budgeting and can be easily evaluated.

#### 5. Develop Program Activities

An outline course of action to serve as a guide for implementing program activities is developed in this step. In the extension service, the program activities are formulated and developed into a plan of work which can be either short range, such as the annual plan of work, or long range plan of work. The extension worker should use this plan of work to implement the program activities. Some considerations that may be included in the plan of work are: 1) identification of objectives to be accomplished and tasks to be done, 2) sequence of activities, 3) time schedule and dates, 4) subject experts and others to be involved, 5) instructional methods, 6) resources needed, and 7) evaluation procedure.

## 6. Implement the Program Plan

After developing the plan of work, the next step involves implementation of the program activities already identified by carrying out learning experiences for the people. The extension worker should strive to encourage adequate involvement of the people in this step if any effective change in behavior is to be achieved.

## 7. Evaluate the Program, Revise, and Redirect the Plan

Evaluation is an important but often neglected aspect of programming, particularly in developing countries. The common type of evaluation done is the product evaluation which involves only the assessment of the program's effectiveness. This study recommends the use of Stufflebeam's model of evaluation which involves evaluation of the program's content, input, process, and product. Evaluation is a continuous process which should incorporate the planning and implementation phases.

## Conclusions

Based on the analysis of the data and results of this study, the following conclusions were made:

1. The educational background and working experience of the respondents affected their perceptions of the program development concepts. The respondents with higher educational background and greater length of working experience generally perceived the program development concepts to be more appropriate and less used by the Nigeria Extension Service.

2. The evaluation concepts received the lowest ratings by respondents when compared with the planning and implementation concepts. Based on the findings, evaluation was considered to be the most neglected phase of programming by extension workers.

3. There was no significant difference between the perceptions of both younger (26 years and below) and older (above 26 years) respondents concerning the appropriateness and usage of the program planning, implementation, and evaluation concepts for the Nigeria Extension Service. It was concluded that age did not affect the perceptions of respondents concerning the appropriateness and usage of the program development concepts.

4. It was evident from the findings that the system of programming used by the Extension Service in Nigeria lacked clientele participation and was largely determined at the top hierarchy. It was concluded from this study that a number of factors were limiting the extension worker's effort in developing sound, productive, and effective programs for clients. The most serious limitations were:

a. Insufficient inputs and other facilities to implement extension programming,

b. Scarcity of trained and qualified extension workers, resulting in higher number of clients for each extension worker,

c. Lack of adequate support by the government,

d. Insufficient funding of extension programs,

e. Inadequate evaluation procedure.



## Recommendations

The following recommendations were made based on the conclusions drawn from the analysis and interpretation of the data collected and the review of literature:

1. In view of the finding that the respondents perceived the selected program development concepts as very appropriate to the development of extension programs, it is recommended that these selected concepts or similar concepts be tested for use by the Nigeria Extension Service. The overwhelming evidence from both groups of respondents suggests that the program development concepts are not being utilized enough even though they are considered to be appropriate for the Extension Service. Staff development workshops, or some type of training programs relating to program development should be designed and implemented for all extension workers, especially the newly employed.

2. A careful examination and analysis of the data collected reveals that the evaluation component of the program development process is the most neglected and, therefore, requires more attention. A more concerted effort should be oriented toward the evaluation component in order to determine not only the accomplishments made but also provide information for program improvement, accountability, assessment of the extension workers, and their clientele. An evaluation system incorporating the program's content, input, process, and product is highly recommended.

3. In view of the overwhelming evidence by both groups of respondents that the prevailing system of programming involves a "top-down" approach with little participation by members of the client system, it is recommended that the people be more involved in the entire program

development process. A clientele-centered or grassroots approach is strongly recommended. This approach allows the people not only to be involved in the entire process, but helps to determine their most immediate needs, interests, and opportunities. These needs could serve as the basic foundation upon which to base extension programs. It also make the extension program "the people's program."

4. In view of the present deplorable status of extension workers in the country, it is recommended that the conditions of service for these workers be improved in order to increase their efficiency. The information gathered from respondents indicated that most of the extension workers were frustrated due to these reasons:

- a. Low pay,
- b. Non-provision of transport facilities,
- c. Inadequate tools and other equipment,
- d. Extensive area of work to be covered by each worker due to shortage of extension workers,
- e. Instability caused by frequent transfer of extension workers.

