CROSS-CULTURAL DIFFUSION OF ADULT EDUCATION:
THE ROLE OF AGRICULTURAL EXTENSION STAFF IN ECS NIGERIA.

by

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We accept this dissertation as conforming to the
required standard

THE UNIVERSITY OF BRITISH COLUMBIA

APRIL, 1975
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Date 24th April, 1975
Abstract

In Nigeria, agriculture is the primary industry employing about 75% of the total population. However, traditional farming methods and small farm units prevail throughout the country. Many people have been concerned that after nearly forty years of operation, the Agricultural Extension Service has made very little or no educational impact on the average Nigerian farmer in terms of improving his skills and making him more receptive to technological change.

The purpose of this study was to find out how well agricultural extension staff in the East Central State of Nigeria performed their role as adult educators. The investigation was limited to agent-related variables such as attitudes, beliefs, role perception and training which are crucial in determining individual levels of staff performance and consequently the over-all effectiveness of the extension programme. Verner's model of cross-cultural diffusion of adult education provided the theoretical framework for analysing the activities of the field staff, and findings were compared with North American standards.

The subjects included 51 senior and 165 junior extension staff representing a 32% proportionate random sample of the population. An interview schedule, a Likert-type attitude-measuring scale and a multiple choice knowledge test were constructed, validated and used to collect information relevant to the objectives of the study. Statistical treatment of the data involved the
preparation of multivariate contingency tables, determination of group means and standard deviations, the use of t-tests and other correlational techniques.

Ninety per cent of the senior and junior extension staff in the state were dissatisfied with the conditions of service in the ministry. Most of the respondents had a poor to moderately favourable attitude towards extension work and towards the farmers. They also had a low level of knowledge of extension principles. These findings suggest that generally, the extension staff in East Central State of Nigeria performed poorly as adult educators. Staff attitudes towards extension and the client system were positively related to rank in the service, formal education and level of agricultural training received.

Less than one-half of the field staff perceived adult education as their most important function. The major responsibility for extension was that of junior staff who spent about two-thirds of their time in the field. Individual and group instructional methods and techniques were used more often than mass communication devices which were limitedly available in the rural areas.

Extension workers in the state needed additional training in adult education processes, related social sciences and technical agriculture. The major problems of extension in the state include organizational and administrative bottlenecks, shortage of trained personnel, staff incompetency, lack of field and office facilities, and poor inter-agency cooperation.
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By adopting the comparative approach, and by focussing the elements of an emerging theory of cross-cultural diffusion of adult education upon the activities of the extension services, the study provided a global perspective of the diffusion process as it relates to agricultural extension, and developed a set of criteria for judging its educational effectiveness. It has also provided some insight into agent-related causes of failure of rural adult education programmes in a developing country. In addition to identifying specific areas of needed inservice training, the study has provided useful information about the problems of extension in the state, and has suggested guidelines for improving the effectiveness of the service.
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CHAPTER 1

INTRODUCTION

The Problem

The successful application of science and technology to improve productivity in various sectors of the economy accounts for most of the differences between the rich and the poor nations of the world. In agriculture, the adoption of technology by farmers in economically advanced countries like Canada and the U.S.A. has resulted in increased farm output, reduced costs of production and overall improvement in income and levels of living of the rural people. Although several factors including economic and physical inputs, social institutions and knowledge have contributed to bring about this phenomenal increase in agricultural production, much of the credit is given to continuing research in agriculture and the Agricultural Extension Service, an informal adult education system which promotes the adoption of new scientific farming practices through educational procedures (1).

Technology in agriculture is reflected in tractors and other modern farm machinery. It is embodied in hybrid corn, new varieties of crops, pesticides, commercial fertilizers, contour ploughing, advanced practices in crop culture and production of animals, automatic feeders, and rural electrification. These have made it possible for a small and declining number of North American farmers to produce continuously enough food and surplus agricultural products
for an expanding total population. One farmer now produces enough food for about 30 people; thirty years ago, he produced enough to feed himself and 10 others (2). Farms have become larger and more productive thereby providing higher incomes, better nutrition, improved health and housing, greater security and satisfaction to rural people (3).

In contrast, poverty, illiteracy, disease and hunger arising from low agricultural productivity are continuing problems of the governments and people of the developing countries. In Nigeria, for example, the masses are largely uneducated and many suffer from malnutrition and lack of modern social amenities. Agriculture is the primary industry employing about 75% of the total population and contributing nearly one-half of the country's national income (4). Most of Nigeria's agriculture is subsistence and unproductive. The traditional farming system of shifting cultivation with long bush fallow can no longer continue to meet the growing demands of the people for more, better and cheaper food.

Undoubtedly, the key to solving many of the social problems of the developing nations lies in providing effective rural education programmes in agriculture, health care and basic literacy particularly for adults. Such educational programmes would provide opportunities for the people to acquire the necessary knowledge and skills that would enable them to choose wisely, act productively and grow individually while contributing fully to national progress.

Most developing countries now recognize the importance of
improved agriculture, and the vital contribution which an extension education programme has made and can make to the economic, social and general development of their countries. Within the last 25 years, many countries in Africa, Latin America and Asia, with or without international technical assistance, have established rural agricultural education systems similar to the North American model in a bid to develop their agriculture (5). When measured against the broad objectives of reducing poverty and economic stagnation in the rural villages, increased agricultural productivity resulting from new innovations adopted by farmers, overall educational impact and creating in the people a sense of responsibility and involvement in the total development of the state, the results have varied from successful programmes in a number of countries to token efforts in some, and disastrous and expensive failures in others (6).

In Nigeria, regional departments of agriculture were established about 50 years ago, and programmes of agricultural education and research have been pursued seriously for at least half that period. Within the last decade, these agricultural programmes and services have further been improved as a result of technical assistance from more advanced and friendly nations (7). While remarkable success has been achieved in certain projects like:

- the development of the rice industry around Abakaliki and Uzo-Uwani in the East Central State,
- mixed farming in parts of Kano State,
- the cultivation of improved varieties of maize in the West,
- cocoa planting, rehabilitation, spraying and processing in the
Western State, and oil palm development in the East Central State, farming in Nigeria is still predominantly subsistence. The vast majority of rural inhabitants still depend on traditional farming methods and tools.

Findings from a number of adoption studies and nation-wide shortages of staple foods clearly indicate that generally, Agricultural Extension has made very little educational impact on the Nigerian farmer in terms of improving his skills and orienting his attitude towards scientific farming. In other words, Extension has not contributed sufficiently to rural progress and development as would be expected of such an educational agency.

Following his study of Extension Services in Western Nigeria, Williams (8) seriously questioned the quality and performance of extension workers in Nigeria, when as he pointed out, the type of training given to them at the Schools of Agriculture includes only technical subject matter, and does nothing to prepare them for the important task of relating technical change to the institutional and cultural framework within which the farm family operates.

Ninety per cent of the farmers interviewed in Eastern Nigeria by Hursh and others (9) were not using any improved farming practices and 40% had never tried any of the recommended innovations. In a study of the International Labour Organization's Pilot project, Hoare (10) reported that 70% of 239 families interviewed in Abeokuta province of Western Nigeria had never been contacted by the Extension Service. Similar results were obtained by Gill (11) in his study of
extension in Northern Nigeria.

Okigbo (12) former chairman of the Agricultural Development Corporation, in a paper submitted to the East Central State Policy Committee observed that extension work in the East Central and other states in Nigeria has been of minimal effectiveness. There seems to be poor motivation and poor performance by agricultural staff both in the field and in the laboratory. Charges of corruption, excessive drinking in the villages and laziness have also been made against Nigerian extension workers by other writers (13).

Nigerian leaders (14) have publicly expressed their dissatisfaction with the apparent ineffectiveness of the Agricultural Extension Services in bringing about increased food production. In several states, reorganizations (15) involving changes in structure, staff and responsibilities have been carried out frequently by the Ministry of Agriculture in an effort to ensure a more effective implementation of government agricultural development policy.

Anon (16) has adequately summarized the situation as follows:

Better farming methods have been found in Nigeria through research, better varieties of crops and breeds of animals have been introduced but change in the farmers' attitude which is a most fundamental and indispensable element in agricultural progress has remained static. This gap continues to widen not necessarily that research was not based on people's needs or not carefully analysed. Rather, the cause of the existing gap lies in administration and the problems of the extension staff.

There is the need, therefore, to examine the Extension Services, its staff and programmes, determine progress systematically, and identify some of the factors and problems that influence the acceptance
of extension programmes by farmers in different parts of Nigeria.

Need for the Study

Why has agricultural extension made very little or no educational impact on the average Nigerian farmer? What is the general level of performance of the field staff and how do they feel about their job? What problems exist and what changes should be made in the training and functional activities of the extension agent to facilitate a more efficient delivery of programmes to the clientele?

Very little extension research has been done so far in Nigeria. The need for research to explore, evaluate and find answers to these and many other questions and problems of rural adult education programmes in Nigeria is obvious. The success or failure of Extension in developing countries is a matter of great concern not only to them but to advanced nations because it means survival and progress for large rural populations of the world who depend on agriculture for their livelihood. Such a study could have important theoretical and practical implications for the international diffusion of adult education.

Scope of the Study

Three broad categories of antecedent variables interact to influence or determine the outcome of an extension programme in any given situation. These are: change-agent variables, environmental variables and client variables. Change-agent variables include such
factors as training and knowledge of subject matter, teaching skills, attitudes, job responsibilities, performance and personal satisfaction.

Environmental variables include organizational, administrative and programme factors, the overall economic, social and political situation as well as the internal and external complementary relationships existing between the extension organization and other institutions serving the rural community. Client variables refer generally to economic, psychological and socio-cultural patterns of behaviour on the part of the farmer himself. For instance, the value systems, attitudes and perceptions of farmers in the community are crucial socio-cultural dimensions which determine the success or failure of the change effort (17, 18).

Research in education has shown that instructional effectiveness is a major factor which determines the success of educational programmes. Secondly, in most learning situations, the teacher's behaviour is the primary causative factor accounting for the growth of the learner towards the goals of the institution (19, 20). In other words, the role of the extension agent or adult educator is very crucial to purposeful learning and to a large extent determines adoption behaviour of the farmer. This view is supported by results of adoption studies conducted by Rogers (21) and Verner (22). Thus, in seeking explanations for the success or failure of Extension education in emerging nations, one would necessarily start by asking questions about the attitude, training and operational activities of field staff at the village level.
The scope of the study was limited to an investigation of those agent-related variables which are known to influence individual performance and consequently the overall effectiveness of extension. The study attempted to demonstrate the applicability of a model of cross-cultural diffusion of adult education (23) in explaining the success or failure of agricultural extension in a developing country. Attention was focussed on senior and junior extension staff working in the East Central State of Nigeria. The primary concern was to assess their attitudes, perceptions, training, knowledge and performance as adult educators and to compare these with North American standards.

Purpose of the Study

The purpose of the study was to evaluate the performance of senior and junior extension staff in the East Central State of Nigeria as adult educators. The study was designed, therefore, to answer the following questions:

1. How do senior and junior extension staff in the East Central State of Nigeria perceive their role?
2. How well do they perform their job?
3. What are the attitudes of extension staff towards (a) employment in the Extension Service and (b) towards the farmers?
4. How do these attitudes relate to other aspects of staff characteristics and performance?
5. What adult education methods and instructional techniques are employed and to what degree when contacts are made between
Study Area
12,000 sq. miles
About 10 million pop.
Level to rolling topogr.
4th smallest state in land area, but one of the most populated.
extension personnel and their clientele in rural Eastern Nigeria?

6. Are the extension staff suitably trained to work effectively as adult educators?

Such an evaluation, it was hoped, would yield useful information about the Extension Service in the state, and would help in identifying and explaining the reasons for any gaps between what is and what ought to be. It would also lead to rational recommendations regarding how to close the gaps.

The specific objectives of the study were:

1. To determine the attitudes of senior and junior agricultural extension staff in the East Central State of Nigeria towards:
   (a) employment in the service and (b) towards the client system.

2. To analyse their role perceptions and performance as adult educators.

3. To test their knowledge of selected adult education principles and practices.

4. To analyse the feelings of senior and junior extension staff about needed skills and competencies for doing their job.

5. To compare findings with North American standards.

6. To suggest measures for programme improvement and staff development based on findings in preceding objectives.

The essential differences between senior and junior extension staff in the state are rank in the service, and levels of formal education and agricultural training received. Although both groups
of respondents were compared in respect of all variables investigated, the study tried specifically to determine if there were significant differences between senior and junior agricultural extension staff with regard to their attitude towards extension work and the client system.

Definitions and Abbreviations

**Ministry of Agriculture and Natural Resources (MANR)**

Ministry or civil service department of the government of the East Central State of Nigeria responsible for agricultural development and extension education programmes.

**Agricultural Extension Services (Extension)**

An administrative division of the MANR directly responsible for extension education programmes. Early in 1974, the MANR was reorganized into two ministries: a. Ministry of Agricultural Extension and b. Ministry of Production and Animal Husbandry. (See Organizational Chart on page 62b)

**Zones and Divisions**

The state is divided into 10 major geographical areas known as zones for convenience in administering the extension services. The zones are sub-divided into a number of smaller units called 'divisions'. A division is the smallest administrative unit directly responsible for field extension operations.

**Agricultural Officer (AO)**

This is the official designation for an agricultural staff who
holds a university degree. A.O.s may be placed in charge of
divisions, government demonstration farms or special projects;
and they may be promoted to the rank of Senior Agricultural
Officer (SAO), Principal Agricultural Officer (PAO) or to
Chief Agricultural Officer (CAO).

**Agricultural Superintendent (AS)**

Usually an experienced agricultural staff who has a secondary
school education and holds at least a diploma in agriculture
from the government School of Agriculture or elsewhere.
Assistant Agricultural Superintendents (AAS) have the same
qualifications but are less experienced.

**Agricultural Assistants (AA)**

These are departmental junior technical staff who have
completed their secondary school education and received one
year or more of formal agricultural training in the School of
Agriculture, or sometimes promoted from below. AAs are
engaged in various phases of agricultural extension work in
local council areas and may have Agricultural Demonstrators
assisting them.

**Agricultural Demonstrators (AD)**

This is the lowest cadre of technical staff and usually have
had some secondary education with little formal on-the-job
agricultural training. They were formerly known as Field
Overseers (FO). The staff development policy is to retrain
and upgrade all ADs to the rank of AA. The AAs and ADs have
the most direct contact with farmers in the field.
Senior Staff (SS)

For the purpose of this study, senior staff were identified as all the Senior Agricultural Officers (SAO), Agricultural Officers (AO), Agricultural Superintendents (AS) and the Assistant Agricultural Superintendents (AAS). These staff perform mostly administrative and supervisory functions.

Junior Staff (JS)

For this study, junior staff were identified as the following: all Agricultural Assistants (AA), Agricultural Demonstrators (AD) and Field Overseers (FO).

U.N.N. - The University of Nigeria, Nsukka.

E.C.S. - The East Central State of Nigeria, one of 12 political divisions forming the Federal Republic of Nigeria. (see map on page 47)

A.D.A. - Agricultural Development Authority, a commercial agricultural production agency sponsored by the state government.

Plan of the Study

This report, consisting of descriptive, analytical and explanatory material is presented in eight parts. In the next chapter, literature relating to selected aspects of the Extension Service in North America is reviewed with the aim of identifying those organizing and general principles of adult education practice which have universal application, and also other relevant change-agent
characteristics against which the Nigerian extension worker was evaluated. This is followed by a similar review of the Ministry of Agriculture Extension Services in East Central State of Nigeria in chapter three. Brief descriptions of the rural setting in Eastern Nigeria, traditional education and current adult education systems have also been included in this chapter to facilitate better understanding of the research findings.

Chapter four outlines the theoretical framework underlying the study, while chapter five describes the methodology adopted. Major findings from the study are presented, discussed and summarized in chapter six. The main focus of the report is a comparative analysis of the Agricultural Extension Services in the East Central State of Nigeria, and this is presented in chapter seven. The final chapter integrates the important conclusions, discusses their implications for the organization, operation and improvement of extension services in the state, and puts forward a list of recommendations resulting from the author's interpretation of empirical observations and findings.
Footnotes to Chapter 1


22. Coolie Verner and Frank W. Millerd, Adult Education and the Adoption of Innovations. Rural Sociology Monograph #1, Department of Agricultural Economics, University of British Columbia, Vancouver, 1966, p. 43.

THE EXTENSION SERVICE IN NORTH AMERICA

The purposes of this review were (a) to identify attitudinal and performance criteria against which the Nigerian extension worker would be evaluated, and (b) to identify success-factors in the American extension system as well as organizing and general principles of rural adult education that have universal application and can, therefore, guide developing countries in setting up, operating or improving their own rural education programmes.

History and Structure

Agricultural Extension is an informal practical programme of rural education designed to help people improve themselves. Through extension, practical information originating from research centres, and relating to the problems of agriculture and family living are diffused among rural people so that they can use them to improve their living conditions. Extension is not only concerned with presenting and securing the adoption of a particular improved practice but also with changing the overall outlook of the farmer to the point where he will be receptive to and, on his own initiative, continuously seek ways of improving his farm business and home (1).

Extension work, as it is known today, is an American innovation. In the United States, it grew out of the need for the application of scientific knowledge to agriculture in the 19th
century, following the closing of the western frontiers. It began officially with the passing of the Morrill Act of 1862 which established the Land-grant college system for the purpose of providing liberal and practical education for farmers and workers in the industrial and mechanical trades. In the same year, the United States Department of Agriculture was established to assist farmers in crop and animal production as well as control of pests and diseases.

The 'demonstration idea' which is basic to all extension teaching was introduced in 1886 by Seaman A. Knapp, a scientific farmer and later a professor of agriculture (2). When it proved rather difficult to get the natives of Charles City, Louisiana interested in improved methods of agriculture, Knapp induced farmers from northern cities to move to the area and 'show practically' what could be done by way of good farming under his general direction. As a result of these demonstrations, the natives successfully learned improved farming techniques in cotton cultivation and the effective control of the boll weevil pest. Increasing demands by farmers all over the country for this type of 'extended knowledge of improved farming' gave added impetus for the development of agricultural extension.

The passing of the Smith-Lever Act by the U.S. Congress in 1914 created the 'Cooperative Extension Service' and gave Extension its present status by spelling out legislative guide-lines whereby the county, the state and the federal governments, cooperated and
collectively provided the necessary financial support for 'research in agricultural techniques, teaching of agriculture in colleges and the diffusion of agricultural knowledge to the people outside the colleges.' Later on, agricultural extension work was expanded to include Home Economics education for farm wives and 4-H club work for rural youth, thus instituting what some writers have described as 'the family approach to extension work' (3).

Canada's earliest extension efforts were influenced by activities in the U.S.A. and France where extension had started to show tremendous effects upon crop yields (4). In 1867, the Dominion Department of Agriculture was formed. By 1906, the department was already well organized and in that year inaugurated an unusual extension project consisting of special trains travelling across Canada and stopping at specified points to explain wheat smut and its control to farmers (5). In June 1913, with the passing of the Agricultural Instruction Act of Canada (6), the Dominion government provided financial support for agricultural instruction in colleges, schools and among the people.

Today in both countries, Extension has a complex organizational structure which basically involves all levels of government, the universities and the people themselves in cooperative action. Their experiences have shown that cooperation between federal and provincial workers in extension, and in other fields of agriculture makes for greater efficiency than does competition; and it is on the basis of mutual understanding rather than that of legislative rights that
Extension and other rural development programmes are carried out (7).

Structurally, the North American extension system consists of three interrelated components: (a) Research branch, (b) Staff training and (c) Extension branch. Continuing research in agriculture is done by technical experts in federal, state and private institutions as well as the universities. This fact-finding process is absolutely essential because extension work soon becomes obsolete unless fresh information is constantly supplied to it. Staff training is undertaken primarily by the universities to produce both research staff and field extension workers. The Extension branch provides educational services and is the link between the farmers and the research branch which is the source of information.

Philosophy, Objectives and Functions

The Extension Service was born out of a recognition of the fact that research pertinent to agriculture had a broader application and usefulness to many more people than just the few individuals attending agricultural colleges; and out of the recognition that practical information should be quickly extended to farmers along with encouragement for its adoption whenever appropriate.

Extension work is based on the philosophy of helping rural people to improve themselves through action-oriented, problem-solving types of educational programmes. The overall purpose is to assist people engaged in farming and homemaking to utilize more fully their own resources and those available to them, in solving current problems and in meeting changing economic and social needs (8).
The major function of the Extension Service as stated in the Smith-Lever Act of 1914 is:

'To aid in diffusing among the people of the U.S. useful and practical information on subjects relating to agriculture and home economics, and to encourage the application of the same .................'

As noted by the Scope Report (9), this broad charter clearly identifies Extension's function as 'education for action directed towards helping people to help themselves.' Extension's educational responsibility, as pointed out by Brunner and Yang (10) involves much more than making available factual information to the people. They stress that an educational achievement is attained only when interest is aroused, understanding developed and appropriate action is taken by the learner.

In performing its educational function, Extension operates informally and joins with the people to:

- study and analyse the local community situation
- identify concerns, problems and opportunities
- consider alternative solutions and set objectives to be attained
- develop a plan of action taking into account the people's desires, resources and abilities
- implement the plan and finally
- evaluate to determine programme accomplishments.

Since the depression of the 1930's, agriculture has become progressively more specialized and sophisticated so that the North American farmer has had to constantly improve his efficiency in
order to stay in business. These, together with changing economic and social conditions have had far reaching consequences for the Extension Service in terms of broader responsibilities. Extension has continuously improved its services and enlarged its sphere of activities. It is now concerned with efficiency in crop and livestock production, farm and home management, conservation, marketing, distribution and utilization of farm products; and also with family living, youth, leadership and resource development as well as public affairs (11).

Over the years, education has remained the national goal of Extension although the clientele base, programme emphasis, methods and procedures have widened in order to meet changing social conditions. Much emphasis is currently placed on working with groups of special importance to the extension purpose, such as rural youth, farm families, rural and urban residents, marketing agencies, consumers of farm products and communities. Verner (12) has pointed out, however, that while Extension is no longer limited to rural people and matters pertaining to agriculture and home economics, its adult education role has remained marginal and its efforts have been confined to those areas of educational interest selected mainly by the agency, instead of utilizing its size and potential to meet the total educational needs of rural adults.

The direction and outcome of social action, according to Rogers (13), Reeder and others (14) is determined more than anything else by the actor's (individual or organization) set of beliefs and
disbeliefs, just as social action in turn influences the actor's system of values and beliefs. In other words, an organization succeeds in achieving its objectives when its members behave in accordance with the norms, goals and set policies of the organization. Based on this theory, the apparent success of Extension in North America can be explained largely by those values, attitudes and beliefs which the organization holds about its work and the community it serves.

Most adult educators (15,16,17) agree that a democratic philosophy embracing beliefs and convictions which stress the importance of the individual in the progress of a nation is a prerequisite if the change agent and his organization must maintain a positive and permanent influence upon the situation which they are trying to change. Some of the fundamental beliefs underlying extension include: (18)

- Ideas should be put to work for the betterment of humanity, that is, findings from research must be utilized and not just filed away.
- Knowledge can most effectively be transferred through a process of man helping his fellow man to solve common problems.
- Rural people are intelligent, capable and desirous of improving themselves and should be given every opportunity and encouragement to do so.
- Education is the best way of bringing about permanent changes in people's behaviour.
Extension is basically a system of education that teaches people 'how to do things' and not just a system that 'does things for people'.

The education process should be based on freedom of choice, not force or compulsion.

**Organizing and General Principles**

Because no two countries are exactly alike in agricultural resources and problems, levels of living, cultural values, social organization, educational levels or government organization and services, it would be dangerous and foolish for anybody to attempt to apply American extension techniques, procedures and organizational patterns unmodified in other countries. While a system of adult education established in one society may not necessarily be appropriate for another, educators (19,20,21) around the world agree that certain elements and organizing principles are basic to the structure and operation of extension if it must provide an effective means of achieving widespread progress in agriculture.

The following organizing and general principles of education which have been tested and successfully applied in North America have broad validity and universal application and can, therefore, guide developing countries in establishing or expanding their own extension systems. During the early stages of development of the extension organization, there is the need for (22):

- Legislative provisions to ensure funding and continuity of extension.
- Proper recognition of extension as an important arm of government.
- Leadership in research to ensure a constant flow of facts for use in extension work.
- An organizational structure that makes extension available to all rural people and permits a two-way flow of ideas from the agency to the people and vice versa.
- Flexible programmes based on community needs.
- The use of local leaders and farm organizations to multiply extension's efforts.
- Specialists and competent field staff who are not only well-trained but devoted to their duty.
- Supporting agencies to take care of farm input supplies etc.
- Demonstrated willingness and effort on the part of local people to cooperate with extension.

As the extension organization continues to grow, it soon discovers that the operational effectiveness of the extension programmes is increased when (23):

- local extension projects are based on the needs and interests of farm families
- extension staff are aware of their responsibilities in relation to other agencies
- the extension area contains people who are receptive to education and who demonstrate their interest in a practical way
- the area has potential for economic return from increased agricultural production
the extension organization and the community have ways and means of effectively disseminating information among farm families
- the community is served by other change agencies that can reinforce the extension programme or contribute to rural community development
- local people including county council officials agree with and support proposed extension projects
- local community leaders are involved in the planning of extension projects, and the projects are not imposed on them
- volunteer local leaders who have personal ability and willingness to serve, are utilized in implementing the extension programmes
- local community characteristics such as traditional authority, kinship obligations and other pertinent socio-cultural factors are given due consideration in the execution of extension work
- the aims and objectives of extension are not fixed but flexible and modified from time to time on the basis of individual and social needs
- rural families achieve satisfying results from extension work.

Role and Training of the Agent

Traditionally, the agricultural extension agent has been responsible for:
- developing and conducting the extension programme in the county
- keeping farmers informed of the latest developments and recommendations relating to better techniques of production
- assisting the farmers in farm planning and agribusiness management
- bringing back to the research centre farmers' problems for solution
- teaching and advising the farmers on the spot about their production and marketing problems and other felt needs
- providing other direct services for the farmers as may be required by the department of agriculture, as well as providing professional guidance to rural people in their effort to improve the economic and cultural level of the family and community.

The process of contemporary extension like other types of adult education programmes consists of four related stages: knowing the community, planning the programme, implementation or teaching stage, and evaluation of programme results. The job of stimulating the farming community to make changes that will improve their standards of living is not done by imposing new ideas but by education, persuasion, service and community involvement. Success in the extension approach depends upon deep understanding of the community, its values, motivations, ambitions and limitations (24). It is, therefore, obvious that the extension worker must study the community well, explain the objectives of his agency to the people and show a sympathetic understanding of the needs of the farmers if they are to value his advice.

