

A COMPARATIVE ANALYSIS OF THE COOPERATIVE EXTENSION SERVICE  
OF THE UNITED STATES (VIRGINIA) AND THE  
AGRICULTURAL EXTENSION SERVICE OF NIGERIA (ANAMBRA)

by

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## Chapter One

### INTRODUCTION

"The concern for man and his destiny must always be the chief interest of all technical effort. Never forget it among your diagrams and equations."  
(Albert Einstein)

Farms are a predominant feature in the United States. The needs and problems of the farmers are important parts of every rural community. About two hundred years ago, the United States produced little or no food for export. Since the 1920's, through the use of machines and new technology and through the efforts of the Cooperative Extension Service, farm output has increased substantially. Today the nation produces enough food to feed its people and for export to many other countries. The United States exported a record \$40.5 billion in agricultural products in 1980, and \$45 billion in 1981 to a total of more than one hundred and thirty different countries. Agriculture plays an important role in the economic development of the United States. It is the largest employer with about twenty-two million people working in some phase of agriculture (Fact Book of US Agriculture, 1981).

Studies by agricultural economists in the United States indicate a very high pay off to society from agricultural research and extension. The 1980, National Evaluation of Extension Report cited Evanson's estimate concerning the value of the extension effort.

It stated: "Public sector agricultural research and extension and the level of the education of the farmer may account for nearly fifty percent of the agricultural productivity increase between 1948 and 1979" (Hildreth, 1981, p. 44). American farmers today produce over sixty percent more crop output on the same number of acres than did their forefathers. One American farmer today produces enough food and fibre for seventy-eight people while ten years ago one farmer produced enough for only forty-seven people (Fact Book of U.S. Agriculture, 1981). "The extension service concentrates its effort on helping farmers produce efficiently" (Vines and Anderson, 1976).

Low farm income is a characteristic of the small farmer all over the world. In the United States, sixty-eight percent of United States farms had annual gross sales of less than \$10,000 and about half of these had gross sales below \$2,500 dollars (U.S. Census of Agriculture, 1975). Due to the low income earned by the small farmers, the number of farms has decreased while the average size has increased (Clayton, 1981). The popularity and complexity of the small farmers problems are well known all over the world especially among the nations where the major occupation is farming. Farmers problems are many but the most common ones are the following:

1. Low level of education.
2. Low farm income.
3. Lack of knowledge of farm practices.
4. Lack of capital resources.
5. Lack of knowledge of where to purchase production and harvesting materials economically.
6. Poor organization and management of farm enterprises (McAffee, 1978).

The Cooperative Extension Service is organized in many nations to help the farmers solve their home, community, and farm problems. This is done through farmer education and farmer use of the latest information from research. In the United States, the extension workers use many formal and informal techniques in teaching farm people.

"The extension service offices are located in nearly three thousand counties in the United States. County agents and technicians are present in the counties to assist through translating information from research into practical down to earth answers to individual or group problems" (Heldreth, 1981, p. 44). They present information to farmers and the public, by the telephone, mail, at meetings, in newspapers, and on radio and television. In the United States, information is made available to the farmers through land-grant universities, agricultural experiment stations, State Extension Services, public and private libraries, education departments and businesses and industries. The United States Cooperative Extension Service is a partnership between the federal government, state government (land-grant institution) and the local government. The extension service provides education designed to meet the needs of the people (Kelsey and Hearne, 1963).

Legislation affecting the extension program in the U.S. was first passed by congress in 1862. In that year the land-grant college act was passed. Since then additional federal legislation has been enacted. The Agricultural Experiment Station act was passed in 1886 and the Extension Service was established in 1914 through the passage of the Smith Lever Act. This legislation has been extremely valuable in supporting and advancing the development of agriculture in the

United States. The cooperative extension system has attracted the attention of the industrialized nations, the developing nations and the third world nations and it is the envy of many countries throughout the world.

There are changes in farm mechanization and technology taking place in most farming countries. Nigeria, the country of the researcher, has about eighty percent of its working population engaged in peasant farming and is affected by these changes (Hellener, 1966; Kirk-Green, 1981 and Ogionwo, 1978).

Since the mid 1960's many modern farm implements and materials have been introduced into the country. Nigeria imported a total of ₦ 110.00 million (one Naira is approximately 1.55 U.S. dollars) worth of tractors and other agricultural machinery between 1973-1976 (see Appendix A). It is estimated that the cost of fertilizer imported into Nigeria for the current four year national development plan 1981-1985 will be ₦ 1,428,505 (Federal Statistics, 1976). The Nigerian government also has made some efforts since the 1970's to stimulate and improve farming. The editor of the "African Magazine" reported in 1970 that Nigeria has found itself increasingly unable to provide food for its seventy-two million people without importing food. He said: "To put an end to this embarrassing situation, the federal government, in 1970 allocated ₦ 480 million (Naira) for the improvement and development of agriculture in the next five years" (Africa, 1970, pp. 38-40).

The first strategy pursued by the Nigerian government in 1970 was the concept of "The River Basin Agricultural Development" as a tool for the transformation of agriculture. The second strategy was

the launching of the National Accelerated Food Production Program in 1973. The third was the launching of "Operation Feed the Nation." Finally in 1980, "The Green Revolution" was launched (Central Bank Annual Report, 1980; The N.A.F.P.P. Report 1973; EKPO, 1982; The Green Revolution Report, 1980; Kirk-Green, 1981).

The Nigerian Extension Service has the primary responsibility for carrying out these strategies. During the period 1970-1980, the federal and state governments of Nigeria increased the number of scholarships for study in the field of agriculture and related subjects. They also employed and trained the greatest number of agricultural technical staff in the history of Nigeria. The agricultural extension service in the Anambra state of Nigeria currently has a large scale agricultural development plan being developed for the reorganization of the extension service (Annex "B", Anambra State - Agricultural Extension Report, 1982).

The government of Nigeria spent ₦ 1,311.123 million (approximately 2,045.35 million U.S. dollars) on agriculture for the third national development plan period (1975-80) and of this amount, a greater percentage was allocated to extension than any other agricultural division. The 1981-85 fourth National Development plan allocation for agriculture is ₦ 9031.88 million (Naira) out of which thirty percent is made available for extension (see Appendix B). This indicates that the policy makers of Nigeria want to improve the farming sector through the implementation of a strong agricultural extension policy (Fourth National Development Plan, 1981).

Nigeria has for a long time relied on her abundant land and human resources for its economic and social development. However, the discovery of petroleum changed the importance of agriculture and petroleum became the most dynamic element and also the principal source of revenue in Nigeria in the 1970's. In 1981, due to the excess of petroleum, the price became devalued and oil no longer earns the revenue it did previously. The Nigerian policy makers have again turned to trying to improve the agricultural sector. They believe it to be the most stable and everlasting source of economy for Nigeria. They also believe that the improvement of agriculture has helped the economic development of many nations and will also help to improve the economy of Nigeria.

The poor quality and quantity of agricultural output in Nigeria is attributed mainly to the following:

1. The inefficient production techniques used by the farmers.
2. The predominantly illiterate and conservative rural peoples and communities.
3. The land tenure system.
4. Insufficient number of trained agricultural technicians.
5. The inefficient system of the agricultural extension service (Kirk-Green, 1981; Ogionwo, 1978).

The Agricultural Extension Service has also been involved in many functions such as credit, research, direct production of agricultural products, marketing, education and the supply of farming materials. This has distracted the extension workers from the work they should be really doing. The Ministry of Agriculture and Natural Resources has

gone through a number of organizational changes in the quest of improving agriculture. In the late 1800's it was called the Ministry of Agriculture, and it carried out functions relating to research, supply, education and production. In the 1960's it was changed to the Ministry of Agriculture and Natural Resources (MANR) with various divisions. The Extension Division was in charge of the development and improvement of all natural resources. Presently the ministry has been subdivided into the Ministry of Food Production and the Ministry of Agriculture. The Extension Division coordinates the activities of the two ministries of the Ministry of Agriculture and Natural Resources. The writer worked as a staff member of the Nigerian Agricultural Extension Service for thirteen and one-half years. The main weaknesses as they affected the extension service as perceived by the writer and other authors:

1. Insufficient preservice training given to the extension staff.
2. Isolation of the extension worker from the farmers he seeks to serve due to insufficient number of trained extension staff members.
3. Most junior and intermediate extension workers were posted to work in their home areas and as a result they were unable to communicate sensitively with the farmers in their villages especially those who knew when and where the extension workers were born.
4. Each extension worker has too many farmers to work with. One extension worker works with about 4,000 farmers in Anambra state (Annex "B", Report, 1982). "The nation's

current ratio is one extension worker to two thousand, five hundred farmers" (Guidelines for the Fourth National Development Plan, 1981-1985, p. 26).

5. Lack of good transportation and facilities for the extension staff.
6. Poor working conditions for the extension staff. The junior and intermediate extension workers are not paid adequately. Thus, they do not devote all their time to the extension service but may be employed in other part-time work.
7. People are assigned to jobs for which they do not have the proper background and training. For example in the early 1960's the Minister of Agriculture for the former eastern region was a medical doctor.
8. There has been poor programming and weak supervision in the agricultural sector since the advent of the oil boom in the mid 1960's.
9. Inability of the government to introduce and provide simple mechanized farm equipment and techniques.
10. Extension workers are responsible for various non-extension functions.

Apart from the weaknesses of the Nigeria Extension System mentioned above, there are other problems of the farmers of Nigeria such as:

1. The laws and customs governing the land and its inheritance or acquisition (National Agriculture, Sample Census of Agriculture, 1977).

2. Traditional land tenure system (Report on Land Tenure, 1980).
3. Lack of cooperative effort among the farmers.
4. Lack of capital resources.
5. Low educational level.
6. Lack of knowledge of where and how to purchase production and harvesting materials economically.
7. Lack of managerial ability.
8. Poor value attached to farming by farmers.
9. Peasant labour supply movement to the urban areas (Ogionwo, 1978).
10. Poor farmers' transportation method.
11. Traditional farming techniques used by the peasant farmers of Nigeria.

Nigeria has not been as fortunate and successful as the United States in the development and improvement of its Cooperative Extension System. The country has social, economic, educational, organizational and many other problems which affect the development and improvement of its extension system.

#### Statement of the Problem

The population of Nigeria is expected to double within the near future and the increased production of food is essential to the well-being of the country. The nation imports some food to feed its people (see Appendix C). About eighty percent of the working population in Nigeria is engaged in agriculture.

Some attempts have been made to introduce new methods of farming. These have been done through the reorganization of the Ministry of Agriculture and Natural Resources and the launching of three special agricultural programs, "Operation Feed the Nation," "The Green Revolution" and "The National Accelerated Food Production Program." Some progress is being made, however much needs to be done. The nation needs a good cooperative extension system to help improve the educational standard, the knowledge of modern practices in agriculture, the income, the living standard and the economic status of the farmers and the nation.

No intensive study has been made to determine the elements of the United States Cooperative Extension Service which would suggest possible changes in the Nigerian system. In the United States, the farmers are helped almost daily through the efforts of a well organized effective system of cooperative extension (Vines and Anderson, 1976).

In Nigeria, the modernization of agriculture and increased production of food and fibre are seen as the answer to the nation's self-sufficiency and economic problems. The agricultural policy makers want help and are interested in obtaining information about ways to improve the Agricultural Extension Service and thus the agricultural industry in Nigeria.

In this study an analysis of the Cooperative Extension Service in the United States using Virginia as a model and the Agricultural Extension Service in Nigeria using Anambra state as a model will be made. This study will investigate the extension system of the two nations.

Recommendations will be made for the improvement of the Agricultural Extension Service in Nigeria.

### Objectives of the Study

There are three objectives of the study as follows:

1. To investigate the following of the Cooperative Extension Service in the United States (Virginia) and Nigeria (Anambra).
  - A. Background and history
  - B. Organization
  - C. Administration
  - D. Responsibilities of personnel
  - E. Financing
  - F. Program areas
  - G. Training of staff
  - H. Communication processes and methods used
  - I. Reporting and program evaluation
2. To write a descriptive comparison of the two extension systems.
3. To make recommendations for the improvement of the Nigerian Agricultural Extension Service based on the findings.

### Research Questions

There are four groups of research questions as follows:

1. Questions about the United States Cooperative Extension Service.
  - A. What is the background and history?
  - B. How is the Extension Service organized?
  - C. How is the Extension Service administered?
  - D. What are the responsibilities of the personnel?
  - E. How is the Extension Service financed?
  - F. How is each program area organized, administered and carried out?

- G. How are the staff members trained?
  - H. What communication processes and methods are used?
  - I. How are the programs reported and evaluated?
2. Questions about the Nigerian Agricultural Extension Service.
- A. What is the background and history?
  - B. How is the Extension Service organized?
  - C. How is the Extension Service administered?
  - D. What are the responsibilities of the personnel?
  - E. How is the Extension Service financed?
  - F. How is each program area organized, administered and conducted?
  - G. How are the staff members trained?
  - H. What communication processes and methods are used?
  - I. How are the programs evaluated and reported?
3. How do the two Extension Systems compare?
- A. Background and history
  - B. Organization
  - C. Administration
  - D. Responsibilities of personnel
  - E. Financing
  - F. Program areas
  - G. Training of staff
  - H. Communication processes and methods used
  - I. Reporting and program evaluation
4. What recommendations are appropriate for the improvement of the Nigerian Agricultural Extension Service?

- A. Organization
- B. Administration
- C. Responsibilities of staff
- D. Financing
- E. Program areas
- F. Training of staff
- G. Communication processes and methods used
- H. Reporting and program evaluation

### The Need and Justification for the Study

About eighty percent of the working population of Nigeria is engaged in peasant farming. A good extension system of Agricultural Extension is needed to support both the producers and consumers of agricultural products.

The policy makers of Nigeria are interested in obtaining new ideas and recommendations from knowledgeable people concerning ways to improve the nation's economic, social and agricultural development.

Between 1963 and 1973, the population of Nigeria rose over 2.5 percent (Ogionwo, 1978). Changes are needed if the farmers are to produce the necessary food to adequately feed the people. Therefore, the nation needs to develop and improve its food production system within the very near future.

Nigeria has an Agricultural Extension system which is in transition. It has not been successful in changing the life of the peasant farmers and needs to be improved if agriculture is to be successful in Nigeria.

It is now believed by the Nigerian policy makers, that agriculture is a more stable and everlasting base for the economy and again needs to be the primary source of income in Nigeria.

A comparative analysis of the Cooperative Extension Service in the United States and Nigeria reveals some differences, similarities, strengths and weaknesses of the two systems which are important tools for planning and improvement of the Agricultural Extension Service.

The Cooperative Extension Service of the United States seems to work for its people. Many nations, including Nigeria, send their students and extension workers in the Agricultural Extension Service to study the cooperative extension system of the United States as a tool for improving their own agricultural extension system.

Nigeria's economy has gone down within the last year due to the reduced price of oil on which the nation has built its wealth since the mid-1960's.

#### Limitations of the Study

This study is limited to the Cooperative Extension Service in the United States and the Agricultural Extension Service in Nigeria.

The recommendations are specific for use in Nigeria but may be appropriate for other countries.

#### Assumptions

In order to facilitate the analysis of this study, the writer made the following assumptions:

1. The United States Cooperative Extension Service has made a major contribution to the well-being of the people of the

United States (Vines and Anderson, 1976).

2. The United States Agricultural Extension system has some elements which seem to function successfully (Kelsey and Hearne, 1963).
3. Nigeria's agricultural extension system is in transition and the nation urgently needs ideas and recommendations for its reorganization, development and improvement (Axinn and Thorat, 1972; Third National Development Plan, 1975-80; Kirk-Green, 1981).

## Methodology

### A. Literature Review

In the initial stages of the research, a literature review was made. The following elements of the Cooperative Extension Service of the United States and Nigeria were reviewed.

1. Background and history
2. Organization
3. Administration
4. Responsibilities of the personnel
5. Financing
6. Program areas
7. Training of staff
8. Communication processes and methods used
9. Reporting and program evaluation

Slides and films pertinent to this study were reviewed.

## B. Sources of Information

Additional information was obtained from the World Bank, the U.S.A.I.D. office in Washington, D.C., the Library of Congress, public libraries, the author's personal library, the Cooperative Extension Service offices and the Nigerian Embassy in the United States.

Letters were mailed to farmers, co-workers and relations in the Ministry of Agriculture in Nigeria and telephone interviews were also conducted.

In the U.S., information was obtained from the following:

1. The Associate Dean and Director of the Cooperative Extension Service in Virginia
2. The district chairman in charge of the West Central District in Virginia
3. The county chairman in charge of the Montgomery County, Virginia Extension Service
4. The Assistant Director in charge of the Virginia State Extension Service
5. The agricultural officer in charge of poultry extension work in the River's State of Nigeria now on study leave at Virginia Tech.
6. Akpan Ekpo, a professor of Agricultural Economics now teaching at the Agricultural and Technical State University in Greensboro, N. C.

Conferences organized by the Agricultural Extension Service in the United States and by the African Studies Association in Washington, D.C., were attended.

### C. Descriptive Comparison

A complete answer to each research question is provided. The descriptive comparisons were made item by item and conclusions for each element were prepared based on value judgements.

### D. Recommendations

The recommendations for each element were made based on the results of the comparison between the United States, Virginia and the Nigerian, Anambra Extension systems.

### Definition of Terms

Terms mentioned below are defined in the sense applicable to this study.

A and E System	: Accountability and Evaluation System
A.A.	: Agricultural Assistant
A.A.S.	: Assistant Agricultural Officer
A.D.	: Agricultural Demonstrator
A.O.	: Agricultural Officer
A.S.	: Agricultural Superintendent
C.A.O.	: Chief Agricultural Officer
C.E.S.	: Cooperative Extension Service (United States)
Clientele	: A group of people who are served by the Cooperative Extension Service usually the farmers and local people.
County:	: A local governing body usually located in the local community

Federal Formula	: Laws and regulations set down by the federal government by which the states expend the federally appropriated funds
F.O.	: Field Overseer
Government Direct Investment approach (G.D.I. approach)	: This is an approach whereby the Government engages in direct production of agricultural products
Human Resource Development	: The acquisition of knowledge, skills, attitude and ability by a nation's citizens to make them productive individuals
Larger farmer	: A farmer whose gross annual income is 20,000 dollars and above or has more than five acres and farms full time
Memorandum of Understanding	: An agreement between the 1862 and 1890 Land-Grant institution which authorizes the two institutions to carry out Cooperative Extension work in a state jointly.
M.O.	: Machine Operator
Naira	: The Naira is the Nigerian unit of money which is equivalent to \$1.55 (at the present time)
National Development Plan	: This is a long range plan of action for the economic development of Nigeria
N.M.	: Nursery Men
P.A.O.	: Principal Agricultural Officer
Paraprofessional	: Skilled workers or technicians to the professional in a business

- Production Resources : These are resources such as land, capital, labor managerial ability, farm materials, etc., that are used for producing agricultural goods
- Program : A regular plan of action in any undertaking
- Small farmer : A farmer whose gross annual income is less than 20,000 dollars or has five acres or less and farms part-time
- S.A.O. : Senior Agricultural Officer
- Traditional farmers or peasant farmers : Farmers who farm through the use of practices or methods handed down to them by the generations
- Unit : A group of extension workers who plan and work together and are usually located in a city
- U.S.A.I.D. : United States Aid for International Development
- VEMIS : Virginia Extension Management Information System

## Chapter Summary

In the first chapter background information about the type of Cooperative Extension Service found in the United States and Nigeria is given. The statement of the problem explains the situation in each nation's extension system with respect to its contribution to the lives of the American and Nigerian farmers. The objectives of the study indicate the various segments to be studied about the extension services of the United States and Nigeria. As a result of the study it is anticipated that the Agricultural Extension Service in Nigeria will be improved. The study is limited to the Cooperative Extension Service in the United States using Virginia as a model and the Agricultural Extension Service of Nigeria using Anambra as a model.

The methods used in this study are as follows:

- A. Literature Review
- B. Sources of Information
- C. Descriptive Comparison
- D. Recommendations

The study is a descriptive research study.

## Chapter Two

### THE COOPERATIVE EXTENSION SERVICE OF THE UNITED STATES

"Land of opportunity! Land of freedom! Land where a man could carve an empire with a little luck and the brawn and brains God gave him" (USDA - NASULAC Extension Study Committee, 1968, p. 1).

#### Chapter Introduction

In Chapter Two, the following elements of the Cooperative Extension Service are explained: Background and History, The Organization, The Administration, The Responsibilities of Personnel, The Financing, The Program Areas, The Training of Staff, The Communication Processes and Methods Used, and The Reporting and Evaluation of Programs. The elements are studied at the federal, state and local levels where applicable.

#### Background and History

In the United States, a country of great wealth, opportunity and freedom, there still remain many whose wealth, opportunity and freedom are limited. The agricultural sector especially the small farmer, has been hard hit. During the early years, the American wilderness was a great obstacle for the farmers as land was cleared and tended for the production of crops needed for food. Crude farming methods were used and the farming equipment was handmade of wood. The discoveries of science were few until the close of the eighteenth century (Hiranrusme, 1973).

One of the earliest technically educated men especially in agriculture was George Washington. His state documents indicated that he not only knew the needs of the country, but he realized that the education of the people and society and the dissemination of knowledge were necessary for the safety of the republic (Stimson and Lathrop, 1942).