A closer investigation of these problems by the government is strongly recommended in order to ensure a more dedicated and hardworking extension staff. An increased understanding of the plight of extension workers may lead to improved attitudes by the government in terms of increased pay and provision of other incentives.

5. Since this study contains information gathered from only agricultural and extension students, it is recommended that a further study be conducted involving a broader scope of agricultural and extension workers who have already completed their in-service training and are currently working on the job in all nineteen states of the country.

6. Finally, it is highly recommended that further research be done in order to find the most effective way of coordinating the work of the country's Agricultural Extension Service, the agricultural research institutes, and the various colleges of agriculture. Results of such research would encourage productive relationships among the three agencies instead of their present developmental efforts which appear to be often fragmented and uncoordinated.

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APPENDIXES



APPENDIX A

INFORMATION RELATING TO PROGRAM DEVELOPMENT  
PROCESS IN NIGERIA

## UNIVERSITY OF IBADAN, IBADAN, NIGERIA

## DEPARTMENT OF AGRICULTURAL EXTENSION

Telephone: Ibadan 400550-400614 (65 lines)  
Ext. 1900



Cables & Telegrams. University Ibadan

14th June, 1984.

Mr. Chris Adeyemi,  
124 West Maple # 3  
Stillwater, Oklahoma 74074,  
U. S. A.

Dear Mr. Adeyemi,

Thank you for your letter of 21st March 1984 asking for information on how programme planning process is carried out in Extension for Nigerian farmers.

As far as I know, there is no procedure for planning programmes in the sense that we understand it, which means involving the people in

- a) Analysis of the situation
- b) Delineating the Problems
- c) Setting up the objectives
- d) Plan of Work & Calendar of Work
- e) Evaluation & Reappraisal

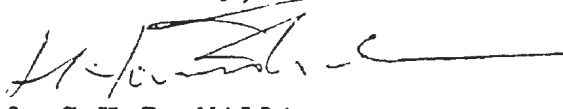
In none of the procedure stated above do we consult the people for whom the programme is designed. The system we adopt is that of automatic approach in which the government decides what the programme should be at any particular time and ask the extension agent to go out and sell the programme to the farmers.

I have enclosed some papers for your consideration which may be of assistance to you.

I apologise that I have not been able to reply until now due to my being involved in assignments for the Lagos State Government and other pressing academic problems.

I hope you find the enclosed materials of benefit.

Yours sincerely,

  
Prof. S.K.T. Williams,  
Head of Department.

APPENDIX B

LETTER OF TRANSMITTAL



Oklahoma State University

DEPARTMENT OF AGRICULTURAL EDUCATION

STILLWATER, OKLAHOMA 74078  
448 AGRICULTURAL HALL  
(405) 624-5129

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March 15, 1985

The Principal  
School of Agriculture  
P.M.B. 5029  
Ibadan, Nigeria

Dear Sir:

Mr. C.O. Adeyemi, a former student of your institution, is requesting permission to collect data for his doctoral degree dissertation through administered distributed questionnaires for students presently studying in your institution. The purpose of the study is to determine the perceptual assessment of the students with regard to the appropriateness and usage of selected program development concepts as they relate to the Nigeria Extension Service.

The questionnaires would require about 15 minutes for completion. Mr. Adeyemi plans to carry out the survey during his visit to your school on June 19, 1985. Please advise me as soon as is convenient if you have objections to Mr. Adeyemi's request. Attached is a copy of the questionnaire for your information. Thank you for your assistance in this matter.

Sincerely,

Robert Terry  
Professor and Head



APPENDIX C

COVER LETTER TO THE QUESTIONNAIRE

Gbenga Adeyemi  
315 N. Main #11  
Stillwater, Oklahoma 74074

June 19, 1985


Dear Sir/Madam:

I am requesting your assistance in completing this questionnaire. The purpose of the study is to determine the perceptual assessment of respondents with regard to the appropriateness and usage of selected program development concepts as they relate to the Nigeria Extension Service. The information gathered will be used in developing a conceptual program development model for the country's extension service.