Extension programmes ideally should be planned by a committee in which all relevant social systems are represented (25). The task
of the planning committee is to review facts and information relating to the community, identify pressing problems, decide what basic objectives or conditions are best for the community, and select the best solution as guide for action. A plan of work is prepared showing step by step the procedure to be followed. A good plan of work is the most effective way to accomplish teaching objectives in line with the overall aims of extension.

The implementation or instruction stage is concerned with the design and management of the activities of the farmer in a way that will most likely result in his learning the new idea (26). It is a crucial stage in which the agent has to consider: his teaching objectives and ultimate learner behaviour, the identification and sequencing of learning tasks and the selection of suitable instructional techniques. The success of the teaching effort depends upon the agent's ability to distinguish between the different instructional processes, methods, techniques and devices available, his judgement in selecting the most appropriate approach and his skill in using the techniques (27).

While the programme is underway, the methods and activities are constantly reviewed to find out if everything is going according to plan. At the end of the programme period, a full scale evaluation is undertaken to measure achievements, that is, how well the original problem has been solved and what benefits now accrue to the community as a result of the action taken.
As described by Chamberlain (28), the successful adult educator recognizes the potential for learning of his likely customers and understands how to provide the necessary conditions for learning to take place. He is imaginative, and an effective communicator who believes in his mission to the extent of practising it himself.

The foregoing describes the ideal educational role of the North American agricultural agent. In practice, however, his work involves a wide variety of functions some of which have very little or no apparent educational implications. These different roles and the learning needs of extension agents have been identified and analysed in many studies such as those of Stone (29), Wilkening (31), Job (34), Morehouse (35) and Findlay (30).

Stone (29) classified the operational roles of the agent into seven categories based on the amount of time spent on each function: Consultant 24%, Programme Administrator 24%, Salesman of information and ideas 17%, Student 7%, Organizer of groups 7%, Organizer and supervisor of events 6%, Facilitator or service agent 5%.

In a more recent work, Leagans and Findlay (30) synthesized a 12-item typology of role behaviours characteristic of the agricultural extension agent:

1. **Cooperative Extension System**: Understanding the nature of the Extension Service organization as a public educational system and adhering to its structure, processes, and evolution within a hierarchy of social systems.
2. Developing a Philosophy: Understanding and influencing the variables relevant to the process whereby individuals place value on objects, qualities and evidence within the environment, and establish beliefs and values as guides to system relationship and the behaviours relative to the evaluation of differences.

3. Development of Systems: Understanding the evolvement of individual systems and promoting their growth towards structural, cognitive, affective maturity through adaptation and adjustment to environmental variables.

4. Professionalism: Understanding the meaning of behaviour associated with professionals, acquiring and exercising this behaviour.

5. Learning Process: Understanding general theories and conditions of learning and cognitions central to individual growth and development and adjusting them to environmental conditions.

6. Motivation of Client Systems: Understanding the process of motivation, involving a meaningful learning set, and exercising a disposition to incorporate new material into the cognitive structure essential to meaningful learning.

7. Programming: Understanding and executing the process of programming purposeful change and the related process of problem-solving, situational, directional and strategy analyses.
8. **Learning Experience**: Understanding and executing the process of programming purposeful learning, including the selection of desirable learning outcomes and means of achieving them.

9. **Diffusion of Knowledge**: Understanding and executing the process of imparting, exchanging, or transferring factual information in the form of knowledge, skills, values, ideas, concepts and principles in system development, control and maintenance of system viability.

10. **Adoption of Innovation**: Understanding and executing the process of influencing adoption of innovation, including the stages and techniques associated with influencing behavioural change in client systems.

11. **Appraisal of Innovations**: Understanding and executing the factors and stages in the process of evaluating the adoption of innovation by the client system.

12. **Management of Resources**: Understanding and performing the management of administrative functions and processes through which systems maintain viability and affect developmental change.

Wilkening (31) found that the various subsystems within the complex social structure of extension have different expectations and perceptions of the role of the change agent, and that the agents themselves differ in the degree to which they perceive these roles
as important. Agricultural agents in Wisconsin tended to view themselves as generalists whose functions were influenced greatly by local interests. Most of them did not perceive themselves as adult educators nor did they rank education as the most important part of their role.

In Ohio, McComick (32) showed that 80% of the agents perceived of their role as adult education, and Price (33) reported that the number was somewhat less. In both studies, newer agents tended to see their service role as more important than the educational role. Job (34) and Morehouse (35) found also that agricultural agents in British Columbia and Nova Scotia placed a higher rating on their service function to farmers than on adult education and community development. All the agents were strongly motivated and satisfied with their job conditions. Security of job and its prestige did not seem to be of concern to them.

Training

The numerous occupational roles of the extension agent with their associated adult educator behaviours require different personal characteristics, skills and competencies which are rarely possessed by an individual. This fact emphasizes the importance and need for sound technical training and broad professional preparation for all agents.

The early agricultural agents were selected on the basis of successful practical farm experience and clear evidence of leadership. As time went on, a farm background and graduation from an
agricultural college became prerequisites for the position of county agricultural agent. Home agents were also expected to have a bachelor's degree from a recognized university department of Home Economics. Presently, the emphasis is on additional professional preparation through graduate work.

The training of extension personnel in North America may be considered under: preservice, induction, inservice and graduate work. The extension worker's job, especially that of the county agent is general in character. This means that to be useful, the preservice training programme must be flexible in providing for integration with some degree of specialization. In its report (36) the Joint Committee on Extension Programmes, Policies and Goals of the U.S.D.A. and the Association of Land-Grant Colleges and Universities suggested that the prospective extension agent requires three types of courses:

- the major subject-matter fields in agriculture or home economics and the basic natural sciences on which this subject matter is based.
- basic training in the social sciences, as these bear on newer programme content and on cultural understanding and social and community organization.
- basic courses in education and adult education, including psychology and subjects dealing with extension organization, history, philosophy and methods, etc.

Induction training for new employees is very important, although some states still give only a few days of such training
before placing a worker in a county. The predominant pattern of induction training is to place the new worker under an experienced agent to serve as assistant agent for a period of up to half a year. The training is on-the-job and seeks to fill the gaps in the basic academic preparation of the new employee by linking already learned principles to everyday practice.

The rapid advances in knowledge as a result of research and the expanding educational programmes of extension make inservice training an imperative. The aim of such training is to increase the agent's proficiency and keep him up to date as to content and method. As Brunner said, extension is an adult education agency which takes large quantities of its own medicine (37).

Following a review of several studies, the National Task Force on Inservice Training (38) recommended that while each agent will have special training needs according to his own job requirements, to perform effectively, extension agents need training and skills in the following nine areas: extension organization and administration, programme development, understanding human development, the educational process, understanding social systems, communications, research and evaluation, technical subject matter and effective thinking. The opportunity for agents to acquire needed inservice training is provided through annual conferences, workshops, refresher courses and summer schools which are usually planned by the extension service in such a way as to involve all personnel periodically.

The recognition of the need for additional professional
training for extension workers has grown gradually over the years. Today, it is almost a compulsory requirement actively promoted by the Federal office of extension. Graduate schools originally were puzzled as to how to develop appropriate adult education curriculum (39), but as with undergraduate preparation, this problem has been resolved. Based on the common core of interest in learning about adult education, and a common identity in the field in spite of the diversity in programmes, institutions and leadership, it has been possible to devise suitable and practical educational programmes applicable to all leaders in the field (40). Today, graduate work is offered throughout the academic year by many North American universities.

**Educational Methods and Techniques Used**

The primary concern of the agricultural agent is to convince farmers or rural people to adopt new ideas for the improvement of their farm business. Careful planning of the extension programme is only half the job. In addition to knowing what to teach and how to teach, those whose job it is to teach must know their objectives, the capabilities of the audience and must be able to organize the learning situation in such a way as to appeal to as many senses as possible in the circumstances (41). To achieve this, the extension worker uses the four fundamental communication media of: the spoken word, the written word, the real object and the picture (42). These four communication media form the basis for the well-known adult education methods and instructional techniques such as lectures,
demonstrations, group discussions, field trips and different types of devices, e.g. newspapers, bulletins, radio, television and films used by extension agents.

In reaching the clientele, the North American agent has many extension teaching methods, techniques and devices available to him, a number of which can be directed to the individual farmer (individual instructional), some to groups of farmers (instructional group), and others to masses of rural people (mass communication). The most common individual instructional methods used by agricultural agents in contacting farmers are: telephone calls, letters, farm and office visits. When an agent first comes into a district, it is natural for him to start visiting his farmers so as to know them, and also to know his district. Later on, he finds it convenient to depend more on letters, telephone calls, and office visits, and uses less of farm visits because they are expensive, time-consuming, and can reach only one person at a time. Farm visits are, however, among the most effective extension teaching methods because they facilitate immediate discussion of the farmer's problem (43).

Usually, the agricultural agent has in his possession facts and information which are of value to other farmers in the community, and because it is part of his duty to spread such knowledge so that as many people as possible can benefit from it, he finds it expedient to meet farmers in groups. Different kinds of group meetings constitute the most common group contact method used by extension agents in North America (44). A meeting creates personal contact with a
large number of people at a given time and facilitates the collective sharing of knowledge and experience; but the intensity of the educational situation for each farmer is not as great as it is with individual instructional/contact methods. Short courses, farm demonstrations and group tours are other instructional group techniques used by North American agents occasionally.

Of the mass communications methods, simple inexpensive leaflets, bulletins and publications are most frequently used. All branches of the Extension Service have illustrated bulletins designed to guide farmers in various aspects of the farm business. Most letters sent to farmers in reply to their queries usually contain such leaflets and bulletins for reference. Newspaper releases, radio announcements and television are used at times. Urgent extension recommendations are diffused through these mass media channels which are efficient in creating awareness, disseminating information and reaching many people with the least effort; but only a small proportion of those reached are motivated to act (45).

Findings from adoption studies (46) show that while individual and group instructional techniques may be expensive and time-consuming, they are by far superior to mass communication media in terms of evoking desired responses from the clientele. Other studies of the comparative effectiveness of extension methods suggest that no single extension teaching method is best for all situations (47). There is the need to select them judiciously and use complementary techniques in combination for more effectiveness.
Summary

This review has identified operating conditions and other essential attributes of a successful agricultural extension (rural adult education) system. They include: understanding, knowledge and skillful application of basic principles of education by the change-agent, emphasis on the educational role, development of democratic working philosophies and guidelines, the use of well-trained and competent personnel, and the maintenance of effective instructional contact with the clientele. This study seeks to determine the extent to which these conditions of successful extension performance are present in the Extension Services of the East Central State of Nigeria.
Footnotes to Chapter II


5. Ibid., p. 19.


7. Canada's Agricultural Extension Services, Federal Department of Agriculture Publication, Ottawa, p. vi.


27. Dickinson, op. cit., p. 68.


33. Verner and Dickinson, loc. cit.


40. Verner, Dickinson et al. op. cit., p. 33.

41. Penders, op. cit., p. 142.

42. Ibid., p. 143.


44. Ibid., p. 14.


CHAPTER III
EXTENSION SERVICES IN EAST CENTRAL STATE OF NIGERIA

The cross-cultural diffusion model (page 87) suggests that no matter how well-planned and managed a rural development or adult education programme may be, no matter how sophisticated and informed its field staff, there are always some economic, sociological and traditional features of the local environment or host culture that can aid, hinder, or frustrate the programme. The purpose of this chapter is to describe the Agricultural Extension Services in the East Central State of Nigeria; and to make the description more meaningful, it includes a brief review of the local situation in which the extension services operate.

The Rural Setting

A. Nigeria: Nigeria, with an estimated population of 65 million people (1) is the most populous country in Africa. It is a republic within the British Commonwealth of independent nations, and occupies an area of 356,000 square miles on the west coast, about the same size as British Columbia. The country lies within the tropics between 4 and 14 degrees north of the equator and longitudes 3° and 14° east of the prime meridian. It is generally undulating. Climatic conditions are typically tropical with a very high relative humidity.

The annual rainfall ranges from 120 inches along the Atlantic coast to about 30 inches in the extreme north. Average daily
temperatures range from 80 to 85°F in southern coastal areas, but get progressively higher as one moves inland towards the Sahara desert.

The vegetational pattern is keyed closely to the rainfall distribution, changing from heavy deciduous rain forest along the coast to subtropical savannah further inland. There are two distinct seasons: the dry season which lasts from October to March, and the rainy season from April to September.

Little is known about Nigeria before the arrival of European traders and missionaries in 1486 (2). The region was inhabited by a multiplicity of ethnic or tribal groups, each with its distinct culture, language and well-developed traditional system of government. Among the major ethnic groups are the Hausa, Fulani, Ibo, Yoruba, Benin, Efik, Ibi-bio, Tiv and Kanuri. These ethnic groups which later on became what is now called Nigeria had evolved complex systems of government and some had developed into great kingdoms such as the Kanem-Bornu Empire, the Fulani and Yoruba Empires before the first European traders arrived. Following the Treaty of Utrecht in 1713, the British gained administrative control of the region and engaged in a lucrative slave trade.

Nigeria came into being in its present form in 1914 when the two protectorates of Northern and Southern Nigeria were amalgamated by Sir Fredrick Luggard. Despite many difficulties, focussing mainly on the differences among its various component groups, Nigeria became a sovereign federation on October 1, 1960; and on October 6, 1963, it became a republic within the Commonwealth. A military coup in
January 1966 gave Nigeria its present military government. In 1967, the military administration divided the country into its present 12-state structure.

Among the 100 or more countries and territories which today may be classified as economically underdeveloped, Nigeria ranks in the bottom 50 per cent. The per capita income is a little over $120, but the average farmer earns much less than that a year (3). Agriculture is the primary industry employing most of the rural population, and virtually all of the country's agricultural output is produced in small farms of less than 3 acres.

Although the potential for increased production of crops through improved farming methods is known to be significantly higher than the present level of production, traditional farming methods and small farm units prevail throughout Nigeria. Most farmers still rely on the hoe and appear reluctant to try new techniques. The use of fertilizers, insecticides and modern agricultural tools or machinery is rare. A few commercial plantations have been established in the southern states mostly for rubber, cocoa and oil palm. Some of the major export items include palm oil and kernel, cocoa, rubber, cotton, peanuts, timber and petroleum oil which is now the major source of Nigeria's foreign exchange. Coal, tin ore, columbite, iron and limestone are also found in exportable quantities.

Less than 50 per cent of the people can read and write the local language or English, and only a small proportion of the adult population is educated. The old colonial system of education which
was grossly irrelevant to the cultural values and ideals of the people is being changed gradually. Education is highly valued by Nigerians and a very large percentage of the country's budget is devoted to providing and expanding educational services at all levels (4). There are six universities with over 10,000 undergraduates, and the same number of Nigerian students are studying in oversea institutions (5). Nigerian leaders are aware of the people's problems and have evolved long-range economic development programmes designed to:

'Increase agricultural productivity and diversify production in order to improve diets, keep up with a population growth of 2-3% a year, expand export earnings and through improved efficiency release labour from the farms into new and expanding jobs in mining, manufacturing and trade' (6).

B. The East Central State of Nigeria

Physical Features: The East Central State of Nigeria, one of twelve political divisions, is the fourth smallest state in size and covers about 11,000 square miles southeast of the country. It is situated 4° to 7° north of the equator, and 5° to 9° east of the prime meridian. The climate is tropical and consists of the rainy and dry seasons. Temperatures are uniformly high throughout the year ranging from 70°F to 99°F. The average annual rainfall varies from 65 inches along the northern border to over 80 inches nearer the south. These climatic conditions sustain a thick rain forest vegetation all over the state.

Population: With over 8 million people, the state is one of the
most densely populated rural areas in Africa. The average density of population ranges from about 500 persons per square mile in Abakaliki province to over 1,000 persons per square mile in Okigwi, Orlu and Owerri divisions, compared to the national average of less than 250. Although all the inhabitants are members of the Ibo tribe, there are differences in dialects between larger communities. English is the official language used in schools and government establishments, and the pidgin form of it is widely spoken by most people.

**Government:** The state is divided into provinces for administrative purposes and the provinces are subdivided into divisions and local council areas. Most of the government ministries and departments are represented at the divisional headquarters and only the larger ministries like agriculture, health and education have representatives at the local county levels. The towns are connected by a fair network of roads and lorries run regularly between towns and villages.

**Occupation:** Generally, the people are farmers, although many of them combine farming with petty trading, lumbering, palm wine tapping, carpentry or tailoring. Farming is the most important economic activity. It supplies all the staple foods, and a few years ago, agricultural exports were the main source of foreign exchange for the region. The state produces most of her own food: rice, yams, cocoyams, corn, cassava, etc. by traditional farming methods and also produces palm oil and kernels, coal, iron ore,
Figure 2.

MAP OF THE EAST CENTRAL STATE OF NIGERIA

Scale: 1" = 40 miles. — State Boundary, — Rail line.
limestone and crude petroleum for export. A few livestock are kept, but neither goats nor cows are milked. Fishing and hunting are done in certain areas. Trade is important and every village has a central market.

**Farming System:** Throughout the state, the bush fallow system of farming is practised. Using the hoe and matchet as basic tools, a farmer would clear small isolated plots of land totalling about 2 to 3 acres each year, cultivate them for two to three years and then allow them to return to their natural vegetation for a number of years. During this fallow period, which is usually between 3 and 7 years, the fertility of the soil is replenished. The predominant cropping pattern is mixed-cropping dominated by yams, cassava and maize.

**Land Tenure:** A farmer can acquire land in several ways: by inheritance, allotments of communal land by the elders, pledging, or in very rare cases outright purchasing. In certain areas of the state, farmers are experiencing a continuing decline in crop yields as the rapidly increasing population density progressively reduces the amount of land available for cultivation and consequently the traditional period of bush fallow in the rotation.

**The People:** Over 80 per cent of the people live in rural villages. Their houses are rectangular, built of mud with thatch roofs. Wealthier people often use concrete blocks and corrugated iron sheets. Related extended family groups live in the same compound, and these compounds are clustered into villages which in turn may be joined
to form larger communities or towns. In most villages, there are organized age-groups for men, which function in community work such as road clearing, night guards, and repair of the village church and school buildings; or in the case of women, sweeping the market place every market day.

Authority in the village is exercised by a council of elders. The council of elders consists of the oldest men from each lineage that makes up the village. On controversial issues, they usually summon an assembly of all citizens from the town to deliberate with them. During the combined meeting of the council and the assembly, the oldest member of the council of elders presides. His duty is not to have the final say on any matter but to chair the meeting and judiciously determine the consensus. Every citizen has an equal say in the affairs of the assembly. No voting is done but the consensus usually becomes law or policy in the village.

Traditional laws and customs and other socio-cultural values are much respected. Every Ibo lives in a system of circular loyalties, from the immediate family to the extended family, to the village group and to the community or town; and finally to the tribal group. There is division of labour according to the sexes.

In recent times, the larger villages have taken on a more important role in community development effort, especially in terms of acquiring modern amenities like maternity clinics, postal agencies, pipe-borne water supply etc. through self-help projects. The major problems of rural Nigeria include a largely uneducated electorate,
undiversified economy with little in the way of industries, malnutrition and other health problems, traditional methods of farming with low levels of productivity and rural poverty.

**Traditional Education**

Education is concerned with tradition, that is the preservation and transmission of values, ideas and practices which have proved to be worthwhile over the years (7). The members of any society have specific methods, techniques and processes for rearing and educating their children, thus transmitting to them their cultural heritage. Cultural or social heritage consists of all the accumulated body of knowledge, values, skills and artifacts which have emerged through human experience in that society. This accumulated capital of human experience must be preserved and handed over systematically if the new generation is not to start anew, and this experience should be recognized in planning subsequent programmes of continuing education.

Culture is not rigid or fixed. Each generation adds to it by reinterpreting and reintegrating it in terms of its own needs. In other words, cultural heritage must be responsive to changes taking place in the life and times of the people. In its modern concept, education is vitally concerned with change, growth, adaptation and improvement (8). It is the function of education to help preserve what is good in any culture and to bring about desirable changes by helping the individual to grow in relation to
his society and the changing conditions (9).

In preliterate societies, learning was acquired in two ways: imitation, in the apprenticeship method; and memorization in the oral tradition (10). The purpose of education in these societies, though it was certainly not expressed in these terms, was to make the individual a member of the group by passing on to him those skills, ideas and values necessary for living in the society. This is the cultural process or traditional meaning of education in which the growing child learns through growing up in the community and through day to day adjustment to situations. The child may acquire new knowledge, a feeling of belonging, love and attachment to a way of life, or a deep sense of belief in certain values by observing, listening, doing and imitating others.

In more advanced societies, parents send their children to school. The school may be regarded as an institutional invention to serve a social need. It is a device provided by members of a society for the specialized instruction of the young. Schools were developed as a result of the increasing division of labour and specialization in more complex and sophisticated societies.

The East Central State of Nigeria, and the whole of the country shares the heritage of a strong system of traditional education (11). The system is collective in nature, and intimately tied with the social life of the community. Its goals and processes are multivalent and it is achieved gradually as the child goes through the successive stages of physical, emotional and mental development.
Children occupy a central position in the life of the Ibo family. When a baby is born in the family, it is meticulously cared for by the mother. By the time the child attains the age of 6 to 8 years, the mother, in the case of a girl, or the father, if it is a boy, assumes the main responsibility for his education. The child's education at this time consists of helping with the work of one of his parents. The duty of the father or mother as a teacher consists of advising and guiding the child as he makes his first contacts with the environment. They give him the benefit of their own experience to enable him to participate in community activities. The father teaches the young boy how to become a man, just as the mother teaches her daughter everything relating to the role of the woman in the family.

Later, the child's education becomes the concern of every member of the community. In Ibo culture, it is considered very natural for the child to be scolded, corrected, advised or rewarded by any older person in the community. At about 10 to 15 years of age, children of both sexes are increasingly involved in the adult life of the community. They are allowed unrestricted opportunities to attend various public functions, to see and hear more about the problems of daily life. They lead a collective life with their contemporaries in the same age group and of the same sex.

The boys then learn an occupation, which may be hereditary in their own families, with a father or uncles, or in professional groups. By this time, they are ready to be initiated into adult secret societies through special ceremonies, rituals and the
performance of other rites. As in all educational systems, the child's initiation into the adult society simply means learning how to behave well, be loyal and polite to his elders.

The final stage of his training is completed through listening to and observing the elders as they settle community quarrels, in the same way that as a small child, he listened with other children to the stories, folklore, legends, songs and riddles told by adults during moonlit nights. Hereditary rights, traditional value systems, local laws and customs are observed, and conduct is regulated in a variety of ways, with appropriate punishment meted out when behaviour deviates from the accepted norm.

Traditional education seemed to have fulfilled the economic, political, social and cultural needs of the Ibo tribe. The system combined the concepts of education and instruction in an attempt to develop human beings physically and behaviourally. As described above, traditional education embraces character building as well as the development of physical aptitudes. It includes the acquisition of those moral qualities accepted as correct adult behaviour, and the acquisition of knowledge and skills needed by individuals if they are to successfully participate in the various aspects of the social life of the community. The effectiveness of traditional education was possible because of its close relationship with actual life situations. The child actually grew up in the real school of community life.
Adult Education

Formal education as opposed to traditional was introduced into Nigeria by the Christian missions which founded schools as complementary institutions to the church. They led the way in developing orthographies for local languages and in promoting literacy as a means of spreading religion. Until recently, education was largely in the hands of the missionaries, who did creditable work with limited resources in an obviously hostile environment (12). The East Central State government has now taken over the management of schools from private and religious agencies, and is providing increased opportunities for the education of youth through a free primary educational system administered by the state school board.

Adult education as such is not yet properly established, but the state supports a great deal of organized adult learning activities in the form of community development projects. At the state level, a number of government ministries including Education, Health, Agriculture and the Divisional Administration Department (13) share responsibility for adult education. Each ministry administers its own specific programmes with part of its annual vote. On the provincial level, these ministries have branches which implement adult education programmes under the supervision of designated senior members of staff. The department of education has a full time supervisor of adult education who inspects field activities, sets standards, trains literacy teachers and certifies new literates.
On the divisional and county levels, the departments of agriculture and rural health have different categories of full time staff who are directly involved in adult education work with local people, while the department of education has volunteers/part time adult education instructors drawn from the community. The activities of the various departments converge on the people at the village level, where different types of change agents: school teachers, agricultural extension workers, community development officials, village social workers, rural health inspectors and adult literacy instructors are involved basically in performing the same function of educating the people.

Other private agencies, industrial firms and institutions of higher education are also interested in promoting adult education in the state. Government technical departments, commercial houses and other bodies provide inservice and retraining programmes to update their staff, while the universities and some secondary schools provide extra-mural programmes designed to prepare adults for specific internal and external certificate examinations (14).

Current adult education programmes being emphasized include adult literacy education, concentrating on the three basic skills of reading, writing and speaking, with the goal of making the adult competent in the use of English as a second language. In the field of agriculture, extension education programmes seek to promote the mass adoption of improved techniques of soil conservation and scientific methods of farming. In the area of rural health, the programmes teach sanitation, improved family hygiene, infant welfare and family planning.
The most commonly used method is the class. From 10 to 15 people meet 3 to 5 times a week, each meeting lasting about 1½ hours. Community school buildings, churches and local government halls are used as classrooms. The classes are usually taught by day-school teachers who may be required to undergo a short training session before starting. The extra-mural classes are conducted in the afternoons or evenings and a few individuals take correspondence study through foreign agencies who have branches in Nigeria.

Theoretically 80 per cent of the state's population who live in rural villages are the target group, but comparatively few of them utilize these educational opportunities. Usually people who live nearer the programme centres participate more. Students in most of the programmes pay a few pennies for materials and provide their own books and kerosene lamps in rural areas. Teaching in the vernacular is no longer emphasized and there is increased participation by women. Also, there is increased government supervision of teachers and the universities are becoming more involved in adult education research so as to improve programme delivery and results (15).

Improper planning, limitations in resources, incompetent staff, the local people's rigid attachment to traditional culture, and lack of inter-agency cooperation have been the major problems of adult education in Nigeria (16).
HISTORY AND ORGANIZATIONAL STRUCTURE OF

THE MINISTRY OF AGRICULTURE AND NATURAL RESOURCES

Federal M.A.N.R.

The history (17) of agricultural development in Nigeria dates back to 1893, when Sir Claude Macdonald formed eight departments of government, one of which was for botanical research. This department with its headquarters at Olokomeji in the Western state was concerned with both forestry and agricultural matters.

In 1905, the British Cotton Growing Association acquired four square miles of land at a site near Ibadan for the purpose of growing cotton in the interest of the expanding British textile industry. This site was later named 'Moor Plantation' after Sir R.D.R. Moor, who was High Commissioner of the Protectorate of Southern Nigeria.