Kelsey and Hearne (1963) said that agriculture extension work grew out of an historical situation. Several societies were established in the late 1700's which promoted the agricultural industry. The first agriculturally oriented society was organized in Pennsylvania on March 1, 1785, and George Washington and Benjamin Franklin were elected as members. A similar society was incorporated in South Carolina during the same year which proposed, among other things, the establishment of an experimental farm. In New York, a society for the promotion of agriculture, arts, and manufactures, which had been organized on the 26th of February, 1791, published the first small volume of transactions in 1792. The Massachusetts Society for the Promotion of Agriculture was established March 7, 1792, and began publishing bulletins in 1797. Another society for promoting agriculture was started in the state of Connecticut in 1794, and published the first volume of its proceedings in 1802 (Stimson and Lathrop, 1942).

Agricultural societies such as those mentioned in the previous paragraph led to the establishment of fairs and exhibitions. A member of the Massachusetts society first suggested in 1801 that agricultural fairs should be held regularly at Cambridge during the spring and fall, and premiums be given for farm products. However, no action appears to have been taken with regard to this suggestion.

The Philadelphia Society for the Promotion of Agriculture, of which George Washington was an honorary member, appointed a committee on January 21, 1794, to prepare a plan for establishing the state society for the promotion of agriculture, including the education of youth in this most important art (Stimson and Lathrop, 1942). This committee made a report offering several alternative propositions for promoting agricultural education. One suggestion made was the endowment of professors to be annexed to the University of Pennsylvania and the College of Carlisle, and other seminaries of learning, for the purpose of teaching agriculture. Another suggestion was to use the common school system of the state to educate the farmer in his business, with the county school masters being made secretaries of the county societies. The schools were used as meeting places and also served as repositories of their transactions. The legislature may enjoin on these school masters the combination of the subject of agriculture with other parts of education. This was the first formal effort made in the United States to present the claims of agricultural education to a legislature and to incorporate instruction in agriculture in the common schools.

After the American Revolution, several agricultural societies were formed by people who saw a need for educating the public (especially those directly involved with the public) about new agricultural developments. Even as late as 1850, there was no instruction in agriculture in the public schools.

In 1862, the Morrill Act was passed by Congress. This act allowed states to establish a land-grant college to offer instruction and courses in agricultural matters. In addition to this on-campus

instruction for full-time students, these land-grant colleges also offered short courses in such subjects as dairy and horticulture to instruct farmers in practical skills.

In 1887, Congress passed the Hatch Act, which provided funds for states to establish agricultural experimental stations. These stations tested different crop varieties and production techniques, and made specific recommendations for the geographical area in which they were located. In 1890 the black land-grant institutions were established for instructing the Blacks in agriculture and related arts (Hightower and Dermaco, 1973).

In 1892 Booker T. Washington began his "Farmer Day" at Tuskegee Institute. Before this time and after, he did weekend plowing and planting in the communities. Later he used a motorized unit known as the Jessup wagon in 1906 for his farm demonstration (Flowers, 1983).

In a report prepared for the extension budget task force at Virginia Tech (1978), the editor noted that in 1862 the Morrill Act was passed by Congress and allowed all the states in the United States to establish land-grant institutions in order to offer courses in agricultural matters. It also provided 30,000 acres of land granted to each state to be sold. Ten percent of the proceeds was to be used if necessary to purchase a college site and experimental farms, and the balance invested at 5 percent interest. The editor noted that the Smith-Lever Act of 1914 created the Cooperative Extension Service by which practical information could be disseminated to the farmers through farmer education. Farmer Cooperative Demonstrations were started by Seaman Knapp in 1904. He believed that farmers would



change their practices by carrying out demonstrations on their own farms. Knapp received \$40,000 from the Congress in 1904 to disseminate information so as to enable the farmers to grow cotton despite the presence of weevil. He employed over twenty extension workers who worked with the farmers to improve crop and livestock production.

In 1906 W. C. Stalling was the first employed extension agent. He was located in Smith County, Texas. In 1900 Dr. Bailey and Seaman Knapp began boys and girls clubs. In 1913, the agents through club work carried out at members homes, developed the home demonstration program for women. The mothers and adult females were taught cooking, sewing, sanitation, and beautification. This later evolved into Home Economics Program. With the passage of the Smith-Lever Act in 1914, O. H. Benson was placed in charge of youth clubs for the eastern states. He gave the club the name "Four-H Club".

Kesley and Hearne (1963) said that the Smith-Lever Act of 1914 was the foundation of the cooperative extension system. The act appropriated funds for the establishment of extension programs in all the states that had a land-grant institution(s) and incorporated the federal government and the local people as partners. In 1972, a "memorandum of understanding" between the federal government and the land-grant institution was reached regarding extension work in agriculture and home economics. This was done in order to solve some administrative problems such as the planning and carrying out of programs. The Smith-Lever Act was amended several times so as to establish and improve the Cooperative Extension Service of the United States.

In 1946 the Agricultural Marketing Act was passed providing funds for carrying on research, educational demonstration and service work in marketing. In 1958 the Federal Extension Committee on Organization and Policy was formed and involved staff members from all the states extension service in a review of the objectives and programs for the Cooperative Extension Service.

The State Technical Act was enacted in 1965 to promote the economic growth of the states and the nation. In 1968 funds were appropriated for the Expanded Food and Nutrition Education Program (EFNEP) which involved the use of para-professionals known as technicians to provide information about nutrition to low income families in order to reduce the incidence of malnutrition. In 1972, Title V-- Rural Development and Small Farm Research and Education Act was enacted to encourage rural development through community resource development program efforts in cooperation with the research resources of the university. In the same year, 1972, the Environmental and Consumer Protection Appropriation Act provided new funding from the USDA to enable the 1890 and 1862 institutions to combine resources to develop and carry out programs for audiences which had been difficult to reach. In 1973 the 4-H Urban and 4-H Community Resource Development Act provided funds for 4-H programs. Two-thirds of the money was for the improvement of Urban 4-H and one-third was for helping rural youth understand and improve their communities. In 1976, funds were provided by Congress for urban gardening. Extension workers helped the city residents to establish vegetable gardening in their backyard. In 1977, the Title XIV of the National Agricultural Research Extension

and Teaching Policy Act provided funds for new programs in small research and extension and the transfer of 1890 administration funds from 1862 to 1890 institutions effective from October 1, 1978. The institutions are to maintain one program concept through a memorandum of understanding between the two institutions for the development of and administration of cooperative extension service (The Extension Budget Guideline Task Force, 1978).

### Organization

"An institution is like a tune; it is not constituted by individual sounds but by the relations between them" (Peter F. Drucker, 1946, p. 26).

Modern civilization requires large aggregations of people working together in order to produce its goods and services efficiently. Organizations are the strategies created to bring order out of chaos when groups work together. As indicated by the quotation introducing this section, things which are not organized are like individual sounds; they must be set in a suitable relationship to get a pleasant tune. Organization sets the relationship between people, work and resources. Whenever groups of people exist in a common effort, organization must be used to get productive results (Davis, 1967).

In the books Cooperative Extension Work and Heritage Horizon; Extension Commitment to People, written by Kelsey and Hearne (1963) and Vines and Anderson (1976), respectively, the authors have a common notion of how the Cooperative Extension Service is organized. They

indicated that the Cooperative Extension Service is a cooperative arrangement between the federal government, the state land-grant institutions and the local people.

Williams (1968) wrote on his views of the organization of Agricultural Extension Services. The author said that the complex nature of the organization of the system comprises three main categories of participants, namely the county, the state, and the federal government. He said that the manner in which the extension policy is determined is different from state to state.

The Cooperative Extension Service includes three groups of organizers; namely, the extension functional unit of the Science and Education Administration of the United States Department of Agriculture (USDA), the land-grant college and the county or local extension service.

The Extension Division at Virginia Tech has seven subdivisions of which the Cooperative Extension Service is one. The subdivisions are as follows:

1. The Cooperative Extension Service
2. The institutional support
3. The off-campus academic instruction
4. The operation and maintenance of plant
5. The community education
6. The community service
7. The academic support

The Dean of the Extension Division is responsible for the Extension Division at Virginia Tech. He is responsible to the president of

the university (Virginia Tech) who in turn reports to the Administrator of the Extension Functional Unit through the Board of Visitors of Virginia Tech (The Extension Budget Guideline Task Force, 1978).

### Federal

At the federal level the Cooperative Extension Service is headed by the Secretary of Agriculture of the USDA. The Extension Functional Unit is under the leadership of an administrator who reports to the Director of the Science and Education Administration. The Extension Functional Unit of the Science and Education Administration of the Department of Agriculture controls and coordinates all extension activities of the land-grant colleges but does not have authority over the states. The Administrator of the Extension Division reports to the Director of Science and Education Administration. (See Figure 1 showing the organizational structure of the Cooperative Extension Service at the Federal level.

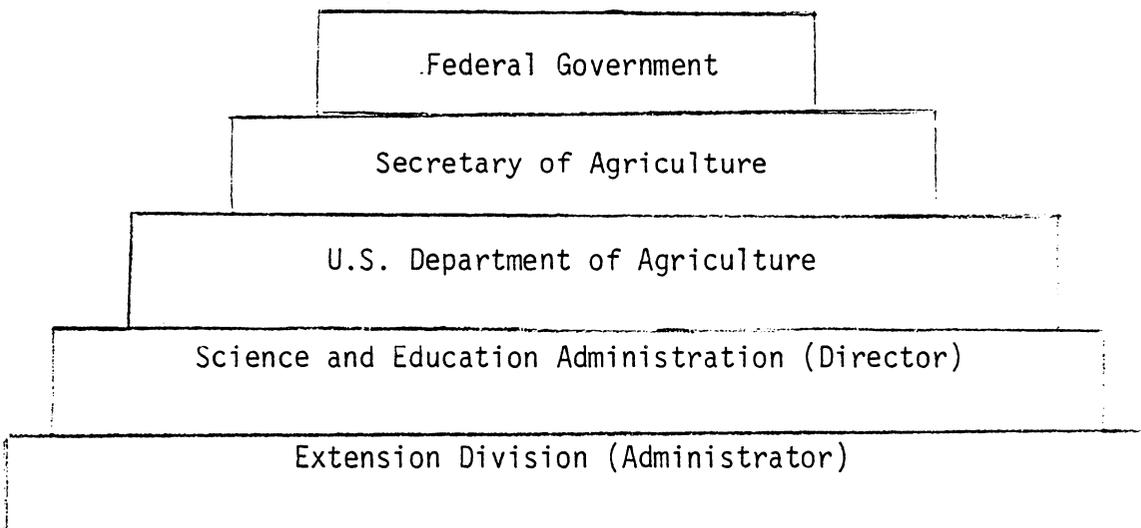


Figure 1. Organizational Structure of the Cooperative Extension Service at the Federal Level.

State

Through a personal interview conducted by the writer with the Associate Dean and Director of the Extension Service at Virginia (1982), an explanation was given of the organization and administration of the Cooperative Extension Service in the United States using the Virginia Cooperative Extension Service as a model. Dr. William L. Flowers said that the Dean of Extension is also the Director of the Cooperative Extension Service. The appointment of the director is approved by the federal extension service. The director resides at Virginia Tech, and he is responsible for the conduct of the service as agreed between the federal and the state government.

There is one Cooperative Extension Service program in Virginia including a close cooperative arrangement with the 1890 administrator who is located on the Virginia State University campus in Petersburg, Virginia.

Within the state organization, there are directors, district chairmen, program leaders, specialists, county chairmen, and county agents (see Figure 2, the Organizational Chart for Virginia (CES) on page 31).

Generally, the dean of the school of agriculture is the coordinator of three mandatory program areas of the land-grant institution--teaching in agriculture, research in agriculture, and extension in agriculture.

Virginia Tech changed that plan in 1965 and the Virginia legislature formed the Extension Division in 1966. The Extension Division became a state agency with a dean who was accorded equal rank with academic deans but whose administrative responsibilities were greater

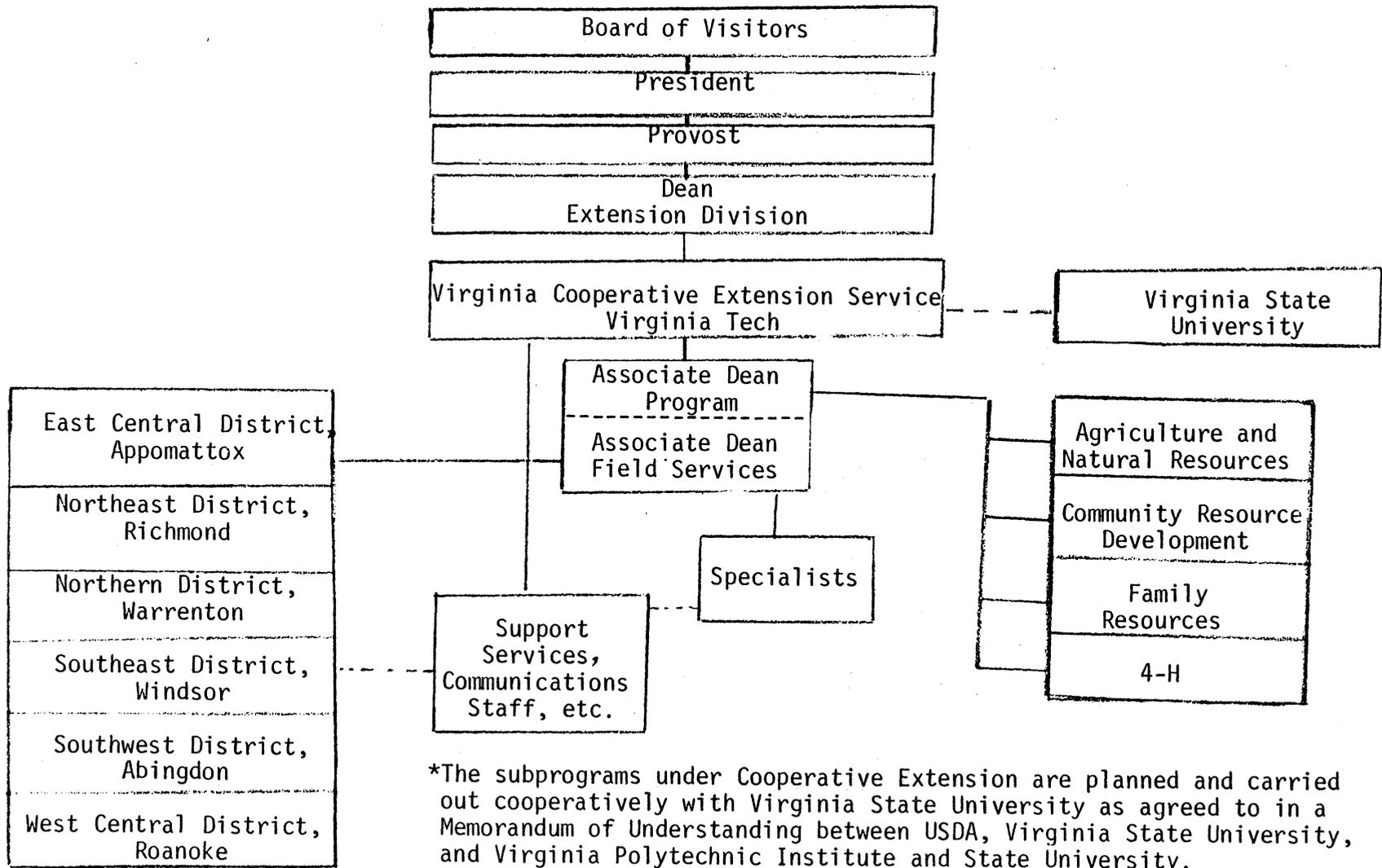


Figure 2. Organizational Chart of the Virginia Cooperative Extension Service.

than any of the academic deans.

The director of the extension service is selected by the governing body of the state institution with the approval of USDA. Usually he is already associated with the 1862 institution. In the states where there are 1862 and 1890 institutions, the state director works hand in hand with his counterpart from the 1890 institution who is usually designated an administrator. In some states, the dean of the college of agriculture is the director of extension. In others, the dean is the director of extension with associate and assistant directors working very close with him.

Virginia's extension service needs specialized assistance in the program areas. This service is provided by the state's extension specialists who are housed at Virginia Tech and Virginia State.

Coordination of extension work is facilitated because the agricultural experiment stations and the state extension services usually have their headquarters at the state college of agriculture (see Figure 2, the Organizational Chart of the Virginia Cooperative Extension Service on page 31).

### Local

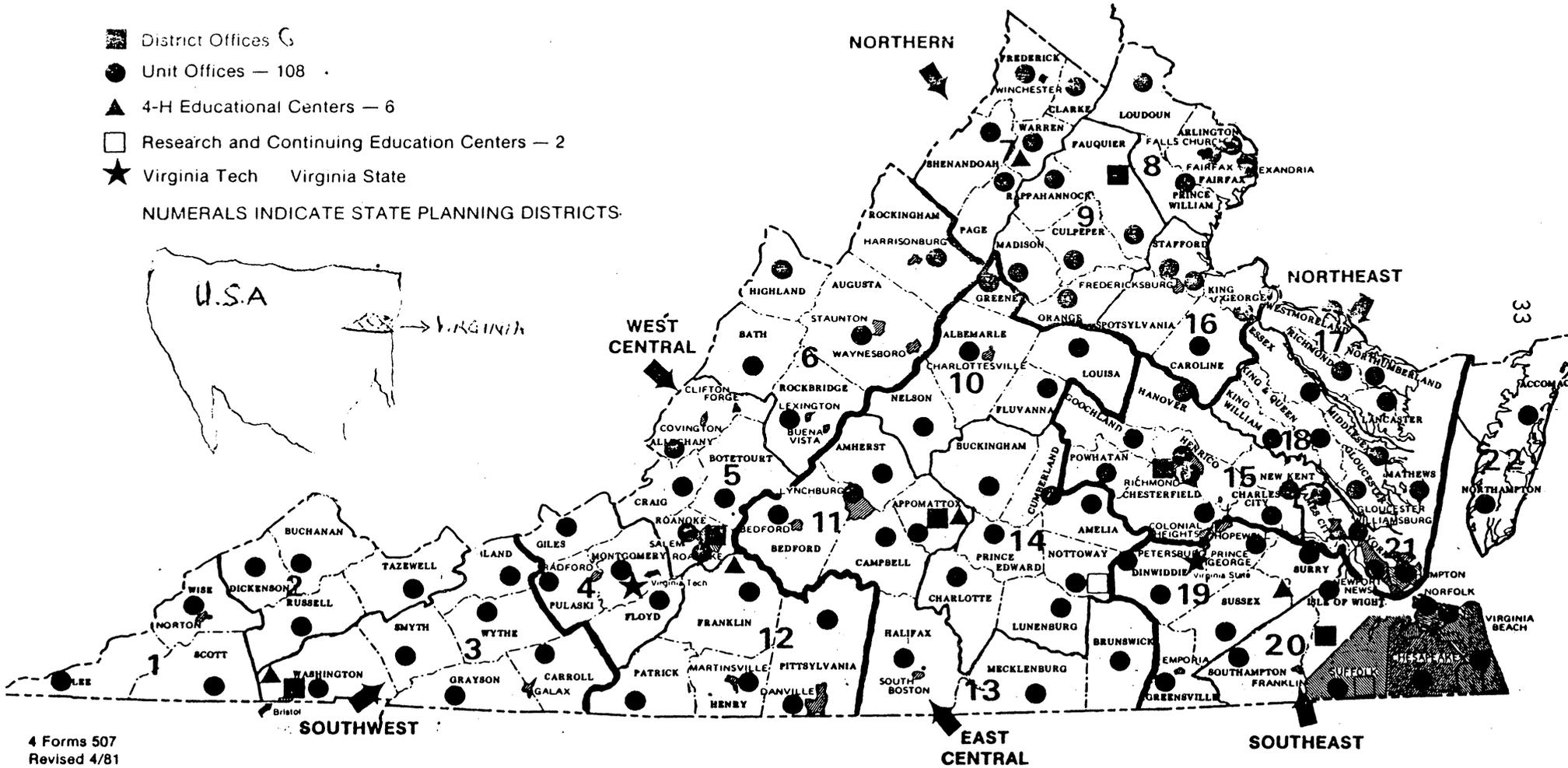
There are six extension districts in Virginia which are supervised by six district chairmen. The districts are the west central district, the east central district, the northeastern district, northern district, southeastern district, and the southwestern district (see Figure 3, the map of Virginia Cooperative Extension Service on page 33).

Figure 3

# VIRGINIA COOPERATIVE EXTENSION SERVICE

- District Offices
- Unit Offices — 108
- ▲ 4-H Educational Centers — 6
- Research and Continuing Education Centers — 2
- ★ Virginia Tech Virginia State

NUMERALS INDICATE STATE PLANNING DISTRICTS:



Within the districts are unit extension offices which are the operational units that deal directly with the clientele and/or volunteers. The unit offices are located in local county or city governments within the state and they are headed by the unit chairmen. There are about 450 extension agents working in the counties of Virginia. The extension agents report to the unit chairmen who report to the district chairmen. There is a group of area extension agents who also work in several counties (Flowers, 1983 and Mayton, 1982).

At the unit offices there are secretaries who do secretarial work (see Figure 4 on page 35, the organizational structure of the Cooperative Extension Service at the local level). The Cooperative Extension Service in Virginia is similar to other states in organizational structure; however, it has some unique features in its organization.