It will be highly appreciated if you would take a few minutes to respond to the questionnaire. I am particularly desirous of obtaining your responses because of your past experiences with farmers as contact agents. Your input in this regard will surely help us in the agricultural profession improve upon the work of agricultural extension programming for our farmers and indeed the entire community we serve.

Thank you for your participation.

Sincerely,

  
Gbenga Adeyemi  
Graduate Student

APPENDIX D

QUESTIONNAIRE

AGRICULTURAL WORKERS'S PERCEPTIONS OF APPROPRIATENESS  
AND USAGE OF SELECTED PROGRAM DEVELOPMENT  
CONCEPTS FOR THE NIGERIA  
EXTENSION SERVICE

Purpose of This Questionnaire

1. To obtain information from respondents regarding their judgements as to the extent to which selected program planning concepts are appropriate for Nigeria extension service.
2. To obtain information as to the extent to which they perceive each concept is being used by the extension service in developing programs for farmers.

General Instructions

This questionnaire is divided into two sections. There is no right or wrong answer to each question. You may also write suggestions wherever you feel necessary. Signature or names are not required.

Section I:

Please rate by checking each of the following selected program development concepts in terms of the extent to which it is appropriate in Nigeria (Column I) and the extent to which you feel it is being used by the extension division in developing programs for farmers (Column II). If you check "inappropriate" in any of the items in Column I, please comment on the back of the questionnaire numbering your comments the same as the item checked.







## PART C

## Program Evaluation Concepts

Column I

Judgement as to the extent to which each concept is appropriate for Nigeria.

Column II

Extent to which you feel each concept is being used by the extension division.

Extremely Appropriate Very Appropriate Appropriate Somewhat Appropriate Inappropriate		Great Deal	Much	Some	Little	None
	1. Establish a criteria upon which evaluation of programs will be based.					
	2. Determine the extent to which program evaluation should be based on stated objectives of the program.					
	3. Design for collection and analysis of evidence as regards planned programs.					
	4. Collect, analyze, and interpret information to determine the strengths and weaknesses of the program.					
	5. Help clientele recognize and measure their progress.					
	6. Make judgements relative to adjustments in programs, activities and methods based on the evidence collected.					
	7. Make effective use of evaluation information to make adjustments in learning experiences or future program planning.					
	8. Prepare reports on the effectiveness of extension programs and activities for higher officials.					
	9. Inform the public of the successes of extension programs.					
	10. Use previous evaluation reports along with other information in subsequent program development. Perform follow-up evaluation.					

- A. From your viewpoint, what are the main problems confronting extension workers in designing programs for their clientele?
- B. Please give suggestions for improvement of extension programming based on your work experiences with farmers and other extension clientele.

Section 2: Demographic Information

- A. Your age: \_\_\_\_\_
- B. Your rank: \_\_\_\_\_
- C. Number of years employed by the Ministry/Agricultural Agency or Institution: \_\_\_\_\_
- D. If employed by state's Ministry of Agriculture, please indicate name of State: \_\_\_\_\_
- E. What is the highest degree/educational qualification you hold?
- \_\_\_\_\_ 1. School Certificate/GCE O'Level
  - \_\_\_\_\_ 2. Ordinary Diploma in Agriculture
  - \_\_\_\_\_ 3. Higher Diploma in Agriculture
  - \_\_\_\_\_ 4. Higher School Certificate/GCE Advanced Level
  - \_\_\_\_\_ 5. Other (please specify) \_\_\_\_\_