The cotton growing venture was later abandoned because the British Cotton Growing Association failed to grow cotton satisfactorily. This was the first lesson learned in Nigeria on the failure of a project due to inadequate feasibility study and research. In 1910, Moor Plantation became the headquarters and main experimental station of the Agricultural Department of Southern Nigeria, and was administered as a separate department under the directorship of Mr. W.H. Johnson, Mr. Johnson remained the director of agriculture for eleven years and retired in June 1921.

In 1912, Lord Luggard established a department of agriculture in Northern Nigeria. In June 1921, following the amalgamation of the north and the south, the northern and southern departments of
agriculture were also merged to form the Nigerian Department of Agriculture, under the directorship of Mr. O.T. Faulkner, who carried out major policy reorganization and set out the following objectives:

- production of export crops
- improvement and maintenance of soil fertility
- efficient marketing of agricultural produce
- introduction of agricultural education for the training of Nigerians
- and the establishment of the rudiments of Extension Service.

Two agricultural training schools were then built in Moor Plantation, Ibadan and at Samaru, near Zaria. In the northern provinces, farmer service or agricultural advisory work to improve traditional farming was the responsibility of the Native Authority, and specialist advice was given by one botanist and one chemist stationed at Samaru; and in the south by an entomologist and a pathologist stationed at Ibadan. Early extension work throughout the country consisted of intensive village to village touring on horseback, bicycle or on foot by expatriate agricultural officers, who showed the farmers how best to fit the production of major export crops - palms, cocoa, cotton and groundnuts into their farming operations. Indigenous junior field workers later visited the farmers to enforce the adoption of the new practices demonstrated by the agricultural officers.

The Agricultural Ordinance of 1948 consolidated all existing regulations prior to that year, and laid down for the country's
major agricultural commodities, the basis for quality, standardization, disease and pest control measures enforceable by the Director of Agriculture. The Ordinance also laid down the functional guidelines for the major institutions that provided support for agricultural development.

Mr. Faulkner's policy objectives were pursued with only minor modifications by subsequent directors of agriculture, within the framework of the Agricultural Ordinance of 1948, until a federal system of government was introduced in 1954. From 1954 onwards, Regional Ministries of Agriculture were set up and the functions of the Federal Government in agricultural matters were confined to agricultural research. There was no Federal Ministry of Agriculture and Natural Resources as such until 1964, when an administrative division of the Federal Ministry of Economic Development with responsibility for research was converted to a Federal Ministry of Natural Resources and Research.

After the regionalization of agriculture, considerable attention was turned to the development of Extension Services, which engaged primarily in the distribution of improved planting materials to farmers. Work on export crops still dominated the extension activities. This early and prolonged emphasis on the production of export crops has tended to distort Nigerian agriculture in the face of present relatively poor world prices for tropical agricultural commodities, and the increasing rate of urbanization and population growth which have stepped up the country's demand for food.
FEDERAL MINISTRY OF AGRICULTURE & NATURAL RESOURCES

COMMISSIONER FOR AGRICULTURE

PERMANENT SECRETARY

HEADQUARTERS & ADMINISTRATION

RESEARCH INSTITUTES

1. CRIN
2. NIFOR
3. NITR
4. RRIN
5. LEATHER
6. KAINJI RESEARCH
7. LAKE CHAD RESEARCH PROJECT

RESEARCH DEPARTMENTS

1. F.D.A.R.
2. F.D.V.R.
3. F.D.F.R.
4. A.R.T.S.

FED. DEPT. OF AGRIC. FORESTRY LIVESTOCK FISHERIES MET.

EXTENSION SERVICES

PLANT QUARANTINE

AGRIC. PLANNING DIVISION

LAND & WATER RESOURCES

CROP PRODUCTION

CROP PROTECTION

AGRICULTURAL COOPERATIVES

ESTABLISHMENT DIVISION

Figure 3
The Federal Department of Agriculture, in its present form, was officially established on 1st June, 1970 and now has the following organizational structure: (see page 60)

(a) **Production Division**: This comes directly under the director of agriculture and coordinates the activities of state ministries in the following areas: food and export crop production, horticulture, fertilizer campaign, agricultural credit, marketing and storage, extension activities and youth programmes, mechanization of agriculture.

(b) **Planning Division**: This section is headed by a Chief Agricultural planning officer who is based in Lagos.

(c) **Land and Water Resources Division**: A chief water resources officer is in charge. Under him falls the Land and Water Resources Conservation School at Jos, in northern Nigeria.

(d) **Pest Control Division**: This is headed by a chief agricultural officer based in Kaduna. A plant quarantine service comes under this division but for administrative convenience the Plant Quarantine Service is administered directly by the Director of Agriculture at Ibadan.

In order to carry out effectively the coordinating role of the Federal Department of Agriculture and the functions of the four divisions in the field, state federal offices were established in each state capital in 1972, and these are manned by a principal or senior agricultural officer. The duties of the state offices are as follows:
to help elaborate and appraise agricultural projects, particularly projects in the food production sector, which state ministries of agriculture intend to put forward for financing by the Federal government or for joint execution by both governments.

- to keep a close watch on the progress of federal government financed projects and to report bottlenecks and difficulties in time so that delays in implementation of the projects could be reduced to the barest minimum.

- to act as liaison officers between the state ministries of agriculture and the federal department on technical and administrative matters connected with federal grants to agriculture.

Four special extension programmes in which the Federal Department and the State Ministries of Agriculture have been particularly active are: the national accelerated food production project, tree crop rehabilitation project, irrigated rice production project, and fertilizer promotion project. The effort here is directed towards combating apparent national shortage in food supplies, rise in the prices of staple food stuffs and low agricultural productivity.

THE EAST CENTRAL STATE MINISTRY OF AGRICULTURE AND NATURAL RESOURCES

Organizational Structure

In the East Central State, government agricultural policies are implemented by the M.A.N.R. under the general direction of a
ECS MINISTRY OF AGRICULTURE & NATURAL RESOURCES

COMMISSIONER FOR AGRICULTURE

PERMANENT SECRETARY

Divisions: RESEARCH VET. FORESTRY AGRICULTURE PRODUCE FISHERIES MARKETING BOARD INSPI.

CHIEF AGRICULTURAL OFFICER

DEPUTY CAO

Branches: AGRIC. RES. & TRAINING SOIL CONSV. ANIMAL PRODTN. AGRIC. EXTENSION SERVICE SUPPORTING SERVICES ENGINEERING SECTION AGRICULTURAL ECONOMICS

SCHOOL OF AGRIC. PLANT FEED GOVT. DEM. FARMS AGRIC. INF. MACHINERY FARM MGT.
RESEARCH STATION PROT. STORES TREE CROP DEV. CREDITS TRANSPORT
F.P.P. FOOD CROP DEV. SEED MULT. MAINTENANCE
Y.F.CLUB HORTICULTURE IRRIGATION
HOME ECONS.

ZONAL EXTENSION UNITS

Figure 4.
commissioner. Below him is a permanent secretary who is a civil servant in charge of administration and policy matters for all of the 10 divisions of the ministry. (see chart on page 62b)

The Agricultural Division, headed by the Chief Agricultural Officer, is the largest and it is divided into seven sections which are further subdivided into a number of branches, each performing special extension-related functions. The Agricultural Extension Service is the largest section and consists of three branches: crop and livestock development, home economics and young farmers' club.

The state is divided into 10 extension zones, all of which are served by 859 senior and junior extension staff. Responsible for the administration and supervision of a zonal extension unit is a senior agricultural officer (SAO) who may have any number of agricultural officers or superintendents working under him in the divisional areas. The divisions are further divided into county council areas with assistant agricultural superintendents and agricultural assistants directly responsible for field extension activities and reporting back to the officers and superintendents in charge of the division.

It is at the county level that the actual extension work with farmers is conducted. Normally, the agricultural assistant here has a small staff of local extension workers: agricultural demonstrators or field overseers who sometimes have no formal agricultural training, to help at the village level. Apart from general extension staff, there are a number of field specialists
e.g. horticultural officers, supervised agricultural credit officers, fertilizer promotion officers, etc. who also work directly with the farmers.

Staffing of MOA Extension Services

**TABLE 1**

**DISTRIBUTION OF MOA EXTENSION SERVICE STAFF BY RANK 1974/75**

<table>
<thead>
<tr>
<th>RANK</th>
<th>Field Workers</th>
<th>Headoffice Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>SAO and above</td>
<td>4</td>
<td>33.33</td>
<td>8</td>
</tr>
<tr>
<td>AO</td>
<td>43</td>
<td>75.44</td>
<td>14</td>
</tr>
<tr>
<td>AS</td>
<td>36</td>
<td>94.73</td>
<td>2</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>83</td>
<td>-</td>
<td>24</td>
</tr>
<tr>
<td>AAS</td>
<td>52</td>
<td>91.23</td>
<td>5</td>
</tr>
<tr>
<td>AA</td>
<td>454</td>
<td>97.01</td>
<td>14</td>
</tr>
<tr>
<td>AD</td>
<td>221</td>
<td>97.35</td>
<td>6</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>727</td>
<td>-</td>
<td>25</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>810</td>
<td>-</td>
<td>49</td>
</tr>
</tbody>
</table>

**This figure includes 92 AAs, 68 ADs at the School of Agriculture, and 49 headoffice staff who were not part of the survey population as they had no direct contact with farmers at the time of the study.**

Table 1 shows the staff situation as of July 1974. In addition to clerical and other supporting staff, there were 859 technical staff, 12.46% of whom were senior staff in the ranks of SAO, AO and AS, while
87.54% were junior staff. The objective of the staff development programme was to gradually raise the quality and numbers of field staff through inservice training so as to attain the target of 1,125 recommended by the F.A.O. (18). This number is based on a ratio of one extension staff to 800 farm families.

Objectives and Functions

Between 1900 and 1940, Nigerian agriculture was largely foreign-trade oriented as a result of the policy of 'laissez faire in traditional agriculture with limited interference in export crop production' pursued under the colonial administration (19). By this means, the colonial masters hoped to create demand for manufactured products and obtain enough supplies of raw materials for British industries. During World War II, agricultural policy veered towards protection and encouragement, to enable it to attain higher productivity necessary for feeding the population and supplying badly needed raw materials to Britain.

From 1940 to 1960, there was a swing to large-scale production in contrast to earlier decades of small-scale farming, but still in favour of export crops. Agricultural Production and Development Corporations, Resettlement and Partnership Schemes were favoured as suitable avenues for increased production and better use of modern farming techniques. With independence in 1960, Nigeria's colonial-oriented agricultural policy gave way to a system of integrated development planning in which agriculture and other sectors of the economy received equal consideration.
As stated in Sessional Paper No. 4 of 1964, the present policy of the state Ministry of Agriculture is to raise the standard of living of the people through increased farm productivity resulting from improved management of crops, livestock and the land. This agricultural policy has been restated and expanded into departmental objectives in recent years to include: the raising of the productivity of the farmer and the overall modernization/commercialization of the largely primitive and subsistence agriculture so that it can complement the non-agricultural sectors of the economy by providing:

- more and better food to meet the demands of a rapidly growing population
- adequate and cheap raw materials for developing local industries
- increased capital formation through greater volumes of export crops
- attractive employment opportunities in rural areas for youth.

From time to time, depending on the prevailing economic situations, government stipulates in development plan periods, shifts in emphasis on how to achieve policy objectives. For example, in the 1962/68 development plan, export-crop production was emphasized, while in the current 70/74 programme, food crop production is being accorded greater priority (20).

In trying to achieve this objective, the M.A.N.R. performs three related functions: agricultural research, which seeks to find ways of improving the productivity of crops and livestock; the training of agricultural technicians and vocational farmers, and the communication of research findings to the farmers through the
Extension Services. To complement basic research conducted by agricultural institutions and the university, the ministry has a research branch which undertakes applied research aimed at discovering more productive systems and farming techniques, developing and adapting new and improved farm technologies like seeds, stock, fertilizer, pesticides, implements and tools.

The training function of the M.A.N.R. covers both the preservice and inservice training of junior and intermediate technical staff at the School of Agriculture, Umudike. It also includes the training of farmers on the job in government farms and demonstration farm centres, and organizing refresher courses and workshops for the senior technical staff.

Most of the divisions of the M.A.N.R. namely Agriculture, Veterinary, Forestry, Fisheries, and Produce Inspection have some kind of field extension services. These services are the major vehicles for carrying technical innovations from the research sources to the farmer. As vital links between research and the farmer, they also serve to bring back farmers' problems to the research centres for solution. The Agricultural Extension Service has three components namely:

(a) Advisory or Educational Service
(b) Farm Supply Services
(c) Supporting Services

The Advisory Services: This entails a field organization in which a large number of technical staff are posted to the rural villages to advise, guide and teach farmers as well as channel to them various
farm inputs supplied by the ministry and other agencies of government.

Farm Supply Services: Since Nigeria does not have a well-developed private sector agribusiness, the Extension Services of the state Ministry of Agriculture and Natural Resources undertake to procure and distribute essential farm inputs such as improved planting materials, young livestock, day-old chicks, feeds, seeds, farm credit, fertilizers as well as agro-chemicals. Supplying of materials to farmers is a major function of the Extension Services and will likely continue to be until the private sector is capable of taking over these functions (21).

Supporting Services: The M.A.N.R. is sustained by a number of other supporting service units. These include the Agricultural Information Service, Soil Conservation Service, Young Farmers and Home Economics programmes, and the Agro-Meteorological Service.

Staff Training

The training of graduate level staff is the responsibility of the university. In 1954, a regional School of Agriculture was built at Umudike for the purpose of providing (a) intensive training for junior and intermediate technical staff so as to make them more competent in their job, and to enhance their prospects for promotion in the department; (b) regular inservice training and refresher courses for the senior staff.

The school, which has now been taken over by the Federal Government offers a 1½ to 2 year preservice agricultural training course to secondary school leavers who have been given civil service
appointment by government. Success in this course qualifies candidates for posting in any of the state ministries of agriculture as agricultural assistants. The school also offers a science-oriented 2-year course leading to the award of a diploma certificate and promotion to the rank of assistant agricultural superintendent in the ministry. The AA course is concerned with more practical matters while the diploma course seeks a deeper and more scientific understanding of technical agriculture, administration and supervision of agricultural development programmes.

From 1962 to 1968, the AA course was reduced to a 6-9 month crash training programme in an effort to increase the turnover thereby making more AAs available for extension work. This programme was scrapped when the ministry realized that shortening the training period had very adverse effects on the efficiency of the AA in the field.

By policy, the more promising AAs in the field are selected and sent back to the school for further training at the diploma level and subsequent upgrading to AAS and AS levels. Agricultural demonstrators and field overseers similarly have the opportunity to be selected and retrained as AAs. Diploma holders may receive university credit and given direct entry into any Nigerian university to do a 3-year course leading to a bachelor's degree in agriculture instead of the usual four years. Limited opportunities also exist for graduate agricultural officers to win any of the federal, state or foreign government scholarship awards for post graduate studies within or outside the country.
Responsibilities of the Extension Worker

The responsibilities and duties performed by the extension worker in ECS Nigeria depend on the area of extension in which he is deployed: general extension, tree crop extension, home economics extension, horticultural extension etc. In general, the duties are to: (22)

1. Live in the area assigned to him in order to develop friendly working relations with farm people and be considered by them as one of their own.

2. Be in contact with other technical divisions of the M.A.N.R., other agencies and commodity organizations, and be well informed on their programmes and policies in order to ensure that proper coordination is achieved at the field level.

3. Represent extension at the divisional or county level in committees planning programmes for agriculture and rural development and to make sure that farmers' interests and desires are considered and protected.

4. Cooperate with subject-matter specialists and assist them in projecting their programmes.

5. Cooperate with the Agricultural Information Section in preparing press releases, news stories, newspaper/newsletter articles, and radio broadcasts.

6. Participate in evaluating studies, agricultural surveys and censuses.

7. Prepare, update and/or render monthly and quarterly reports as required. Prepare and submit records of activities and
accomplishments.

8. Freely move and regularly visit rural villages, farms and projects in the area, according to schedules, approved plans of work and needs of the people.

9. Be in contact and cooperate with farmers, local and community leaders, equipment supply firms and agents, leaders of farm organizations and officials of agricultural institutions, services and agencies operating agricultural and rural development programmes in the area.

10. Prepare local extension programmes and annual plans of work with the help of local leaders, extension supervisors and subject-matter specialists.

11. Participate in committees/councils and bodies responsible for the planning and implementation of agricultural/community development programmes in the area.

12. Plan and conduct educational activities such as demonstrations, meetings, field days, study tours, training sessions for farm youth; organize agricultural exhibits, campaigns and special projects involving farm people.

13. By means of individual, group and mass contact methods impart information to farmers, leaders and others in order to bring about in them desirable changes in attitude, knowledge and skills.

14. Bring to the attention of extension administration problems and situations requiring study and action.

15. Procure, hold, sometimes multiply, and/or distribute to
farmers at subsidized prices, improved planting materials, livestock, farm tools and equipment, fertilizers and insecticides, in order to facilitate adoption or make the application of a recommended farm practice possible.

Major Programmes

Every branch of the M.A.N.R. has its own programme of work. The programme which usually includes long term and short term goals is developed by the staff members of the branch. Each zonal extension unit develops its own programmes and budget and submits to the CAO. These are collectively debated and modified as necessary during the programme planning meeting of all senior extension staff at the headquarters. Programme emphasis and priorities are determined and final approval is given by the CAO after government has voted and released the funds.

The M.A.N.R. is involved in a wide variety of programmes and activities which include annual crops, tree crops, livestock production, home economics, youth work and other special schemes and projects (23).

Annual Crops
1. Rice extension
2. Seed improvement
3. Horticultural programme

Tree Crops
4. Oil Palm rehabilitation scheme
5. Rubber planting scheme
6. Cocoa improvement scheme

**Livestock Production**

7. Livestock and poultry extension
8. Livestock feeds
9. Grain storage

**Supporting Services, Special Schemes and Projects**

1. Agricultural Information Service
2. Supervised Agricultural Credit scheme
3. Plant Protection extension
4. Soil Conservation programme
5. Fertilizer Promotion programme
6. Rural Women's programme
7. Young Farmers' Club programme
8. Agricultural mechanization programme
9. Agricultural economics, Records and Statistics
10. Agro-Meteorological services
11. Staff Training (School of Agriculture)
12. Agricultural Research (Research Station)

Although it is beyond the scope of this report to discuss all of these programmes in detail, it is necessary to cite a few of the more important activities e.g. oil palm rehabilitation, fertilizer promotion and poultry programmes to describe more fully the nature of the functions undertaken by the Extension Service in ECS Nigeria.
Oil Palm Rehabilitation

This scheme was instituted in 1962 with a target of felling some 60,000 acres of natural palm groves and replanting them with high yielding varieties produced by the Nigerian Institute for Oil Palm Research in Benin. Underlying this scheme is a government subsidy in cash and kind up to $54 (N36) per acre. The farmer has to provide at least five acres of suitable land, the necessary labour and sign a formal contract with the Ministry of Agriculture obliging him to clear, space, mulch and maintain his land according to laid down procedures. The ministry would in turn inspect and survey the land, provide seedlings and fertilizer; and based on satisfactory maintenance, pay the cash subsidy over a five-year period.

Fertilizer Promotion Programme

This programme is operated by the Soil Conservation Service. Each division has an AA or a higher ranking extension staff responsible for fertilizer promotion activities. These activities consist of fertilizer demonstrations, educational campaigns and the sale of fertilizers to farmers at subsidized prices. There has been a considerable increase in the use of fertilizer by the better farmers in the state although the extension staff still face such problems as lack of adequate transport facilities and persistent rumours among farmers about the decaying effects of fertilizer on root crops.

Currently, the F.A.O., the West German Government and the
Federal government of Nigeria are cooperating to provide technical assistance to the state in the form of funds, staff, transportation vehicles and supply of fertilizers for the programme as part of the national accelerated food production project.

**Poultry Programme**

The Ministry directs major extension effort to the production and distribution of day-old chicks. The chicks are hatched at ministry farm centres and distributed at subsidized prices to farmers throughout the state. Poultry feed is also supplied at reduced cost and loans could be arranged for the farmers. To benefit from the programme, a farmer must provide adequate housing, basic poultry rearing equipment and trained labour for running the enterprise. The main objective of the poultry project is to replace local chickens with imported superior breeds that can produce more eggs and meat badly needed to step up the protein content of the people's diet.

**Related Activities**

Other agencies such as the ECS Agricultural Development Authority (ADA), the University of Nigeria, Nsukka, the Norwegian Church Agricultural Project (NORCAP) and the Shell-BP Company also undertake extension-related activities in the state, but only the ADA and the University programmes will be discussed briefly because of their close relationship with the MOA Extension Services and the investigator's official connection with the latter.

**ECS Agricultural Development Authority (ADA)**

The ADA is a post-war development of what used to be the
Eastern Nigeria Development Corporation, a commercial agricultural production agency which operated large scale oil palm and cashew plantations. The ECS Edict No. 18 of 1970 (24) formally established the ADA and charged it with the duty of securing the investigation and formulation of projects for developing the crop and animal resources of the state with a view to expanding production and processing of foodstuffs and raw materials needed for other agro-industrial development. The edict also empowered the ADA to acquire, hold, manage and dispose of property corporate or personal, and by investment or otherwise enter into any contract necessary for the discharge of its functions.

Specifically, the Agricultural Development Authority functions as:

- a commercial concern through production units that are expected to make profit. Serious attention is given to the operation of plantations as nucleus projects integrated with the farming systems of the communities in which plantations are located.

- a stimulating agency for agricultural development through granting of loans etc. to agro-business firms, cooperative societies or individuals. Priority is given to food crop production and processing while not ignoring other ways of diversifying the cash crop economy.

- a provider of financial and other support for research related to priorities in the execution of its projects, and

- alone or in association with other agencies participate in the
stimulation of infrastructural development or provision of facilities that enhance agricultural development in the state.

As part of this venture, the ADA has recently taken over a number of commercially viable MOA demonstration centres, farm settlements, and projects as well as the technical agricultural staff operating these projects. Okigbo (25) has summarised the major problems of the ADA as those relating to: i. finance, ii. strained relationship with Ministry of Agriculture staff who, according to him, often behave as if ADA were a competing interest that should be eliminated, iii. shortage of qualified and experienced staff, and the employment of thousands of former Eastern Nigeria Development Corporation staff who, prior to the civil war, were engaged in projects outside the present boundaries of the state, iv. policy problems and v. overlapping responsibilities with those of other government ministries.

The University of Nigeria, Nsukka.

Since its inception, the University of Nigeria has continued to produce agricultural and home economics graduates most of whom are employed by the Ministry of Agriculture. In addition, the Faculty of Agricultural Sciences through its two departments of Home Economics and Agricultural Economics/Extension has been involved in some extra-mural activities since 1961. This rural education project included the running of weekly adult home-making classes for women, and a young farmers' club scheme. The purpose was to
transmit modern agricultural and family living knowledge to communities surrounding the university. These extension activities were disrupted by the civil war.

Late in 1972, the faculty re-initiated a 'Coordinated Extra-Mural programme' for rural development (26), designed to enable the university to complement the efforts of other government ministries and play a more active role in developing agriculture in the state. The overall objective of the project is to re-activate the war-torn economy of the East Central and South Eastern states of Nigeria and to improve living standards in the rural areas through increased production of crops and animals and better nutrition. To achieve this objective, the Faculty of Agricultural Sciences seeks to:

- intensify existing extension programmes in the faculty in such a way as to exert maximum impact on the community
- establish pilot projects which will be used to demonstrate the best possible techniques of rural development and will serve as models for other communities.
- generate productive enterprises that would absorb the numerous unemployed youths who stream to urban centres in the vain search for paid employment
- use the projects as field laboratories for the training of students in practical extension and community development.

RELATED EXTENSION RESEARCH IN NIGERIA

A few studies (27) have been conducted in Nigeria primarily to explore certain aspects of agricultural development, diffusion of
innovations and examine factors affecting farmers' response to specific extension programmes. Kincaid et. al. (28) studied the opinions and attitudes of indigenous and foreign service staff in the M.A.N.R. regarding selected extension policies and programmes. They found that ministry personnel were moderately satisfied with their terms of employment; and that inadequate logistical support, improper planning and management of programmes as well as poor quality staff were the most serious problems limiting extension's progress in the country.

Kidd (29), in a study of staff performance and farmers' response to extension in Western Nigeria found that the respondents generally had a favourable attitude towards a career in agriculture, but were very concerned by lack of personal progress in the service. Many of the subordinate staff felt that farmers influenced their decisions regarding programmes of work and the different hierarchies of extension staff perceived their job essentially as that of supervising their immediate subordinates.

Akinbode (30) investigated the orientation of Extension Services in Western state using attitudes and role performance of divisional extension officers as indicators of that orientation. The findings revealed that Extension, a government agency, behaved in a way to promote education and development, contrary to the hypothesis that public service organizations behave in a way to facilitate their maintenance and survival. A serious limitation of this study was that the respondents were drawn from only one
As part of a cross-cultural study involving Brazil, India and Nigeria, Hursh and others (31) surveyed 71 villages in former Eastern Region of Nigeria to determine distinguishing characteristics between relatively successful extension villages and relatively unsuccessful villages. In addition to indications of poor extension impact, they found that the degree of change agent contact with the village and the communication techniques used were the best indicators of success in extension programmes.

Although these studies were conducted mostly in the Western state during a period of national emergency, and despite known educational, socio-economic and agricultural differences between the states of Nigeria, many of the findings can be safely generalized. This review, however, leads to one conclusion - that these studies are merely the beginning of an enormous research task that has to be done to produce facts and information on which decisions about Nigeria's rural adult education programmes will be based if they must produce the desired changes on rural people.
Footnotes to Chapter III

1. There is some doubt as to the validity of this figure. A census taken in November 1963 placed the population of Nigeria at 55.6 million, and the most recent national census of November 1973 gave the population as over 68 million. Like the 1963 census, this last one has been the subject of considerable political debate and controversy between the states.


16. Information supplied by a state supervisor of adult education at Enugu during a personal interview and discussion with the investigator.


THEORETICAL FRAMEWORK

Diffusion of Culture

Although relevant concepts have been drawn from many areas of the social sciences, the framework for the study is based on the theory of cultural diffusion. According to this theory, social change is essentially a communication or diffusion process which involves the transfer of culture elements from one society to another in order to stimulate and accelerate growth in the receiving culture.

As applied to adult education by Verner (1), the theory suggests that the disparity in educational opportunities existing within and between nations can be reduced through the diffusion of educational technology from the more advanced to less developed nations. This cross-fertilization process of education may be initiated by the donor, the borrower or an intermediary such as the UNESCO and other research institutions whose major function is to promote the international diffusion of science and technology (2) by placing at the disposal of others useful ideas, skills and experiences originating elsewhere.