### Administration

#### Federal

As stated by Kelsey and Hearne:

Through this line organization pass the administrative and supervisory responsibilities of the service. Some of these are: organizing the service for efficiency; personnel selection; training and management; determining and carrying out the purposes and objectives of the program; evaluating the effectiveness of the organization and of the work; establishing and maintaining satisfactory relationships between the college and the county cooperating groups; and reporting to officials and to the public. (Kelsey and Hearne, 1963, p. 47)

On the federal level, the Extension Service is a nationwide functional unit under the direction of the United States Department of

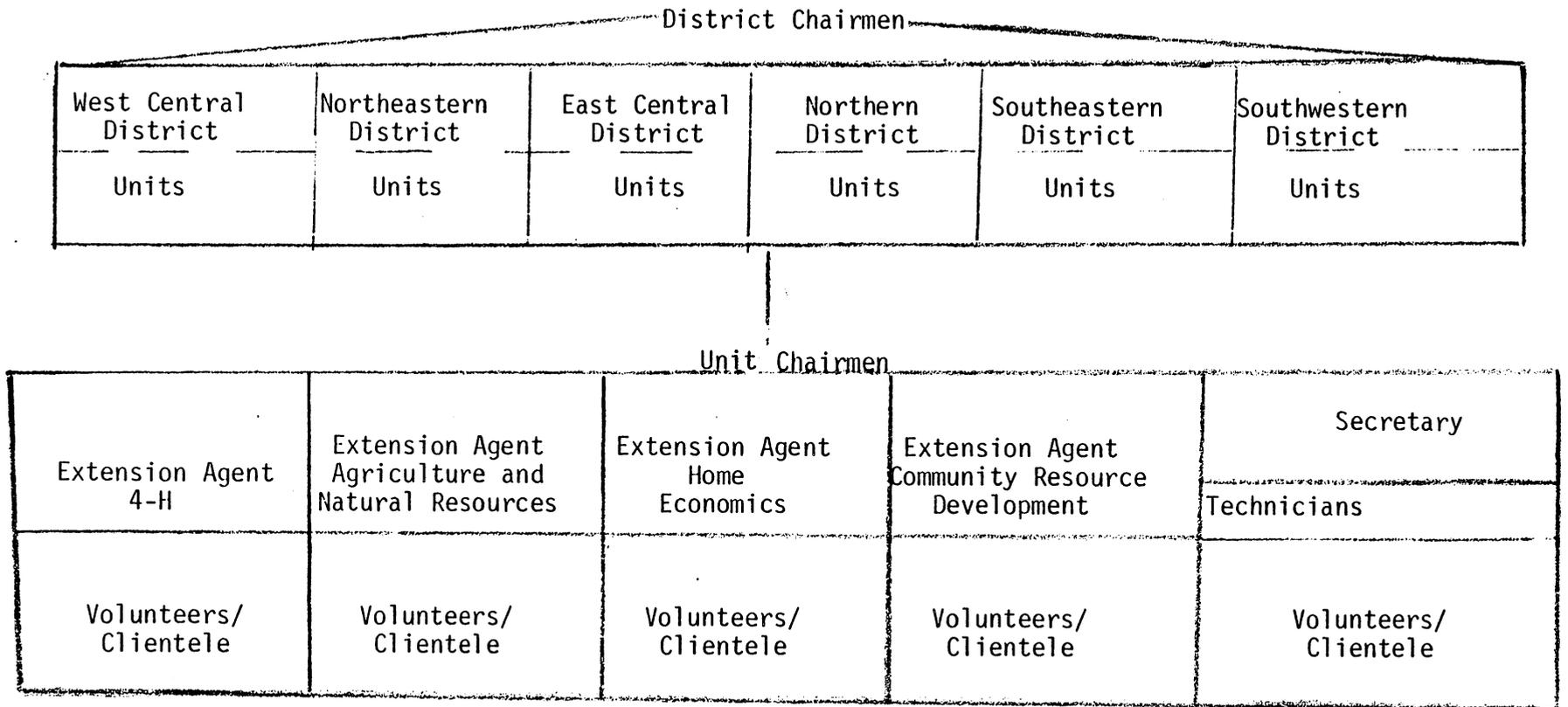


Figure 4. The Organization of the Cooperative Extension Service at the Local Level.

Agriculture (USDA). The USDA is responsible for the administration of the Smith-Lever Act and other laws and regulations involving Cooperative Extension work. It also assists the state Extension Service in program development and implementation. The Secretary of Agriculture is the Head of the Extension Service of the United States Department of Agriculture (ES-USDA). The Secretary of Agriculture of the USDA, the Director of the Science and Education Administration and the administrator of the Extension Functional Unit administer the Extension Service at the federal level (see Figure 5, the administrative structure of the Cooperative Extension Service of Virginia Tech showing the federal level administration on page 38).

The Smith-Lever Act provides that "there may be inaugurated in connection with the college or colleges in each state now receiving...the benefits of the act of Congress approved July, second 1862...agricultural extension work which shall be carried on in cooperation with the United States Department of Agriculture...." (Kelsey and Hearne, 1963, p. 45).

### State

At the state level the Cooperative Extension Service is administered at Virginia Tech which works closely with the 1890 administrator at Virginia State. The Dean of the Cooperative Extension Service is appointed by the governing board of Virginia Tech. The appointment must be approved by the United States Department of Agriculture.

Three Associate Deans and one Assistant Dean assist the Dean in administering the Extension Service. The Associate Deans are, namely, the Associate Dean, Field Operations; the Associate Dean, Planning,

Impact Studies, Reports, Grants and Contracts; and the Associate Dean, Relations with Other Agencies.

The Assistant Dean works closely with the Dean in carrying out the overall responsibilities of the Dean (see Figure 5, the Virginia Cooperative Extension Service administrative structure on page 38).

There are extension faculty known as "Subject Matter Specialists" who are housed in the eight colleges at Virginia Tech. They provide educational assistance in specific technical subject matter areas for Extension Service through research publications and updating of programs.

### Local

There are 114 units of Cooperative Extension Service in Virginia which are supervised and administered by six district chairmen. These district chairmen report to the Associate Dean, Field Operations.

There are assistants to the district chairmen known as supervisors who help the district chairmen to administer the program areas. At the district offices there are secretarial staffs who do secretarial duties (Wayne Keffer, District Chairman, West Central District, 1982) (see Figure 5, the Administrative Structure of Virginia Cooperative Extension Service on page 38). The county or unit chairmen are the chief administrators for the program at the unit level. However, the extension agent and technicians help to administer the programs at the county level. The unit chairmen report to the district chairmen and to the Associate Dean, Field Operations (Mayton, 1982).

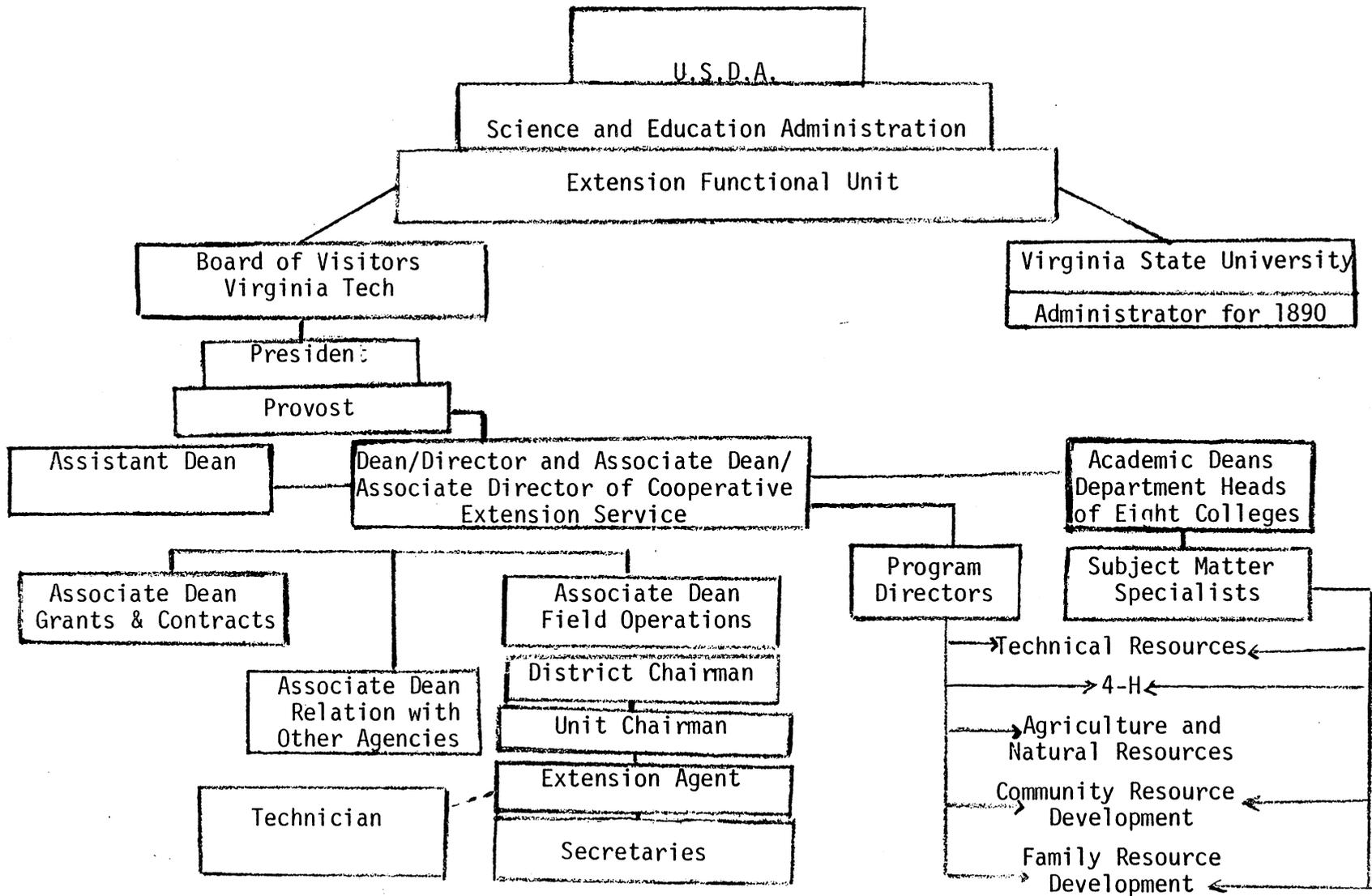


Figure 5  
 Administrative Structure of the Cooperative Extension Service  
 in Virginia with Special Reference to Virginia Tech

## Responsibilities of the Personnel

The Cooperative Extension Service has personnel in the federal, state and local or county organization who jointly carry out their responsibilities. Their duties are related and interdependent to one another.

### Federal

The Secretary of the United States Department of Agriculture is the head of the Cooperative Extension Service at the federal level. The Administrator of the Extension Functional Unit of the Science and Education Administration of the USDA is responsible for administering and implementing the Cooperative Extension work. A group of administrative officials, liaison officers and specialists assist the administrator to control and coordinate all extension activities of the land-grant colleges but do not have full authority over the states.

The Administrator reports to the Secretary of Agriculture (see Figure 1, which also shows the Federal Level Administration on page 29).

#### The Secretary:

The responsibility of the Secretary of the USDA is "to conduct and maintain a definite and distinct administrative division for the management of the Cooperative Extension work" (Kelsey and Hearne, 1963, p. 45). The Secretary mobilizes, interprets and prepares the resources of the USDA for the use of the state Extension Service. He approves the appointment of each state Director of Cooperative Extension Service.

The Secretary of Agriculture informs the public about the progress of the extension programs. He approves Cooperative Extension projects that involve the use of federal funds.

The Administrator of the USDA:

The Administrator of the Extension Service of the USDA is responsible to the Secretary of Agriculture. He has some personnel under him to assist in supervising and administering the federal extension work.

At the federal level the Extension Service carries out the duties which the state Extension Services cannot do readily (Kelsey and Hearne, 1963).

### State

At the state level, Cooperative Extension work is administered by the land-grant university or colleges. In Virginia, the Cooperative Extension Service has the largest number of personnel among the subprograms of the Extension Division. Thirteen of the fifty states have two universities or land-grant institutions whose personnel work cooperatively to administer the program areas. Personnel of the Agricultural Extension Service can be categorized as follows:

1. The 1862 land-grant institution personnel
2. The 1890 land-grant institution personnel

The personnel of the 1862 Agricultural Extension Program can be categorized as follows: The Dean, Associate Dean, Assistant Dean, Subject Matter Specialists, District Chairman, Unit Chairman, Extension Agents, Technicians, Secretaries and Support Staff (The Extension Budget Guideline Task Force, 1978).

The personnel of the 1890 Agricultural Extension Program can be categorized as follows: The Administrator, Administrative Assistant, Specialists, Program Leaders, Extension Agents, Technicians, Secretaries, and Support Personnel (Flowers, 1983; Elliott, 1983).

The duties of the personnel are related to and dependent on each other. The duties of the Dean or the Director, the Associate Dean, and the Assistant Dean of the 1862 Extension Division/Cooperative Extension Service are similar to their counterparts of the 1890 Extension Service.

The other ranks of officers starting from the specialists, the district chairman, the county or unit chairman, the extension agents, and the technicians or paraprofessionals have similar responsibilities.

The Cooperative Extension Service at Virginia Tech and Virginia State University agree to share administrative leadership, the mutual development of the plan of work, reporting of programs, management of funds and other administrative procedures as stated in the "Memorandum of Understanding", (The Extension Budget Guideline Task Force, 1978).

The Cooperative Extension Service at Virginia State University is responsible for specific programs in the state such as small farm gardening, production with limited resource producers, family horticulture and landscaping, economic development and small business. In addition to the above mentioned, they also help to solve the problems of the hard-to-reach and disadvantaged families.

The Dean/Director, Virginia Cooperative Extension Service:

The Dean of the Extension Division is also the Director of the Virginia Cooperative Extension Service and is responsible for the

administrative management and leadership of the extension division. He reports to the provost as dean and works directly with the president of the university on matters related to the Cooperative Extension Service. The dean's responsibilities, therefore, involve all those things that will further the objectives of the extension service within that state. The following are his principal duties; however, he delegates some of these responsibilities:

1. Organization: He develops the plan of administrative organization and revises the plan from time to time to meet the changing conditions.
2. Personnel Selection and Management: He makes adequate plans for succession within his organization. The dean manages agency personnel.
3. Policy Determination: He determines policy, and solicits and carefully considers the views of his associates before making a final decision. This duty is not delegatable.
4. He plans, organizes and coordinates the resources of the local people, the land-grant institution, and the federal government in improving the agriculture and home life of the people in his state.
5. The dean, with the help of the associate deans, the assistant deans, and the district and unit chairmen, develops an annual plan of work. This program planning function is delegated to an associate dean and program personnel.
6. Supervision: The dean delegates the supervision function in a large part to the three associate deans but he still has the

duty of supervising those to whom he has delegated this authority.

7. Evaluation: The dean delegates this function to his associates. This involves determining the effectiveness of the organization (where it is weak, why and how it can be improved, and the value of the extension program to the public).
8. Finance: The dean has the duty of arranging for funds to finance the extension program in his state. This may involve arrangements with:
  - a. the land-grant university president and governing board;
  - b. the federal extension office;
  - c. the state legislature;
  - d. the county appropriation units;
  - e. the local contributing groups;
  - f. special funded projects and finances earned through continuing education centers

In addition to arranging for funds, he provides an appropriate accounting system and the necessary budget controls. The dean as the chief administrator of the extension service in his state has a vast number of duties to perform; however, he delegates most of these duties but he cannot avoid the final responsibility for them (Kelsey and Hearne, 1963).

#### The Associate Deans:

The three associate deans, in addition to their duties, carry out certain responsibilities delegated by the dean. Their duties are as follows:

The Associate Dean in Charge of Program Plans/Grants and Contracts:

1. Long Range Plan: Develop an annual and long-range plan of work and revise the plan from time to time.
2. Impact Studies: Carries out impact studies on the Cooperative Extension activities and updates the programs.
3. Administration: Develops working policy papers and position statements in support of the dean's policy determination.
4. Meetings: Conducts periodic meetings with the district chairmen and the four program area specialists in Cooperative Extension and attends executive meetings.
5. Reports: Renders periodic and VEMIS (Virginia Extension Management Information System) reports to the dean of the activities of the Cooperative Extension program in the state.
6. Grants and Contracts: Approves grants and contracts.

The Associate Dean in Charge of Field Operations:

1. Reports: Writes periodic reports on field operations and renders annual report and VEMIS report.
2. Meetings: Holds monthly and bimonthly meetings with the field staff.
3. Administration: Assists the dean in administering the Cooperative Extension work in the field or communities.
4. Planning: Assists in planning programs.

Associate Dean in Charge of Relations with Other Agencies:

1. Administration: Assists the dean in administering Cooperative Extension work with other agencies.
2. Reports: Renders VEMIS and periodic reports.
3. Meetings: Attends and holds meetings with other agencies.
4. Planning: Assists in annual planning of Cooperative Extension work.
5. Public Relations: Maintains good public relations with other agencies and the Cooperative Extension Service (Personal interview with the Associate Dean and Assistant Director, Dr. Flowers, 1983).

The Assistant Dean:

The assistant dean works very closely with the dean. The responsibilities of the assistant dean are as follows:

1. Assist the dean to develop the plan for administrative organization and revise the plan from time to time.
2. Assist in personnel selection and management.
3. Assist in planning, organization and coordination of the resources of the local people, the land-grant institutions and the federal government.
4. Assist in developing the annual plan of work.
5. Writes reports on the activities of the Cooperative Extension work.
6. Holds meetings with field officers periodically and attends executive meetings.

In Virginia, the assistant dean works closely with the dean, the associate deans, the district chairmen and the specialists (Personal interview with Dr. Ann Thompson, Assistant Dean of Field Operations, 1982; and the Associate Dean in Charge of Total Agency, Dr. Flowers, 1983).

#### Subject Matter Specialists:

There are more than 112 subject matter specialists who are in charge of the different subject matter areas in extension education in Virginia. These specialists have functional linkages with the research or experimental station, the extension agent, the university and the USDA. Their responsibilities are as follows:

1. Backing up the county programs with suitable state-wide publicity, popular bulletins, motion pictures, slides and other teaching aids.
2. Analyzing and interpreting scientific knowledge and assisting in bridging the gap between the research and recommended practices.
3. Maintaining competence in a professional subject matter area or field of work.
4. Doing research in agriculture and related fields.
5. Submitting administrative reports to the academic department, Extension Division or to federal offices as required.
6. Providing leadership to the field staff members in helping them to keep current in their subject matter and assist them in determining, implementing and evaluating extension programs.

7. Translating research information into practical terms and serve as a communications channel between research, field staff and the people.
8. Assisting in developing a long-range program statement and annual plan of work in subject matter fields which consider the needs of the people as identified by the field staff and others.
9. Teaching of people within the county in such a manner as to strengthen the position of the county worker.
10. Assisting agents in the effective use of appropriate teaching methods. (Administrative Handbook of the Extension Division, 1970).

### Local

#### District Chairman:

The district chairman is responsible for the functioning of the Cooperative Extension Service at the district level. The district chairman reports to the associate dean of field services.

The duties of the district chairman are as follows:

1. Provide the necessary climate for the Cooperative Extension agent to work in the districts.
2. Provide the necessary leadership to bring about the full support of all elements of the Extension Service.
3. Select the counties in which special programs will be conducted.

4. Check periodically with the unit chairman on progress or problems.
5. Supervise the duties of unit chairman and program personnel at the county level.
6. Work cooperatively with the subject matter area specialists.
7. Hold bimonthly meetings with the district and county staff.
8. Recruit Cooperative Extension agents.
9. Report the activities of the Cooperative Extension program to the associate dean.
10. Evaluate the program from time to time.
11. Promote friendly relationships with others in the district and state.
12. Meet monthly as part of the dean's state leadership team.  
(Kelsey and Hearne, 1963, and Keffer, 1982).

#### Unit Chairman:

In all the units, extension agents are housed together, usually at the unit headquarters. The unit chairman is an extension agent who supervises the county extension work in his or her county. The unit extension agent is responsible to the district chairman and the associate dean, field operations. The unit chairman's duties are as follows:

1. Assesses the Community Needs: Reviews data about the community.
2. Selects the Local Advisory Committee: Solicits the advice of the committee and public about needs of the community.

3. Prepares the Annual Plan of Work: Reviews annual and long-range plans and coordinates plans with other extension agents and advisory committee.
4. Supervises the extension work in the unit.
5. Evaluates the program effectiveness and prepares and submits reports to the district chairman and the associate dean of field operations (Virginia Cooperative Extension Service, Long-Range Plan and Plan of Work, Montgomery-121, FY 1980).

#### The Cooperative Extension Agents:

The Cooperative Extension agents carry out the extension educational program at the local level.

The responsibilities of the extension agents are to:

1. Work with their clientele in their farm homes and local communities to identify program needs.
2. Teach the farmers new methods of farming and homemaking through different methods.
3. Carry out planned programs, evaluate effectiveness of program and conduct follow-up evaluation.
4. Prepare specific program plans.
5. Prepare materials and assign responsibilities to resource personnel
6. Select the most appropriate teaching strategy.
7. Plan for publicity and program evaluation.
8. Determine community needs by reviewing data about community past programs and resources available.

9. Select advisory committee members for the community.
10. Prepare an annual plan of work: Review prior annual and long-range plans and determine objectives.
11. Respond to client requests for specific information through helping clients solve existing problems.
12. Recruit, train and make use of volunteer leaders.
13. Develop and maintain good public relations within the county.
14. Maintain and increase personnel professional competency through evaluation of their own areas of strengths and weaknesses and develop plans for personal growth.
15. Write Virginia Extension Management Information System (VEMIS) report: Report monthly on each day's activities, visits, its purpose and mileage.
16. Develop rural leadership.
17. Assist in the organization of local 4-H clubs.
18. Attend meetings in extension and commercial agricultural county meeting.
19. Advise and provide technical assistance to the producers and others.
20. Help the agricultural technicians with problems that may arise in the program.