APPENDIX E

PROGRAM CONCEPT MEANS AND STANDARD DEVIATIONS

PROGRAM CONCEPT MEANS AND STANDARD DEVIATIONS

	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41)		Higher Diploma (n=64)		Ordinary Diploma (n=41)		Higher Diploma (n=64)	
Program Planning Concepts	$\bar{x}$	Std.Dev.	$\bar{x}$	Std.Dev.	$\bar{x}$	Std.Dev.	$\bar{x}$	Std.Dev.
1. Identify the target audience to be reached.	4.17	0.77	4.17	0.80	3.51	0.76	3.06	0.77
2. Analyze the agricultural situation of the district/community.	3.73	0.78	4.00	0.74	3.02	0.74	3.08	0.73
3. Obtain information about the social, economic, religious, and cultural background of the community within which educational program is to be effected.	3.73	0.70	4.06	0.79	3.10	0.83	2.84	0.80
4. Involve clientele and others such as advisory committee in planning the program.	4.10	0.77	3.95	0.84	2.95	0.82	2.67	0.79
5. Recruit volunteers to serve in leadership roles in extension programs.	3.83	0.70	3.67	0.78	3.20	0.84	2.66	0.82
6. Reach decisions on problems, concerns, and opportunities.	3.76	0.76	3.63	0.63	3.02	0.77	2.94	0.83

(Continued)

	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41)		Higher Diploma (n=64)		Ordinary Diploma (n=41)		Higher Diploma (n=64)	
Program Planning Concepts	$\bar{x}$	Std.Dev.	$\bar{x}$	Std.Dev.	$\bar{x}$	Std.Dev.	$\bar{x}$	Std.Dev.
7. Formulate objectives and procedures for planning the agricultural program.	4.02	0.76	4.06	0.77	3.00	0.65	3.13	0.75
8. Set priorities on problems identified.	4.05	0.70	3.98	0.70	3.12	0.79	2.81	0.77
9. Develop measurable objectives for solving identified problems.	3.76	0.70	3.86	0.64	3.02	0.77	2.80	0.66
10. Identify or help locate resource people who will teach or help in educational programs.	3.63	0.66	3.95	0.76	3.05	0.78	2.81	0.65
11. Design and sequence teaching-learning experience to reach educational objectives in each program.	3.63	0.66	3.91	0.70	3.02	0.80	2.81	0.69
12. Schedule facilities: meeting or demonstration area.	3.68	0.73	4.00	0.65	3.32	0.83	2.80	0.74
13. Prepare and distribute promotion materials for program.	3.59	0.72	3.73	0.70	2.93	0.79	2.58	0.82

PROGRAM CONCEPT MEANS AND STANDARD DEVIATIONS

Program Implementation Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41) $\bar{x}$	Std.Dev.	Higher Diploma (n=64) $\bar{x}$	Std.Dev.	Ordinary Diploma (n=41) $\bar{x}$	Std.Dev.	Higher Diploma (n=64) $\bar{x}$	Std.Dev.
1. Seek out and harness local leadership in delivering programs.	4.07	0.68	4.06	0.56	3.44	0.67	3.14	0.66
2. Develop warm learning climate proper room arrangement, adequate lighting, space, and room temperature) for clientele.	3.56	0.71	3.83	0.70	2.71	0.63	2.71	0.65
3. Select and organize teaching-learning activities.	3.63	0.83	3.83	0.84	2.95	0.49	2.86	0.48
4. Develop a plan of work for the successful implementation of the program.	3.95	0.77	4.20	0.79	3.22	0.66	3.13	0.49
5. Develop basic instructional materials for the educational programs.	3.59	0.63	3.98	0.58	3.05	0.67	2.88	0.55
6. Greet and introduce participants/speakers at meetings or demonstration plots.	3.68	0.70	3.92	0.72	3.51	0.60	3.42	0.68



(Continued)

Program Implementation Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41) $\bar{x}$	Std.Dev.	Higher Diploma (n=64) $\bar{x}$	Std.Dev.	Ordinary Diploma (n=41) $\bar{x}$	Std.Dev.	Higher Diploma (n=64) $\bar{x}$	Std.Dev.
7. Make adequate use of resource people, local leaders, and volunteers in conducting the programs.	3.83	0.85	4.06	0.77	3.09	0.72	3.16	0.73
8. Operate audiovisual aids appropriately to supplement and compliment instructional programs.	3.71	0.79	4.05	0.73	2.88	0.74	2.64	0.71
9. Design the educational experiences that are appropriate and directed at the objectives identified.	3.54	0.83	3.88	0.81	2.98	0.83	2.89	0.77
10. Use demonstration methods and other extension teaching methods in delivering programs.	4.00	0.74	4.16	0.64	3.56	0.91	3.13	0.84
11. Use motivation appropriately in educational programs.	3.56	0.69	4.02	0.72	2.73	0.64	2.89	0.73
12. Distribute hand-out materials at meetings/demonstration plots.	3.37	0.77	3.69	0.74	2.88	0.63	2.77	0.49
13. Conduct farm and home visits.	4.05	0.85	4.19	0.83	3.63	0.81	3.03	0.73