The transfer of a cultural element occurs in three distinct stages which include the introduction or presentation of the element, its acceptance by the receiving culture, and the integration of the element into the pre-existing culture. The presentation of an
element may occur by chance through inter-cultural contacts or by deliberate action on the part of individuals or governments. The acceptance of an element by a receiving culture depends primarily upon the immediate utility and potentiality of the element to that culture while integration is determined by the compatibility of the element with existing value systems and social organizations. Usually the integration of an acceptable element results in the modification of both the transferred elements and relevant aspects of the receiving culture.

Elements such as materials and equipment can be transferred with some facility if they do not involve basic alterations in behaviour patterns of the recipients. Those traits which necessitate alterations in established processes, or impinge upon attitudes, beliefs and values in a culture are resisted. Innovative ideas, underlying principles and techniques of instruction in adult education can be transferred easily and in many circumstances it is better to transfer just the idea through stimulus diffusion and leave the receiving culture to develop its own appropriate responses.

The educational elements which tend to be culture-bound include methods, materials or devices and programme content, but not techniques, which are derived from universal principles governing human learning behaviour. An element or its associated traits may be rejected at any stage, and integration becomes more difficult or impossible where the receiving agency lacks a proper understanding and true acceptance of the educational idea, or fails
to modify it to suit local conditions before disseminating the idea to the people. (See Model on page 87)

Cultural borrowing in adult education has existed for centuries, and there is anthropological or historical evidence to show that the comparatively rapid growth of human culture as a whole has been due to the ability of all societies to borrow elements from other cultures and incorporate them into their own (3). There is very little doubt that the agricultural extension idea (including scientific knowledge, practices and experiences) which has made North American agriculture the most productive in the world, if properly diffused, can substantially improve and transform traditional farming in developing countries. The outcome will depend primarily on how well the receiving agency performs its research and educational roles, which include organizational administration, staff training, programme planning, implementation and evaluation.

It has always been realized that systems of education cannot be transferred from one country to another without being found unsuited to the new environment. Therefore, the most critical aspect of the role of the receiving agency, as noted by Hayami and Ruttan (4) is the capacity to modify or develop, through research, new forms of the borrowed technology consistent with local environmental and economic conditions. This role of the receiving agency is particularly important in agriculture where biological, chemical, mechanical or educational technology can be transferred, and where
North America
(ORIGINATING CULTURE)

MORE
ADVANCED AGRICULTURAL
TECHNOLOGY
- Biological Technology
- Chemical Technology
- Mechanical Technology
- Educational Technology
(Agricultural Extension)

Inter-cultural contacts:
chance factor or by
deliberate action.

AGRICULTURAL
EXTENSION
- Ideas
- Content
- Methods
- Techniques
- Devices

Nigeria
(HOST CULTURE)

TRADITIONAL
FARMING
RECEIVING AGENCY
(AGRIC. EXTN. SERVICE)
1. Understanding
2. Acceptance
3. Training & Competence
(modify and adapt)
4. Effective Teaching
.communicate)

Acceptance by Community
and cultural integration.

Schema: CROSS-CULTURAL TRANSFER OF ADULT EDUCATION.
most innovations are location-specific because of ecological and other natural reasons.

As suggested by the model, the rationale underlying this study is that educational technology (the agricultural extension system) transferred from a more advanced to a less developed country has greater chances of success when the receiving agency (Agricultural Extension Service in Nigeria) does the following:

- has a proper **understanding** of the principles and processes of extension and **accepts** the system as the best way to solve the problem of low agricultural productivity in the area.
- Perceives its **role** as primarily **educational** and develops a democratic **philosophy** (attitudes, values and beliefs) characterised by a concern for the development of rural people.
- has the technical **training and competence** to modify transferred elements of agricultural extension (i.e. research) where necessary into forms compatible with the local culture, and
- **effectively communicates** the appropriate facts in their usable form to the people.

In other words, the degree to which these four performance-related variables are present or absent in any Extension Service largely determines the relative effectiveness of its educational programmes and its total impact on the rural people.
Cross-Cultural Transfer of Agricultural Technology

Since the end of World War II, the problem of economic development for nations of Africa, Asia and Latin America has been a major concern to these nations and to the developed industrial nations of the world. In trying to help stimulate development in these areas, the industrial countries have sponsored economic and technical assistance programmes. Economic aid has been in the form of grants and loans of money or materials to the developing countries in an attempt to spark those sectors of the economy potentially capable of rapidly improving economic conditions. The technical approach has been to export or train indigenous technical experts for the recipient countries, on the assumption that the knowledge acquired would promote economic growth as soon as it was transferred.

Efforts to achieve agricultural development by direct transfer of foreign technology have been largely unsuccessful. Hayami and Ruttan (5) have suggested that inadequate recognition of the location-specific character of agricultural technology was a major reason for the lack of effectiveness of much of the technical assistance effort of national and international agencies during the 1950s and 60s. Other causes of the failure of transferred agricultural innovations in developing countries, according to Verner (6), lie in the fact that we presently know very little about those principles of cross-cultural diffusion of technology which are particularly relevant to the spread of modern concepts of adult education to other countries and between subcultural groups.
The effective diffusion of culture and technology within national boundaries has been a major area of interest and the focus of a considerable amount of research in Anthropology, Sociology, Education, Economics and other disciplines. Each discipline has evolved a somewhat different model of the process and has been concerned with specific aspects of the phenomena (7).

In Agricultural Extension and Rural Sociology, the main focus has been on (a) the diffusion of new ideas from the technical expert to the ultimate recipient, usually a rural farmer; and (b) the impact of socio-cultural factors on communication and adoption behaviour over time and space within a society. These studies have shown that the adoption process follows the same general pattern - the 5-step classical diffusion model (8) consisting of: Awareness, Interest, Evaluation, Trial and Adoption, regardless of the means of communication and the cultural setting involved.

Furthermore, there has been particular concern with the understanding of how the different socio-economic characteristics of adopters create a continuum ranging from innovators to laggards, and how these characteristics determine the means of communication that are most effective in accelerating the diffusion process (9). Economists have focussed their attention on how economic variables such as the profitability of innovations and the asset position of farms and firms influence the rate of diffusion (10).

These studies have made a significant contribution to adult education research by introducing the concept of acceptance or adoption of practices as a means of measuring behavioural
changes (11). Also, they have provided a useful conceptual framework for describing and analysing the diffusion—adoption process within a particular area. However, the interpretation and use of their findings in adult education practice are severely handicapped by their failure to differentiate precisely between the dissemination of information through communication processes and the achievement of systematic learning through adult education methods and instructional techniques.

The entire process by which technology and other educational ideas are transferred across cultural and international boundaries is one area of diffusion of innovations which has received very little research attention. For example, none of Verner's postulates (12) about methods of adult education in cross-cultural diffusion have been tested. Most of the diffusion studies done so far have limited relevance for the cross-cultural transfer of adult education.

Among various diffusion models, the agricultural—change model (13) offers the most useful framework for understanding the process of cross-cultural diffusion of technology because it provides for an agency in the host culture that is responsible for receiving, testing, developing and adapting borrowed agricultural technology to suit local conditions, a most crucial requirement in the whole process.

In addition, the model has an organized procedure for diffusing the innovations through adult education processes and this facilitates the assessment of programme result and the effects of
socio-cultural factors on methods and techniques of adult education used in promoting learning. This model (see page 87) and the classification theory of adult education methods proposed by Verner (14) have been used in this study as the frame of reference for investigating the effectiveness of a transferred adult education technology - the agricultural extension service system in the East Central State of Nigeria.

The Change-Agent Role

Sociological literature contains many different definitions and usages of the term 'role'. Some writers (15) emphasize the normative and cultural aspects of role, that is 'what society expects of an individual occupying a given status position'. Others define role in terms of social interaction or patterns of related acts in which one actor's behaviour becomes a stimulus for another actor, whose response in turn restimulates the first actor and so on.

Parsons (16) sees role as an individual definition situation with reference to his and others' social position. In other words, role refers to socially prescribed way of behaving in a particular situation for any person occupying a given social position or status. Roles are the results of persons engaging in purposive behaviour within an interactional context governed by group norms and taking place within a certain situation. Thus, as Wilkening and Smith (17) suggested, there are at least four aspects of role: (a) the functions performed by the role occupant, (b) the nature
of the interaction between the role occupant and others, (c) consensus with respect to expected behaviours or norms and (d) the situational context involving persons and resources available to the role occupant. This study is concerned with the first, second and fourth components to a limited extent.

Parsons (18) further suggested that the structure of an organization may be analysed from the point of view of the suborganizations or roles which participate in the functioning of the total organization. Based on this suggestion, the Agricultural Extension Service has been described as a 'complex social system' in which many factors operate as farmers try to learn new ways of farming. Within this large social system, there are the professional subsystem to which the change agent belongs, and the client subsystem. According to Wilkening (19) each of the subsystems may have different expectations and perceptions of the role of the change agent, and these expectations influence strongly the activities of the agent.

Another major factor influencing the activities of the change agent is his attitude. Attitudes are basic components of human behaviour. People's actions, regardless of the object at which they are directed, are determined to some degree by their attitudes. This action tendency dictates that if an individual holds a positive attitude towards a given object he will be inclined to support that object. On the other hand, a negative attitude predisposes him to harm or punish the object. The change agent's
attitude affects what the farmer learns, the way he learns it, the value he gives to the learning, and the influence that learning has upon his life on and off the farm (20).

The agricultural agent is a professional person who works to promote the adoption or learning of new ideas. He functions as a teacher essentially and provides a two-way communication link between his organization and the clientele. The overall effectiveness of such a role will depend on the interaction of factors within the two subsystems and the teaching behaviour of the agent himself (21). The agent's teaching behaviour will in turn be determined by his institutionally assigned responsibilities, his personality and training, as well as his attitude towards the agency and members of the client system. Therefore, the success of extension education or the final impact of the educational programme on farmers will depend on the effect of these intervening variables which collectively determine how well the agent performs his duties.

The schema for the study has been developed on a framework provided by role theory that: personal characteristics and environmental variables interact to determine the agricultural agent's perception of his role and his effectiveness in fulfilling this role. (see page 95)
AGENT-RELATED VARIABLES INFLUENCING PERFORMANCE

EXTENSION EDUCATION

1. Personal Characteristics
2. Role Perceptions & Expectations
3. Attitude towards the Agency
4. Attitude towards Client System
5. Agent's Teaching Behaviour
6. Reaction of the Clients

AGENT'S

Performance or
Functional
Effectiveness
in the field

PROGRAMMES

Learning and
ADOPTION of new
farming PRACTICES by
FARMERS.
Overall Positive
attitude towards
CHANGE.

OUTCOME

Intervening Independent Variables
Dependent Variable
Footnotes to Chapter IV


7. Everett M. Rogers et. al., "The County Extension Agent and His Constituents." Agricultural Experiment Station Research Bulletin, No. 858, Wooster, Ohio, 1960, p. 43.


METHODOLOGY

Performance Evaluation in Education

Many conceptual and operational definitions have been given to the term 'evaluation'. Generally, it refers to the process of determining the extent to which the objectives of a particular educational programme have been achieved (1). Jenkins (2) defines evaluation as the process of acquiring, analyzing and using information for making decisions associated with planning, programming, implementing and recycling programme components and activities. This definition emphasizes the importance of evaluation as a necessary basis for making educational decisions, and its role in the achievement of the objectives of planned change.

In adult education as in most fields of social science, evaluation is a complex process which may include judging programme efforts, that is, organizational or individual performance and behaviour inputs, assessing the effectiveness and efficiency of programme implementation processes, and determining the end results of the total programme. Evaluation, among other benefits, helps the adult educator to determine (3):

- whether the adult education programme is meeting the educational needs of the participant.
- how effective adult education processes are in achieving
goals and objectives, and evaluation generally enhances our knowledge about educating adults.

While the evaluation of adult education and other social change programmes may be designed to yield different kinds of useful information about programme inputs, processes and end products, many authors (4,5,6,7) see the following 5-step approach to evaluation as basic.

1. Determine what to evaluate.
2. Define the objectives or behavioural changes desired.
3. Determine acceptable evidence.
5. Summarize and interpret the evidence.

The process of evaluation involves basically the comparison of collected evidence against a set of criteria. Evaluation of the participant should be guided by the specific objectives of the educational activity in terms of resultant changes in behaviour; and the evaluation of programmes involves comparing them against a standard, an ideal or hypothetical concept of what a good programme should be (8). The results, of course, would reflect the effectiveness of the behaviour and effort of the adult educator.

Performance refers to a specific kind of human behaviour within a system. According to Lewin's theory (9), human behaviour is the product of a complicated internal mechanism involving components within the individual's entire universe of personal experience. All of the factors which determine the direction in which behaviour
is to proceed are already present in the 'life space or phenomenal field' of the individual. Although no comprehensive theories of instruction and adult learning behaviour have yet been developed, research clearly indicates that a list of variables do have powerful effects upon learner and teacher behaviour in any learning situation (10).

In his analysis of the educational process, Armstrong (11) identified six essential input factors: the teacher, the curriculum or programme, instructional techniques used, the institutional and social environment, communication media and the learner, which interact to bring about the learning outcome in the cognitive, affective or psychomotor domain. Mitzel (12), in his model, identified four related types of criteria variables against which a teacher's effectiveness can be measured: his personality and training, the learning environment created by him, teacher-pupil growth. Both Armstrong and Mitzel agree that the teacher's personality, training and teaching behaviour are the most important factors determining the outcome of the learning situation.

Performance evaluation has been defined by Lopez (13) as the retrospective determination of the quality of the services rendered by an employee. To be valid, he adds, all types of evaluations whether of 'behaviour' or of 'programme results' must be done scientifically. In his opinion, a meaningful system of staff performance evaluation should include, among other things, statistics on employee's field activities and a survey of opinions and attitudes concerning various aspects of the work environment.
The final purpose of performance evaluation should be to create a climate in which the organization and its individual members satisfy their respective needs.

Related terms such as efficiency, competence, ability and effectiveness have been used loosely, and although scholars have not yet produced a universally acceptable definition of the 'effective teacher', many (14,15) agree that the ultimate criterion of teacher effectiveness must be based on changes occurring in the learner. However, all observed changes in the learner cannot reasonably be attributed to teacher effectiveness; and because there are several factors which make it extremely difficult to measure a teacher's effectiveness in producing changes in pupil behaviour either in the classroom or field situation, intermediate criteria are often used, but these must be shown to be relevant and correlated with the ultimate criterion (16).

In agricultural extension work, the final measure of success is increased farm productivity resulting from widespread and continued adoption of new innovations by farmers, and the consequent improvement in income and levels of living of rural people. In this study, effectiveness refers to the degree to which the extension worker has been successful in educating and influencing farmers to adopt recommended practices and develop in the farmer an attitude that is generally receptive to change. No attempt was made to measure adoption behaviour by farmers, rather, the following presage and process criteria identified by Mitzel and others (see page 95) as
Intervening independent variables, which determine the change agent's level of performance, were measured and used as approximate indicators of the overall level of effectiveness of extension education in the East Central State of Nigeria. The variables studied include:

1. Personal Characteristics of the Agent
   - Age and early childhood environment
   - Formal education and Agricultural Training received
   - Rank in the Service and Years of extension experience
   - Major responsibilities of the Agent.

2. Agent's Perception of his Role and Attitude towards Extension and the Environment
   - Role Perception
   - Attitude towards employment in the Extension Service
   - Attitude towards the Client system

3. Knowledge and Teaching Behaviour (Performance) of the Agent
   - Knowledge of selected adult education principles and practices
   - Ways of collecting technical information for use in extension
   - Educational methods and Techniques used to contact farmers
   - Time spent in performing various extension functions

4. Opinions about critical issues and problems of extension in the state.
Collection of Data

The survey method was used and field work was carried out in the summer of 1974. In addition to library review, data for the study were collected through the use of three different instruments namely: Interview Schedule, Attitude Scales and Knowledge Test. Library materials reviewed include books, periodicals, agricultural department reports and other research publications in Extension, Education and related social sciences.

General information relating to the historical background, policy and functions of the Extension Services in Nigeria was obtained by personal interviews and discussions with top officials of the Federal and East Central State ministry of agriculture.

Constructing the Instruments

An Interview Schedule was developed containing sections designed to provide information about the personal characteristics of respondents, their extension responsibilities, adult education methods and instructional techniques used to contact farmers, as well as their feelings and opinions concerning further training and continuing education.

Attitude questionnaires have the general weakness that the respondent can falsify or distort answers based on a fairly clear idea of what is acceptable (17). However, according to Krech (18), attitudes can be measured objectively on the basis of inferences drawn from how a person responds or reacts towards a given object. The most widely used methods of attitude measurement are 'attitude
scales' which consist of a series of statements to which an individual responds along some type of continuum.

A modified Likert-type rating scale was designed and used to measure senior and junior staff attitudes towards employment in the Extension Service and the client system. The initial scale contained 54 critical statements concerning extension, its activities, and the farmers such as: 'With conditions as they are, it is difficult for one to do his best', 'If I had to do it all over, I would still choose Extension as a career', 'Villagers who reject extension advice are foolish'. The statements were then submitted to five judges who were asked to examine each assertion and decide if 'agreement with it' indicated a favourable or unfavourable attitude towards the object. An attempt was made to state one half of the items positively and the other half negatively, and the final listing was done randomly in order to minimize possible response set which could be generated if only favourable or unfavourable statements were included.

These were pretested with 68 undergraduates in the Faculty of Agricultural Sciences, University of Nigeria, Nsukka. The reliability coefficient based on a derived Kuder-Richardson formular 20 (19) was .74. With results from the same pretest, the items were analysed using Flanagan's method of estimating discrimination (20). Thirty items with biserial coefficients of correlation of r .34 and above were finally selected and included in the instrument. Fifteen of the items sought to determine respondents' attitude towards employment in Extension, while the other half measured
attitude to farmers. Pretest scores on both attitude scales correlated significantly at the .01 level indicating a good degree of internal consistency. \( r = .364, \) for a critical \( r \) value of .308 with DF 67.)

During the interview, respondents were asked to indicate their honest feelings about each statement along the scale of: strongly agree (SA), agree (A), undecided (U), disagree (D) and strongly disagree (SD). Each item was considered to be approximately the same value as any other item. Values of 5, 4, 3, 2, and 1 were assigned to the five positions in that order where agreement with an item indicated a positive or favourable attitude as previously judged by the panel. The values were reversed with 5 assigned to 'strongly disagree' (SD) where agreement with a statement indicated a negative or unfavourable attitude.

The same procedure was followed in developing the staff knowledge test. A 26-item multiple choice test was prepared and pretested with the same group of 68 undergraduates in agriculture. A reliability coefficient of .71 was obtained and following item analysis, the final instrument contained 12 items whose biserial coefficient of correlation ranged from \( r \) .37 to .70. The instrument was used to measure respondents' knowledge of selected adult education principles and practices as taught in the government School of Agriculture (21) where the majority of the agricultural agents received their initial technical training. Each item correctly answered received a score of 1 point, and those wrongly answered received zero or no points.
Pretesting

The preliminary draft of the Interview Schedule was critiqued by two selected panels (UBC and UNN) before being pre-tested with a small sample of the population under the supervision of a faculty member in the Department of Agricultural Economics and Extension at the University of Nigeria, Nsukka. A second pretest was also conducted using nine former junior extension staff now students in the faculty of agriculture. These pretests resulted in the restructuring and editing of a number of interview questions and the shortening of the whole instrument.

Sampling

For extension administration purposes, the ECS is divided into ten different agricultural zones, and two distinct categories of 'senior' and 'junior' extension staff operate in each zone. The total population included 164 senior and 515 junior staff serving about 6 million farmers in the state. The subjects consisted of a 32% proportionate random sample of both categories of staff drawn from all the zones. Selection was done through the use of table of random numbers (22), with a staff list obtained from the headoffice in Enugu.

Included in the senior staff category were the supervisory ranks of senior agricultural officer (SAO), agricultural officer (AO), agricultural superintendent (AS) and assistant agricultural superintendent (AAS). The junior staff category comprised of field
staff in the ranks of agricultural assistants (AA) and agricultural
demonstrators (AD) formerly known as field overseers (FO) (See
Table 1, page 64).

**Interview Procedure**

Two undergraduate field assistants were hired on a full
time basis by the investigator, trained for two weeks and used for
the field work which lasted roughly 2 months. To save time and
money, a 'system of group interview' was adopted in which the
investigator sent notices ahead of time asking all selected re-
pondents in a particular zone to assemble at the zonal agricultural
office on a given date for an important meeting. This was done
after obtaining permission and clearance from the senior agri-
cultural officer in charge of the zone and the state chief
agricultural extension officer.

At the meetings, copies of the Interview Schedule, Attitude-
measuring scales and the Knowledge Test were given to each participating
respondent. The questions were read aloud one after the other by
the investigator and misunderstandings were explained before the
group members separately recorded their individual responses. During
the process, the field assistants and the researcher, when necessary,
moved in to discuss and assist respondents with their problems. The
three instruments were completed by each of the 216 subjects. Where
a selected respondent failed to turn up for the meeting, a substitute
in the same rank from other extension staff working at the zonal office
was randomly selected.
Analysis of Data

All questions contained in the Interview Schedule, Attitude scales and Knowledge Test were coded before use to facilitate key-punching of data and mechanical processing with the IBM 370 computer at UBC. Information relating to personal characteristics of the respondents were rank-ordered, and frequency as well as percentage distribution of respondents were calculated for each variable. Bivariate contingency tables were prepared and relationships between pairs of rank-ordered or ordinal variables were determined through the application of Goodman and Kruskal's coefficient of Rank Association known as 'gamma' (23).

Senior and junior staff responses to individual items on the attitude rating scales were hand-tabulated and summarized using 'Agree and Disagree' as the major categories. Further, the attitude scales and test responses were scored according to a predetermined system described on page 105. The results and all other variable raw scores were fed into the computer for a determination of group and total means, standard deviations and t-test levels of significance in respect of differences between means. For each test of significance, a null hypothesis of no difference between senior and junior groups of respondents with regard to the variable tested was used based on the .01 and .05 levels of alpha.

Finally a correlation matrix (see Appendix table C on page 210) was prepared showing the nature and degree of relationship between twelve of the more important variables investigated.
Footnotes to Chapter V


Kuder - Richardson Formula 20

This formula is used in determining the internal consistency of measurements. It provides an estimate of the average reliability for all possible combinations of splits (first half versus second half, odds versus evens etc.) It assumes that the test is a 'power' rather than a 'speed' test.

\[
KR_{20} = \frac{n}{n-1} \left( \frac{s^2 - \sum pq}{s^2} \right)
\]

where \( n \) = the number of items on the examination
\( s^2 \) = the variance of the scores (SD^2)
\( p \) = the proportion of the subjects responding correctly to each item
\( q \) = the proportion of the subjects responding incorrectly to each item, or 1-p.


21. The School of Agriculture, Umudike is the centre for training all Departmental non-graduate staff. The period of training ranges from 1 to 3 years following high school graduation. The researcher was the Lecturer in Agricultural Extension Methods and other subjects for eight years before taking up his present appointment with the University of Nigeria.

23. Gamma - Goodman and Kruskal's Coefficient of Rank Association:

This statistic is used to help determine the degree to which an individual's relative position or rank in one ordinal scale is predictable from his rank in another. Specifically, GAMMA is a coefficient of association between 2 sets of ordered observations based on their mutual predictability in terms of the relative number of agreements and inversions in the order of the rankings.

If \( \Gamma = +1 \) the 2 sets of ranks are in perfect 'agreement' (all subjects are ranked exactly in the same order in the two ordinal scales).

If \( \Gamma = -1 \) the 2 sets of ranks are in perfect 'inversion' (all subjects are ranked in exactly the opposite order on the two ordinal scales).

\( \Gamma \) from 0 to +1 indicates increasing association of the ranks towards perfect agreement.

\( \Gamma \) from 0 to -1 indicates increasing association of the ranks towards perfect inversion.

The calculation formula is:**

\[
\Gamma = \frac{f_a - f_i}{f_a + f_i}
\]

where \( f_a \) is the frequency of agreements, and

\( f_i \) is the frequency of inversions.

** UBC MVTAB \, Multivariate Contingency Tabulations,

James Bjerring et. al, Subject Codes: 13.1, 13.3

Computing Centre, The University of British Columbia,


pp. 81 - 83.
CHAPTER VI
PRESENTATION AND DISCUSSION OF FINDINGS

Research in education (10,11,12) and the cross-cultural diffusion model (pages 87 and 95) indicate that the level of performance or functional effectiveness of the change agent is determined largely by a number of agent-related variables. These variables which include personal characteristics, role perception and expectations, attitude towards the agency and the client system, knowledge of extension principles and communication skills were studied in order to find out how well extension staff in the East Central State of Nigeria performed their adult education role. The findings are presented and discussed below.

A. Personal Characteristics of Respondents

TABLE 2
DISTRIBUTION OF RESPONDENTS BY AGE

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>Senior Staff</th>
<th>Junior Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Less than 26</td>
<td>0</td>
<td>00</td>
<td>14</td>
</tr>
<tr>
<td>26 - 30</td>
<td>12</td>
<td>23.53</td>
<td>97</td>
</tr>
<tr>
<td>31 - 35</td>
<td>25</td>
<td>49.02</td>
<td>45</td>
</tr>
<tr>
<td>36 - 40</td>
<td>5</td>
<td>9.80</td>
<td>1</td>
</tr>
<tr>
<td>41 - 45</td>
<td>6</td>
<td>11.76</td>
<td>5</td>
</tr>
<tr>
<td>46 and above</td>
<td>3</td>
<td>5.88</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>99.99</td>
<td>165</td>
</tr>
</tbody>
</table>

Mean 34.56 30.08 31.14
SD 5.76 4.55 5.21

\[ t = 5.08 \text{ significant at } .01 \text{ level.} \]
Age of Respondents

Table 2 shows the age distribution of the senior and junior staff respondents. The median age for all the subjects was 30 years. Although the range was 20 years, with slightly more variability in the senior staff group, only 17 subjects or less than 8 per cent of the sample were over 40 years of age. The two youngest subjects were 23, and 82% of the respondents were under 35 years of age, indicating a relatively high proportion of young staff. This high number of young staff reflects (i) recent efforts by the ministry to recruit and train more secondary school leavers as extension workers; and (ii) the current policy of retiring civil servants at 50. Age and rank were inversely correlated \( r = -.37, \text{df} = 215, p < .01 \) showing that older extension staff occupied the lower ranks.