The Cooperative Extension agents are coordinators and friends of the producer and others in the community. There are various kinds of Cooperative Extension agents; however, they perform similar functions (Unpublished master's thesis by Navaratnam, 1982).

### Agricultural Technicians:

The duties of the agricultural technicians who are paraprofessionals in the agriculture production programs are to:

1. Assist county staff in identifying farmers' problems.
2. Work with farmers on an individual basis in evaluating enterprises and making recommendations.
3. Assist and direct farmers in compiling needed information for obtaining financial assistance and other supporting resources.
4. Assist farmers in completing recommended practices.
5. Plan and initiate small group meetings for the purpose of conducting method demonstrations and discussing market considerations.
6. Work with county extension staff in developing bench marks to be used in evaluating progress.
7. Assist farmers in planning and making improvements around the farm and home.
8. Encourage the family to participate in Cooperative Extension activities.

### Secretaries:

Secretaries are employed by the local extension program. They provide secretarial assistance for the staff members of the extension organization.

### Communications Staff:

Communications staff consisting of a media coordinator, staff editor, photographer/audio technician and graphic artist provides supporting services. It is the responsibility of the communications staff to give media assistance in the form of brochures, publications, AV materials, slides, radio, television, etc. (Cooperative Extension Service Self Study Report, 1979).

## Financing

Financing for Cooperative Extension is provided by all the three levels of government, the federal, state and local. The amount of money provided varies from one fiscal year (FY) to another since the programs differ.

The data on the following page illustrates the yearly financing of Cooperative Extension Service in Virginia between 1971 -78 (Table I).

### Federal

There is federal legislation such as the Morrill Act of 1862 and 1890 and the Smith-Lever Act of 1914 which appropriate funds for the operation of the Cooperative Extension Service. The Morrill Act of 1862 provided grants of public land to the states for the establishment and maintenance of at least one land-grant institution per state. The Morrill Act of 1890 provided additional funds for the establishment of black land-grant institutions. The Smith-Lever Act of 1914 created

TABLE I  
 YEARLY FINANCING OF COOPERATIVE EXTENSION SERVICE  
 IN VIRGINIA BETWEEN 1971-78

Federal Fiscal Year	Va. Coop. Ext. Service Federal Appropriations	1890 Ext. Ser. Appropriations	Va. Coop. Ext. Ser. Offset Requirements	Va. State Appropriations	Local Appropriations
1971-72	4,209,800	241,210	2,390,137	6,833,035	2,061,765
1972-73	4,597,651	360,754	2,666,408	8,096,745	2,238,880
1973-74	4,811,626	360,754	2,736,458	8,321,945	2,501,630
1974-75	5,506,258	388,074	2,963,395	10,310,830	2,796,240
1975-76*	7,356,523	589,287	4,010,422	11,193,530	2,884,302
1976-77	5,972,290	506,459	3,328,870	12,849,800	3,077,362
1977-78	6,060,157	563,102	3,453,777	13,681,555	3,303,349

\*Due to change in Federal Fiscal Years, appropriations are for the 15-month period ending September 30, 1976

Source: Extension Budget Guidelines Task Force, 1978.

the Cooperative Extension Service. A key provision of the Smith-Lever Act required the states to develop and submit a plan of work for approval before funds were made available at the federal level. Smith-Lever Act was amended several times and provided funds for carrying out research, assisting disadvantaged farm families and marketing (Public Law 733, Title 11, Sec. 203(n), Public Law 360, 1955).

In addition to the regular appropriations, the Extension Service receives other federal funds for special needs programs including (1) a social growth and development program for youths ages six to nine and (2) small part-time farm and home garden projects designed to help small farmers increase their farm income and marketing skills (Agriculture Extension Self Study Report, 1979).

### State

The Smith-Lever Act and its amendments require that the states provide a certain amount of money from non-federal funds to match the federal allocation. To facilitate federal regulations and audit reviews, university (land-grant institutions) administration uses the federal formula monies to offset state matching funds for payment.

Non-formula funds are expended in accordance with the specific instructions for which they were appropriated. State appropriations not subject to federal audit or review are utilized for payment of personal services, travel, printing, equipment and other materials.

Kelsey and Hearne (1963) stated: The resultant supervisory influence of the USDA and its overruling authority over the program

plans of the state extension service, calls for utmost efficacy. In the states the expenditures for the fiscal year cover the cost of salaries and fringe benefits, travel expenses, equipment office supplies, state cars, communications, printing, publications and contractual services.

In Virginia personnel services accounted for 81.8 percent of the Cooperative Extension expenditures in 1978. The balance, 18.2 percent, was used for support of educational programs. Based on data from the Extension Management Information System, the following represents expenditure by program for FY 78 for Virginia Cooperative Extension Service.

Agriculture and Natural Resources	\$ 6,535,142	39%
Community Resource Development	\$ 2,013,351	12.2%
Family Resource	\$ 3,581,125	21.7%
4-H	\$ 4,373,266	26.5%
	<hr/>	
Total	\$16,502,884	100%

(The Extension Budget Guideline Task Force, 1978)

### Local

The local government of the units are authorized to appropriate out of county funds money for the support of the Cooperative Extension Service. The funds made available by the counties are used in cooperation with the land-grant institution for paying expenses. The land-grant institution supplements the funds appropriated by the counties. In some states county funds are given to the state

(land-grant institution) for administration. In others the county funds are administered by the county governing body.

#### Private Funds

Funds raised from contributions from organizations and individuals are administered by the local governing body. These funds are usually used to accomplish work for which no public money has been appropriated (Kelsey and Hearne, 1963).

### Program Areas

If doctrine is defined as the broadest kind of rationale for the existence of an organization or institution, one could say that the doctrines for the four program areas of the extension service are responsible for the continuous existence of the Cooperative Extension Service. (Walson, 1982)

The Cooperative Extension Service focuses on the extension programs in order to carry out extension work effectively. The Cooperative Extension Service conducts educational programs that will enable the people to improve their knowledge and skills in managing their resources and adapting to their environment. In Virginia, extension service programs make available the educational resources of Virginia Tech and Virginia State universities to help Virginia's people solve farm, economic and social problems (personal interview with the Administrative Assistant, Elliott, 1983).

Cooperative Extension programs originate primarily at the local level. Local people are involved through planning committees, and individual contacts. Program priorities are established by the extension staff and local people working together (The Extension Budget Guideline Task Force, 1978).

Kelsey and Hearne (1963) defined the Cooperative Extension program as a statement of situation, objectives, problems and solutions. They said that a program plan of work helps to execute the program efficiently. The authors enumerated ten reasons why there should be a program plan. Their reasons are as follows:

1. To ensure careful consideration of what is to be done and why.

2. To have available in written form a statement for general public use.
3. To furnish a guide against which to judge all new proposals.
4. To establish objectives towards which progress can be measured and evaluated.
5. To prevent mistaking the means for the end.
6. To give continuity during changes in personnel.
7. To aid in the development of leadership.
8. To avoid waste of time and money.
9. To help justify appropriations by public bodies.

The authors also enumerated different types of programs carried out by the Cooperative Extension Service such as, (a) Agriculture Program, (b) 4-H Youth Program, (c) Community Resource Development, and (d) Home Economics Program. Each of these programs have numerous projects and activities designed to improve the farm, home, the individual and community.

Brunner and Yang (1949), Kelsey and Hearne (1963) and the editor of a report prepared for the Extension Budget Guideline Task Force for Virginia Tech (1978), have a common explanation of the functioning of the program areas of the Cooperative Extension Service. They said that the main four program areas are as follows:

1. Agriculture and natural resources;
2. Family resources (home economics);
3. Community resource development; and
4. 4-H youth clubs.

## Agriculture and Natural Resources

The agriculture and natural resources program area is the broadest of all the Cooperative Extension Service programs. The cooperative agents collect plans of work from the localities, which are made available to the program's subject matter specialist who develops subject matter materials to help local agents conduct their programs more effectively. The purpose of the program is to make the agricultural resources (experimental results and research findings) of the land-grant colleges, available to commercial farmers, related agri-business enterprises, marketing firms, and the public at large. Special programs are conducted for the small or limited resource farmers to help them with their problems. The extension agents use different types of educational techniques to conduct the agricultural programs. These techniques include result demonstrations, method demonstrations meetings, field days, tours and publications. The demonstration technique is the oldest method used and continues to be one of the most effective teaching methods. Agents also visit individual farmers, but they limit the usage because it is time-consuming. Under this program there are very many projects but to mention a few, like: beef production, crop production, milk production, swine production, small farm management, dairy projects and vegetable gardening. The agriculture production extension agents work closely with farmers to improve production practices of the farmers. Agricultural specialists help to coordinate the activities carried out under the area of agriculture program.

In Virginia extension agents and faculty reported 1,381,914 contacts with Virginia citizens through agriculture programs during

FY 1978 (Guideline Task Force, 1978).

There are some agriculture and natural resource programs conducted in Virginia such as:

1. Dairy Industry Program:

Virginia Cooperative Extension Service started a six-year program to increase the efficiency of the dairy industry.

2. Small Farm Assistance:

In Smyth County in 1974 a small farm program was initiated for farmers called limited resource farmers or small farmers. The farmers were classified as having gross income of \$20,000 or less. Technicians and agricultural extension agents were employed to provide one on one instruction in farm management.

3. Beef Production Program:

A Halifax extension agent, working with the local livestock planning committee, planned and developed educational programs to increase and improve the beef industry in the county through improved management, increased use of forage, and improved marketing.

4. Swine Industry Expansion:

Virginia Beach extension agents working closely with the Tidewater Pork Producers Association have conducted educational programs over the past fifteen years that have resulted in increases in market hog production. In 1967, there were 52,500 market hogs with the value of slightly more than \$2 million in the city. By 1977, production had increased to 225,000 market hogs with the value of \$23 million.

There are other programs like individual farm management assistance, drought assistance, plant clinics, Virginia farm management tours and livestock management programs. There were 26 man years of technician staff time devoted to agriculture and natural resources in 1978. Among the program areas agriculture and natural resources ranked second behind the 4-H program in terms of number of total audience contact (see Table II below).

TABLE II  
AUDIENCE CONTACTS BY PROGRAM AREA  
COOPERATIVE EXTENSION SERVICE FY 1978

Program Area	White	Black	Other	Total
Agriculture and Natural Resources	87.5%	11.9%	.6%	1,381,914
C.R.D.	77.4%	21.9%	.7%	55,190
Family Resources	66.9%	32.3%	.8%	1,258,072
4-H	74.5%	25.2%	.3%	1,716,464

#### The 4-H Program

The editor of the Extension Budget Guideline Task Force, Virginia Tech Extension Service (1978) traced the history and organization of the 4-H Club. He said that the 4-H organization started as "corn and tomato" clubs for boys and girls in 1900 by Dr. Bailey and Seaman Knapp. The first sponsored 4-H Club was established in 1907. The youths carried out corn growing, vegetable gardening, canning, and

livestock raising. The older farmers adopted new practices as a result of the youths' demonstration farms and projects. In 1909 the clover leaf emblem was introduced by O. H. Benson and Miss Jessie Fields from Wright and Page counties of Iowa, respectively. The four-fingered clover leaf represented the head, hand, heart and health. The 4-H Club program was organized to teach the youths how to farm and be good citizens. The program included many projects in agriculture, resource development and home economics. In 1914, Woodrow Wilson signed the Smith-Lever Act which provided funds for nationwide extension work. "It specified that work shall...consist of the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in said colleges...." (Kelsey and Hearne, 1963, p. 31; Vines and Anderson, 1976, p. 7).

Four-H is the youth program of the Cooperative Extension Service. It is a practical, dynamic, informal educational program designed to meet the needs of all boys and girls between 9 and 19 years of age regardless of whether they are rural or urban, white or black, and regardless of their social and economic lifestyle. 4-H offers young people a wide range of learning experiences to help them enjoy learning new things, develop new interests, make new friends, learn democratic group action, and develop leadership ability.

As indicated in the 4-H Leaders Handbook (VPI & SU, 1978):

The major objective of the 4-H program is to help boys and girls develop into useful and desirable citizens. Through 4-H they have opportunities to develop good character traits; wholesome attitudes, leadership qualities, and knowledge and skills in areas of special interest to them.

From its beginning, 4-H has been a "learning by doing program." The name 4-H refers to the elements of the head, heart, hands, and health. Each element contains a specific concept as follows (4-H Leaders Handbook, 1978).

- Head
- To develop an awareness of and learn to apply the latest scientific knowledge in many subjects such as agriculture, home economics, sociology and psychology in their own lives and the lives of their families
  - To provide young people many opportunities to develop an intelligent understanding of natural phenomena in their environment
  - To help young people develop the thinking, reasoning, and decision-making habits they need to become capable individuals and useful members of society
  - To help young people realize the importance of continuing education and to help them develop a desire to continue to learn
- Heart
- To aid in the development of wholesome character and personality qualities, loyalty, good citizenship, high ideals, and a sense of responsibility
  - To arouse worthy ambitions for personal, family, and community development
- Hands
- To help youth develop useful and creative skills in a variety of subjects such as agriculture and home economics
  - To provide opportunities to "learn by doing" through 4-H projects, activities, demonstrations, and illustrated talks
- Health
- To help youth know about and understand what constitutes good health
  - To help cultivate good health habits and intelligent use of leisure time which will lead youth to satisfying and rewarding lives

The 4-H pledge is as follows:

I pledge,

My head to clearer thinking  
My heart to greater loyalty  
My hands to larger service and  
My health to better living; for  
My club, my community and my country (Williams, 1952, p. 19)

The 4-H'ers elect their own officers based on parliamentary procedure and form a structured formal local club. The local club is responsible for project work, activities, leadership and recreation. The project activity is something that the member does as an individual with the help of a local 4-H leader. Volunteer leaders including adult and youth, play a major role in conducting 4-H projects and activities. Extension agents also provide necessary materials and other facilities for use in their work with 4-H members.

4-H clubs have the freedom to select the projects in which they would like to take part. Programs may be undertaken individually or through group effort. 4-H members have an opportunity to strengthen leadership skills and meet with other 4-H state and National Congress participants. Youth are selected to attend the National Congress based on their performance in local and district 4-H activities. During the state and National Congress, youth have an opportunity to compete with people from other communities in their chosen project area.

Learn by doing has always been an important basic approach for 4-H members. Projects continue to be a valuable tool for bringing about constructive thought and action and Virginia offers a wide choice of projects and activities to fit the varied needs and interests of boys and girls. As the pace of change has accelerated, so have the efforts to develop 4-H projects and other 4-H materials in tune with

today's world. Extension specialists, who are members of the university faculty, work continuously to develop new and exciting 4-H programs. Specifically home economics specialists have been heavily involved in writing materials and training extension staff in support of the TV programs and 4-H Expanded Food and Nutrition Education Programs (Navarathnam, 1982).

In Virginia in 1977 there were 241,242 members enrolled in 4-H activities. Of this number only 217,225 participated in different projects. 4-H enrollment in projects in 1977 was as follows:

Animal science projects	36,579
Engineering projects	45,011
Home economics	38,861
Natural resources	34,056
4-H television program	65,632
4-H expanded food and nutrition education projects	<u>21,103</u>
Total members	241,242

(The Extension Budget Guidelines Task Force, 1978).

In Virginia adult and youth volunteer 4-H leaders play a major role in conducting the Virginia 4-H programs. The Virginia Cooperative Extension Service conducts leadership training for all volunteers on how to be effective 4-H leaders. It also provides them with materials to use in their voluntary work with 4-H members. In 1977, there were 10,395 volunteer leaders in 4-H in Virginia. A wide range of projects in 49 major subjects have been developed by Virginia Tech faculty. The current 4-H curriculum is based on "4-H in Century III"

a national guide approved by the Extension Committee on Organization and Policy.

4-H members have an opportunity to strengthen their leadership skills and meet with other 4-H members from across Virginia at the state 4-H Congress held on the Virginia Tech campus each year. During the state and national congress, selected talented youth have an opportunity to compete with other members from different communities in their chosen project area.

Projects continue to be a valuable tool for bringing about constructive thought and action by 4-H members. Virginia offers a wide choice of projects and activities to fit the diverse needs of youths. Extension specialists, who are members of the university faculty, work continuously to develop new and exciting 4-H programs. Specifically, home economics specialists have been heavily involved in the writing of materials and training extension staff to support the TV programs and 4-H expanded food and nutrition education programs (Extension Committee on Organization and Policy, "4-H in Century III," 1976).

The following are some of the projects carried out by Virginia 4-H Club members in 1977:

1. Urban Gardening -- Youth in Roanoke City participated in the 4-H garden project and planted 243 gardens.
2. Water Safety -- Thirty-nine 4-H youth participated in a Coast Guard day camp.
3. Plant Science -- Four hundred and six 4-H'ers in Caroline County planted more than 1,000 plants ranging from sweet potatoes to pine seedlings.

4. Riding for the Handicapped -- Eighteen handicapped youth and over thirty volunteers completed the two-week 4-H horse back riding for the handicapped program.
5. Embryology -- A Prince William school teacher was given training on the 4-H embryology project.
6. Lawn Mower Clinics -- Lawn Mower Clinics for 4-H members were held at four locations in York County.
7. Vegetable Show and Sale -- Fifty-four 4-H'ers who were participating in 4-H garden projects in their localities participated in the Fourth Annual Southeast District 4-H Vegetable Show and Sale held at Tower's Shopping Mall in Portsmouth in July.
8. Park Improvement -- In Henrico County, 3,000 trees and shrubs were planted by 4-H'ers at the Crump Farm which had previously been converted to a public park.
9. Crop Production -- Twenty-five 4-H members participated in a tobacco project where they managed a one-acre plot of tobacco and handled the production from the plant bed to the warehouse floor.
10. Dairy Judging -- The 1977 State 4-H Dairy Cattle Judging team took top honors at the national contest in Wisconsin. A Madison County volunteer leader and the Dairy 4-H specialist served as team coaches.
11. Meat Evaluation -- The Animal Science faculty at Virginia Tech developed a meat identification and evaluation project for the 4-H'ers to learn about meat from production to

the table.

12. International Exchange -- A former 4-H member from Amelia was accepted to participate in the 4-H International Youth Exchange Program with Kenya, Africa.

Several other projects are available in Virginia to provide the organizational flexibility essential to extending broad educational 4-H programs to a maximum number of youths (Virginia 4-H Projects, Publication 567, 1980).

#### 4-H Camp

In the United States, there are national, regional and state 4-H camps for 4-H members. Camping is one of the oldest 4-H educational methods. It was initially viewed as a form of recreational program. There are different types of campus such as adventure camps, mobile camps, bicycle camps, etc. Camping generally ranges from primitive sites with tents and camp fires to modern educational centers with amenities indoors. From 1970 through 1976, the number of 4-H members who participated in camping increased by fifty percent in the nation, but as 4-H enrollments declined in 1977 camping participants decreased by fifteen percent (Wessel and Wessel, 1982).

The national 4-H camp is a major annual event in Washington, D.C. Outstanding 4-Hers from each state who have shown outstanding abilities and fitness for leadership were recognized at the National 4-H Camp.

In Virginia there are six 4-H camp centers namely:

- (1) The South West 4-H Center in Washington County
- (2) The West Central 4-H Center in Franklin County

- (3) The East Central 4-H Center in Appomattox County
- (4) The North East 4-H Center in James City County
- (5) The South East 4-H Center in Sussex County
- (6) The North District 4-H Center in Warren County

All the 4-H camps carry out similar activities. They utilize the natural resources around them for informal class activities. (Allen, 1983).

#### Community Resource Development Program

The Community Resource Development program usually called (C.R.D.) of the Cooperative Extension Service is a three-way partnership between the state land-grant universities, the U.S. Department of Agriculture and county governments. They share in planning and financing the extension work. The CRD programs help people to improve the communities where they live and work. The nature of community development is primarily that of education. It provides the public with the tools necessary to know what is best for their particular community. The community as a whole becomes educated and capable of tackling and solving its problems such as:

- Employment, income and economic improvement
- Local government organization, operation and finances, especially with regard to government-citizen relations
- Transportation, housing and law enforcement, energy, health
- Safe and dependable water supplies
- Comprehensive planning

- Environment and natural resources
- Recreation and tourism

The extension CRD programs can and do relate to all the above problems. About 55 percent of this assistance is provided by extension employees located at the county level, 20 percent of it by multi-county extension agents and specialists, and 25 percent by professionals at the land-grant universities.

In the state of Virginia the purpose of the CRD programs is to make the educational resources of Virginia Tech and Virginia State College available to help create the types of communities in which the citizens wish to live, work and play. The CRD program seeks to help a community be more effective in defining its needs and designing appropriate educational programs to meet those needs. It also sponsors programs that will contribute to citizen participation in community improvement activities.

Extension agents strive for maximum involvement with the locality in developing local plans of work and in implementing programs. Agents also work with voluntary associations and citizens in identifying problems, establishing priorities and in program implementation. Extension faculty provide educational leadership for local CRD programs and use the CRD plans as a guide in preparing their program plans. Extension specialists also are active in identifying educational needs at the state level and in conducting programs in cooperation with various governmental agencies and volunteer citizen associations. The faculty also use the input from these organizations and citizens in developing CRD programs (Personal interview with Dr. Lacy, CRD

specialist, 1982).