PROGRAM CONCEPT MEANS AND STANDARD DEVIATIONS

Program Evaluation Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41)		Higher Diploma (n=64)		Ordinary Diploma (n=41)		Higher Diploma (n=64)	
	$\bar{x}$	Std.Dev.	$\bar{x}$	Std.Dev.	$\bar{x}$	Std.Dev.	$\bar{x}$	Std.Dev.
1. Establish a criteria upon which evaluation of programs will be based.	3.85	0.67	3.92	0.66	2.90	0.76	2.95	0.63
2. Determine the extent to which program evaluation should be based on stated objectives of the program.	3.68	0.73	3.83	0.68	2.81	0.74	2.86	0.59
3. Design for collection and analysis of evidence as regards planned programs.	3.56	0.69	3.73	0.72	2.68	0.66	2.73	0.60
4. Collect, analyze, and interpret information to determine the strengths and weaknesses of the program.	3.93	0.75	4.05	0.74	2.66	0.63	2.70	0.77
5. Help clientele recognize and measure their progress.	3.78	0.82	4.03	0.83	2.59	0.68	2.77	0.78

(Continued)

Program Evaluation Concepts	Appropriateness of Concepts				Usage of Concepts			
	Ordinary Diploma (n=41) $\bar{x}$	Std.Dev.	Higher Diploma (n=64) $\bar{x}$	Std.Dev.	Ordinary Diploma (n=41) $\bar{x}$	Std.Dev.	Higher Diploma (n=64) $\bar{x}$	Std.Dev.
6. Make judgments relative to adjustments in programs, activities, and methods based on the evidence collected.	3.42	0.81	3.75	0.80	2.63	0.71	2.81	0.71
7. Make effective use of evaluation information to make adjustments in learning experiences or future program planning.	3.61	0.63	4.00	0.71	2.63	0.77	2.75	0.69
8. Prepare reports on the effectiveness of extension programs and activities for higher officials.	3.66	0.67	4.02	0.64	2.32	0.68	3.00	0.70
9. Inform the public of the successes of extension programs.	3.85	0.59	3.92	0.63	3.07	0.65	2.88	0.72
10. Use previous evaluation reports along with other information in subsequent program development. Perform follow-up evaluation.	3.76	0.77	4.05	0.68	2.98	0.66	2.83	0.77

VITA

Christopher Olugbenga Adeyemi

Candidate for the Degree of

Doctor of Education

Thesis: AGRICULTURAL WORKERS' PERCEPTIONS OF APPROPRIATENESS AND USAGE OF SELECTED PROGRAM DEVELOPMENT CONCEPTS FOR THE NIGERIA EXTENSION SERVICE

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Minna, Nigeria on November 25, 1952, the son of Rufus and Titi Adeyemi-Mamoye.

Education: Graduated from Osogbo Grammar School, Osogbo, Nigeria; obtained Ordinary Diploma Certificate in Agriculture from the Federal School of Agriculture, Umuduke, in 1973; Higher Diploma in Agriculture from School of Agriculture, Ibadan, 1979; received Bachelor of Science Degree in Agriculture from University of Nebraska, Lincoln, Nebraska, 1981; Master of Science Degree, University of Nebraska, Lincoln, Nebraska, 1983; completed requirements for the Doctor of Education Degree at Oklahoma State University, in May, 1986.

Professional Experience: Served as Agricultural Assistant, Pathology Department, Nigerian Institute for Oil Palm Research, Benin-City, Nigeria, 1972-1977; Agricultural Superintendent, Statistics Department, Nigerian Institute for Oil Palm Research, Benin-City, Nigeria, 1978-1979.