**TABLE 3**

DISTRIBUTION OF RESPONDENTS BY CHILDHOOD ENVIRONMENT

<table>
<thead>
<tr>
<th>Childhood Environment</th>
<th>Senior Staff</th>
<th></th>
<th>Junior Staff</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Rural Village</td>
<td>36</td>
<td>70.59</td>
<td>98</td>
<td>59.39</td>
<td>134</td>
<td>62.04</td>
</tr>
<tr>
<td>Town</td>
<td>13</td>
<td>25.49</td>
<td>52</td>
<td>31.52</td>
<td>30</td>
<td>30.09</td>
</tr>
<tr>
<td>City</td>
<td>2</td>
<td>3.92</td>
<td>15</td>
<td>9.09</td>
<td>17</td>
<td>7.87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
<td><strong>100.00</strong></td>
<td><strong>165</strong></td>
<td><strong>100.00</strong></td>
<td><strong>216</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Gamma = +0.247
Early Childhood Environment

As shown in Table 3, the respondents varied in their childhood experiences and came from different backgrounds. Approximately two-thirds of them (70 per cent of the senior staff and 60 per cent of the junior staff) spent their early childhood in rural village environments. Thirty percent of the extension staff grew up in towns and less than 8 per cent were reared in cities. Some years ago, previous farm experience or rural background was one of the conditions for employment in the ministry, but recently this prerequisite has been deemphasized in order to attract more school leavers into agriculture. There was a positive association between rural background and rank in the Extension Service ($\gamma = +0.247$), but this was not significant.

TABLE 4

DISTRIBUTION OF RESPONDENTS BY LEVEL OF FORMAL EDUCATION ATTAINED

<table>
<thead>
<tr>
<th>Level of Formal Education Attained</th>
<th>Senior Staff</th>
<th></th>
<th>Junior Staff</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Primary School</td>
<td>0</td>
<td>00</td>
<td>8</td>
<td>4.85</td>
<td>8</td>
</tr>
<tr>
<td>Secondary School</td>
<td>28</td>
<td>54.90</td>
<td>150</td>
<td>90.91</td>
<td>178</td>
</tr>
<tr>
<td>University</td>
<td>21</td>
<td>41.18</td>
<td>0</td>
<td>00</td>
<td>21</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>3.92</td>
<td>7</td>
<td>4.24</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100.00</td>
<td>165</td>
<td>100.00</td>
<td>216</td>
</tr>
</tbody>
</table>

$\gamma = +0.837, \ t = 5.11$ significant at .01 level.
Formal Education

Table 4 shows the highest level of formal education attained by the two groups of respondents. Four per cent of the extension workers had completed primary school only, 82.41 per cent had completed secondary education and the remaining 14% were university graduates. Two fifths of the senior staff had bachelor's degrees and only one of them had a master's degree. Generally, the higher the level of formal education received by a respondent, the higher his rank in the department ($r = .36$, $df = 215$, $p < .01$).

The finding that 96% of the field staff had received secondary school education or better is consistent with the government's policy of recruiting people with a minimum of secondary school education into the School of Agriculture. Those eight members of the junior staff who reported completing only primary school education must have reached their positions in the department through promotions earned after considerable field experience and hard work.

### TABLE 5

<table>
<thead>
<tr>
<th>Level of Agric. Training</th>
<th>Senior Staff</th>
<th>Junior Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>AD Course</td>
<td>0</td>
<td>00</td>
<td>37</td>
</tr>
<tr>
<td>AA Course</td>
<td>0</td>
<td>00</td>
<td>127</td>
</tr>
<tr>
<td>Diploma Course</td>
<td>25</td>
<td>49.02</td>
<td>0</td>
</tr>
<tr>
<td>B. Sc. (Agric.)</td>
<td>21</td>
<td>41.18</td>
<td>0</td>
</tr>
<tr>
<td>Post Graduate</td>
<td>1</td>
<td>1.96</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>7.84</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>51</td>
<td>100.00</td>
<td>165</td>
</tr>
</tbody>
</table>

*gamma = +0.98, $t = 14.81$ significant at .01 level.*
Agricultural Training

All respondents reported having received some kind of formal agricultural training. About one-quarter of the junior staff had gone through the agricultural demonstrator (AD) course which is mostly practical and on-the-job; and three-quarter of them had reached the agricultural assistant (AA) certificate level. One-half of the senior staff had received agricultural training up to the first degree level in universities, while the remaining half were promoted into the senior ranks after going through the AA course and the 2-year diploma course at the School of Agriculture. Agricultural training showed a high and positive relationship with rank \( r = .79, \ df = 215, p < .01 \). Table B in the appendix reveals that 14 per cent of the senior staff received part or all of their agricultural training in foreign countries, while the rest were trained locally.

Although statistical analysis indicates a very high degree of association between the level and length of agricultural training received by a respondent and his rank in the service, these factors are not necessarily accurate predictors of the intensity of formal training in extension methods received by staff. There seems to be a paucity of training in extension methods, and this observation is supported by the large number of negative responses obtained from respondents when asked during the interview if they had adequate training to do an effective job, (Section C, page 145).

Years in the Extension Service

Tenure was divided into five-year categories with a maximum of
21 years and over. Table 6 shows that approximately 84% of the respondents had worked in the ministry for periods ranging from 6 to 15 years. Seven percent of the extension staff had been employed for less than 6 years while 8% had served 16 years and over. The mean number of years in the service for senior staff was 13.27, and for junior staff it was 10.36 years. The difference between both means was significant at the .01 level. ($t = 3.21, \text{df} = 215, p < .01$).

Tenure showed a significant but negative correlation with rank ($r = -.26, \text{df} = 215, p < .01$), meaning that those who had been in the service longest were not occupying the top ranks. About 90% of the junior staff fell within the medium-tenure range of 6 to 15 years as against 68% of the senior staff. This finding seems to lend some support to the general impression among the workers that most junior extension staff have reached a dead end with little or no opportunities for advancement in the service.

**TABLE 6**

**DISTRIBUTION OF RESPONDENTS BY YEARS IN THE EXTENSION SERVICE**

| Years in Service | Senior Staff | | | Junior Staff | | | Total | | |
|------------------|--------------|------------------|------------------|------------------|------------------|------------------|
|                   | No. | %     | No. | %     | No. | %     | | | | |
| 0 - 5             | 5   | 9.80  | 11  | 6.67  | 16  | 7.41  | | | | |
| 6 - 10            | 9   | 17.65 | 83  | 50.30 | 92  | 42.59 | | | | |
| 11 - 15           | 26  | 50.98 | 64  | 38.79 | 90  | 41.67 | | | | |
| 16 - 20           | 2   | 3.92  | 3   | 1.82  | 5   | 2.31  | | | | |
| 21 and over       | 9   | 17.65 | 4   | 2.42  | 13  | 6.02  | | | | |
| Total             | 51  | 100.00| 165 | 100.00| 216 | 100.00| | | | |
| Mean              | 13.27| 10.36 | | | 11.05| | | | | |
| SD                | 6.08 | 4.02  | | | 4.74 | | | | |
| $t = 3.206$ significant at .01 level

|
Table 7 shows that with the exception of 29 respondents, all other staff had been doing extension work for periods ranging from 6 to 21 years and more. Like tenure, respondents' years of extension experience correlated negatively with their levels of formal education, and rank in the service \((r = -0.29\) and \(-0.08\) respectively). This suggests that many senior staff had not been in extension for a long time, and therefore, did not have sufficient practical experience in their job. In fact, many intermediate and junior staff complained that their supervisory officers lacked the field experience necessary for providing meaningful leadership and guidance to subordinate staff. Years of extension experience was positively correlated with age \((r = 0.77\) and tenure \((r = 0.89, df = 215, p < 0.01)\) meaning that older staff had been in the service much longer, and had been doing extension work for longer periods than younger staff.
TABLE 8

DISTRIBUTION OF RESPONDENTS BY MAJOR AREAS OF RESPONSIBILITY

<table>
<thead>
<tr>
<th>Areas of Major Responsibility</th>
<th>Senior Staff</th>
<th>Junior Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>1st.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admin. and Supv'n.</td>
<td>8</td>
<td>15.68</td>
<td>0</td>
</tr>
<tr>
<td>Gen. Extension</td>
<td>28</td>
<td>54.92</td>
<td>122</td>
</tr>
<tr>
<td>Government Farm</td>
<td>4</td>
<td>7.84</td>
<td>5</td>
</tr>
<tr>
<td>Special Projects</td>
<td>11</td>
<td>21.56</td>
<td>31</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>00</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100.00</td>
<td>165</td>
</tr>
</tbody>
</table>

| 2nd.                          |      |       |      |       |      |       |
| Admin. and Supv'n.            |    21 | 41.17 |     32 | 19.39 | 53   | 24.53 |
| Gen. Extension                | 22   | 43.15 | 53   | 32.14 | 75   | 34.74 |
| Government Farm               |      2 | 3.92 |       18 | 10.90 | 20   | 9.25  |
| Special Projects              |      6 | 11.76|       52 | 31.51 | 58   | 26.86 |
| Other                         |      0 | 00    |       10 | 6.06  | 10   | 4.62  |
| Total                         | 51   | 100   | 165  | 100   | 216  | 100   |

Responsibilities

Data presented in Table 8 reveal that the respondents had multiple assignments of responsibility. General extension was the number one responsibility for 70% of the people interviewed, and for the remaining 30% it was a second major job assignment. One-fifth of the staff were posted primarily to special projects and schemes with extension as a secondary activity. Less than 5% worked in government demonstration farm centres but had extension work as their second major responsibility. One-fifth of the junior staff reported that administration and supervision of other subordinate staff was their second major duty.
A majority of the staff interviewed did not feel that their efficiency in extension was in any way adversely affected by these additional responsibilities. This was in agreement with the opinion of the chief extension officer who said that different agricultural projects were certainly potential sources of useful information and new knowledge for farmers; involvement in these project areas, he added, should theoretically and practically enhance staff performance in general extension.

Summary of Biographical Data

The age distribution of the sample was skewed towards the lower age group of 20 to 30 years, indicating therefore, a disproportionately high number of young extension staff. Only 8 per cent of the respondents were over 40 years of age. Considering childhood experiences and background, about two-thirds of the extension staff came from rural villages and one-third grew up in towns and cities.

Over 82 per cent of the respondents had received secondary school education which was the modal level of formal education for the population. Fourteen per cent of the extension staff were graduates, and less than 4% had received only primary school education. All the extension workers had received formal agricultural training at various levels. Three-quarters of the junior staff had completed the agricultural assistant training course at the School of Agriculture. One-half of the senior staff had B. Sc. (Agric.) degrees and the rest had diploma certificates in agriculture. Formal
education and level of agricultural training showed very high positive correlations with rank.

The majority of the extension staff (83%) had been employed in the ministry for 10 to 21 years, and had been involved in field extension work during most of their service period. The average number of years of extension experience for the respondents was 9. Generally, the older the extension worker, the longer he had served in the ministry, and the greater his years of field experience; but the lower his rank, and the less his level of formal education and agricultural training. Many senior staff members with reasonably high formal agricultural training appeared to lack the practical experience essential for supervising field extension staff.

With the exception of Agricultural demonstrators, who occupied the lowest level of the extension staff hierarchy, all the respondents were officially assigned other responsibilities in addition to general extension duties. While extension was the number one job for 70 per cent of the staff, it was a second major function for 20 per cent of the respondents who were posted to special projects and schemes, and for the 5 per cent who worked on government farms.
B. Evaluations: Attitudes, Knowledge and Performance

Attitude towards Employment in the Extension Service:

The attitude-to-extension scale was a combination of three distinct subscales containing statements to which subjects responded on a five-point rating scale. Seven of the items in subscale one reflected the respondent's feelings towards extension as a vocation. Subscale two with eight items measured staff attitude towards the extension organization and the remaining 15 items in the third subscale tested respondents' attitude towards the farmers.

In tabulating responses to the attitude scales, two approaches were used. Firstly, staff responses on the 5-point rating continuum were summarised item by item and presented in a table of percentage distribution with 'Agree' and 'Disagree' as the two major categories. This facilitated a closer examination of the responses to individual items, particularly the controversial statements. Secondly, individual responses to each item on the scale were scored from 1 to 5 points depending on whether the statement was favourable or unfavourable and the scores were added up. (See page 106 in Chapter V). Total scores, means and standard deviations were then computed for both senior and junior groups of respondents thereby enabling the correlation of attitude scores with other variables studied. Scores above the mean indicated a positive attitude and those below showed a negative attitude.
Entries at the top of Table 9 reveal that generally, the extension staff had only a moderately favourable attitude towards their vocation. About 90 per cent of the respondents felt that extension was an interesting and challenging job which offered them the opportunity to use their knowledge and skills. Sixty-nine per cent felt that extension has most of the characteristics of an ideal job. One-half of the respondents, however, felt that in comparison with other jobs in the state, extension gave very little or no prestige; and only 38% said they would still choose extension as a career if they had a second chance. For most of the items in this subscale, percentages of senior staff 'agree' and 'disagree' responses were about even with those of junior staff.

In part two of Table 9, responses from 190 out of 216 subjects showed that most extension staff were dissatisfied with their conditions of service. Ninety per cent of the senior staff and eighty-five per cent of the junior staff felt that working conditions in the field made it difficult for them to do their best in extension, and that without drastic changes little progress can be achieved. About 68% of the respondents in both categories also felt that:

i. employee benefits for extension workers were not attractive  
ii. extension had no future for most of its staff  
iii. hard work was of no help in getting a promotion in the ministry  
iv. the organization was doing very little to encourage its staff.

One-quarter of the respondents agreed with the statement that 'most supervisory extension staff in the zones were difficult to work with'. Compared with results obtained by Job in British Columbia (1) where
<table>
<thead>
<tr>
<th>Item</th>
<th>Senior Staff</th>
<th>Junior Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+ Extension provides one with a variety of interesting tasks - - - - -</td>
<td>96.07</td>
<td>85.45</td>
<td>87.96</td>
</tr>
<tr>
<td>2+ Each day of field work is full of excitement and new challenges - - -</td>
<td>76.47</td>
<td>59.39</td>
<td>63.42</td>
</tr>
<tr>
<td>3- Compared to other jobs, extension gives no prestige - - - - - - - -</td>
<td>43.13</td>
<td>46.66</td>
<td>45.83</td>
</tr>
<tr>
<td>4- There isn't much one can be proud of in extension - - - - - - - -</td>
<td>41.17</td>
<td>54.54</td>
<td>51.38</td>
</tr>
<tr>
<td>5+ Extension has most of the characteristics of an ideal job - - - - - - - -</td>
<td>78.43</td>
<td>66.06</td>
<td>68.98</td>
</tr>
<tr>
<td>6+ If I had to do it all over, I would still choose extension as a career - - - - - - - -</td>
<td>60.78</td>
<td>41.21</td>
<td>45.83</td>
</tr>
<tr>
<td>7+ Extension gives one a chance to use his skills and knowledge - - - - - - - -</td>
<td>96.07</td>
<td>90.90</td>
<td>92.12</td>
</tr>
<tr>
<td>8+ Employee benefits for extension workers are good - - - - - - - - - -</td>
<td>13.72</td>
<td>31.51</td>
<td>27.37</td>
</tr>
<tr>
<td>9- Extension has no future for most of its staff - - - - - - - - - -</td>
<td>68.62</td>
<td>68.48</td>
<td>68.51</td>
</tr>
<tr>
<td>10- Hard work is of no help in getting a promotion in this department - - - - - - - -</td>
<td>70.58</td>
<td>68.48</td>
<td>68.98</td>
</tr>
<tr>
<td>11- With conditions as they are, it is difficult for one to do his best - - - - - - - -</td>
<td>90.19</td>
<td>85.45</td>
<td>86.57</td>
</tr>
<tr>
<td>12- Most of the supervisory staff in the zones are difficult to work with - - - - - - - -</td>
<td>21.56</td>
<td>27.87</td>
<td>26.38</td>
</tr>
<tr>
<td>13- Supervisory extension staff expect too much from their subordinates - - - - - - - -</td>
<td>23.52</td>
<td>36.36</td>
<td>33.33</td>
</tr>
<tr>
<td>14- Without drastic changes in the service, very little progress can be made - - - - - - - -</td>
<td>90.10</td>
<td>89.09</td>
<td>89.35</td>
</tr>
<tr>
<td>15+ The organization is doing everything it can to encourage its staff, the present problems are beyond its control - - - - - - - -</td>
<td>15.68</td>
<td>21.21</td>
<td>19.90</td>
</tr>
</tbody>
</table>

+ = positive statement, and - = negative statement, agreement with a positive item indicates a favourable attitude, and agreement with a negative item indicates an unfavourable attitude.
less than 10% of the agents were dissatisfied with their job conditions, these findings indicate a very high level of dissatisfaction among the Nigerian extension workers in the sample.

Further analysis of open-ended responses to question 5 in section III of the interview schedule revealed the following as additional causes of staff dissatisfaction with the extension organization:

i. the feeling that they were being bypassed during selection for training or promotion

ii. Some staff who had completed various levels of inservice and advanced agricultural training had been waiting too long without promotion

iii. some older members of the junior and intermediate staff had reached their maximum salaries and were marking time on the same pay for 3 to 5 years without increment or advancement to the next higher grade

iv. above all, most respondents felt generally insecure and unhappy with the state government because of the preferential treatment it was giving to the Agricultural Development Authority, a newly-created commercial agricultural production agency.

These findings agree with results obtained by Kidd (2) in Western Nigeria, although he had generally lower percentages of staff expressing dissatisfaction with conditions of service in the sister ministry.

A combined tabulation of scores from both subscales as
shown in Table 10 tended to mask some of the findings discussed above. The total mean score was 43.06 out of 75, indicating that most of the staff had a poor to moderately favourable attitude towards employment in the extension service. The difference between SS and JS mean scores was tested \( t = 2.44, df = 215, p < .01 \), indicating therefore, that there was a highly significant difference between the senior and junior groups of respondents with regard to their attitude towards extension work.

Attitude to extension showed no relationship with age \( (r = .08) \), length of service \( (r = .01) \) and extension experience \( (r = .01) \) but it was positively correlated with rank \( (r = .15) \), agricultural training \( (r = .16) \), and amount of time spent on administration and supervision \( (r = .14) \), all at the .05 level of significance. In other words, the higher the rank, the greater the score, meaning that senior staff generally had a more favourable attitude towards extension work and the organization than junior staff. Kidd (3), on the other hand, found that higher ranking extension staff in Western Nigeria obtained lower attitude to job scores in 1968.

**TABLE 10**

DISTRIBUTION OF RESPONDENTS BY SCORES ON ATTITUDE TO EXTENSION SCALE

<table>
<thead>
<tr>
<th>Scores on Att'd. Scale</th>
<th>Senior Staff</th>
<th>Junior Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>21 - 30</td>
<td>1</td>
<td>1.96</td>
<td>11</td>
</tr>
<tr>
<td>31 - 40</td>
<td>8</td>
<td>15.69</td>
<td>57</td>
</tr>
<tr>
<td>41 - 50</td>
<td>31</td>
<td>60.78</td>
<td>73</td>
</tr>
<tr>
<td>51 - 60</td>
<td>10</td>
<td>19.61</td>
<td>23</td>
</tr>
<tr>
<td>60 and over</td>
<td>1</td>
<td>1.96</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>51</td>
<td>100.00</td>
<td>165</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>45.27</td>
<td></td>
<td>42.38</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>7.15</td>
<td></td>
<td>8.15</td>
</tr>
</tbody>
</table>
Attitude Towards the Client System

Table 11 summarises respondents' agree/disagree reactions to 15 farmer-related statements in subscale 3 which was used to measure staff attitude towards the farmers. With the exception of items 20, 21 and 26, senior and junior staff response patterns were identical. Eighty-five per cent of the extension staff agreed that field workers should live in the rural villages in which they worked, and the same proportion of respondents believed that many farmers expected too much from extension workers. Seventy-four per cent of them agreed that an extension worker who is not concerned with the overall welfare of rural people is only doing half his job, and the same number of respondents also expressed the feeling that too much teaching effort was required before rural people could learn anything. In the opinion of two-thirds of the extension staff, most farmers in the state showed a willingness to adopt recommended practices, although the majority lacked sufficient personal motivation to seek new ways of improving their traditional farming methods.

When attitude-to-farmer scores were tabulated against rank as shown in table 12, a number of relationships emerged. The total mean score was 44.63 out of 75, indicating once more that the extension staff had an overall moderately favourable attitude towards the farmers. Senior and junior staff group means were 48.17 and 43.54 respectively, but there was greater variability of individual scores within the senior group. The difference between both means, when tested, gave a t-value of 4.04 which was significant at the .01
## TABLE 11

PERCENTAGE DISTRIBUTION OF RESPONDENTS AGREEING AND DISAGREEING WITH VARIOUS ITEMS ON THE ATTITUDE TO CLIENT SYSTEM SCALE

<table>
<thead>
<tr>
<th>Subscale 3</th>
<th>Senior Staff</th>
<th>Junior Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEM</td>
<td>Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>16+ Most farmers are willing to adopt recommended practices</td>
<td>52.94</td>
<td>45.09</td>
<td>65.45</td>
</tr>
<tr>
<td>17- Farmers usually have no genuine reasons for resisting change</td>
<td>54.92</td>
<td>41.17</td>
<td>47.87</td>
</tr>
<tr>
<td>18- In general, farmers lack the ability to contribute effectively in planning extension programmes</td>
<td>25.49</td>
<td>66.66</td>
<td>43.63</td>
</tr>
<tr>
<td>19- Most farmers are not intelligent enough to understand what extension is all about</td>
<td>45.09</td>
<td>52.94</td>
<td>57.57</td>
</tr>
<tr>
<td>20- Most farmers lack the motivation to improve themselves</td>
<td>60.78</td>
<td>33.33</td>
<td>66.06</td>
</tr>
<tr>
<td>21- Too much teaching effort is required before rural people can learn anything</td>
<td>60.78</td>
<td>35.29</td>
<td>78.78</td>
</tr>
<tr>
<td>22- Quite often, one gets fed up working with poor illiterates</td>
<td>41.17</td>
<td>45.09</td>
<td>55.75</td>
</tr>
<tr>
<td>23- Many farmers expect too much from extension workers</td>
<td>88.23</td>
<td>9.80</td>
<td>84.24</td>
</tr>
<tr>
<td>24+ All rural development workers should be willing to put in longer hours of work than other civil servants</td>
<td>68.62</td>
<td>19.60</td>
<td>66.06</td>
</tr>
<tr>
<td>25+ The extension worker who is not concerned with the overall welfare of rural people is doing only half his job</td>
<td>88.23</td>
<td>5.88</td>
<td>69.09</td>
</tr>
<tr>
<td>26- Extension workers do not spend enough time in the field</td>
<td>43.13</td>
<td>54.90</td>
<td>17.57</td>
</tr>
<tr>
<td>27+ Extension workers should live in the rural villages in which they work</td>
<td>90.19</td>
<td>3.92</td>
<td>81.21</td>
</tr>
<tr>
<td>28- Most farmers are uncooperative</td>
<td>37.25</td>
<td>52.94</td>
<td>56.36</td>
</tr>
<tr>
<td>29- Rather than become actively involved in extn. work, the University of Nigeria should concentrate on training graduates</td>
<td>15.68</td>
<td>74.50</td>
<td>27.27</td>
</tr>
<tr>
<td>30- Villagers who reject extn. advice are foolish</td>
<td>37.25</td>
<td>39.21</td>
<td>49.69</td>
</tr>
</tbody>
</table>

+ = positive statement, and - = negative statement, agreement with a positive item indicates a favourable attitude, and agreement with a negative item indicates an unfavourable attitude.
level, indicating once again that there was a highly significant difference between senior and junior staff groups of respondents with regard to their attitude towards the client system.

### TABLE 12

**DISTRIBUTION OF RESPONDENTS BY SCORES ON ATTITUDE TO CLIENT SCALE**

<table>
<thead>
<tr>
<th>SCORES</th>
<th>Senior Staff</th>
<th></th>
<th>Junior Staff</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>21 - 30</td>
<td>0</td>
<td>0.00</td>
<td>2</td>
<td>1.21</td>
<td>2</td>
<td>0.93</td>
</tr>
<tr>
<td>31 - 40</td>
<td>7</td>
<td>13.73</td>
<td>51</td>
<td>30.91</td>
<td>58</td>
<td>26.85</td>
</tr>
<tr>
<td>41 - 50</td>
<td>26</td>
<td>50.98</td>
<td>90</td>
<td>54.55</td>
<td>116</td>
<td>53.70</td>
</tr>
<tr>
<td>51 - 60</td>
<td>15</td>
<td>29.41</td>
<td>22</td>
<td>13.33</td>
<td>37</td>
<td>17.13</td>
</tr>
<tr>
<td>60 and over</td>
<td>3</td>
<td>5.88</td>
<td>0</td>
<td>0.00</td>
<td>3</td>
<td>1.39</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>51</td>
<td>100.00</td>
<td>165</td>
<td>100.00</td>
<td>216</td>
<td>100.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>48.17</td>
<td>43.54</td>
<td>44.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>7.48</td>
<td>5.97</td>
<td>6.64</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Attitude to farmers was not related to age \( r = -.01 \), length of service \( r = -.04 \) and extension experience \( r = -.12 \), but it showed a significant and positive association with rank \( r = .30 \), formal education \( r = .26 \), agricultural training \( r = .35 \) and attitude towards extension work \( r = .26 \). Thus, the lower the rank, the less the score, meaning that junior staff generally had a less favourable attitude towards the farmers than senior staff.

"Rather than become actively involved in field extension work, the University of Nigeria should concentrate on training agricultural graduates."

This statement was inserted by the investigator in order
to determine MOA extension staff reactions to the proposed university extra-mural programme. Three-quarters of the senior staff and more than one-half of the junior staff welcomed the idea of university involvement in direct extension work with farmers. One-quarter of the extension staff, however, wanted the university to concentrate on graduate training instead of working directly with farmers.

The reaction of many top-ranking extension administrators in the headoffice to the idea of university involvement in field extension work had been unenthusiastic. These findings seem to indicate that while we could expect some attitude of non-cooperation from MOA headquarters, the majority of field extension staff in the ministry would cooperate with the university in rural development projects.

**Knowledge of Selected Adult Education Principles and Practices**

The knowledge test contained 12 multiple-choice questions relating to common extension practices and principles of programme planning, implementation and evaluation in adult education (agricultural extension), most of which the extension staff should have learned while in the School of Agriculture or in the university. Two of the questions were philosophical, and correct answers to four others could be arrived at through logical reasoning based on field experience.

Table 13 shows the distribution of respondents according to their scores on the knowledge test. The total mean score was 5.79 out of a possible maximum score of 12, indicating that most of the
extension staff had a low to average knowledge of adult education principles. Five per cent of the senior staff and 33% of the junior staff scored 4 points or less. Only 12% of the respondents came within the high-score range of 9 - 12. Although about the same degree of variability occurred within both groups of scores, the SS group had a higher mean score of 7.25 compared with 5.34 for the JS. The test of difference between means (t = 5.45, df = 215, \(p < .01\)) confirmed that there is a significant difference between senior and junior groups of respondents with regard to their knowledge of selected adult education principles and practices.