Extension agents provide the educational and technical base for helping people solve problems. The resulting demonstration technique is often used in working with community problems through active participation. More traditional education techniques such as workshops, meetings, and demonstrations are also used by agents conducting CRD programs.

The mass media, including radio, television and news releases, play an important role in implementing CRD programs. Some examples of CRD work are helpful in understanding this program area of Cooperative Extension work in Virginia.

1. Energy Task Force - At the request of the Fairfax Board of Supervisors, extension provided leadership in organizing an energy task force. Over 100 energy cost cutting clinics were held in the Fairfax area for over 5,000 learners.
2. Home Energy Saving -- A computer program was developed on the computerized management network for use by local extension agents to help citizens learn how energy could be saved in the home through improved insulation, caulking, weather stripping and other modifications in Virginia.
3. Developing Community Leaders -- In Franklin County, extension workers helped identify 27 key leaders and were instrumental in developing and conducting two workshops to help these leaders understand the community development process.
4. Community Beautification -- Extension personnel working with the city council and community leaders provided assistance to

the city of Alexandria in implementing a program of citizen involvement to plant flowers and shrubs throughout the city.

5. Land Use Planning -- At the request of the Pittsylvania County Board of Supervisors, educational meetings were conducted by extension personnel on county wide land use planning and zoning.
6. Planning Commission Training -- The Montgomery County extension office was active in organizing a training program for the Montgomery County Planning Commission members to help them better understand their responsibilities and approaches to their work.

#### Family Resources (Home Economics)

The family resource program, previously known as the home economics program, focuses on improving the quality of family and individual life, family financial management and nutrition. Home economics agents work with clientele in various programs.

In Virginia families live in diverse home and community environments and have diverse needs. The main purpose of the family resource staff is to conduct educational programs which will help individuals and families identify these needs and improve the quality of home and family living.

The program has eight major thrusts, namely:

1. Improved housing and home environment
2. Improved health practices
3. Improved resource utilization through management

4. Improved nutrition
5. Improved knowledge and skill related to clothing
6. Improved family relationships and human development skills
7. The expanded food and nutrition education program (EFNEP) for low income families
8. Improved knowledge in arts

Extension agents work with organized groups such as women's clubs, community action councils, agencies on aging, local government agencies, Farmers Home Administration and clubs like the Homemaker Club. They also work with various health associations and consumer groups and social services to develop and implement joint programs and to deliver specific program requests related to home and family living. Most agents with family resource responsibilities work with advisory councils or local planning committees who provide valuable program guidance. The faculty work with various groups organized at the state level to develop educational programs or upon request to serve in an advisory capacity.

The demonstration technique, workshops, meetings, television, radio, newsletters and publications are some teaching methods used by the Family Resource agents to teach the clientele the following topics:

1. Child abuse prevention
2. Nutrition education
3. Estate planning
4. Diets for athletes
5. Gardening
6. Health

7. Consumerism for elderly people
8. Family night
9. Child rearing practices
10. Food preservation
11. Whip inflation (cutting cost)
12. Wills and deeds
13. Leadership training
14. Public service announcements

### Training of Staff

Brunner and Yang (1969) state that there have been workshops conducted for extension administrators, for state leaders, supervisors, specialists, technicians, editors, for visual education workers, and for those engaged in extension research and evaluation. The scope of these workshops is always determined in cooperation with the participants, whose actual operational problems figure prominently in the content. They added that previously workshops for those working with farmers, home makers and youth have been the three major traditional aspects of extension work; however, food marketers, resource developers and others have been added recently. The authors concluded that training of workers for Cooperative Extension Service is essential due to the ever-changing nature of the needs and interests of its clientele.

Axinn and Thorat (1972) studied the training of extension staff in the United States. They said that as years passed and the nature

of rural population changed, the qualifications of the extension worker had to change. They noted that from the 1970's more persons with masters and doctors degrees were hired than prior to the 1970's. The authors suggested a number of training courses. They said, "To train prospective county agents, courses in history, philosophy and methods of extension or organizations are offered to third and fourth year undergraduate students in colleges. Students take these courses in addition to such related subjects as agricultural economics, rural sociology, agriculture and home economics." (Axinn and Thorat, 1972, pp. 100-101).

Federal legislation from 1964 through 1967 provided much of the financial means for employing paraprofessionals in extension throughout the country. Even today there are a number of organizations using paraprofessionals as a means of reaching those audiences with limited-resources (Federal Legislation, 1964).

Along with the employment of paraprofessionals comes supervision, training and evaluation. Gudridge (1972), in describing the inadequacy of paraprofessional training programs, maintained that the typical aide receives no training prior to employment. He pointed out that fewer than half of the aides, even after appointment, participated in in-service training programs.

In recent years, organized training programs have taken a variety of forms. Programs ranging from formalized sessions to incidental on-the-job training have been developed. The degree of formality, as viewed by Botherson and Johnson (1971), is determined by those conducting the program, as well as by the techniques and procedures

employed.

Brennen (1969) indicated that a balanced training program should include psychology, human development, and teaching techniques.

Harrison (1967) implied that while Brennen's stated areas of staff development are important, special attention should be given to necessary technical competencies that agencies expect of paraprofessionals. Primary focus should be on how individuals would be able to work together.

Paraprofessional training consists of three types: (1) orientation training, (2) in-service training, and (3) on-the-job training. Orientation training is designed to provide the paraprofessional with a clear understanding of extension's philosophy, specific functions of the job, and methods used in reaching and teaching extension audiences. In-service training is usually conducted by specialists at the state or district level and is coordinated by individuals with overall leadership responsibility for programs using paraprofessionals (McAfee, 1983).

A true mark of a professional extension worker is that he/she actively seeks help in solving his/her individual training needs in order that he/she may be a more effective extension employee. (Administrative Handbook, 1970)

### In-Service Training

The purposes of an in-service training program is to help extension agents gain additional knowledge and skills in a variety of program area needs. Major emphasis during these training periods is given for helping staff members understand and get acquainted with how to apply basic theories, principles and methods involved in developing

and carrying out effective extension education programs.

Extension agents are expected to express their felt needs for in-service education programs. Supervisory personnel at various levels have the responsibility of helping each extension agent to identify his/her training needs and plan for appropriate training sessions. An updated statement of operational procedures, a time table regarding in-service educational programs for extension agents, as well as a listing of non-credit and credit workshops and courses are made available to all extension agents. An extension agent is granted up to 15 days extension time annually to participate in in-service educational programs.

In addition to the formalized in-service education, extension agents are granted permission to participate in professional improvement meetings, conferences and seminars. There are no special in-service training centers available for this type of training, but seven states have in-service training programs which provide for training extension agents from across the nation. Generally, training programs are conducted on campus and in various parts of the state depending on where the nearest geographical area is to the majority of the participants. Many district offices and 4-H educational centers provide excellent facilities for in-service training programs. Subject matter specialists generally serve as members of the training teams for these in-service programs.

### Graduate Education

Advanced study opportunities are available for extension agents who have gained at least two years of experience as an extension employee. Each extension agent is expected to have a plan of "professional improvement" which leads to a masters or doctors degree. The total number of staff members who are granted leave to participate in advanced study programs during any given year will be dependent upon availability of other staff members to maintain the on-going extension programs at the operational level and the availability of financial support for those seeking educational leave. Many agents have completed master's degree programs as a result of their participation in the graduate education program.

### Qualifications of Staff

The qualifications of Cooperative Extension staff members in the United States ranges from doctoral degrees to a high school diploma. In Virginia the qualifications are as follows:

#### Dean:

In the Cooperative Extension Service organization, the dean is usually a person with a doctoral degree in the field of agriculture or a related field like adult education or extension education. He has many years of experience in an administrative or technical field.

#### Associate Dean:

The associate dean of Cooperative Extension usually has the same qualifications as the dean.

### Specialists:

The specialists are usually personnel with doctorate degrees and a sound experience in their field.

### District Chairman:

The district chairman is a technical staff member usually with a doctoral degree, or a masters degree with a long period of service in the field of agriculture, education or related field.

### County Chairman:

The county chairman and the extension agent are graduates of a university with a bachelors degree. Some, however, have a masters degree in agriculture, adult education, or a related field.

### The Technicians and Secretaries:

The technicians and secretaries usually have completed a two-year college program and may hold an associate degree. In some cases they may have a B.S. degree or M.S. degree. They may upgrade their education according to their needs and interests (Guideline Task Force, 1978, and Agricultural Extension Self Study Report, 1979).

## Communication Processes and Methods

### Used

The effective teacher or group leader must not only have at his command a variety of tools and methods of teaching but must know where to use them, when to use them, and how to use them. (William W. Reeder)

## Communication Process

The extension workers have a grave responsibility to communicate ideas with full knowledge of the power and ethics involved. Extension work consists of arranging situations in which the clientele may see, hear about, and do the things to be learned. The extension workers plan these situations so that the information or skill to be learned will be easily understood, interest can easily be developed, desire will be created and the opportunity for action on the part of the learner will be at hand.

The communication process has a specific segment known as the "adoption process." The diffusion process is the process by which an idea gets from its source of origin to its place of ultimate use. The "diffusion process" has five stages of development, namely, awareness, interest, evaluation, trial and adoption. The adoption stage is characterized by large scale and continuous use of the idea and it is the most crucial stage for the agents of change such as the extension agent (Rogers and Shoemaker, 1962). The author of *Adopters of New Farm Ideas* (1961) said that the rural people receive their information through many sources. Research has shown that the sources most used by farmers vary with the stages in the adoption or diffusion process. Some studies show that mass media are the most important in attracting awareness and interest; however, farmers say that they rely on friends and neighbors at all stages in the diffusion of knowledge. The characteristics of individual groups of adopters as found in these studies were classified as follows in order: (1) Innovator, (2) Early Adopter, (3) Early Majority, (4) Late Majority, and (5) Late Adopter (see

Figure 6). The general statement of this study resulted from research studies in a dozen states and foreign countries (Adopters of New Farm Ideas North Central Regional Ext. Publication, No. 13, 1961).

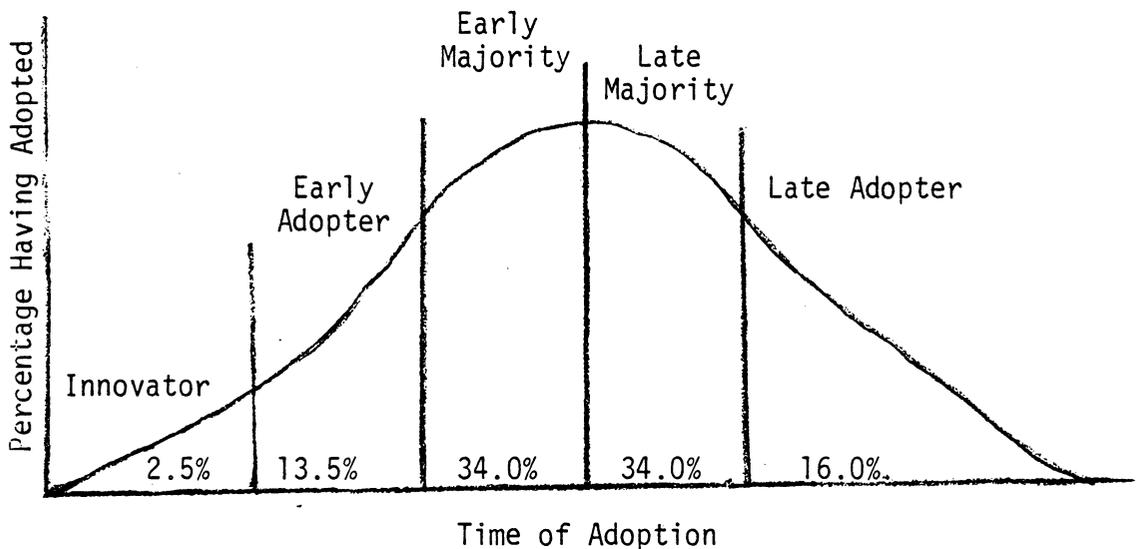


Figure 6. Distribution of farmers among five categories according to time of adoption. [From Adopters of New Farm Ideas, 1961.]

Extension educational programs developed with these processes in mind are more likely to succeed than are those not developed with these processes.

#### Methods Used in Extension Work

There are many ways through which people learn. The following are some of the ways through which extension clientele learn:

1. Seeing
2. Hearing
3. Doing

Before seeing, hearing or doing can take place, the learner must have the things to be learned called to his attention, be interested, have the desire or want, and have the chance to act.

The extension worker uses the following methods to teach their clientele:

#### Individual Contact Method:

##### 1. Result and Method Demonstration

Conducting demonstrations is one of the most important teaching methods used since the establishment of the Cooperative Extension Service.

Axinn and Thorat (1972) indicated that Ben D. Cook stated:

After over a half century of Extension work, the result and method demonstration continues to be one of the important methods. For the most part, result demonstrations are now used in situations that involve major changes in changing enterprises methods, habits, or facilities...practices materials or devices. The need is past in most areas, for result demonstrations to prove cooperative extension as a source of useful impartial and factual information. (Axinn and Thorat, 1972, p. 99).

##### 2. Farm and Home Visits

The farm and home visit is another effective teaching method in Cooperative Extension work, although it cannot be used widely because it takes a lot of time, money and energy. Farmers should be advised to visit the extension agent at his office so as to minimize the number of the agents' visits. Mass media methods should also be used to contact farmers widely so as to help teach those farmers who cannot be contacted personally.

Wilson (1955) in his study reported that farm and home visits account for 10.8 percent of the change in farm practices as a result of all extension teachings. He concluded that, "relative to their teaching methods, the cost of influencing adoption of an improved practice through farm and home visits is about 10 percent less than the average of all methods." He also noted that the farm and home visit method is the most basic of extension work. (Wilson, 1955, pp. 34-35).

### 3. Office Calls

Office calls involve direct personal contact either by telephone or in person between the farmer and the extension worker. Office calls reveal that the farmer in seeking the extension agent recognizes the extension agent as a teacher, a problem solver and a friend. The office call method of teaching farmers is low in cost and saves the agent's time.

### 4. Telephone Calls

Usually the extension agent spends some of his time each morning in the office answering and making calls. Extension studies have shown that the adoption of many practices are not associated with information received over the phone. The telephone calls as initiated by the extension agents are used primarily to arrange meetings and check progress. One percent of all practices adopted is accounted for by the use of telephone calls. However, the large number of telephone calls in and out of the extension office should be handled promptly, courteously (Wilson, 1955).

## 5. Correspondence

The author (Wilson, 1955) placed the letter received by the farmer from the extension agent higher in effectiveness than telephone calls. He said that it constitutes 1.1 percent change in farmers agricultural practices due to extension teaching. Discussions over the telephone may not be retrieved but written information can always be retrieved. Of course, important agreements should always be written down.

### The Group Method:

This includes results and method demonstration, lecture meetings, general meetings, group discussion, tours, trips and field days. These methods are more expensive than the mass media method. It requires travelling to the site and follow-up. This method establishes confidence in the minds of the farmers and extension agents. The major advantage is that many people can be reached at the same time. The method is cheaper than the home and farm visit method where farmers are contacted individually. The better educated and more progressive elements of the society, isolated nationalities and religious groups usually respond to group methods (Kelsey and Hearne, 1963).

### Mass Media Method:

Mass media method includes publications (bulletins, pamphlets, circulars and leaflets), news stories, radio broadcasts, television broadcasts, exhibits and newspapers.

Radio, television, newspapers and exhibits are likely to be used in working with part-time farmers and people living in suburbs and

cities.

Young mothers and the elderly who are unable to attend meetings or participate in group activities may effectively be reached by the use of circular letters, radios and television. The educated elements will respond to written materials. (Extension Teaching Methods, 1955).

#### Indirect Influence:

Indirect influence is the result of spreading information from neighbor to neighbor. The extension agent should encourage the farmers to report the results of the practices adopted. Farmers teach themselves in a chain reaction by the use of this practice.

#### Teaching by the Use of Local Leaders

Local leaders well-trained by the extension agents can use many methods of teaching farmers and others. This method is mainly used among youth clubs like the 4-H Club and the home economics clubs. Volunteer leaders are a good medium to enlarge extension coverage and increase the volume of extension teachings (Wilson, 1955).

### Reporting and Program Evaluation

Kelsey and Hearne (1963) defined evaluation in the Cooperative Extension Service as studies on what has actually been accomplished in extension work. They said that in extension the words "appraised" "evaluation" and "measurement" can be used interchangeably. They also stated "evaluation is a process by which the values of an enterprise are ascertained or an analysis by which one is able to understand and appreciate the merits or deficiencies of persons, groups, programs, situations, methods and processes". They finally said that evaluation can be viewed as a method by which how far an activity has progressed and how much further it should be carried to accomplish its objectives. (Kelsey and Hearne, p. 246, 1963).

Sabrosky (1946) stated that measurement or appraisal may take place at three points of attainment. The first point is before any change occurs - the behavior of the clientele before extension workers have done any teaching. The second is at any step in the progress of the people toward the ultimate goal or the objective. The third point for evaluation would be to measure the attainment of the final goal or the objective. One can evaluate whether certain teaching have been effective or not and under what condition through evaluation of the program. (Sabrosky, 1946).

Kelsey and Hearne (1963) enumerated some devices which can be used to evaluate progress toward an educational objective as follows:

1. Value scales (used to determine the values people place on things).

2. Attitude scales. (Show how people feel toward things).
3. Opinion polls. (Used to get peoples' opinions on various questions.
4. Knowledge and comprehension tests. (Used to determine if a person understands or can apply certain acquired knowledge.
5. Interest checks. (Used to find out, in what people are interested.
6. Skill or performance ratings. (Used to determine the amount of skill attained.
7. Adoption of practices. (Used to find out if certain things are being done, by whom, how many times, and mostly used in extension.
8. Case history. (Used a great deal in extension evaluation. This is a technique by which an individual club or farm is studied intensively and reported.

A new evaluation system known as Accountability/Evaluation (A and E) was developed in (1982) by the Virginia Cooperative Extension Service for the FY 1984-1987. It required that the state, district or unit will identify and report changes in clientele knowledge, planning, attitude, skills and aspirations. Program accomplishments will be made known to the extension advisory committee members, other discussion makers, key individuals, and the public.

During the evaluation phase, staff will determine the impact of the educational activities.

Extension staff will be required to submit an annual plan of work and evaluation plan. The evaluation data to be collected and the method to be used will be submitted

Major changes were suggested recently in the extension accountability and evaluation system across the country. The program component framework used for developing the state plans of work and annual reports in the Extension Management Information System (EMIS) will not be a part of the new Accountability and Evaluation System (A&E) instead, the major programs identified by each state will be central to developing plans of work. Four year plans of work will be utilized for the first time beginning July 1, 1983. The new A and E system will provide greater opportunity for program leadership at the federal, state and local levels. Every extension professional will participate in at least one impact study conducted at the federal, state or local level during each four year cycle. The Extension A&E council has been established to give national leadership.

In a book State Extension Plan of Work Report Guidelines (1983) the administrator of USDA stated that Extension is being challenged to identify and evaluate program results, impacts and consequences. She said that in order to respond to this demand the Federal and State partners have jointly established a new Accountability and Evaluation System.

The author pointed out that several new features should be noted as follows:

1. The priorities selected for national impact studies are

expected to provide solid evidence of Cooperative Extension impact.

2. The four-year plan of work cycle allows for greater depth in the planning stages.
3. The focus on major programs results.
4. More sophisticated reporting strategies whereby impact studies, accomplishment information and input information will be used for Accountability and Evaluation.

In another book A Report Prepared for the Extension Budget Guideline Task Force (1978), the editor enumerated the different types of reports rendered by the Cooperative Extension Service as follows:

1. Annual progress reports (Annual Narrative Report)
  - (a) Expended staff years by program area and program component
  - (b) Narrative report of accomplishment
2. Specially funded program reports
  - (a) 4-H urban expansion report
  - (b) 4-H enrollment report (4-H 237)
  - (c) Program development groups reports (council and committees)
  - (d) Pesticide program report
3. Annual Civil Rights and Equal Employment Opportunity compliance Report.
4. Administrative reports.

- (a) Smith-Lever Budget
- (b) Title V Budgets
- (c) Extension funds - Undrawn balance as of September 30
- (d) Report of space used
- (e) USDA Honor Awards Nomination
- (f) Annual Summary Retirement fund transaction
- (g) Financial report
- (h) Field work request
- (i) Certification of offset to Smith Lever Fund
- (j) Personnel racial data of new federal appointments
- (k) Personnel action notification
- (l) Clearance of data collection notification
- (m) Withholding and contribution
- (n) Penalty mail authorizations
- (o) Excess property utilization and disposal
- (p) Penalty mail survey

### Reporting

The process of gathering and sharing information and data in extension service is called reporting. The descriptions of the data are usually reported under suggested headings for ease in compiling summaries and finding items of interest. Reports put the extension worker in a better position to decide what is needed in the future. Some data are gathered (bench mark data) in different program areas and stored in the computer in files. The extension administrator with the help of his/her assistants develop the Annual Narrative Report.

The staff members also render monthly reports and other reports periodically as required by the chief administrators of the Cooperative Extension Service. All extension personnel at the state, district and county level must submit reports to their superiors regarding accomplishments made in relation to the plan of work. (Cooperative Extension Service, "Self Study Report, 1979").