When test scores were compared with other variables, it was found they were significantly and positively related to rank (\(r = .36\)), formal education (\(r = .27\)), agricultural training (\(r = .33\)) and attitude to farmers (\(r = .36, \text{df} = 215, \text{p} < .01\)). Test scores were also negatively related to age (\(r = -.08\)), length of service (\(r = -.14, \text{df} = 215, \text{p} < .05\)), and years of extension experience (\(r = -.21, \text{df} = 215, \text{p} < .01\)), but the relationship with age was not

<table>
<thead>
<tr>
<th>TEST SCORES</th>
<th>Senior Staff</th>
<th>Junior Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Low 0 - 4</td>
<td>3</td>
<td>5.88</td>
<td>55</td>
</tr>
<tr>
<td>Med. 5 - 8</td>
<td>34</td>
<td>66.67</td>
<td>97</td>
</tr>
<tr>
<td>High 9 - 12</td>
<td>14</td>
<td>27.45</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100.00</td>
<td>165</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.25</td>
<td>5.34</td>
<td>5.79</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.23</td>
<td>2.04</td>
<td>2.24</td>
<td></td>
</tr>
</tbody>
</table>
significant. (See Correlation Matrix on page 210). As would be expected the higher the rank, the higher the test score, rank itself being determined by levels of formal education and agricultural training received by the extension staff.

Role Perception and Performance
Perceived Importance of Extension Functions

Respondents were asked to rank nine extension functions in order of importance. An examination of Table 14 shows that extension staff differed considerably in their ranking and perceived importance of various functions. 'Teaching farmers new practices' or adult education was ranked as the most important job by nearly 43% of the respondents, indicating that most of them (57%) considered other extension functions to be more important than adult education. While these results follow the same trends as the findings from North American studies (p.32) the proportion of extension staff in the East Central State of Nigeria who perceived adult education as their most important job is comparatively lower.

When rank scores were tabulated against respondent categories (Table 15) it was seen that both senior and junior groups of staff still ranked 'teaching farmers' as the most important job they did in extension, followed by 'programme planning'.

TABLE 14
PERCENTAGE DISTRIBUTION OF RESPONDENTS BASED ON THEIR RANKING OF VARIOUS EXTENSION FUNCTIONS IN ORDER OF IMPORTANCE

<table>
<thead>
<tr>
<th>Extension Functions</th>
<th>RANKING (7th, 8th and 9th omitted)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
</tr>
<tr>
<td>a. Rural Adviser</td>
<td>14.81</td>
</tr>
<tr>
<td>b. Office Work</td>
<td>0.46</td>
</tr>
<tr>
<td>c. Programme Plan'g.</td>
<td>21.30</td>
</tr>
<tr>
<td>d. Admin. and Supv.</td>
<td>1.85</td>
</tr>
<tr>
<td>e. Public Relations</td>
<td>4.17</td>
</tr>
<tr>
<td>f. Collecting Information</td>
<td>6.94</td>
</tr>
<tr>
<td>g. Teaching Farmers</td>
<td>42.59</td>
</tr>
</tbody>
</table>

TABLE 15
MEAN SCORES AND RESPONDENTS' RANKING OF VARIOUS EXTENSION FUNCTIONS

| Extension Functions       | Senior Staff |  | Junior Staff |  | Total |
|---------------------------|--------------|-----------------|--------------|-----------------|        |
|                           | X            | Rank | X            | Rank | X            | Rank |
| a. Rural Adviser         | 4.78         | 5th  | 4.53         | 5th  | 4.59         | 4th  |
| b. Office Work           | 7.29         | 9th  | 7.28         | 9th  | 7.28         | 9th  |
| c. Programme Plan'g.     | 3.73         | 2nd  | 4.24         | 2nd  | 4.11         | 2nd  |
| d. Admin. and Supv.      | 6.03         | 7th  | 7.16         | 8th  | 6.89         | 8th  |
| e. Public Relations      | 6.17         | 8th  | 5.60         | 7th  | 5.73         | 7th  |
| f. Collecting Information| 4.41         | 3rd  | 4.69         | 6th  | 4.62         | 6th  |
| g. Teaching Farmers      | 2.51         | 1st  | 2.49         | 1st  | 2.50         | 1st  |
| h. Distributing Materials| 5.41         | 6th  | 4.36         | 3rd  | 4.61         | 5th  |
| i. Training Local Leaders| 4.55         | 4th  | 4.52         | 4th  | 4.53         | 3rd  |
The junior staff, who in the situation constituted the real extension workers, ranked 'distribution of materials to farmers' as their third most important job while for senior staff the number three job was 'collecting information for use in extension'. Office work, administration and supervision of subordinate staff were ranked as the least important extension functions by most staff, although there was a strong tendency for the senior group to see them as quite important ($r = .23$).

In practice, however, senior extension staff in the state have very little educational contact with farmers in the field. Most of their time is spent in office administration and occasional tours of inspection. In other words, 'teaching farmers' is not their most important function. The author is inclined to believe, therefore, that most of the senior staff and to some extent the junior staff gave what they considered as appropriate answers to this part of the interview schedule instead of what they really felt.

**Time Spent on Various Activities**

Senior extension staff who were interviewed spent nearly one-half of their time in field work and about one-third in office administration (Table 16). The junior staff spent two-thirds of their time in field extension work and less than one-fifth in routine office work. Staff in charge of government demonstration farms spent about 30% of their time on these farms and the rest in general duties including extension work; while those working on special projects gave equal time to their projects and general extension duties.
### TABLE 16

<table>
<thead>
<tr>
<th>Activities</th>
<th>Senior Staff</th>
<th>Junior Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>30.34</td>
<td>10.75</td>
<td>19.74</td>
</tr>
<tr>
<td>General Extension</td>
<td>42.09</td>
<td>65.15</td>
<td>53.70</td>
</tr>
<tr>
<td>Government Farm</td>
<td>9.93</td>
<td>6.69</td>
<td>7.81</td>
</tr>
<tr>
<td>Special Projects</td>
<td>11.91</td>
<td>11.78</td>
<td>11.58</td>
</tr>
<tr>
<td>Other</td>
<td>5.72</td>
<td>5.63</td>
<td>7.17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99.99</strong></td>
<td><strong>100.00</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Time spent in administration was positively related to rank ($r = .48$, df = 215, $p < .01$) but negatively associated with time spent in extension work ($r = -.13$, df = 215, $p < .05$). Thus, the higher the rank, the greater the time spent in administration and other office routine, and consequently the less the time spent doing field work. These findings are consistent with the usual bureaucratic organizational behaviour found in some developing countries where senior technical officers generally prefer to work as office administrators rather than field men (4).

**Sources of Technical Information**

Borrowed cultural elements and more so agricultural technology must be tested and retested by the receiving agency before final dissemination to the people. To check the degree to which this happened in the East Central State before usable information reached the farmer, respondents were asked to show the sources from where
they obtained technical information for use in extension work.

Data in Table 17 show that most of the respondents got their information from two main sources — zonal agricultural office (82.41%) and the research station (73.15%). Personal notes and records, probably those taken years ago while the extension staff was in training, were reported as sources of technical information by two-thirds of the staff, and nearly 60% of them consulted colleagues around for information to pass on to farmers. Thirty-five per cent of the senior staff and 24% of the junior staff reported using other information sources such as: the better and more experienced farmers, MOA extension newsletters, newspapers, foreign agricultural journals, textbooks, radio and personal initiative.

It would appear, therefore, that at least one-quarter of the extension staff were either oblivious to the dangers inherent in the dissemination of untested innovations, or they were not aware of the principle and need for cultural adaptation of borrowed technology prior to its diffusion within the receiving culture. Also, while sources of information were not significantly related to rank as such, a general trend seemed to be apparent from the data. Most of the supervisory extension staff (84.31%) obtained technical information straight from the research station and passed this on by way of official instructions to 84.24% of the junior staff whose major source of extension information was the zonal agricultural office.
TABLE 17

DISTRIBUTION OF RESPONDENTS BY SOURCES OF TECHNICAL INFORMATION USED

<table>
<thead>
<tr>
<th>Sources of Information</th>
<th>Senior Staff</th>
<th></th>
<th>Junior Staff</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Zonal Agric. office</td>
<td>39</td>
<td>76.47</td>
<td>139</td>
<td>84.24</td>
<td>178</td>
<td>82.41</td>
</tr>
<tr>
<td>Research station</td>
<td>43</td>
<td>84.31</td>
<td>115</td>
<td>69.70</td>
<td>158</td>
<td>73.15</td>
</tr>
<tr>
<td>Personal Notes/records</td>
<td>40</td>
<td>78.43</td>
<td>107</td>
<td>64.85</td>
<td>147</td>
<td>68.06</td>
</tr>
<tr>
<td>Colleagues around</td>
<td>34</td>
<td>66.67</td>
<td>90</td>
<td>54.55</td>
<td>124</td>
<td>57.41</td>
</tr>
<tr>
<td>Other Sources</td>
<td>18</td>
<td>35.29</td>
<td>40</td>
<td>24.24</td>
<td>58</td>
<td>26.85</td>
</tr>
</tbody>
</table>

Educational Methods Used

In teaching farmers, extension workers in the East Central State of Nigeria generally used individual instructional methods and techniques more often than group techniques and mass communication devices. As shown in Table 18, three-quarters of the respondents 'visited farmers often' and nearly one-half of them, mostly junior staff 'visited farmers' homes' with the same frequency. One-half of the extension workers were visited 'sometimes' in their offices and houses by farmers. Except for a few top extension officers in the zones, telephones were not available and, therefore, this device had never been used by 76.39 per cent of the respondents. House visits by farmers showed a highly significant negative association with rank ($\chi^2 = 24.14$, df = 3, p < .01), meaning that the higher the rank, the less frequently an extension staff was visited in his house by farmers.
TABLE 18
PERCENTAGE DISTRIBUTION OF RESPONDENTS BY FREQUENCY OF USE OF
VARIOUS EDUCATIONAL METHODS AND TECHNIQUES

<table>
<thead>
<tr>
<th>Methods and Techniques</th>
<th>Frequency of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Often</td>
</tr>
<tr>
<td>Individual Instructional:</td>
<td></td>
</tr>
<tr>
<td>1. Farm visits by agent</td>
<td>72.22</td>
</tr>
<tr>
<td>2. Home visits by agent</td>
<td>46.76</td>
</tr>
<tr>
<td>3. Office visits by farmers</td>
<td>21.76</td>
</tr>
<tr>
<td>4. House visits by farmers</td>
<td>14.81</td>
</tr>
<tr>
<td>5. Telephone calls</td>
<td>00</td>
</tr>
<tr>
<td>Group average</td>
<td>38.88</td>
</tr>
<tr>
<td>Instructional Group:</td>
<td></td>
</tr>
<tr>
<td>6. Demonstrations</td>
<td>43.06</td>
</tr>
<tr>
<td>7. Field trips</td>
<td>12.96</td>
</tr>
<tr>
<td>8. Special meetings</td>
<td>19.91</td>
</tr>
<tr>
<td>9. Short courses</td>
<td>6.94</td>
</tr>
<tr>
<td>10. Lectures and talks</td>
<td>12.96</td>
</tr>
<tr>
<td>11. Field days</td>
<td>2.78</td>
</tr>
<tr>
<td>12. Film shows (IG + device)</td>
<td>2.78</td>
</tr>
<tr>
<td>Group average</td>
<td>14.48</td>
</tr>
<tr>
<td>Mass Communication devices:</td>
<td></td>
</tr>
<tr>
<td>13. Circular letters</td>
<td>10.18</td>
</tr>
<tr>
<td>14. Extension Newsletter</td>
<td>18.06</td>
</tr>
<tr>
<td>15. Newspaper articles</td>
<td>.93</td>
</tr>
<tr>
<td>16. Radio</td>
<td>13.43</td>
</tr>
<tr>
<td>17. Television</td>
<td>00</td>
</tr>
<tr>
<td>18. Messages &amp; announcements</td>
<td>13.43</td>
</tr>
<tr>
<td>Group average</td>
<td>11.21</td>
</tr>
</tbody>
</table>

*Chi-square value for differences between groups were significant at the .01 level.
Forty-three per cent of the respondents used process demonstrations as group instructional techniques 'often'. Other group methods used 'sometimes' by 40% of the extension staff include special meetings, lectures and talks, field trips with farmers and short courses. Thirty-four per cent used these same techniques only 'rarely', and one-third of them had 'never' used film and slide shows as illustrative devices.

Of the three groups of methods, mass communication devices were the least used. Only 13% of the extension staff, mostly senior ones, reported using the radio 'often'. These were invariably involved in 'Farmers Forum', a weekly radio programme sponsored by the state government. Television was unfamiliar; 98% of the respondents had never used it, while 2½ per cent of the staff had been involved in the TV vegetable growing programme at Enugu before the civil war. Less than one-half of the staff 'sometimes' sent out circular letters to farmers or contributed articles for publication in the MOA extension newsletter, and 40 per cent of them 'sometimes' communicated with the clientele through verbal messages and announcements. The junior extension staff tended to write circular letters more often to farmers than senior staff ($\chi^2 = 12.76$, df = 3, $p \leq .01$).

In North America, the agricultural extension services are experiencing a rapid increase in the use of impersonal contact methods and a corresponding decline in the use of personal contact or individual instructional techniques of adult education (5). Cultural, socio-economic and other developmental factors seem to
be responsible for this trend.

Devices and instructional techniques which were 'never' or 'rarely' used by respondents include television, radio, telephone calls, film and slide shows, newspaper articles, extension newsletter and field days. The respondents gave five major reasons for not using these educational channels. Ninety-seven per cent said television sets, radios and telephones were not available in their areas, and 28% said these devices were too expensive for rural farmers to purchase. About one-half of the respondents said the clientele was illiterate and therefore could not be reached through newspapers, newsletters and other written material. One-third of them said it was not their responsibility to use such methods as field days, film and slide shows; and slightly over 16% complained of transportation and mobility problems. Table 19 shows a tabulation of the respondents against their reasons for not using mass communication devices.

**TABLE 19**

**DISTRIBUTION OF RESPONDENTS BY REASONS GIVEN FOR NOT USING MASS COMMUNICATION DEVICES**

<table>
<thead>
<tr>
<th>Reasons Given</th>
<th>Senior Staff</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>1. Illiterate clientele</td>
<td>28</td>
<td>54.90</td>
<td>74</td>
<td>44.85</td>
<td>102</td>
<td>47.22</td>
</tr>
<tr>
<td>2. Device not available</td>
<td>51</td>
<td>100.00</td>
<td>159</td>
<td>96.36</td>
<td>210</td>
<td>97.22</td>
</tr>
<tr>
<td>3. It is expensive</td>
<td>16</td>
<td>31.37</td>
<td>45</td>
<td>27.27</td>
<td>61</td>
<td>28.24</td>
</tr>
<tr>
<td>4. Not my responsibility</td>
<td>12</td>
<td>23.53</td>
<td>56</td>
<td>33.94</td>
<td>68</td>
<td>31.48</td>
</tr>
<tr>
<td>6. Other reasons</td>
<td>9</td>
<td>17.65</td>
<td>22</td>
<td>13.33</td>
<td>31</td>
<td>14.35</td>
</tr>
</tbody>
</table>
Amount of Learning Produced by Different Educational Methods

'Of the methods and techniques you have used, which have you found to produce the greatest amount of learning by farmers?' Seventy-seven per cent of the respondents said demonstration and farm visits resulted in 'much learning' by the farmer, and one-half of them said short courses and home visits by the agent produced 'much learning' also. Between one-third and one-half of the extension staff reported that 'some amount of learning' resulted from house and office visits, field trips, meetings, lectures and talks, and field days; but they felt that most of the mass communication devices listed produced 'little or no learning'. Three-quarters of them felt also that telephone calls and television would produce 'little or no learning' even though they had never used these devices.

Generally, group and individual instructional methods were found to produce greater amounts of learning by farmers than mass communication methods. These findings summarised in table 20 give support to the fact that the elements of instruction and feedback in adult education methods are crucial in producing desired changes in the learner, and they account for the differences in learning effectiveness between systematic diffusion of knowledge and mass communication of information (6).

Efficiency of Different Educational Methods

Respondents were asked which of the methods used were efficient, considering their job situation and the use of their time. About 3/4
<table>
<thead>
<tr>
<th>Educational Methods</th>
<th>Observed Amount of Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Much</td>
</tr>
<tr>
<td>Individual instructional:</td>
<td></td>
</tr>
<tr>
<td>1. Farm visits by agent</td>
<td>76.39</td>
</tr>
<tr>
<td>2. Home visits by agent</td>
<td>50.93</td>
</tr>
<tr>
<td>3. Office visits by farmers</td>
<td>13.89</td>
</tr>
<tr>
<td>4. House visits by farmers</td>
<td>16.67</td>
</tr>
<tr>
<td>5. Telephone calls</td>
<td>2.31</td>
</tr>
<tr>
<td>Group average</td>
<td>32.04</td>
</tr>
<tr>
<td>Instructional group:</td>
<td></td>
</tr>
<tr>
<td>6. Demonstrations</td>
<td>77.78</td>
</tr>
<tr>
<td>7. Field trips</td>
<td>47.22</td>
</tr>
<tr>
<td>8. Special meetings</td>
<td>28.70</td>
</tr>
<tr>
<td>9. Short courses</td>
<td>50.93</td>
</tr>
<tr>
<td>10. Lectures and talks</td>
<td>24.54</td>
</tr>
<tr>
<td>11. Field days</td>
<td>19.91</td>
</tr>
<tr>
<td>12. Film/Slide shows</td>
<td>10.19</td>
</tr>
<tr>
<td>Group average</td>
<td>37.04</td>
</tr>
<tr>
<td>Mass communication:</td>
<td></td>
</tr>
<tr>
<td>13. Circular letters</td>
<td>4.63</td>
</tr>
<tr>
<td>14. Extension newsletter</td>
<td>16.67</td>
</tr>
<tr>
<td>15. Newspaper articles</td>
<td>1.85</td>
</tr>
<tr>
<td>16. Radio</td>
<td>5.09</td>
</tr>
<tr>
<td>17. Television</td>
<td>2.31</td>
</tr>
<tr>
<td>18. Messages &amp; announcements</td>
<td>8.33</td>
</tr>
<tr>
<td>Group average</td>
<td>6.48</td>
</tr>
</tbody>
</table>
of the extension staff said that farm visits and demonstrations were 'very efficient'. Forty-two per cent of the respondents classified most of the listed group and individual methods as 'quite efficient' and over 70% said that television and telephone calls were 'inefficient'.

A close examination of Table 21 reveals that responses to this question followed the same pattern as those for observed amount of learning produced by different methods. Despite the verbal explanations given during the interview, a majority of the senior and junior staff interpreted 'efficiency of methods' as the ability to produce learning and desired changes in the farmer. Also, time did not seem to be a limiting factor to the Nigerian extension worker, since about 75% of them rated most of the time-consuming instructional techniques as 'very efficient' and most of the time-saving mass communication methods as 'inefficient'.

It was noted earlier that the North American agricultural agent has very little time to himself and therefore prefers to use time-saving communication devices most of the time, even though these may not be educationally effective during the later stages of the adoption process. The Nigerian extension worker, on the other hand, has a different orientation and time perspective due probably to personal differences in values and cultural background.

Other Methods

A number of respondents reported that they had other ways of working with farmers in addition to the methods listed: (a) Multipurpose cooperatives - This is a community method in which the farmers are
## Table 21

PERCENTAGE DISTRIBUTION OF RESPONDENTS BASED ON RATED EFFICIENCY OF VARIOUS EDUCATIONAL METHODS

<table>
<thead>
<tr>
<th>Educational Methods</th>
<th>Very Efficient</th>
<th>Quite Efficient</th>
<th>Somewhat Efficient</th>
<th>Inefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual Instructional:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Farm visits by agent</td>
<td>74.54</td>
<td>17.59</td>
<td>4.63</td>
<td>3.24</td>
</tr>
<tr>
<td>2. Home visits by agent</td>
<td>40.28</td>
<td>39.35</td>
<td>16.67</td>
<td>3.70</td>
</tr>
<tr>
<td>3. Office visits by farmers</td>
<td>11.57</td>
<td>36.57</td>
<td>45.37</td>
<td>6.48</td>
</tr>
<tr>
<td>4. House visits by farmers</td>
<td>11.11</td>
<td>30.56</td>
<td>45.83</td>
<td>12.50</td>
</tr>
<tr>
<td>5. Telephone calls</td>
<td>2.78</td>
<td>5.56</td>
<td>21.76</td>
<td>69.90</td>
</tr>
<tr>
<td><strong>Group average</strong></td>
<td>28.06</td>
<td>25.93</td>
<td>26.85</td>
<td>19.16</td>
</tr>
<tr>
<td><strong>Instructional Group:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Demonstrations</td>
<td>73.61</td>
<td>20.83</td>
<td>3.24</td>
<td>2.31</td>
</tr>
<tr>
<td>7. Field trips</td>
<td>37.50</td>
<td>42.13</td>
<td>15.74</td>
<td>4.63</td>
</tr>
<tr>
<td>8. Special meetings</td>
<td>23.15</td>
<td>41.67</td>
<td>32.87</td>
<td>2.31</td>
</tr>
<tr>
<td>9. Short courses</td>
<td>40.74</td>
<td>36.11</td>
<td>18.98</td>
<td>4.16</td>
</tr>
<tr>
<td>10. Lectures and talks</td>
<td>19.44</td>
<td>42.59</td>
<td>33.80</td>
<td>4.16</td>
</tr>
<tr>
<td>11. Field days</td>
<td>16.20</td>
<td>31.02</td>
<td>38.43</td>
<td>14.36</td>
</tr>
<tr>
<td>12. Film/Slide shows</td>
<td>11.57</td>
<td>26.39</td>
<td>42.59</td>
<td>19.44</td>
</tr>
<tr>
<td><strong>Group average</strong></td>
<td>31.74</td>
<td>34.39</td>
<td>26.41</td>
<td>7.34</td>
</tr>
<tr>
<td><strong>Mass Communication:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Circular letters</td>
<td>2.78</td>
<td>17.13</td>
<td>54.63</td>
<td>25.46</td>
</tr>
<tr>
<td>14. Extension newsletter</td>
<td>10.65</td>
<td>35.65</td>
<td>45.83</td>
<td>7.87</td>
</tr>
<tr>
<td>15. Newspaper articles</td>
<td>1.39</td>
<td>11.57</td>
<td>49.54</td>
<td>37.50</td>
</tr>
<tr>
<td>16. Radio</td>
<td>4.63</td>
<td>15.74</td>
<td>42.59</td>
<td>37.03</td>
</tr>
<tr>
<td>17. Television</td>
<td>2.78</td>
<td>7.41</td>
<td>11.11</td>
<td>78.71</td>
</tr>
<tr>
<td>18. Messages &amp; Announcements</td>
<td>7.87</td>
<td>20.37</td>
<td>43.98</td>
<td>27.77</td>
</tr>
<tr>
<td><strong>Group average</strong></td>
<td>5.02</td>
<td>17.98</td>
<td>41.28</td>
<td>35.72</td>
</tr>
</tbody>
</table>
organized into cooperative societies. Each cooperative society owns and manages specific farming projects or other small agro-businesses such as garri processing industry. The members provide some land, usually communally owned, and agree to work on the projects so many days a month. The local extension staff in turn provides technical advice, planting materials and fertilizers which may be paid for at the end of the harvesting season. By agreement, part of the proceeds from the projects are retained for continuing the business while the remaining part is shared equally among members.

Another method reported is the 'Farmers Forum'. This has been organized all over the state for the purpose of bringing together, once a month, farmers in a county council area, so that they can exchange ideas with other farmers and government officials. The extension service also tries to reach the farmers through their children by distributing newsletters in primary schools. These children who might be members of Young Farmers or Rural Science clubs are asked to read the agricultural newsletter to their parents who, hopefully, will be motivated to seek further elucidation and guidance from their local extension workers. There were indications of extension success with the cooperative society and school children approaches.

C. Interest in Continuing Education

Table 22 shows the distribution of respondents based on their opinions concerning further training. Thirty-five per cent, mostly
senior staff, felt they had adequate training in extension to do an effective job. Fifty-five per cent said their training was inadequate, and 10% could not tell how they felt about their training. Sixty-eight per cent of the respondents said they would like to receive further training and the remaining 32% said they were not interested in continuing their education.

Rank was positively related to judged adequacy of training \( (r^2 = .35, \text{df} = 215, p < .01) \), meaning that the higher the rank, the more the extension worker saw his training as being adequate enough to enable him to do an effective job; and the lower the rank, the less adequate a staff member felt about his training.

**TABLE 22**

**DISTRIBUTION OF RESPONDENTS BASED ON THEIR OPINIONS CONCERNING FURTHER TRAINING**

<table>
<thead>
<tr>
<th>Opinions</th>
<th>Senior Staff</th>
<th></th>
<th>Junior Staff</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>My training is adequate</td>
<td>31</td>
<td>60.78</td>
<td>45</td>
<td>27.27</td>
<td>76</td>
<td>35.19</td>
</tr>
<tr>
<td>My training is NOT adequate</td>
<td>19</td>
<td>37.25</td>
<td>100</td>
<td>60.61</td>
<td>119</td>
<td>55.09</td>
</tr>
<tr>
<td>Don't know if it is adequate or not</td>
<td>1</td>
<td>1.96</td>
<td>20</td>
<td>12.12</td>
<td>21</td>
<td>9.72</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
<td><strong>99.99</strong></td>
<td><strong>165</strong></td>
<td><strong>100.00</strong></td>
<td><strong>216</strong></td>
<td><strong>100.00</strong></td>
</tr>
<tr>
<td>Would like further training</td>
<td>20</td>
<td>39.22</td>
<td>128</td>
<td>77.58</td>
<td>148</td>
<td>68.52</td>
</tr>
<tr>
<td>Would NOT like further training</td>
<td>31</td>
<td>60.78</td>
<td>37</td>
<td>22.42</td>
<td>68</td>
<td>31.48</td>
</tr>
<tr>
<td>Undecided</td>
<td>0</td>
<td>00</td>
<td>0</td>
<td>00</td>
<td>0</td>
<td>00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
<td><strong>100.00</strong></td>
<td><strong>165</strong></td>
<td><strong>100.00</strong></td>
<td><strong>216</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>
TABLE 23
DISTRIBUTION OF RESPONDENTS ACCORDING TO TYPE
OF FURTHER TRAINING DESIRED

<table>
<thead>
<tr>
<th>Course Desired</th>
<th>Senior Staff</th>
<th></th>
<th>Junior Staff</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Agric. Assist. course</td>
<td>0</td>
<td>00</td>
<td>31</td>
<td>18.79</td>
<td>31</td>
<td>14.35</td>
</tr>
<tr>
<td>Diploma Course</td>
<td>0</td>
<td>00</td>
<td>52</td>
<td>31.52</td>
<td>52</td>
<td>24.08</td>
</tr>
<tr>
<td>Degree course</td>
<td>24</td>
<td>47.06</td>
<td>74</td>
<td>44.85</td>
<td>98</td>
<td>45.37</td>
</tr>
<tr>
<td>Post Graduate course</td>
<td>10</td>
<td>19.61</td>
<td>0</td>
<td>00</td>
<td>10</td>
<td>4.63</td>
</tr>
<tr>
<td>Short Refresher courses</td>
<td>17</td>
<td>33.33</td>
<td>8</td>
<td>4.84</td>
<td>25</td>
<td>11.57</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100.00</td>
<td>165</td>
<td>100.00</td>
<td>216</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Junior extension staff generally expressed interest in formal School of Agriculture training courses that would qualify them for advancement to a higher grade, although 45% of them indicated a desire to pursue degree courses at the university (Table 23). About one-fifth of the senior staff were interested in post graduate training and one-third preferred short inservice training programmes and refresher courses. Nearly all the non-graduate senior staff were interested in degree courses.

A tabulation of responses against areas of desired training (Table 24) shows that 84.72 per cent of the subjects, mostly junior staff, would like to learn more about technical agriculture in order to do their job effectively. Two-thirds of the respondents desired additional training in programme planning and design of instruction, and evaluation. About 60% felt they needed to improve their communication skills and learn how to determine community needs, while
one-half of them desired training in group dynamics and the use of individual methods and techniques of instruction.

Only one-quarter of the extension staff felt that they needed training in 'how to manage a learning situation'. This was interpreted to mean that the extension workers were generally limited in their understanding of extension as a rural education process and so did not sufficiently appreciate the need for additional training and expertise in this important area. Thirty-nine per cent of each respondent group needed more training in administration and supervision procedures; but the proportion of junior staff desiring training in each of the other areas exceeded that of senior staff, one more indication that the lower the rank, the more incompetent the extension worker felt and consequently the greater his desire for continuing education.
TABLE 25

DISTRIBUTION OF RESPONDENTS ACCORDING TO SUGGESTED MEASURES FOR IMPROVING EXTENSION

<table>
<thead>
<tr>
<th>Suggested Changes</th>
<th>Senior Staff</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>More staff</td>
<td>15</td>
<td>29.41</td>
<td>22</td>
<td>13.33</td>
<td>37</td>
<td>17.13</td>
<td></td>
</tr>
<tr>
<td>Better training of staff</td>
<td>20</td>
<td>39.22</td>
<td>60</td>
<td>36.36</td>
<td>80</td>
<td>37.04</td>
<td></td>
</tr>
<tr>
<td>Incentives for staff</td>
<td>36</td>
<td>70.59</td>
<td>117</td>
<td>70.91</td>
<td>153</td>
<td>70.83</td>
<td></td>
</tr>
<tr>
<td>Incentives for farmers</td>
<td>36</td>
<td>70.59</td>
<td>111</td>
<td>67.27</td>
<td>147</td>
<td>68.06</td>
<td></td>
</tr>
<tr>
<td>Provide adequate Transportation</td>
<td>41</td>
<td>80.39</td>
<td>140</td>
<td>84.85</td>
<td>181</td>
<td>83.80</td>
<td></td>
</tr>
<tr>
<td>Better Programmes</td>
<td>11</td>
<td>21.57</td>
<td>21</td>
<td>12.73</td>
<td>32</td>
<td>14.81</td>
<td></td>
</tr>
<tr>
<td>Literacy education for farmers</td>
<td>4</td>
<td>7.84</td>
<td>25</td>
<td>15.15</td>
<td>29</td>
<td>13.43</td>
<td></td>
</tr>
<tr>
<td>Improve Land tenure system</td>
<td>3</td>
<td>5.88</td>
<td>2</td>
<td>1.21</td>
<td>5</td>
<td>2.31</td>
<td></td>
</tr>
<tr>
<td>More funds for work</td>
<td>12</td>
<td>23.53</td>
<td>26</td>
<td>15.76</td>
<td>38</td>
<td>17.59</td>
<td></td>
</tr>
<tr>
<td>Better Recognition by Government</td>
<td>6</td>
<td>31.37</td>
<td>78</td>
<td>47.27</td>
<td>94</td>
<td>43.52</td>
<td></td>
</tr>
</tbody>
</table>

D. Suggestions for Improving Extension

Respondents were asked to suggest what changes should be made in the Extension Service to make it more effective in serving the farmers in their zones. Data in Table 25 suggest that among the major problems of extension in the state are those relating to: inadequate transportation for field staff, lack of incentives for staff as well as farmers, poor training, insufficient numbers of staff, inadequate financing of programmes and lack of recognition by the government.
Eighty-five per cent of the respondents said that field extension staff should be provided with means of transportation. Seventy per cent wanted other incentives like payment of mileage allowances etc. to field staff, and granting of more loans and subsidies to the farmers. About 40% said there was an immediate need for improved training of extension personnel and proper recognition of the importance of Agricultural Extension Services by the State government. One-fifth of the respondents complained of insufficient numbers of field staff in their areas, and lack of funds for implementing approved programmes. Other changes suggested by respondents include better programmes for the clientele, literacy education for rural farmers, and improved land tenure systems.

E. SUMMARY OF FINDINGS

1. Attitude to Extension Work

Generally, the respondents had from poor to moderately favourable attitude towards employment in the extension service (Mean = 43.06 out of 75). The higher the rank, the more positive the staff member's attitude towards extension. Ninety per cent of them said extension was interesting and challenging, but one-half was concerned that extension gave little or no prestige in comparison with other jobs. Sixty-two per cent of the respondents said they would never choose extension as a career if they had another chance.

The majority of the field staff were dissatisfied with the conditions of service in the ministry. Ninety per cent of the
senior staff and the same proportion of junior staff said it was difficult for them to do their best in the field under the present conditions. They complained mostly of lack of field and office facilities, lack of transportation, lack of incentives and no promotional prospects for staff; and lack of encouragement from the extension organization as well as the state government.

2. **Attitude to Farmers**

Staff attitude towards the client system was only moderately favourable (Mean = 44.63 out of 75). The junior staff, however, had a less favourable disposition towards farmers than the senior staff. Attitude towards extension and attitude to farmers were not related to age, length of service and years of extension experience, but both were significantly and positively correlated with rank, formal education and level of agricultural training received by staff.

Three-quarters of the senior staff and over one-half of the junior staff favoured the idea of university involvement in direct extension work with farmers through the proposed Faculty of Agriculture rural development project, while one-quarter of the respondents wanted the university to concentrate on graduate training rather than work directly with farmers in the state.

3. **Knowledge of Principles**

Most of the extension staff tested had from low to average knowledge of selected adult education principles and practices
(Mean = 5.79 out of 12). The higher the rank, the greater the score on the test; test scores were negatively associated with age, length of service and years of extension experience.

4. Role Perception and Performance

Individually and collectively, the respondent groups ranked 'teaching farmers new practices' (i.e. adult education) as their most important job in extension, and more than one-half of them (57%) considered other extension functions to be more important than adult education. Programme planning was ranked second in importance by all. Both senior and junior staff groups ranked administration, supervision of subordinate staff and office work as the least important functions.

Senior staff respondents spent comparatively less time (42%) in field work and 30% of their time in administrative activities, while the junior staff spent about two-thirds of their time in the field and the rest of their time doing routine office work. Rank was positively related to time spent in administration, but negatively associated with time spent in field extension duties.

The majority of the field staff (82%) collected technical information for use in extension from two main sources - the zonal agricultural office and the research station. Twenty-seven per cent of the respondents passed on to farmers information collected from sources such as the better farmers in the village, extension newsletters, foreign agricultural journals and textbooks.
5. **Methods Used**

Individual instructional methods and techniques, primarily farm and home visits, were used most often by the extension staff, followed by group methods, mainly demonstrations. Mass communication devices like television, radio, film shows and newspapers were least used, and most of them were not available in the rural areas.

Respondents reported that group and individual instructional methods produced greater amounts of learning by farmers than mass contact methods. Considering their job situation and use of their time, they rated individual/group techniques as very efficient but judged mass media methods as being inefficient, suggesting that time was not a limiting factor to the Nigerian extension worker.

6. **Need for Continuing Education**

About two-thirds of the extension staff felt that they did not have adequate training in extension, and therefore, would like to receive further training. The remaining one-third was not interested in continuing their education. Junior staff were mostly interested in School of Agriculture courses that would qualify them for promotion, and nearly one-half of them would like to do degree courses. Only one-fifth of the senior staff were interested in post graduate studies and one-third preferred short inservice training programmes.

Nearly all the junior staff said they would like to receive
additional training in technical agriculture. About two-thirds of the respondents believed that their greatest need for additional training was in the following areas: determining community needs, programme planning and design of instruction, programme evaluation and communication skills. One-half of them were interested in learning about group dynamics and the use of individual instructional methods and techniques.

7. **Improving Zonal Extension**

To improve extension work in the zones, respondents said the following were necessary: means of transportation, payment of travel allowances, more promotions and other incentives for staff; more loans and subsidies for farmers, employment of additional staff, better training, improved programmes, more funds and proper recognition of the extension service by the state government.
Footnotes to Chapter VI

CHAPTER VII

COMPARATIVE ANALYSIS OF THE AGRICULTURAL EXTENSION SERVICES
IN EAST CENTRAL STATE OF NIGERIA AND IN NORTH AMERICA.

In cross-cultural diffusion of adult education, the acceptance and integration of borrowed educational technology into the host culture depend primarily on: a) the ability of the receiving agency to modify transferred elements into forms compatible with the local culture; b) how well the receiving agency performs its educational role, and c) the effects of socio-cultural and environmental factors on the people's learning behaviour. In other words, the success of extension education in a developing country like Nigeria depends on the interaction of factors relating to:

- agricultural research as a source of technical knowledge,
- efficiency in the performance of educational and other facilitating roles including organizational administration, staff training, programme planning, staff performance, cooperation with other rural development agencies and programme evaluation, and finally
- the reaction of farmers to extension as determined by economic, socio-cultural and other environmental conditions.

The purpose of this chapter is to analyse and compare the extension situation in the East Central State of Nigeria with the
system in North America in respect of these success-determining factors. In addition to facilitating proper judgement of both situations, such a comparison would account for differences between the two systems and would also explain how these forces determine the form, character and level of success or failure of extension education in the social system.

**Agricultural Research**

As was noted earlier, the success with which new ideas and techniques of production can be incorporated in physical capital determines the rate at which the economy as a whole can advance. Extension originated from the belief that the application of science to the solution of practical problems is a sure foundation for human progress. The role of research as a source of technical knowledge for the development of agriculture is critically important because without supporting research, extension has nothing new to offer to the farmers.

Availability of technical information is one major difference between Nigerian and American extension services. The North American farmer has available to him substantial public and private agricultural research programmes, which are constantly seeking new ways to safeguard crops and livestock and expand production. From these research establishments new ideas flow and they are systematically communicated to the farmers through extension. Farmers' acceptance or rejection of such findings are made known to the research workers, and any problems encountered in the diffusion form the basis for further research work.
In terms of numbers, Nigeria has enough federal and state-supported agricultural research establishments, but evidence from this and other studies show that they are hampered by lack of funds and scarcity of trained personnel. Generally, agricultural research in the country has either been of poor quality or lacking in the right direction (1). The weakness of extension education has persisted partly because of the failure of research to develop new techniques which the extension service can introduce to farmers, and partly because of defects in the organization of the extension service itself. Research engineers have not yet succeeded in discovering alternative implements to the hoe and matchet that can be adapted to the needs of small peasant farmers, nor has the research agronomist come up with new systems of crop rotation that are markedly superior to shifting cultivation or bush fallow in conserving soil fertility.

Many pressing agricultural problems have not yet been investigated, and some of the studies conducted seem to have no published results. As Obibuaku (2) puts it, at present our research workers appear to be working either by the hunch or according to notions gathered from foreign contacts. The results of their investigations are published in foreign journals which are inaccessible to our people, or hidden away in official files. In this way, the time, money and effort spent on agricultural research by these workers are wasted because the results are not utilized by farmers.

Prior to the creation of the Agricultural Research Council of
Nigeria in 1970, the Nigerian governments had no central planning committee nor well-established policies for promoting and coordinating agricultural research in the country. With public funds, individual researchers and agencies worked on any topic they liked, and they were not held publicly accountable. In some cases, the research topics were not related to immediate national or local needs like the notorious mucuna-fallow experiments of the 1950s. Public money allocated for research was occasionally diverted to personal use or misappropriated. In addition to limitations in training, and scarcity of trained personnel, such scholarly virtues as dedication, patience and perseverance so essential to scientific enquiry seemed to be lacking in the average Nigerian scientist (3).

There is abundant evidence to show that public sector investment in agricultural education and scientific research is essential if a nation is to successfully test and diffuse the indigenous technology employed by its own farmers, transfer and adapt the agricultural technology developed in other countries, and conduct the basic and applied research necessary to provide its farmers with a continuous stream of new biological and chemical technology. It is obvious, therefore, that Nigeria must place more emphasis on agricultural research before there can be adequate answers to problems of agricultural production, improvement of nutritional level, and raising of the standard of living of the people. Experience in economically advanced countries show that the solution to the problem of low agricultural productivity lies in intensified research and more
effective extension services. These in turn depend upon the quality, competence and number of personnel available for these functions. Because research scientists are scarce all over the world, the Nigerian government would have to invest much more in higher level training of indigenous agricultural scientists and extension workers.

Organization & Administration

Administration is the art of guiding, coordinating, and integrating policies established for any organizational unit to effectively and efficiently achieve the purpose of the organization (4). Administration has two phases: (a) Structural - involving division into units of operation and areas of responsibility, assignment of duties, and definition of working relations; and (b) Functional - including policy determination, direction, and leadership required in carrying out operations. The goal of administrative leadership is to provide conditions which will permit all personnel to work at maximum efficiency.

One major problem in cross-cultural diffusion of adult education lies in the organization for and structure of adult education agencies in the receiving culture. The East Central State, like all other states of Nigeria, has a well-established extension service organization within the Ministry of Agriculture. Yearly legislative provisions ensure funds and continuity for the organization. Some senior staff who were interviewed in this study complained that the administration of the extension service follows centralized patterns of decision-making, and show weaknesses of excessive red tape,
bureaucratic insensitivity to human factors in personnel management, and unnecessary pre-occupation with paper work. These often resulted in delayed decisions regarding field work.

Senior staff responses to question 5 on the schedule indicate also that guidelines and procedures essential in providing extension workers with proper direction and continuity of effort have not been spelled out, nor have organizational philosophies, programme objectives and staff responsibilities been clearly defined, documented and circulated. There was some evidence that the two-way flow of communication characteristic of more sophisticated extension systems was lacking in the Nigerian extension scene. A few respondents cited instances where qualified field staff had not been encouraged to use their initiative in implementing local programmes, or to express their views and feelings about certain programmes.

The local agricultural officer who is the extension administrator in the zone, controls a large area. His office is located several miles from the village. He visits farmers only occasionally, more so when there is an outbreak of livestock or crop disease or some other emergency. Supervision of field staff is not regular because of the large area under his control and because the agricultural officer and his subordinate staff have not been provided with means of transportation. Some field extension staff tend to visit more often those farmers who will entertain them with drinks or offer them money and farm gifts in return for their visit (5). Apparently, these non-professional behaviours are encouraged by a widespread feeling
that the civil service belongs to nobody, and an organizational structure in which it is relatively impossible to sack the inefficient and the corrupt.

In the state, several government and private agencies are involved in rural development work. Within the ministry of agriculture itself, many branches engage in direct extension work with farmers. There is very little cooperation and improper coordination of activities within and between these agencies. Also, there is unnecessary duplication of efforts leading to rivalry among senior government officials as well as agencies, all of whom are basically trying to help the same rural villager. The various devices of collective planning, inter-agency staff conferences, common policy statements and directives are not widely used by the administration to promote cooperation and ensure the delivery of better educational services to rural people. The need here is for better inter-agency cooperation and mutual understanding of each other's role in rural community development.

Staff Training

The most striking contrast between the Nigerian and American extension agents lies in the quality of their training. Training is the most important single factor affecting staff attitudes and job performance in any organization. A well-trained and competent staff is a prerequisite for successful extension work in any country. Such staff includes those extension workers who have direct contact with farmers in the village, and also specialists, supervisors and extension
administrators. Proper training in extension implies sound knowledge of extension principles, technical agriculture, social systems and demonstrated competence in requisite adult education skills.

In Nigeria, field extension work is left in the hands of the most poorly trained staff of the ministry - the agricultural assistants and demonstrators. The AAs have had six months to two years of formal agricultural training in the School of Agriculture in addition to secondary school education; while the agricultural demonstrators, who may or may not be high school graduates have received only a few months of on-the-job training. Most of the agricultural officers and top administrators themselves have received limited training in extension methodology, adult education principles, agricultural economics and related social sciences. Furthermore, the extension organization had not instituted regular inservice and post graduate training to correct the apparent defects in basic training of extension personnel in the state.

These conditions can hardly be compared with the situation in North America where extension is supported by well-established graduate and inservice training programmes. The minimum qualification for entry into the extension service is a bachelor's degree in agriculture or home economics. The trend presently is towards higher professional qualifications. Although a post graduate degree as such will not necessarily make one an ideal extension worker, agricultural agents who have undergone longer and higher levels of training have better chances of acquiring more knowledge and skills and developing the right professional attitudes essential for
promoting change through adult education processes. Also, professional preparation of adult educators is an interdisciplinary training which aims at producing the right kind of practitioner who knows his technical subject matter, educational methods and techniques, and social systems; and can therefore, better recognize the importance of the human factor in the change process.

In addition to poorly trained staff, the survey shows that there were not enough extension workers in the East Central State of Nigeria to give proper attention to all the farmers. The few available staff were made to cover large areas and more clients than they could manage effectively. Many remote rural communities had never been contacted by extension workers. The total number of field staff was 859, roughly one extension worker to over 1,500 extended families. This number of staff needs to be increased by at least 50 per cent to meet F.A.O. recommended ratio of 1:1,000. The extension staff situation in other states of Nigeria is not very much better, and cannot be compared with places like Michigan state where one extension agent serves less than 400 people (6).

Programme Planning

There are three distinct procedures for developing extension programmes: predetermined, self-determined and joint planning (7). Some writers regard these as stages along a historical continuum of development of programme planning. In the early days of extension, the programmes were predetermined by the extension organization
alone and the farmers received whatever was offered to them by the pioneer agents. A predetermined programme is one prepared by government officials based on what they can do for the people or what the government wants the people to do. It is a quick process of developing programmes, somehow undemocratic, and because local people are not involved in the planning process, they may not understand it or give it full support.

In self-determined programming, the farmers in the community are left to determine by themselves what programme they want carried out. It is based on the principle that the people will support a programme if it originates from them. It is a slow process and local people do not have accurate knowledge of the situation and resources available. Also, there is a tendency for the people to come up with too many problems most of which are outside the scope of the extension organization.

The third procedure for developing extension programmes is joint planning. It is a situation in which representatives of the local people work together with extension personnel and other professionals to determine the best programme for the people. All the social systems cooperatively collect and analyse available information as a basis for deciding on lines of action to be taken; how to operate to achieve a common objective, and how to meet new problems as they arise. It is a democratic process and because all relevant client and professional subsystems are involved in the planning, there is public support for the programme.
Programme development in adult education is guided by a number of general principles (8), the most basic of which are: that programmes must be based on the needs of local people and that programmes should be arrived at democratically through joint participation of the people, the extension staff and others who can contribute meaningfully. Although joint planning as outlined above is a complex process and one that is difficult to put into practice, this ideal approach to programme development is today receiving greater attention from governments, adult education and other agencies interested in community development in North America. In some areas, however, the tendency is to take the easy approach by adopting the predetermined procedure or modifications of the ideal process, but generally, most of the states, provinces and counties have developed practical procedures which ensure adherence to accepted principles of programme planning.

In Nigeria, the predetermined approach is the rule. Planning is largely the responsibility of senior staff of the ministry with little if any participation of junior personnel. Each zonal extension unit determines its own programmes without necessarily consulting the people or other agencies whose help might later be needed in implementing the programmes. These zonal draft-programmes are collectively debated and modified according to the wishes of top extension officers during an annual meeting of all senior staff. The final written approval comes from the chief extension officer who also determines how much should be spent on each programme.

The zonal agricultural officers then dictate the approved
programme of work in the form of policy statements and instructions to their subordinate staff, who will in turn, impose the programmes on rural farmers. Some of the projects may not reflect the most urgent needs of the community, and when they are forced on the people by relatively incompetent junior staff they usually evoke poor and temporary responses. There can be no doubt that since the responsibility for implementing an extension programme is that of the change agent, and because it is the lives of the people that will be changed, both the extension worker and the people must have the opportunity to participate in the planning of rural adult education programmes. This is an important lesson that should be learned by the extension service in Nigeria.

Staff Performance

Staff performance is the most important single factor responsible for the achievement of organizational goals and programme objectives. Because of economic, educational and socio-cultural differences, one would not expect extension workers in Nigeria to perform at the same level of efficiency as their counterparts in North America. However, a situation in which 90 per cent of both senior and junior extension staff were dissatisfied with their conditions of service would suggest that: (i) all is not well with the extension service in the East Central State of Nigeria, and (ii) that field staff must have been performing at the lowest level of efficiency.

Staff attitudes towards extension and the farmers ranged from
poor to moderately favourable, and there was some evidence of lack of interest and motivation among the workers. The adverse effects of poor attitudes and inadequate training on staff performance were further confounded by other situational factors which the respondents listed as relatively poor salaries and slow advancement on the job; lack of adequate transportation, office equipment, essential demonstration tools, field facilities and supporting farm supplies. A few of the junior and intermediate staff were busy with home study and correspondence courses in a bid to prepare themselves for better alternative employment.

In contrast, studies by Job and others (9) show that the average North American agent is fairly satisfied with his conditions of service and enjoys his work. He has a positive attitude towards extension work and the clientele whom he treats almost as equals. By virtue of his training, he has a good understanding of extension education and the processes of communication. His employers strive to provide him with most of the field and office facilities necessary for doing his job; and above all, he is devoted to his duty.

**Inter-Agency Cooperation and Government Support**

One of the most important elements contributing to the success of extension in North America is the support and recognition given to the service by the people, the state and federal governments. Legislative pronouncements and financial provisions are few of the ways in which government commitment to extension has been demonstrated.
Extension, like other civil service departments, is recognized as a very important arm of the government, and its staff are respected and treated accordingly.

The situation is very different in the East Central State of Nigeria where some influential individuals can cause the cabinet to change government policies, or create new establishments, grant special powers and other concessions to a department or agency. Such differential treatments at best encourage ill-feelings, and non-cooperation between government agencies. The consequent breakdown in agency relations retards the process of rural development.

Experts agree that rural development is essentially a cooperative endeavour involving individuals, communities, interested organizations, governments and their agencies; but the system does not lend itself readily to a uniform organizational structure. Thus, many serious problems of rural development arise from organizational inadequacies and lack of cooperation between agencies. In North America, the Extension Service participates with other rural development agencies in the planning of area development programmes for the communities, and cooperates fully with these agencies to carry out the plans.

The East Central State government policy on rural development calls for very close liaison between the ministries of agriculture, health, education, the divisional administration department and other external agencies who may be rendering financial assistance
for rural development projects in the state. In practice, this has not worked out very smoothly. Rather, there has been serious competition among the agencies. Strained formal and informal relationships have developed resulting in unhappy consequences for the rural communities. The need for reciprocal cooperation between agencies and staff at all levels of the public services cannot be over-stressed.

Evaluation of Programmes

The introduction of new technology to any country is a difficult task, more so in developing countries where successful adoption involves much more than replacing traditional methods of farming with new and better techniques. There must be accompanying changes in the thinking, feeling and overall attitude of rural farmers if they are to utilize recommended ideas. Unorganized efforts to diffuse knowledge among rural people are bound to have very little impact. If change occurs at all, it may be merely due to chance. In addition to planning and carefully implementing a programme, the extension administrator and his staff should develop an effective system for evaluating the progress of extension action from the beginning to the end.

Extension and other rural development programmes in Nigeria are not systematically evaluated. The little evaluation that is done is purely subjective and consists of generalised statements with unreliable estimates of quantities. Adult education is still
a young profession, but enough experience has been gained in many advanced countries, particularly in the area of agricultural extension, to make adult educators in Nigeria recognize that careful planning, supervision and coordinated implementation, and scientific evaluation of programme efforts are the guarantee for success in extension.

Economic and Physical Inputs

Supporting services refer to essential services and materials necessary for effective extension operations. They are the institutional and physical inputs which make it possible for change to occur. Many new ideas and improved practices advocated by extension workers require materials or services which are difficult for the farm family to obtain. These include fertilizers, pesticides, tools and equipment, improved seeds and better livestock. Such physical inputs often require farm credit or loans which are also a production tool. Experience in both advanced and underdeveloped countries shows that the adoption of improved technology is easier and faster in areas where farm supplies have kept pace with the educational aspects of extension, whereas weaknesses in the supply lines of various important inputs like seed and fertilizers have resulted in the non-effectiveness of the extension agency.

In North America, there is a well-developed system of markets, commercial banks, industrial firms and servicemen who provide these non-rural resources to the farmer in his community whenever they are needed. These institutions also purchase his products whenever he
is ready to sell. In developing countries like Nigeria, where these means are either lacking or less developed, governments often become involved in the procurement and distribution of needed farm inputs. In their anxiety to achieve rapid expansion of agricultural production, many governments as well as field extension staff tend to stress supply and service-type programmes, and neglect the more permanent educational phases of rural development. There is general agreement that government handling of supplies and services is only a temporary measure which will at best speed up procurement. But, the ultimate and sound solution seems to be through normal economic processes of marketing and distribution by business firms and farmers' cooperatives.

Most of the extension work done in Nigeria today consists of rendering material services to farmers. The majority of field staff spend much of their time procuring and supplying farm inputs to the farmers. Some of them perform other regulatory duties which conflict with their educational role. For instance, the veterinary assistant is required to collect cattle tax, enforce disease regulations, treat and vaccinate livestock and poultry, and also teach farmers improved animal husbandry practices. Under such circumstances, it is difficult for him to win the confidence of the farmer. There is the need, therefore, to separate inspectorate and regulatory functions from extension education if we must achieve the desired educational impact on rural people.
Socio-Cultural Environment

The acceptance and successful integration of borrowed technology by a host culture depend primarily on the utility of the transferred element and its compatibility with existing value systems and forms of social organizations. Thus, the cultural features of the local environment are capable of enhancing or impeding programme efforts in rural adult education regardless of proper planning, good management and the use of well-trained personnel. Important socio-cultural factors which influence the outcome of extension education programmes include prevailing value systems and the overall attitudes of the community towards change, education and material well-being.