The annual report of the Cooperative Extension Service provide a means by which program accomplishments and benefits can be described and made available to others. They serve as a means by which all the accomplishments of the Cooperative Extension Service can be made known to the executive and legislative branches of the government. The annual reports for Cooperative Extension Service serve as a basis for program management and budget development at the state and national level and as a means by which each state can benefit from the accomplishments of other states to improve their program management. Impact studies, input information, accomplishment information and civil rights information should be included in the annual report. (State Extension Plan of Work Report Guidelines, 1983).

### Program Evaluation

During the program year, all extension workers must work according to the written goals of the annual plan. Extension staff members work out a realistic division of labor so that everyone shares in the responsibility of carrying out the plan of work. All extension agents are expected to have complete understanding about the program and its process. Thus, during the implementation stage, the annual plan of work is executed.

Program evaluation actually is concerned with two types of evaluation:

1. Means evaluation - refers to a constant appraisal of the methods used and what was done at each step of the overall educational program activities;
2. End evaluation - deals specifically with what was accomplished as a result of the overall programming effort.

Another aspect of program evaluation includes the random selection of units for study by state and county extension agents for the purpose of reviewing the education programs as a whole. Both quantitative and qualitative facts of the program are studied in this type of comprehensive evaluation in Cooperative Extension Service. The reviewers evaluate the educational programs on the basis of time and effort spent on various activities and enterprises in order to observe the impact of the program (impact study). Evaluation results are communicated to key individuals and the public at large through a variety of methods, including reports, newsletter (etc.).

### Chapter Summary

The Cooperative Extension Service in the U.S. grew out of an historical situation. At first many societies and organizations were formed to promote agriculture. There was much legislation passed which established and supported Cooperative Extension Service programs. The most influential were the Morrill Acts of 1862 and 1890, and the Smith-Lever Act of 1914.

The success of the Extension Service may be attributed to the nature of the organization and its strong administration. The federal, state and local governments jointly finance, organize and administer the Cooperative Extension Service in the United States. The responsibilities of the personnel vary; however, they are related and interdependent to one another. There are four program areas of the Cooperative Extension Service, namely, the Agriculture and Natural Resources, 4-H, Family Resources and Community Resource Development. The staff of the Cooperative Extension Service are well qualified and frequently take part in in-service training, graduate education, seminars and conferences as a means of improving themselves and their service. Most land-grant universities in the United States offer training programs for the Cooperative Extension Service personnel. Much emphasis is placed on reporting and evaluation of programs.

There are many methods used by agents in extension work. Some of these methods are: mass media method, individual contact method, indirect influence method and teaching by the use of local leaders.

## Chapter 3

### THE AGRICULTURAL EXTENSION SERVICE IN NIGERIA

In my struggle for a peaceful tomorrow I don't mind the tractors, of an efficient system of agriculture; but I hate tanks and guns which destroy people, the greenness, shelters, animals and flowers of the world.

Food and shelter over every head, a cure for the ailing limbs of our days; and freedom from hunger, disease and for our minds is all I ask of Nigerian progress. (Francis O. Walson, 1983)

#### Chapter Introduction

In Chapter 3, the following elements of the Nigerian Agricultural Extension Service are explained: The Background and History, The Organization, The Administration, The Responsibilities of Personnel, The Financing, The Program Areas, The Training of Staff, The Communication Processes and Methods Used, and Reporting and Evaluation of Programs. The elements are studied at the federal, state and local levels where applicable. A summary of the elements studied is written at the end of this chapter.

#### Background and History

The birth of modern Nigeria is usually dated at 1900; however, the entity Nigeria was known to the British colonialists in the 1800's when they came to colonize what was then known as the Niger Coast Protectorate and Niger Basin (Helleiner, 1966).

Religious beliefs affect the Agriculture Extension Service in Nigeria. For example, in the northern and some parts of western Nigeria, where Islamism is the main religion of the people, pigs among

the livestock kept by farmers are forbidden animals and pork is not eaten by the Moslems. The eastern and southern portion are occupied mostly by the Christians and pagans, and they keep and eat all types of livestock. The pagans are the group of people who believe in the living spirits of their ancestors. They are usually found in the remotest parts of the country. Their beliefs affect agricultural extension practices. The pagans believe that the living spirit of their forefathers control the weather and the productivity of the soil. If their "gods" are appeased or pleased there will be plenty of food. Most of the pagans are farmers and most of them use traditional practices in farming; however, attempts are being made to get them to use modern practices (Furon, 1971).

Nigeria has two distinct seasons, namely, the rainy season and the dry season. Agricultural extension work is affected by the climatic conditions in Nigeria. In the rainy season mostly crop farming is carried out while during the dry season the farmers do harvesting, transportation, processing, storage and marketing of their produce. Livestock production is carried out on a large scale during the dry season, while crop farming is carried out but on a small scale since the scorching effect of the sun kills most of the crops. Much agricultural extension work is accomplished during the rainy season. Agriculture in Nigeria depends entirely on human power. Neither animal drawn tools, except wooden ploughs in Northern Nigeria, nor mechanical implements such as tractors are widely used by farmers. Chemical fertilizers and farm yard manures are not being used on any appreciable

scale by the farmers. Most farmers maintain the fertility of their land by a system of rotating bush with crops (Ogionwo, 1978). Crop yields are generally low due to poor farming technique used by the Nigerian farmers. This is brought about partly by insufficient numbers of trained agriculturists and an undeveloped system of agricultural extension service (F.A.O. Yearbook of Agriculture, 1972). The Agricultural Extension Service in Nigeria is making some efforts to improve the techniques used by the peasant farms at the present time.

Nigeria in the 1940's became an important producer and exporter of palm produce, cocoa, natural rubber, cotton and ground nuts (peanuts). These became the main cash crops of the nation earning foreign exchange. The staple food crops such as yams, rice, plantain, cassava, and vegetables were produced at a subsistence level. Hides and skins and timber were produced for local industries and for export (see Figure 7, Map of Nigeria showing agricultural resources on page 97). Animal husbandry consisted of cattle, poultry, goats, sheep, rabbits, and pigs which are left to wander on free range. Fish and other sea foods are harvested from the seas, rivers and streams which also water the hinter land. The Agricultural Extension Service is trying to improve the productivity of the farmers through farmer education programs.

Agriculture in Nigeria, as an industry, began to decline as a result of governmental change in priorities with the advent of the proceeds from mineral oil since the 1960's. The illiterate farmers were therefore left to manage their affairs alone with little or no attention from the government. The Agricultural Extension Service was neglected and received little funds for its work.



Nigerian soil is generally not fertile. In some areas where the soil is fertile, ample rainfall in the rainy season and too much heat from the sun in the dry season are limiting factors for effective agricultural production work.

Nigeria has an agricultural extension system in transition. The system is classified as a typical "British Colonial type" since it is an integral part of the Ministry of Agriculture.

The history of the development of agricultural extension in Nigeria cannot be discussed in isolation but must include the history of agriculture in Nigeria. This dates back to 1893, when Sir Claud Macdonald formed eight departments of government in Nigeria. One major department was for botanical research with its headquarters in Olokomeji in Ibadan. This department was interested in Agriculture and Forestry. Later, in 1905, the British Cotton Growing Association (BCGA) acquired a site, four miles square in Ibadan for the growing of cotton. This was intended to supply all the British textile industries with raw materials. The site was later renamed Moore Plantation after Sir Robert B. Moore, then High Commissioner for the southern protectorate of Nigeria. This cotton growing venture was later to fail as a result of poor feasibility studies. The result of such a failure was the conversion of the Moore Plantation to the Headquarters of the Southern Protectorate of Agriculture in 1910.

In 1912, Lord Lugard established the Department of Agriculture in Northern Nigeria. In June, 1921 following the amalgamation of Northern and Southern Nigeria, the departments of agriculture in the two directorates merged into a common body with O. T. Faulkner as the

Director of Agriculture (Onukwuba, 1980).

He carried out many policy reorganizations and set down a number of objectives to be achieved by the Department of Agriculture. These were as follows:

1. Production of export crops
2. Improvement and maintenance of soil fertility
3. Efficient marketing of agricultural produce
4. Introduction of Agricultural Education for the training of Nigerians
5. Establishment of the rudiments of the Agricultural Extension Service

Due to objective number 4, above, two important agricultural training schools emanated; one at Moore Plantation at Ibadan, the other at Samaru near Zaria in Northern Nigeria, in 1921 and 1927 respectively. These schools trained agricultural extension workers and are still in operation.

The first extension workers carried out advisory services. Their functions were directed towards the improvement of traditional farming through the Native Authority (NA) organization. In the northern part of Nigeria there were two British specialists in the areas of botany and chemistry and in the south they had an entomologist and a pathologist, all providing information for the farmers.

In Nigeria by then most of the extension work was carried out by men on horses in the north and on bicycles and sometimes on foot in the south and consisted of extensive touring of the villages (Axinn and Thorat, 1972).

The major function of the early senior extension workers was teaching the rural farmers ways of fitting the major export crops into their farming systems. Later on, indigenous junior agricultural assistants went around convincing farmers to accept the practices of the expatriates. There were later changes in Faulkner's agricultural policies but they continued until 1954 when Nigeria had a federal system of government resulting in regionalization. There evolved regional ministries of agriculture in the east, north and west, and a school of agriculture was established in the east in the same year. The regions each paid more attention to agricultural extension, but they were still doing more of services than teaching, e.g. distribution of inputs. Later there were training institutes for three months or six months training programs in Agricultural Extension techniques which were established in each of the regions. These institutes trained extension workers with less than five years of successful high school education.

The Federal Ministry of Agriculture was established in 1964. It was then in charge of economic development and research (Helleiner, 1966). In 1968, with the establishment of states, instead of regions, there emerged state ministries of agriculture all related to one federal Ministry of Agriculture. In some states like Anambra State, the Ministry of Agriculture has been reorganized and named the Ministry of Agricultural Extension and the Ministry of Food Production. Thus the organization of the Ministry of Agriculture has been in transition since it was started in 1893 (Axinn and Thorat, 1972).

The extension part of the ministry has been involved in supply, education, marketing, research and the direct production of agricultural

products. The main aim of the Nigerian extension service is to improve the conditions of the small farmers in all ways.

There was no national legislation passed to establish and develop the Agricultural Extension Service in Nigeria.

### Organization

Activities performed in an organization are affected by the structure of the organization. An organization calls for unity of command ("one boss for each group of employees"); assignment of a function to one unit, authority to act commensurate with the responsibility assigned, limited span of management (number of positions supervised by a manager), and other organizational patterns (Scott, 1969).

An organization is viewed as a process of balancing demands for individuals and work group performance, enabling performers to work together as effective as possible in the achievement of the overall objectives (Mintzberg, 1979).

The organization of the Agricultural Extension Service in Nigeria is under the affairs of the Federal Department of Agriculture and the regional (state) Ministries of Agriculture and Natural Resources. The two bodies at the rural farmer level do the same work of improving the productivity of the peasant farmers of Nigeria (Helliener, 1966).

Axinn and Thorat (1972) said that the organizational structure of the Nigerian Ministry of Agriculture varies from region to region. The Ministry of Agriculture in Nigeria has the following branches or sections:

- a. Extension Division

- b. Veterinary Division
- c. Administration Division
- d. Forestry Division
- e. Training Division
- f. Agricultural Engineering Division
- g. Research Division
- h. Produce Inspection Division
- i. Fisheries Division
- j. Farm Settlement Division
- k. Information Section (Government White Paper, 1976)

Each division has its federal and state or regional organization.

### Federal

In a personal interview with the agricultural officer in charge of poultry extension work in Nigeria (Mr. Oruwari), now on study leave at Virginia Tech, the agricultural officer said that the Director of Agriculture is the chief controller of the Federal Ministry of Agriculture. He is stationed at the F.D.A. office in Lagos (capital of Nigeria). There are four zonal offices under the control of the Assistant Director or Chief Agricultural Officer (CAO). The zonal offices are located at Jos, Ibadan, Kaduna and Enugu. There are field offices in all the states of the federation. The four zonal offices are so chosen to cover the four geographical divisions of agriculture in Nigeria. They are, namely, the Southeastern Division, the Southwestern Division, the Northwestern Division, and the Northeastern Division (see Figure 8, map of Nigeria showing the FDA Agricultural

Geographic Divisions on page 104). The divisions are made up of states and are controlled by the Principal Agricultural Officers (see Figure 9, Organization of the Agricultural Extension Service at the Federal level on page 105). The directives on the operations of various FDA offices emanate from the headquarters in Lagos and from the four zonal headquarters.

### State

The Ministry of Agriculture and Natural Resources is organized in all the states in Nigeria. As part of the parliamentary type of government, they are headed by the Permanent Secretaries who are associated with the Ministers of Agriculture who are political appointees (Axinn and Thorat, 1972) (Annex "B", Agricultural Extension Service, 1982).

The Nigerian Ministry of Agriculture and Natural Resources is divided into eleven branches, namely:

- a. The Agricultural Extension Division
- b. The Fisheries Division
- c. The Agricultural Engineering Division
- d. The Produce Inspection Division
- e. The Farm Settlement Division
- f. The Research Division
- g. The Forestry Division
- h. The Training Division
- i. The Information Section
- j. The Veterinary Division

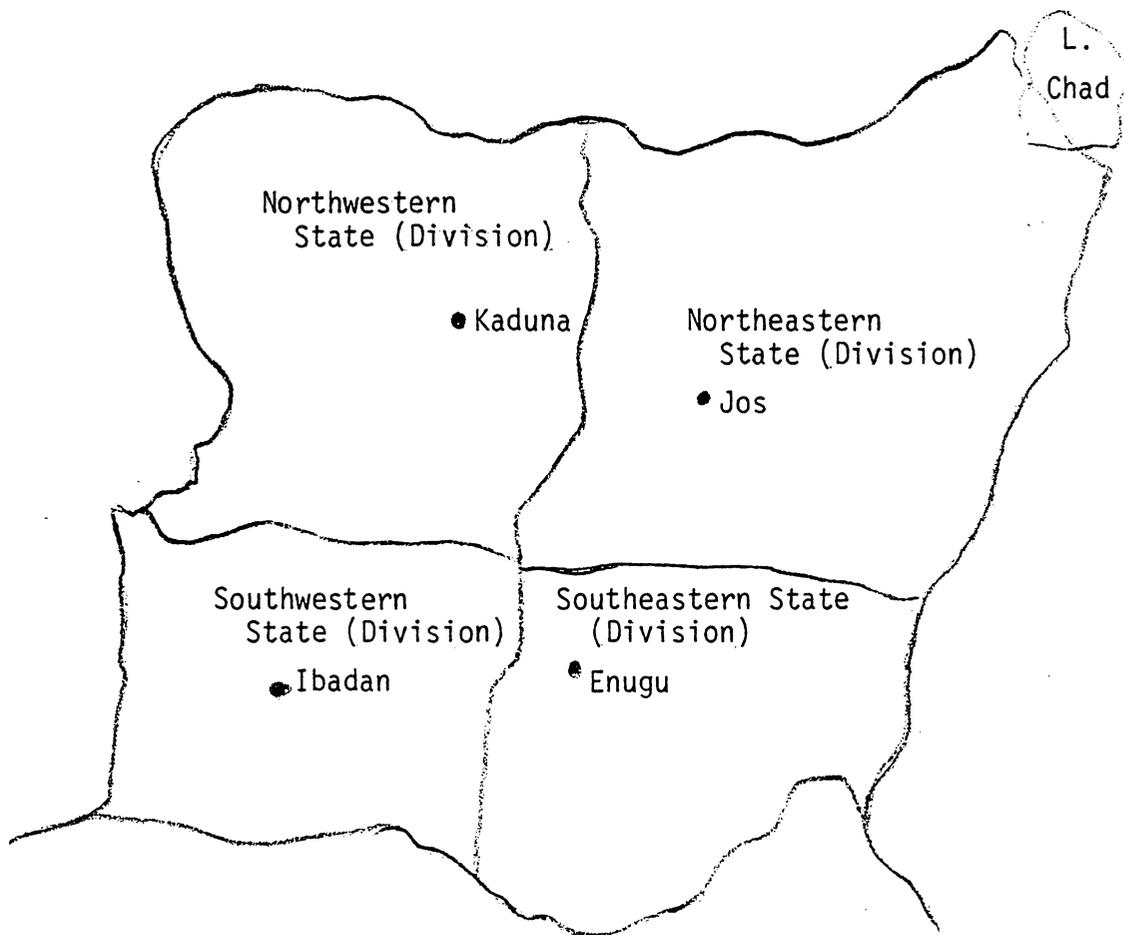


Figure 8. Map of Nigeria Showing the FDA Agricultural Geographic Divisions

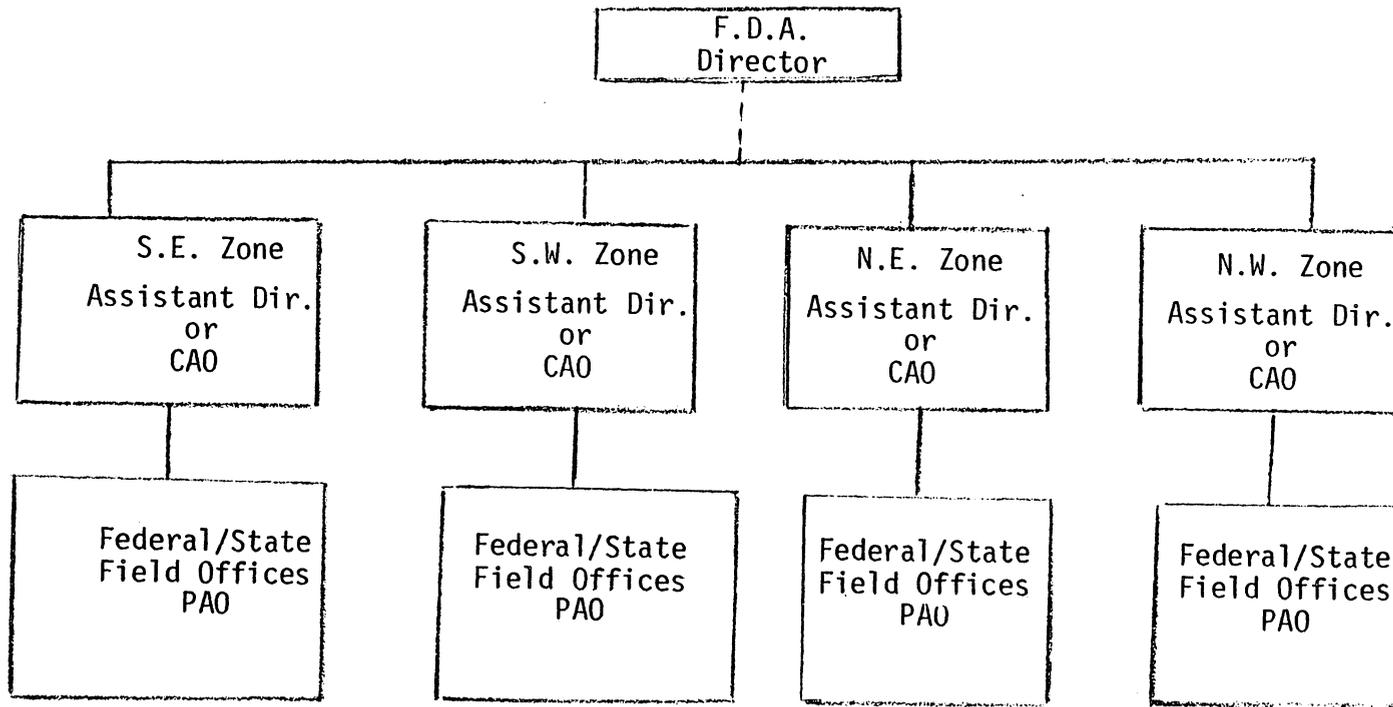


Figure 9. Organization of the Agricultural Extension Service at the Federal Level

k. The Administration Division

(See Figure 10, The Organizational Chart for the Anambra State Ministry of Agriculture and Natural Resources on page 107.)

The Agricultural Extension Service Division is further subdivided into programmatic areas such as Food Crop Development, Young Farmers Club (Y.F.C.), Home Economics, Livestock, Supervised Agricultural Credit, Horticulture, Training, Root Crops, Tree Crops, and Statistics and Records (see Figure 10, The Organizational Chart for the Anambra State Ministry of Agriculture and Natural Resources on page 107).

The Chief Agricultural Officer (CAO) is in charge of the Agricultural Extension Service at the state level. He reports to the Permanent Secretary of the Ministry of Agriculture who is housed at the state headquarters (capital). The states are further divided into zones. The Principal Agricultural Officers are usually in charge of programs at the zonal level of agricultural extension work. They are assisted by senior agricultural officers and agricultural officers who are usually placed in charge of provinces and divisions to organize the Agricultural Extension Service programs. (See Figure 10, The Organizational Chart for the Anambra State Ministry of Agriculture and Natural Resources on page 107.)