In Canada and the United States, there is a long-standing and deep-seated faith in the virtue of education as a means of personal advancement and improvement. Out of this fundamental value public interest and support for many educational programmes have developed. Secondly, the American farmer enjoys a relatively high socio-economic status and functions within a general cultural framework which encourages him to use new technology, and in which he usually gains most of the benefits if his farm operations are productive and efficient. He also has an extensive communication network which brings research information to his community and his rural mailbox, as well as other information on prices and market prospects. Probably the most important of all, there has been a long period of migration out of agriculture which has reduced population pressures.
on farm land, and which occurred because the rural youth were well-trained and educated enough to find good jobs in the urban sector.

In contrast, the average Nigerian farmer is surrounded by very serious socio-cultural circumstances which constitute formidable barriers to change. He has limited economic resources with which to work: a few acres of land, few inefficient hand-tools, and most important of all, little or no education and technical knowledge on how to make better use of his meagre resources. Also, he is malnourished and lives in a small rural village without good water supply, roads, communication facilities, health services and other essential amenities. He is illiterate, old, economically and politically powerless, aparthetic and may even be despised by his own semi-illiterate children.

These conditions coupled with generations of traditional farming on poor soils foster the development of negative attitudes towards innovations and change. In addition, there are problems of leisure and tribal ceremonial preferences, value systems, native customs and beliefs which may hinder response to extension effort by offsetting the pull of monetary inducement or reducing the farmer's motivation for increased output. While the farmers may be superstitious, fatalistic and tied down by tribal customs, it is, of course, not true that rural farmers in developing countries have no motivation to improve themselves; but the intensity and direction of this motivation seem to be limited and can vary considerably from place to place, and from family to family in different social
groups (10). Change can be achieved with time if the right incentives and educational methods are applied.

The problem of land tenure is often exaggerated. It is not a serious problem. The peoples' traditional law of inheritance certainly leads to fragmentation of land, but experience in Japan has shown that small-sized farms are not necessarily an impediment to increased agricultural production. While the successful application of mechanical technology might demand large areas of farm land, tremendous increases in crop yield can be and have been achieved from relatively small scale applications of chemical and biological technology in agriculture. Moreover, the tribal concept of communal ownership of land is very ideal for extensive improvement of agriculture as demonstrated by the success of multi-purpose cooperative farms in the state.

Summary

Much of the American experience in agricultural extension has been used as guidelines for the establishment and operation of extension services in many developing countries. It is evident from the foregoing analysis that agricultural extension, as a borrowed system of rural adult education has not been effective in the East Central State of Nigeria, primarily because of economic, socio-cultural, educational and organizational differences and limitations. Nevertheless, the American agricultural extension system has a basic essence which can be usefully transferred by stimulus diffusion to developing countries. This essence, according to Mosher (11) is that:
"Extension is an out of school educational process: (1) Working with rural people along those lines of their current interest and need which are closely related to gaining a livelihood, improving the physical level of living, and fostering community welfare. (2) Utilizing particular teaching techniques including farm and home visits, process and result demonstrations, local participation in programme planning, field trips, meetings and communication devices. (3) Conducted with the aid of certain supporting activities including the provision of subject matter specialists, formulation of work plans, preparation of a calendar of learning events, planning for inservice training and evaluation of programmes. (4) Carried on within a distinctive spirit of cooperation and mutual respect."

The degree to which there is proper understanding and acceptance of these guidelines, and the effective performance of essential educational and organizational activities by the receiving agency determine the success of extension programmes in the host culture.
Footnotes to Chapter VII


3. Ibid.


CHAPTER VIII

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This final chapter is presented in four sections: introduction, conclusions, implications for action to improve extension in the East Central State of Nigeria, and recommendations for further research.

Introduction

Among educated people in Nigeria, it is widely believed that agricultural development is a requisite foundation for social and economic progress. One major objective of agricultural development is to raise the output of staple food crops in the country at a rate exceeding population growth. Increased agricultural productivity can only be achieved by the farmers if they adopt recommended scientific farming techniques in place of their traditional practices.

New practices are frequently complicated, based on complex scientific knowledge, and difficult for illiterate farmers to understand. Their adoption may have secondary effects on the way people live. To adopt and use improved farming techniques, farmers must understand them, and to understand them requires teaching. Seeking to promote this change is the Agricultural Extension Service -
a rural adult education system borrowed from North America. Its primary function in the state is to help farmers increase their output by teaching them new farming techniques and providing them with essential farm supplies.

Many people in the East Central State of Nigeria have been concerned that after nearly forty years of agricultural extension work, the farmers, who constitute 75 per cent of the population are not producing enough food for the people. Less than 10% of them have made any permanent changes in their traditional farming methods and their general attitude towards technological innovation and change appears to be negative. In short, the agricultural extension services in the state have been generally ineffective.

It is known that the success of extension education in any country depends upon the interaction of three groups of factors: those relating to the environment, the change agent and the client system. This research was conducted primarily to assess the performance of agricultural extension staff in the East Central State of Nigeria as adult educators, focussing mainly on those agent-related variables like attitudes, beliefs, role perception and training which determine individual levels of staff performance and consequently the overall effectiveness of extension programmes.

The subjects were 216 senior and junior extension staff. A comparative approach was adopted using the North American Extension system as standard. Verner's model of Cross-Cultural
diffusion of adult education provided the theoretical framework for examining and analysing the activities of the Extension Service or receiving agency in the change process.

Conclusions

The theory of cross-cultural diffusion of adult education suggests that agricultural extension as a borrowed educational technology has greater chances of success in the host culture when the field staff:

- have a proper understanding of its principles and processes
- the government and the local people accept the system as the best way of solving the problem of low agricultural productivity
- perceive their role as primarily educational and have a concern for helping rural people (democratic working philosophies, attitudes, values)
- are well trained and technically competent
- can effectively communicate and teach farmers the new ideas, and
- when the extension organization performs its research, educational, administrative and other facilitating roles effectively.

1. Several conclusions may be drawn about the Extension Service in the East Central State of Nigeria and the performance of its field staff. The state has a well-established extension service organization as part of the government Ministry of Agriculture and Natural
Resources. Its organizational structure is complemented by two essential institutional components responsible for agricultural research and staff training. The main function of the research section is to search for, test and adapt all innovations before they are finally recommended to farmers. However, evidence from this study shows that one-quarter of the extension staff passed on to farmers untested information collected from sources outside the research station. This is a dangerous practice because a successful method or technology in one country may not necessarily be successful in another. The borrowing and diffusion of cultural phenomena should not take place without a proper assessment of the way in which the new activity might change the host society. There is the need to create a better awareness of this fact among the extension staff in order to ensure that only locally-tested and adapted practices are recommended to the farmers.

Within the extension organization, there is some evidence of serious administrative weaknesses particularly in the area of personnel management. Also, the degree to which a workable and cooperative relationship has been established between extension and other rural development agencies in the state is questionable. There is need for coordinated rural development planning and action which will enhance inter-agency cooperation, better understanding and appreciation of each other's functions and will enable managing executives to maximise the possible advantages of closer working relationships in the field.
The Agricultural Extension Service generally lacked competent staff. Most of the field staff were relatively young. Only 8% of the sample was over 40 years of age. The average extension worker was a high school graduate, with two years or less of technical training at the School of Agriculture, and had been in the service for 11 years. Supervisory staff with reasonably high formal agricultural training tended to lack practical experience. The majority of the extension staff had other official responsibilities in addition to general extension duties.

2. How do senior and junior extension staff in the state perceive their role? Less than one-half of the field staff perceived their role as primarily educational, although as a group, they ranked adult education as their most important function in extension. Scores on the knowledge test, however, indicate that the extension staff generally had a poor knowledge and understanding of basic adult education philosophies, principles and practices. Recent legislative provisions and increased governmental support for the ADA, a newly created commercial agricultural production agency, would seem to indicate that the state government no longer accepts or has lost faith in extension education as the best way of achieving increased agricultural productivity among the rural people.

3. What are the attitudes of extension staff towards (a) employment in the service and (b) towards the farmers? Staff attitude towards extension work and the clientele was poor to moderately favourable. The lower the rank, the less favourable the staff
member's attitude was towards extension and the client system. Most of the staff were poorly motivated and generally dissatisfied with their conditions of service. These apparently constituted serious limitations to their performance as adult educators.

4. What adult education methods and instructional techniques are employed and to what degree? Field extension staff in the state used individual and group instructional methods and techniques more frequently than mass communication devices; but the degree to which education contacts were made with farmers was seriously limited by lack of adequate transportation, lack of field demonstration facilities and office equipment, and lack of other job incentives.

5. Are the extension staff suitably trained to work effectively as adult educators? The answer is NO. There is general shortage of extension personnel and the few staff available lacked adequate training in technical agriculture, adult education processes or extension methodology, and in relevant social sciences. Moreover, no regularized systems existed for them to receive remedial inservice training and post graduate/professional preparations.

6. How well do extension workers in East Central State of Nigeria perform their job? In trying to answer a number of fundamental questions, this study has identified some of the personal, agency and situational factors which affect the success or effectiveness of extension education in the state. They include administrative bottlenecks, lack of inter-agency cooperation, shortage of extension personnel resulting in an unmanageable area of operation, and
ineffective contact with farmers; poor training and lack of technical competence and skill on the part of field workers; poor staff attitudes, poor conditions of service, lack of motivational incentives for staff, inadequate field and office facilities, and the organization's inability to back extension efforts with adequate and timely supply of farm inputs.

The wide range of impeding factors, and the fact that they operate interdependently to determine the functional effectiveness of field staff would suggest that:

i. At best, extension staff in the East Central State of Nigeria perform 'poorly' as adult educators.

ii. Farmers in many areas of the state have not been intensively contacted by the extension staff and therefore, cannot be seriously blamed for not responding to extension programmes.

iii. There is no single and easy solution to the problem of ineffective extension services in the state. To make extension more effective, several complementary approaches must be taken and these would necessarily involve joint action by the state government, the extension organization, field staff, farmers and other rural development agencies in the region.
Implications for Action to Improve Extension

It is obvious that agricultural extension effort in the East Central State of Nigeria has lagged behind expectations due to impediments discussed above. Some of the factors limiting extension success are beyond the control of the change agent who implements the educational programme, or the Agricultural Extension Service—the parent agency sponsoring the rural development programmes. But, it is also clear that the limiting influences of many of these factors on change agent performance can be reduced considerably through concerted action by everybody concerned with the promotion of extension education. With this in mind, the following recommendations are considered pertinent, because of their possible usefulness in strengthening present extension programmes, and also as a guide for future development of rural adult education programmes in the state.

1. For any rural development programme to succeed, its field staff must perform effectively; and for staff to be effective, there is no substitute for technical competence and proper training in the relevant subject matter areas as well as principles and processes of social change. The Agricultural Extension Services in the East Central State should develop comprehensive induction and inservice training programmes for future and present members of its staff. Qualified staff and existing facilities at the School of Agriculture, Umudike, and the University of Nigeria, Nsukka, should be utilized in developing and implementing such training programmes.
All new staff, irrespective of their rank, should be given a 2 to 4-day briefing about ministry objectives, programmes and special projects, personnel policies, schedule of staff responsibilities and departmental report formats etc. Without such induction training, new staff will naturally start their field assignments with apprehension. This study has identified some of the subject matter areas in which there are immediate inservice training needs. Action should follow.

Concerning preservice training, the Extension Service needs to determine systematically how well existing School of Agriculture training and programmes prepare the required numbers and qualities of manpower for extension work and what curriculum modifications are necessary in the training programmes now and in the future.

2. The nature of extension makes very serious demands on the number and quality of staff engaged in the service. Farm conditions differ in types, location, soil type, etc. Farmers themselves are illiterate, numerous and scattered all over the state. Each farm situation demands a different extension approach, and no single extension worker has all the know-how and qualities in him to properly deal with all extension problems. There is the need, therefore, to employ more extension staff, and other specialists properly trained, and competent enough to help increase extension's impact, and ease out the present work load of field staff. As a temporary measure, help could be sought from advanced and friendly nations with whom Nigeria currently maintains technical assistance programmes.
3. Like staff training, sound administrative management is a crucial factor responsible for the successful achievement of organizational goals. To produce the best results, extension efforts have to be aided by a comprehensive scheme of incentives both to the extension agent and to the farmer. This helps to create a congenial atmosphere in which the extension staff are motivated to fulfill their professional responsibilities and satisfy their personal needs. Extension administration in the state needs revamping, particularly in the three areas of personnel management/incentive policies, supervision of subordinate staff and provision of logistical support for field extension.

Decision-making should be decentralized to the degree that zonal extension officers have the authority to make decisions on urgent local matters, and are encouraged to use their initiative as much as possible. Many field staff who need means of transportation urgently cannot get them. Others have had to wait for months before being granted advances to purchase vehicles for use in their official duties. Mileage allowances for official journeys undertaken by some staff have either not been paid promptly or refused in some cases. The entire vehicle-loan system needs to be reviewed to ensure that field staff do not only get advances promptly, but are given sufficient funds to enable them to purchase reliable vehicles. The ministry should also improve the management of its motor vehicle pool and farm mechanization units to ensure that distribution of essential farm supplies to various stations and farms is timely and well-coordinated.
Satisfactory field performance and academic merit should be considered along with seniority and age as criteria for promotion and selection for further training. Senior staff should make greater effort to supervise their subordinate staff more regularly.

4. Agricultural shows, field days and other campaign activities designed to promote extension education should be intensified in all parts of the state. This implies that the Extension Service must utilize all available local communication media including the radio, newspapers, MOA mobile film units, circular letters and posters written in the vernacular, as well as personal and group contact methods to reach all the people. With time, the extensive and proper diffusion of extension information through these channels coupled with regular instructional visits by extension staff to every community, will certainly help to:

- create awareness and understanding of the objectives of various extension programmes among the people
- arouse the interest of older and younger adults in extension education by stressing its importance to the development of agriculture and achievement of better living for rural people
- counteract habit and other unprogressive cultural tendencies,
- shape attitudes of the youth, parents and the entire community towards extension and other change programmes.

5. Extension work as an aspect of rural development touches on the activities of all the government ministries of Health, Education,
Agriculture, Works and Internal Affairs. Rural development programmes are most successful when all the needed human and material resources in the community are simultaneously directed towards the achievement of a common goal. Therefore, these ministries and departments and all their agencies should clarify their respective tasks, and establish among themselves cooperative working arrangements and interrelated planning to ensure that the state's resources for community development and rural welfare are used effectively in meeting the educational needs of individual adults, institutions and communities.

6. Finally, field extension staff should give greater consideration to their task of developing local leaders. With the present shortage of technical staff, the need for careful recruitment, training and effective use of local leaders in implementing extension programmes cannot be over-emphasized. Initially, extension staff may find it necessary to work through existing traditional village leaders and family heads, but they should gradually develop new, educated, more dynamic adult leadership, badly needed to assist professional adult educators in carrying out agricultural and other rural development programmes in the state.

The state has the basic machinery needed for conducting a rural adult education programme far more effective than was found in August 1974. The necessary improvement and changes can largely be accomplished with the existing staff, finance and other resources now available to the ministry of agriculture.
Recommendations for Further Research

A critical review of the results of this investigation raises the following important questions: What are the responsibilities of senior and junior extension staff in the state? To achieve the state's agricultural development programme goals, what kinds of skills and competencies are required of each category of field staff? How well do existing School of Agriculture and University training programmes prepare people for these roles and responsibilities? If not, what curriculum modifications will be necessary now and in the future? Further research would certainly be necessary in this area to determine the extent to which agricultural extension training programmes in the state have been developed in line with the requirements for performance on the job, and what can be done to correct any deficiencies that may exist.

Are farmers in the state aware of agricultural extension staff and ministry programmes in their areas? If so, what is their attitude towards the ministry of agriculture, the extension worker and his programmes? What particular experiences, if any, have led to the development of such attitudes?

To what extent do social, economic, cultural and other farm conditions affect the rural farmers' acceptance and integration of new ideas? What type of incentives would most effectively motivate traditional farmers to adopt scientific farming practices? What educational methods and instructional techniques would be most
effective in helping illiterate farmers to learn? What borrowed elements of agricultural extension have failed or succeeded in the Nigerian culture? In what ways have adopted extension innovations changed the behaviour of the better farmers and the society?

Because of the people's traditional and cultural patterns of community life and the serious effects these could have on learning and adoption behaviour, the two areas of 'attitudes' and 'motivation' of rural farmers deserve patient probing.
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Unpublished Materials


APPENDIX A: INSTRUMENTS

A STUDY OF THE ROLE OF AGRICULTURAL EXTENSION STAFF
IN EAST CENTRAL STATE OF NIGERIA

INTERVIEW SCHEDULE

Reference No. of Respondents ................................. 1 - 5
Interviewer's Name ..................................................
Date of Interview ..................................................

Section I - Personal Characteristics

1. What is your age? .............. years. 6 - 8

2. Where did you spend your early childhood?
   a. rural village
   b. town
   c. city

3. What is your highest level of formal education?
   a. primary school
   b. secondary school
   c. university
   d. other (specify)

4. Highest level of Agricultural training received?
   a. A.D. Course
   b. A.A. Course
   c. Diploma Course
   d. B. Sc. Agric.
   e. Post Graduate
   f. Other (specify)

5. Place of training? (a)____ In Nigeria, (b)____ Outside 12

6. What is your present position in the Department?
   a. S.A.O. and above
   b. A.O.
   c. A.S.
   d. A.A.S.
   e. A.A.
   f. A.D.

7. How long have you been employed in the Ministry? ____ years. 14 - 16
8. How long have you been doing extension work? ___ years. 17 - 19

9. What percentage of your time do you spend on each of the following?
   a. Administration and Supervision
   b. General extension work
   c. Working on Government farm
   d. Special scheme or project
   e. Other (specify) ________________________
      100%

Section II - Role Perception and Performance

1. Please rank the following extension functions in order of their importance to you. 1 = most important, 2 = next important, and so on 41 - 50
   a. Adviser to rural people
   b. Office work and records
   c. Planning extension programs
   d. Administration and supervision of staff
   e. Promoting good public relations
   f. Collecting information for use in extension
   g. Teaching farmers new practices
   h. Distributing materials to farmers
   i. Organizing farmers and training leaders
   j. Other (specify) ________________________

2. Different methods and techniques of working with farmers have been listed on the paper given to you. Please study the list very carefully and then answer the following questions. CARD 2
   a. How often do you use them to contact your farmers? (4 = often, 3 = sometimes, 2 = rarely, and 1 = never)
   b. Of the methods and techniques you have used, which have you found to produce the greatest amount of learning by farmers? (4 = much learning, 3 = some learning, 2 = little learning, and 1 = no learning).
   c. Considering your job and the use of your time, which of the methods used are efficient? (4 = very efficient, 3 = quite efficient, 2 = somewhat efficient, and 1 = inefficient)
### TABLE OF RESPONSES FOR QUESTION 2a, b and c.

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<th>Methods or Techniques</th>
<th>Frequency of Use</th>
<th>Amount of Learning</th>
<th>Efficiency</th>
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<td>b. Visit to farmers' homes by agent</td>
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<td>c. Office visits by farmers</td>
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<td>d. House visits by farmers</td>
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<td>e. Telephone calls</td>
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<td>f. Demonstrations</td>
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<td>g. Field trips with farmers</td>
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<td>h. Special meetings</td>
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<tr>
<td>i. Short courses for farmers</td>
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<td>j. Lectures and talks</td>
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<tr>
<td>k. Field days</td>
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<td>l. Circular letters to farmers</td>
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<td>m. Extension newsletters</td>
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<td>n. Film shows and slides</td>
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<td>o. Newspaper articles</td>
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<td>p. Radio</td>
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<td>q. Television</td>
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<td>r. Messages &amp; announcements</td>
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<td>s. Other (specify)</td>
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</table>

3. What are your reasons for not using the ones you do not use?  

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<tr>
<th>Method</th>
<th>Reasons</th>
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</table>
4. Apart from those methods listed, have you discovered any other ways of working with farmers? Please describe them.


5. From what sources do you obtain technical information for use in Extension?

- a. from the zonal agric. office
- b. from the research station
- c. by reference to personal notes
- d. from other colleagues around
- e. others (specify) 

Yes No

Section III - Needed Skills and Competencies

1. Do you feel you have adequate training in Extension to do an effective job?
   (a) ______ Yes, (b) ______ No, (c) ______ Don't Know.

2. If your answer to question 1 is NO or DON'T KNOW, would you like to receive further training?
   (a) ______ Yes, (b) ______ No, (c) ______ Undecided.

3. What type of training course would you be interested in?
   a. Agricultural Assistant course
   b. Diploma Course
   c. Degree Course
   d. Post Graduate course
   e. Short Refresher course
4. Which of the following do you feel you should know more about in order to do your job?
   a. Technical agriculture
   b. Determining community needs
   c. Planning programs and designing instruction
   d. Managing a learning situation
   e. Individual methods and techniques
   f. How to work with groups
   g. Communication skills
   h. Administration and Supervision
   i. Evaluation of programmes

5. Please suggest what changes you think should be made in the Extension Service to make it more effective in serving the farmers in your zone.

Section IV - ATTITUDE SCALES

Reference No. of Respondents .................................
Name of Interviewer ...........................................
Date of Interview ............................................

Below are some statements concerning Extension Service in the state. Some people agree and others disagree with the statements. There are no right or wrong answers. Please indicate your honest feelings about each of them by ticking off the appropriate response along the following scale.

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<tr>
<td></td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Undecided</td>
<td>Disagree</td>
<td>Strongly Disagree with Statement</td>
</tr>
<tr>
<td>1.</td>
<td>Employee benefits for Extension workers are good</td>
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<tr>
<td>2.</td>
<td>Extension has no future for most of its staff</td>
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<tr>
<td>3.</td>
<td>Hard work is of no help in getting a promotion in this Department</td>
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</tr>
</tbody>
</table>

209 - 217 218 - 227 228 - 230 231 - 247
4. With conditions as they are, it is difficult for one to do his best
5. There isn't much one can be proud of in extension
6. Most of the supervisory staff in the zones are difficult to work with
7. Supervisory extension staff expect too much from their subordinates
8. Without drastic changes in the service very little progress can be made
9. Extension provides one with a variety of interesting tasks
10. Each day of field work is full of excitement and new challenges
11. Compared to other jobs, extension gives no prestige
12. Extension is doing everything it can to encourage its staff, the present problems are beyond its control
13. Extension has most of the characteristics of an ideal job
14. If I had to do it all over, I would still choose Extension as a career
15. Extension gives one a chance to use his knowledge and skills
16. Most farmers are willing to adopt recommended practices
17. Farmers usually have no genuine reasons for resisting change
18. In general, farmers lack the ability to contribute effectively in planning extension programmes
19. Most farmers are not intelligent enough to understand what extension is all about
20. Most farmers lack the motivation to improve themselves

21. Too much teaching effort is required before rural people can learn anything

22. Quite often, one gets fed up working with poor illiterates

23. Many farmers expect too much from extension workers

24. All rural development workers should be willing to put in longer hours of work than other civil servants

25. The extension worker who is not concerned with the overall welfare of rural people is doing only half his job

26. Extension workers do not spend enough time in the field

27. Extension workers should live in the rural villages in which they work

28. Most farmers are uncooperative

29. Rather than become actively involved in extension work, the University of Nigeria should concentrate on training agricultural graduates

30. Villagers who reject extension advice are foolish

Section V - KNOWLEDGE OF ADULT EDUCATION PRINCIPLES

Reference No. of Respondent ........................................ 265
Name of Interviewer ......................................................
Date of Interview ........................................................

Your answers to the following questions will help us determine what subject matter areas should be included in INSERVICE training programmes for Extension staff in the state. Please read each question very carefully and select ONE best answer.

1. What is the primary function of the Extension worker?
   a. providing needed services
   b. providing needed education
   c. serving as a consultant
   d. organizing rural people
2. Increased agricultural productivity will result in ALL of the following Except:
   a. more food
   b. more wealth
   c. better health
   d. better goods

3. The State's extension programme should be planned by?
   a. a joint representative committee
   b. a representative committee of officials
   c. a representative committee of farmers
   d. a representative committee of experts

4. The Diffusion/Adoption process refers to which of these?
   a. absorption of NPK by plants
   b. controlling erosion with bunds
   c. steps in changing farming practices
   d. steps to follow in community work

5. Local leaders are essential in Extension, but the major problem is that:
   a. some communities have none
   b. identification and training are difficult
   c. many of them refuse to serve
   d. many of them want salaries

6. In many respects Extension is similar to classroom teaching. However, Extension work is so unique that:
   a. no principles of classroom teaching apply
   b. few principles of classroom teaching apply
   c. modified principles of classroom teaching apply
   d. there is no need to apply classroom principles

7. Once an extension programme has been planned and accepted by all:
   a. nothing should be added or subtracted
   b. any changes can be made, it depends
   c. only minor changes should be allowed
   d. everybody will have to meet again to decide

8. All of the following deteriorate considerably with age EXCEPT:
   a. seeing
   b. hearing
   c. speaking
   d. movement
9. The chiefs and elders in a village have an important role to play in the change process. What role is it?
   a. giving reward
   b. giving approval
   c. giving punishment
   d. giving suggestions

10. If you were asked to evaluate the effectiveness of a fertilizer campaign programme, what is the most important thing you would look for?
    a. number of farmers at the campaign
    b. quantity of fertilizer sold during the rally
    c. increase in crop yields for that season
    d. additional farmers now using fertilizer

11. Which of the following sequences indicates the proper order for Social Action?
    a. Continuing Action, Cooperative Study, Group decisions, Collective action, Joint evaluation
    e. Group Decisions, Collective Action, Joint Evaluation, Continuing Action, Cooperative Study

12. Which of the following is NOT a basic extension belief?
    a. rural people are capable of improving themselves
    b. rural people need all the help we can give them
    c. extension does things for rural people
    d. ideas should be utilized to improve humanity
    e. education is the best way of changing behaviour
    f. education is a continuing life process

Thanks for your cooperation. CTU
**APPENDIX TABLE B**

**DISTRIBUTION OF RESPONDENTS BY PLACE OF TRAINING**

<table>
<thead>
<tr>
<th>Place of Training</th>
<th>Senior Staff</th>
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<th>Junior Staff</th>
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<th>Total</th>
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<tr>
<td>a. In Nigeria</td>
<td>43</td>
<td>84.31</td>
<td>164</td>
<td>99.39</td>
<td>207</td>
<td>95.83</td>
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<td>b. Foreign Country</td>
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<td>1.96</td>
<td>0</td>
<td>0.00</td>
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<td>0.46</td>
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<td>c. Both (a) and (b)</td>
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<td><strong>Total</strong></td>
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### APPENDIX C

#### CORRELATION MATRIX

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Critical Values of $r$ at .01 level of significance = 0.176, and at .05 level = 0.134, underlined $r$ values are significant.

#### KEY

1. Rank
2. Age
3. Formal Education
4. Agricultural Training
5. Years in the service
6. Years of Extension experience
7. Attitude towards extension
8. Attitude towards farmers
9. Knowledge of AE principles
10. Time spent on administration
11. Time spent in extension
12. Interest in continuing education