### Local

At the local level, the Agricultural Extension Service is organized at the Divisional Agricultural Offices in the states. The divisions are made up of counties and villages. The Agricultural Officers (AO's) are usually in charge of the organization on the

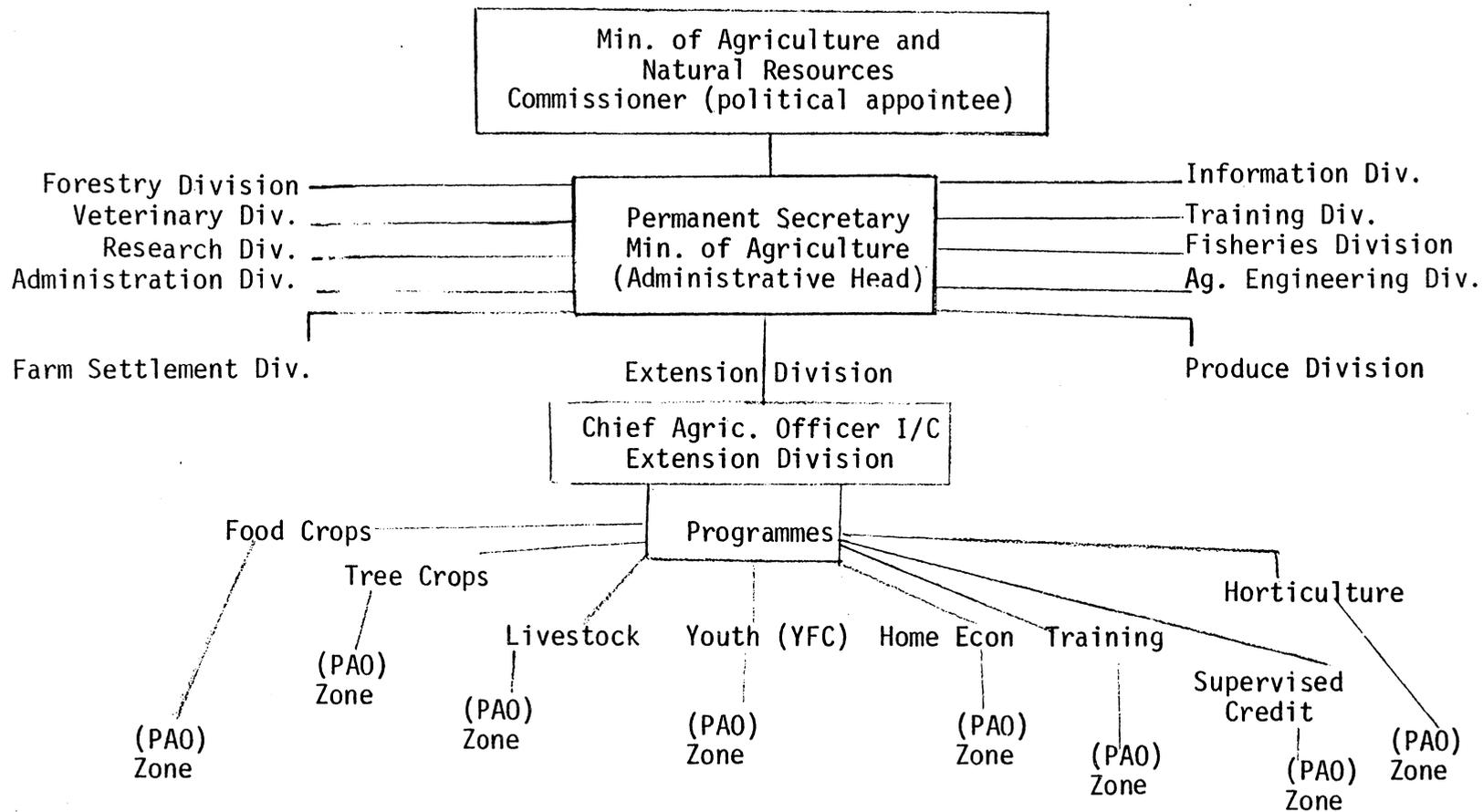


Figure 10. Organizational Chart for the Anambra State Ministry of Agriculture and Natural Resources

divisional level. They are assisted by the Senior Agricultural Superintendents (SAS), Agricultural Superintendents (AS), Assistant Agricultural Superintendents (AAS), Agricultural Assistants (AA), Field Overseers (FO), or Agricultural Demonstrators (AD's) and Nurserymen (NM) and Machine Operators (MO's) to carry out programs of general extension work. The Senior Agricultural Superintendent and the Agricultural Superintendents are usually placed in charge of a specific program in the divisions. They are assisted by the Assistant Agricultural Superintendents, AA's and FO's or AD's who are placed in charge of the counties.

The nurserymen and machine operators are housed at the divisional agricultural offices from where they provide support services to the agricultural extension workers in the field (village farms and government farm). (See Figure 11, The Organizational Chart for Local Level Agricultural Extension Service on page 109.

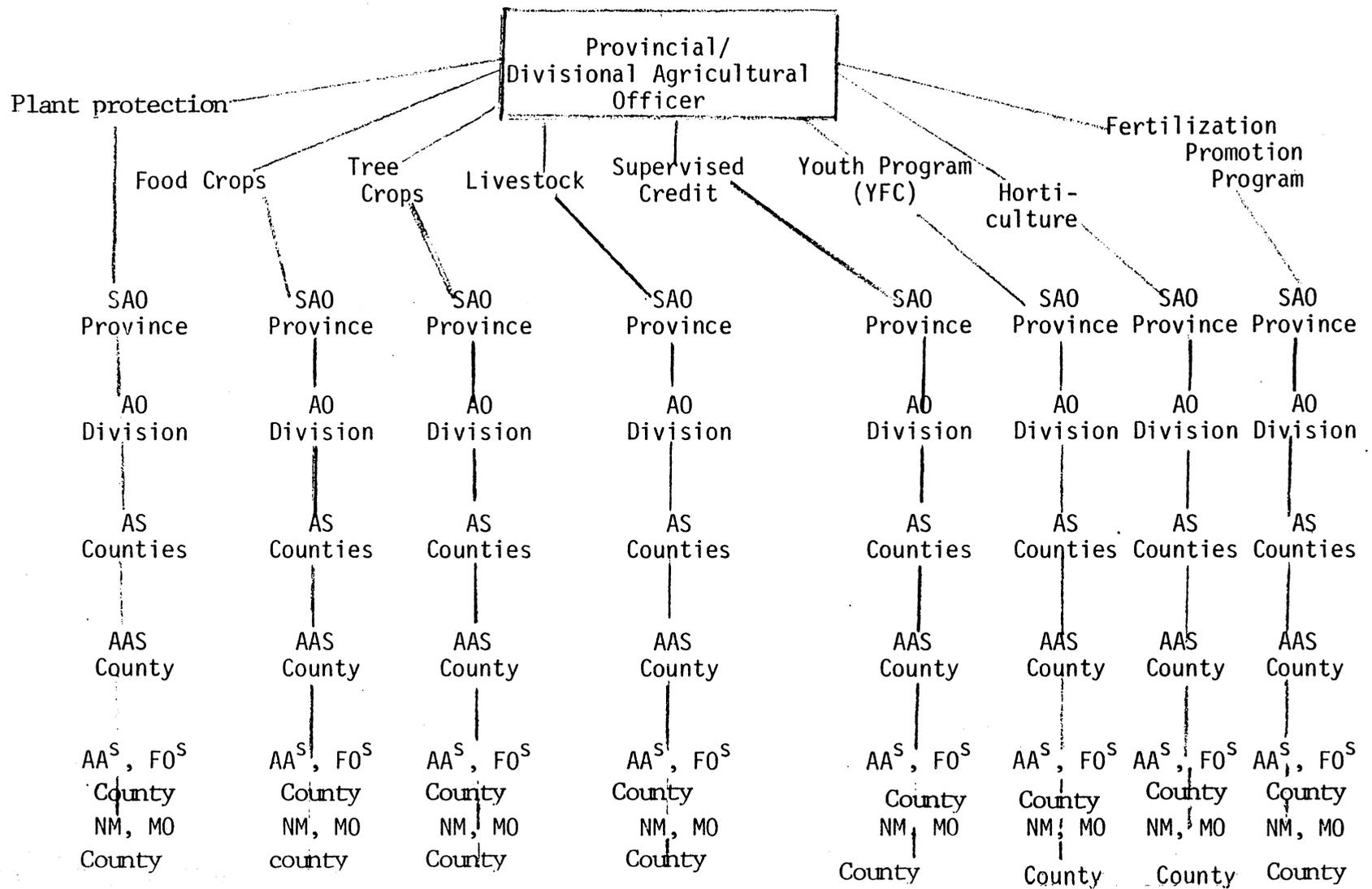


Figure 11. Organizational Chart for the Local Level Agricultural Extension Service

### Administration

Axinn and Thorat (1972) said that the Agricultural Extension Service in Nigeria is carried out in zones, provinces, divisions, county council areas, towns and villages. They indicated that extension work is administered by the Permanent Secretary, the Chief Agricultural Officer, some Principal Agricultural Officers, Senior Agricultural Officers, Agricultural Officers, Agricultural Superintendents, Assistant Agricultural Superintendents, Agricultural Assistants, Field Overseers, and Agricultural Demonstrators.

In a personal interview conducted with Oruwari (1982), the Agricultural Extension officer in charge of poultry extension in Nigeria, he said that the machine operators, the nursery men and clerical officers are other ranks of personnel who assist to carry out extension work. He indicated that in every Agricultural Extension office there are two types of staff members, clerical and technical, who jointly administer the Agricultural Extension Programs.

#### Federal

Onukwuba (1982) said that on the federal level, the Director of Agriculture is the chief administrator of the Federal Ministry of Agriculture. He administers extension work from the national headquarters in Lagos with the assistance of some zonal officers housed at the four zonal head offices in the four geographical divisions of agriculture in Nigeria. These zonal officers are known as Chief Agricultural Officers or Chief Controllers of Agriculture. At the federal offices located in zones within each state are some managers or

Agricultural Officers in charge of the federal agricultural programs. They are designated Federal Principal Agricultural Officers. They assist the Chief Agricultural Officer in administering the Agricultural Extension Service in the zones. Other ranks of Agricultural Officers such as the Senior Agricultural Officer in charge of federal programs and Agricultural Officers in charge of federal programs assist the Principal Agricultural Officers to administer federal level Agricultural Extension programs. In all federal offices there are some secretarial and clerical staff who assist to administer the Agricultural Extension work. They are the Executive Officers, Clerical Assistants and Messengers and they do secretarial work. (See Figure 12, the Administrative Chart Showing Federal Administrators of the Agricultural Extension Service on page 112.)

### State

Axinn and Thorat (1972) did a study of Agricultural Extension Education system in Nigeria. They said that the system at the state level is headed by a Commissioner for Agriculture who is a political appointee and reports the affairs of the Ministry of Agriculture to the ruling political party. The next senior officer, starting from the top, is the Permanent Secretary, who is an administrative person. He administers all policy matters. The Permanent Secretary is assisted by the Assistant Permanent Secretary, some Executive Officers, Clerical Assistants, and Messengers to take care of the clerical work.

The authors said that the next in rank is the Chief Agricultural Officer, who is designated as the C.A.O. He is the chief technical

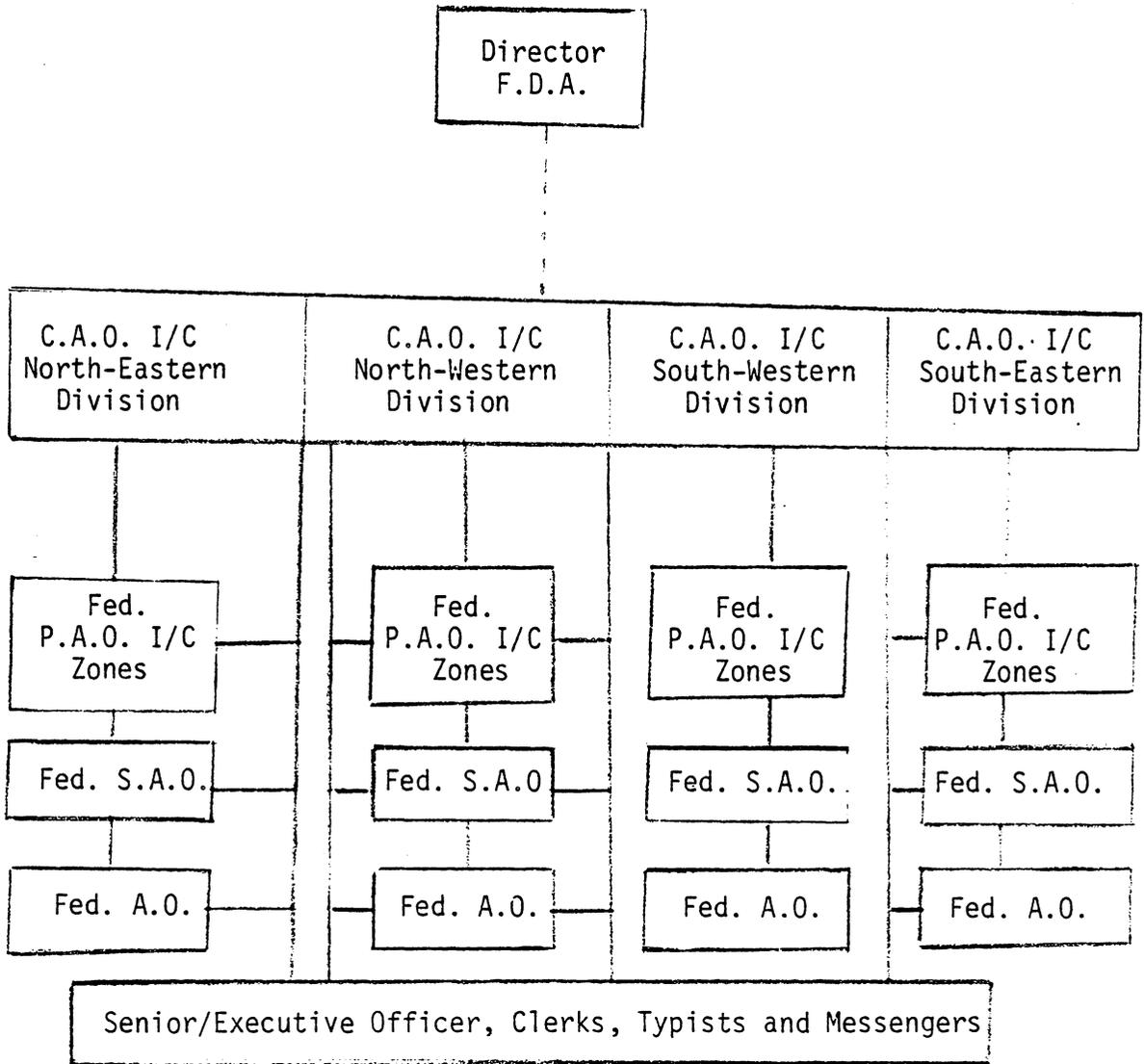


Figure 12. Administrative Chart Showing Federal Administrators of the Agricultural Extension Service

staff who is in charge of the state's agricultural extension work. He reports to the Permanent Secretary of the Ministry of Agriculture. The Chief Agricultural Officer is stationed at the state capital and he administers the extension work in the field.

The C.A.O. works with many other senior and junior technical officers lower in rank than himself, at the headquarters, although he is assisted directly by the Deputy Chief Agricultural Officer, and the Principal Agricultural Officers (see Figure 13, the Administrative Chart of State Agricultural Extension Service on page 114).

Through a personal interview conducted with Dr. Akpan Ekpo, who is the author of "The Crop Sector Performance in an Oil Based Economy, The Case of Nigeria," and is now teaching at North Carolina A and T State University in Greensboro, it was learned that the Agricultural Extension Service is organized in all the states of the federation. Each state is autonomous and does not report all of its activities to the Federal Director of Agriculture except in some cases where federal projects are carried out. Ekpo said that the administrative structure of the Nigerian Agricultural Extension Service is very complex. He indicated that under each Agricultural Extension office are many technical and a few clerical officers. Some duplicate their duties in some areas of the administration of Agricultural Extension work. He cited an example of an Executive Officer and an Agricultural Officer (technical staff) who jointly carry out some secretarial duties like procurement of funds, keeping of records, compiling of reports and taking care of personnel records in the same office. He enumerated the most common technical ranks of administrators of Extension Service

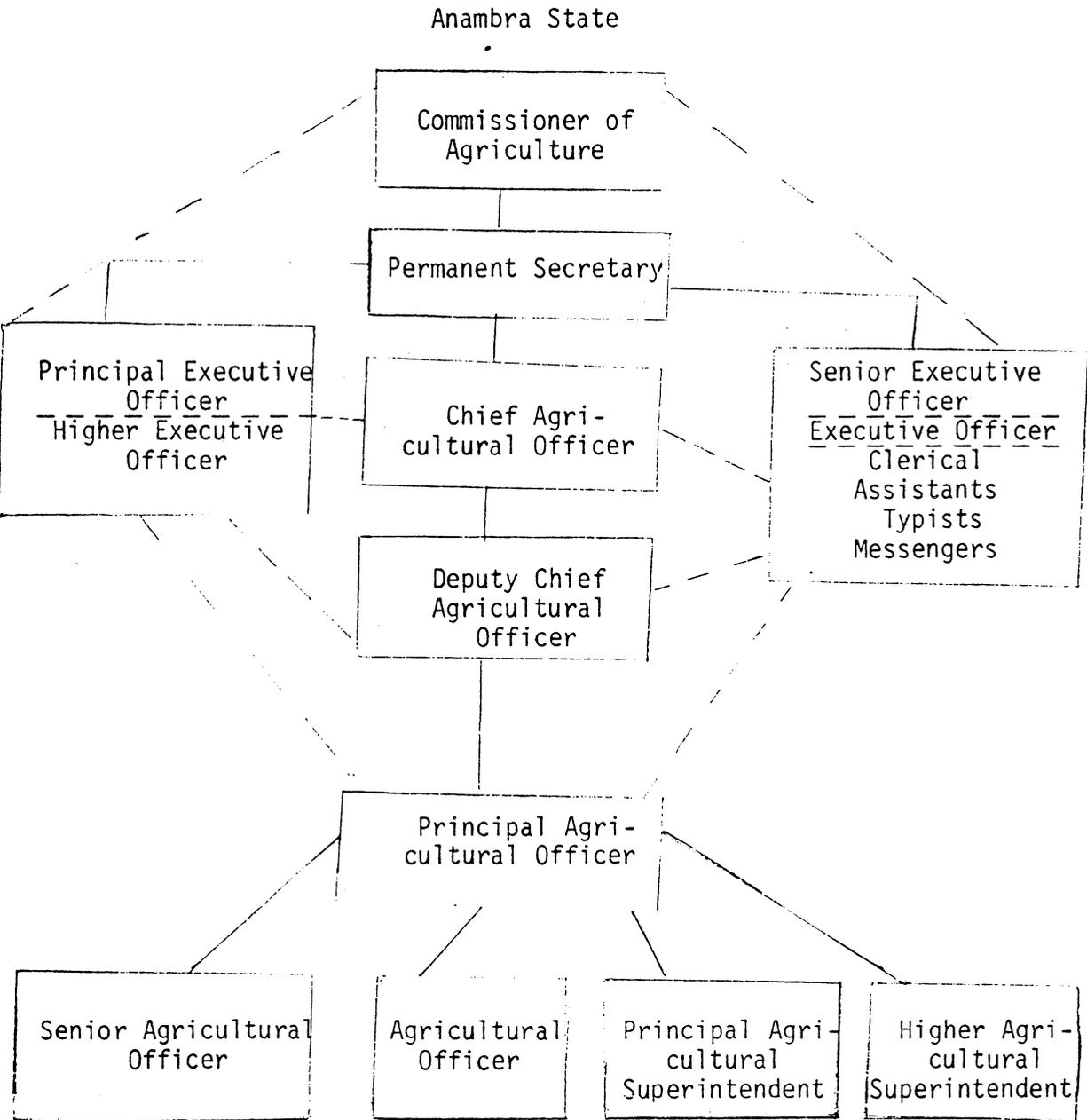


Figure 13. Administrative Chart of State Agricultural Extension Service

within the state, starting from the topmost personnel as follows:

(a) Technical staff members\*

- (1) The Federal Director of Agriculture (D.A.)
- (2) The Chief Agricultural Officer (C.A.O.)
- (3) The Principal Agricultural Officer (P.A.O.)
- (4) The Senior Agricultural Officer (S.A.O.)
- (5) The Agricultural Officer (A.O.)
- (6) The Senior Agricultural Superintendent (S.A.S.)
- (7) The Agricultural Superintendent (A.S.)
- (8) The Assistant Agricultural Superintendent (A.A.S.)
- (9) The Agricultural Assistant (A.A.)
- (10) The Field Overseer (F.O.)
- (11) The Nursery Men/Laborers
- (12) The Machine Operators

(b) Secretarial and clerical staff\*

- (1) The Permanent Secretary
- (2) The Principal Executive Officer (P.E.O.)
- (3) The Senior Executive Officer (S.E.O.)
- (4) The Executive Officer (E.O.)
- (5) The Assistant Executive Officer (A.E.O.)
- (6) The Chief Clerk (C.C.)
- (7) The Clerical Assistants (C.A.)

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\*Within some ranks above are different grades of officers such as Higher, Chief, and Principal which are designated as such to indicate seniority. Within one rank the different grade levels do virtually the same administrative work (see Appendix D and E).

(8) The Typist

(9) The Messengers (See appendices D and E).

Zone There are four geographic divisions or Agricultural Extension Service zones administered by the Principal Agricultural Officers.

### Local

#### Province

The Senior Agricultural officer usually administers the Agricultural Extension work in the provinces. The provinces are made up of divisions. The S.A.O. is usually assisted by some Agricultural Officers, Agricultural Superintendents, Agricultural Assistants, Field Overseers, Agricultural Demonstrators and some Clerical Officers. The S.A.O. reports to the Chief Agricultural Officer (Telephone interview, B. C. Walson, 1983).

#### Division

The Agricultural Officers (A.O.'s) are usually in charge of divisional extension work. They administer the general extension work in the counties and villages within the division. The Agricultural Officers are assisted by the Agricultural Superintendents, the Assistant Agricultural Superintendents, the Agricultural Assistants, the Field Overseers and Agricultural Demonstrators to carry out extension work (Oruwari, 1982). (See Figure 14, Administrative Chart for the Local Administration of Agricultural Extension Service on page 117.)

There are secretarial or clerical staff like the Executive Officer, the clerical assistants, the typists and messengers who assist the Agricultural Officer and other technical officers to administer

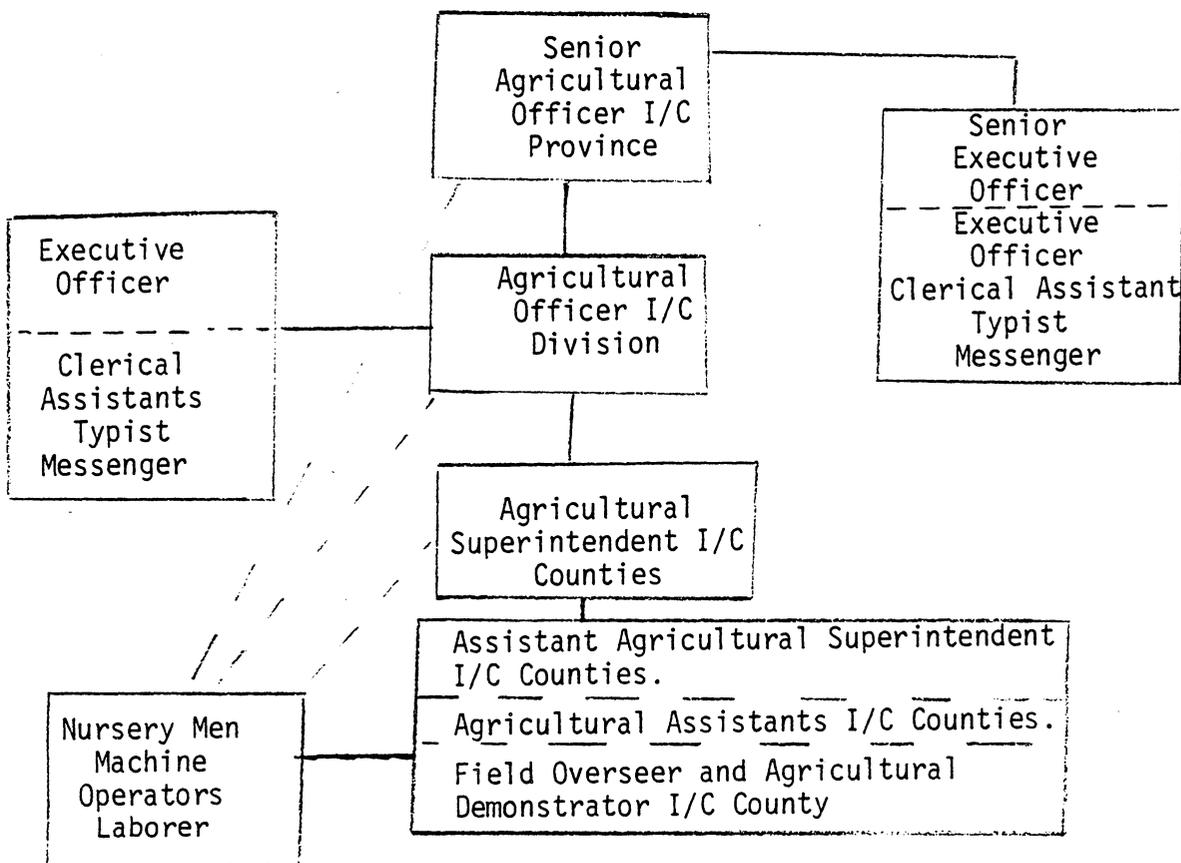


Figure 14. Administrative Chart for the Local Administration of Agricultural Extension Service

Source: Modernizing World Agriculture, p. 155, 1972.

the Agricultural Extension Service in the division and counties. He indicated that in some counties there are county extension offices; however, they are organized by the divisional agricultural officer.

### Responsibilities of Personnel

The duties of Agricultural Extension Service are carried out by the federal and state government staff members. The duties are dependent and supplement one another in order to reach the farmers effectively.

#### Federal

##### The Director

The Director of the Federal Ministry of Agriculture is the chief administrator of all federal programs carried out by the Agricultural Extension Service in Nigeria. His responsibilities are to:

1. Make policies for the administration of federal agricultural program
2. Coordinate federal programs and projects
3. Delegate duties to his assistants
4. Account for the expenditures of the Federal Ministry of Agriculture
5. Develop programs with the aid of his assistant
6. Approve funds for federal Agricultural Extension work
7. Appoint Chief Agricultural Officers to take charge of the agricultural geographical regions of the federation

8. Appoint Principal Agricultural Officers to take charge of federal zone extension work.
9. Hold periodic meetings with staff members.
10. Maintain a good working atmosphere for carrying out federal extension work in the nation.
11. Report to the president of Nigeria on federal Agricultural Extension work.

The Chief Agricultural Officer is in Charge of a Geographical Division.

His duties are to:

1. Supervise federal programs in his geographical division
2. Delegate some of his duties to his assistants
3. Account for federal programs
4. Hold meeting with his staff members
5. Write reports
6. Help develop federal agricultural program
7. Report to the federal Director of Agriculture
8. Write recommendations for promotions or termination of federal staff members under him

The Principal Agricultural Officer is in Charge of the Federal Zone Agriculture Extension Service.

The responsibilities are to:

1. Supervise federal programs at the zonal level
2. Report to the Chief Agricultural Officer in charge of federal programs
3. Delegate some duties to his assistants

4. Help develop programs
5. Render reports to the Chief Agricultural Officer
6. Write recommendations for promotion or termination of staff members under his jurisdiction
7. Hold meetings with the staff members under him
8. Attend meetings held by other higher federal officers

### State

Kincaid et al. (1968) said that the Commissioner for Agriculture is a political appointee. He reports the affairs of the Ministry to the ruling political party. They indicated that the Permanent Secretary is the overall head of the State Ministry of Agriculture and National Resources of which the Agricultural Extension Division is an integral part. They said that most of the responsibilities of the Permanent Secretary are delegated, however, he makes the final decisions, signs documents and he is accountable for the delegated responsibilities. They also indicated that the Permanent Secretary is not a technical personnel.

The authors enumerated some of the most common ranks of technical personnel found in all the states of Nigeria as follows:

- (1) The Chief Agricultural Officer
- (2) Principal Agricultural Officer
- (3) Senior Agricultural Officer
- (4) Agricultural Officer
- (5) Agricultural Superintendents

He noted that below the rank of the Agricultural Superintendent are some junior technical officers who are usually assigned with the main responsibility of working with the clientele.

Through a personal interview conducted with the Agricultural Officer in charge of poultry extension work in Port Harcourt, Nigeria, Mr. Boma Oruwari now on study leave at Virginia Tech, the Agricultural Officer, explained the duties of different personnel at the state level as follows:

The Permanent Secretary (P.S.)

1. Delegates some of his responsibilities to his assistants
2. Makes final decisions on matters concerning the State Ministry of Agriculture and Natural Resources
3. Makes policy for the Ministry
4. Hires personnel
5. Tours the state to meet the farmers occasionally
6. Terminates the appointments of bad personnel
7. Dictates working conditions of staff such as salary, etc.
8. Develops the administrative plans for the Agriculture Extension Service
9. Arranges for salary
10. Attends meetings for the promotion and improvement of Agriculture Extension
11. Holds meetings with the staff members
12. Reports to the Commissioner of Agriculture periodically

13. Creates a good working atmosphere for Agricultural Extension work in the state.

The Chief Agricultural Officer (C.A.O.)

1. Is responsible for all the activities of the Agricultural Extension Service in the state
2. Organizes the Extension Service
3. Plans programs with the help of his assistants
4. Holds periodic meetings with his staff
5. Attends state meetings organized by the Administrator (Governor) of the state
6. Supervises the Agricultural Extension program in the state
7. Renders reports to the Permanent Secretary and to the Federal Director (for federal programs)
8. Develops programs
9. Recommends staff members for promotion or demotion and transfers
10. Appoints senior technical staff to their positions
11. Formulates and carries out policies for the technical staff
12. Delegates some of his responsibilities to his assistants
13. Solicits funds for carrying out Agricultural Extension Service
14. Organizes training programs for professional improvements
15. Attends state conferences and seminars and attends conferences overseas
16. Represents the Agricultural Extension Service on functions held on the state level.

Zone

## The Principal Agricultural Officer

The P.A.O. is the next person in rank to the C.A.O. His duties are delegated by the C.A.O. and are to:

1. Serve in the absence of the C.A.O. as a Deputy Chief Agricultural Officer
2. Plan programs at the zonal level
3. Organize Extension Service on zonal level
4. Help the C.A.O. in carrying out his responsibilities as already indicated under the responsibilities of the Chief Agricultural Officer (see the responsibilities of the C.A.O. on page 122).

Province

Through a telephone interview with one of the former Senior Agricultural Officers for Agricultural Extension in Anambra state, Nigeria, the retired S.A.O. Mr. B. C. Walson said that the Senior Agricultural officers are usually placed in charge of Extension Service in the provinces. He explained the responsibilities of the S.A.O. as being to:

1. Supervise Agricultural Extension work in the province including the divisions under his jurisdiction
2. Hold periodic meetings with the staff members
3. Attend state meetings held by the Chief Agricultural Officer
4. Render reports to the Chief Agricultural Officer
5. Help plan the program

6. Delegate responsibilities
7. Organize extension work in the province
8. Organize inservice training programs for junior staff members
9. Maintain good public relations in the province
10. Arrange for lands with the natives for government projects
11. Approve the applications of subsidy farmers in the province
12. Arrange for funds for extension activities in the province
13. Attend Agricultural Extension meetings and meetings held by the natives for the promotion of farming
14. Organize agricultural shows
15. Organize farmers field days in the province
16. Write yearly recommendations for the promotion or termination of staff members
17. Represent the Agricultural Extension Service in functions held on the provincial level.
18. Transfer extension workers to the stations he feels most appropriate and effective for extension work
19. Redress the grievances among the staff
20. Sign documents on matters concerning the extension work in the province
21. Account for the expenditures of funds for programs and projects carried out in the division
22. Supervise the clerical staff members in the office.

Division

The Agricultural Officer is usually placed in charge of Agricultural Extension work at the division level. His responsibilities are to:

1. Coordinate the activities of the extension staff members in the counties
2. Make frequent supervisory tours
3. Render reports to superior(s)
4. Arrange for the acquisition of land for government demonstration projects and farms in the division and counties
5. Make final decision for the selection of innovative farmers
6. Write annual recommendation reports for the staff members
7. Transfer staff as deemed necessary
8. Supervise the clerical staff members in the office
9. Attend meetings held by the Chief Agricultural Officer at the state capital
10. Hold periodic meetings with the staff in the division
11. Attend agricultural meetings held by the natives
12. Organize farmers cooperatives in the division
13. Hold farmers field days
14. Hold field demonstration days with the farmers
15. Delegate responsibilities to staff members
16. Sign documents pertaining to the affairs of the Agricultural Extension Service in the division
17. Attend agricultural conferences in the state

18. Represent Agricultural Extension Service in functions carried out in the division (Walson, 1983).

#### The Agricultural Superintendent (A.S.)

The A.S. is the lowest in rank among the senior technical officers.

The A.S. assists the A.O. to carry out his responsibilities in the field. His responsibilities are to:

1. Make supervisory visits to the county staff members daily
2. Write reports on activities
3. Direct the lower ranks of personnel in the field
4. Help to plan and administer extension work in the counties and villages
5. Help the A.O. to select innovative and subsidy farmers
6. Take charge of special programs in the division like the youth program
7. Carry out demonstrations on farmers' plots
8. Write plan of work every month
9. Attend agricultural staff members' meetings
10. Act for the Agricultural Officer when he is absent
11. Maintain a good public relation with the lower staff members, the farmers and the community
12. Publicize Agricultural Extension programs
13. Assist the A.O. in administering the Agricultural Extension work

County

The Assistant Agricultural Superintendent (A.A.S.), the Agricultural Assistant and the Field Overseer

This group of personnel carry out similar responsibilities. They are junior technical staff members and usually work with the farmers directly. The A.A.S.'s carry out the responsibilities of the A.S.'s as indicated above in some divisions which do not have an Agricultural Superintendent as one of the staff members.

Their responsibilities are to:

1. Carry out demonstrations on farmers' plots
2. Teach the farmers new methods of farming
3. Recommend subsidy farmers to the Agricultural Officer
4. Publicize agricultural extension programs
5. Help farmers solve their home, community, and farm problems
6. Develop and maintain good public relations
7. Train and make use of innovative and contact farmers
8. Organize the Young Farmer's Clubs (Y.F.C.)
9. Help the laborers and machine operators in problems that may arise in their extension work
10. Identify and report farmers' problems for research
11. Assist farmers in obtaining financial assistance like credits and subsidies
12. Carry out campaigns in order to publicize the agricultural extension programs and encourage families to participate

in agricultural extension

13. Write monthly reports which are submitted to the Agricultural Officer in charge of the division
14. Help to sell government agricultural farming inputs such as fertilizer and insecticides to farmers
15. Advise the clientele on their farm, home, and community problems
16. Help the nursery men and laborers to solve problems that might arise in their field work
17. Develop and maintain good public relations
18. Convince farmers to adopt new practices
19. Prepare a monthly plan of work and itinerary
20. Attend divisional and county Agricultural Extension staff members' meetings
21. Identify farmers' needs and problems
22. Help to organize and publicize field days in their division

#### Machine Operators (M.O.)

The machine operator is a technician who operates engines or non-powered machines like the hand sprayers for spraying, processing and manufacturing of materials. His responsibilities are to:

1. Supplement the work of the plant protection extension staff
2. Operate agricultural machines
3. Render reports
4. Attend meetings for the Agricultural Extension staff members

5. Maintain good public relations with the farmers
6. Teach farmers how to spray their farms
7. Carry out demonstrations on farmers' plots
8. Help advertise and sell agricultural chemicals and equipment

#### Nursery Men and Laborers

The nursery men and laborers work on government demonstration farms. Their responsibilities are similar and are to:

1. Carry out routine cultural operation in the government nursery and farm
2. Use modern methods of farming in the farms and nurseries
3. Keep farm records
4. Render reports monthly or as required by the Agricultural Officer
5. Help to sell agricultural produce from the nursery
6. Harvest the produce from government farms and nursery
7. Report on the farm and nursery as matters arise
8. Maintain good public relations with Agricultural Extension clientele

#### Financing

Four Nigerian authors, Wright, Frags, Mbim (1981) and Akuazaoku (1981) have the same ideas on problems of Nigerian agricultural financing. They indicated that the following are the problems of agricultural financing:

1. The use of outdated methods of farming making financing unattractive to sponsors
2. The laws governing the land tenure system in Nigeria making productive farming very difficult (e.g. the use of tractors)
3. The low esteem attached by others to farming in Nigeria
4. The low revenue accrued from agriculture and the high revenue earned by petroleum

They indicated that in 1960-66 the food crop production index was up by 6.7 per annum. From 1966-1975, the index declined at an annual rate of 1.4% due to poor financing. However, in the late seventies and early eighties agricultural financing has improved. Federal, state, and local authorities and private international and indigenous contributors have increased their interests and efforts in financing Agricultural Extension work in Nigeria (Wright and others, 1981). Agricultural Extension is financed mainly by the federal and state government. The world bank finances forestry extension work. Funds from the local authority (local government), donors and sales from agricultural produce are used to finance the Extension Service; however, these funds are usually meager and inconsistent.

### Federal

Under the Federal Government policy, a lot of emphasis is placed on agriculture and natural resources, hence the introduction of different schemes and special programs like the Food Technology transfer scheme, the Green Revolution, the National Accelerated Food Production Program and the Operation Feed the Nation Program. The allocation for

the fourth year National Plan 1981-1985 shows that there was an increase of funds voted for the agricultural sector.

The agricultural sector budget represents about thirty percent of the total national budget since 1981 fiscal year (see Appendix 2) (Federal Ministry of National Planning, Lagos, 1981). The Agricultural Extension Service receives more money than any other branch of the Ministry of Agriculture (Kincaid, 1968).

In addition to money allocated by the federal government, Agricultural Extension Service receives special funds in some cases of emergency from the federal government. The federal ministries of agriculture in the states also contribute some funds for the administration of federal programs.

### State

The state government allocates funds from the state treasury to help carry out extension work. Agricultural Extension Service has farms where it produces and markets produce. The funds raised are used to finance state agricultural extension work although the funds are usually small.

### Local

The local government helps to finance Agricultural Extension in Nigeria through funds raised from taxes in the local government areas. These funds are usually meager and are not always available.

Donors

Some voluntary organizations like the Food and Agriculture Organization of the United Nations (FAO/UN), Y.W.C.A., National Council for Women Societies (N.C.W.S.), Cooperative Societies, Universities, and International Bank for Reconstruction and Development (I.B.R.D.) and Nigerian banks help to finance agriculture in Nigeria. These organizations and institutions are private donors who give aid in cash and/or kind (specialists, materials, etc.) for the financing of farming in Nigeria.

Program Areas

Axinn and Thorat said, "If doctrine is defined as the broadest kind of rationale for the existence of an organization, one could say that the doctrines for the extension programs in Nigeria were quite similar in 1966-1967." They cited two examples for program similarity in Nigeria as follows:

(1) In Eastern Nigeria, one of the functions of the Agricultural Extension Service is to conceive, organize, and conduct extension programs designed to increase agricultural productivity and income and to promote a more rewarding life for rural people.

(2) In Western Nigeria, one of the functions is to raise the level of living and income of the farming population.

As Kincaid pointed out:

Numerous other activities have also been undertaken as part of the extension operations in Nigeria. Production programs for cocoa (especially spraying for disease and pest control),

cotton, groundnuts, maize, poultry, rice and rubber have received major emphasis in one or more regions. Rehabilitation schemes for oil palm (tree crop) has been implemented in the East and West, respectively. (Kincaid, Jr., 1968, p. 26).

The program activities were many and varied. They tended to be planned at the top level of the ministries and then sent down through official communications to the field worker (Axinn and Thorat, 1972).

The Extension Division of the Ministry of Agriculture and Natural Resources in Nigeria has the following program areas:

1. Food crops
2. Tree crops
3. Home economics
4. Young Farmers' Club (Y.F.C.)
5. Livestock
6. Horticulture
7. Other integrated programs such as fertilizer promotion program, supervised agricultural credit program, and seed multiplication program, plant protection, etc.

#### Food Crops Program

The food crops program is geared towards the production of enough food crops as a weapon against malnutrition, disease and the reduction of food imports from other countries. The government's main strategies are the establishment of the National Accelerated food production program, the large scale farms, River Basin development projects, as well as various rural integrated projects.

Under the Food Crops Programs are projects such as annual crops projects, seed improvement projects, gardening projects, spraying projects, storage projects and plant protection projects.

The Federal government's large scale food production projects are executed through the National Grains and Root Crops Production companies both of which were established in 1975 to produce, process, store and market such food grains as rice, millet, maize, guinea corn and sorghum; yams cassava, potatoes and other root crops. In Niger River Basin food crop projects, cowpea, groundnuts, sorghum, maize and millet are being cultivated. The government has the National Accelerated food production program scheme as the cornerstone for the country's push towards self-sufficiency in staple food production. Extension agent works with farmers in the areas of supply of materials production and education (Third National Development Plan, 1975-80).

#### Tree Crops Program

There are various types of tree crops produced in different parts of Nigeria. In the midwest and western part of Nigeria cocoa and rubber are produced. In the southern portion oil palm and cocoa are the main tree crops grown. The Agricultural Extension Division carries out tree crop rehabilitation schemes so as to encourage farmers to establish plantations of these permanent tree crops. Projects such as Tree Crop Nursery projects, and plant protection projects are carried out. Farmers who operate tree crop plantations receive subsidies in the form of cash and kind (Helleiner, 1966) and (Third National Development Plan, 1975-1980).

### Home Economics Program

The Federal Department of Agriculture (FDA) in collaboration with the Food and Agriculture Organization of the United Nations (FAO/UN) in 1974 initiated the project "Home Economics Planning for Rural Development in Nigeria" with a view of setting up a Federal Home Economics Unit which shall coordinate all the home economics extension services in the country. Axinn and Thorat (1972) indicated that in early 1967, home economics teams were located in selected divisions of Northern Nigeria to carry out home economics extension programs.

The home economics program in Nigeria has the following aims:

- (a) Effective child rearing practices, based on the situations in the rural areas
- (b) Encouragement of rural women to pool their resources through cooperative societies and small scale industries with a view to increasing family income
- (c) Development of community resources which can enhance improved family well being
- (d) Reduction of urban migration
- (e) Promotion of handicraft
- (f) Improvement of home management and family economics
- (g) Promotion of abundant food production and good nutrition
- (h) Encouragement of the use of appropriate clothes
- (i) Promotion of human development
- (j) Improvement of the health of the people
- (k) Education of families on birth control methods.

(Nigeria F. D. A. Workshop, Feb., 1977)

### Young Farmers Club Program

The Young Farmers' Club Program is an out-of-school agricultural education program for boys and girls between the ages of nine years and twenty years, designed to provide training in agriculture, leadership and citizenship. The philosophy of the young farmers is "learning by doing." It is a total youth development program which was started in the Eastern part of Nigeria in 1963. The Young Farmers' Club is modeled after the 4-H Club of America.

The objectives of the program are as follows:

- (a) To teach boys and girls improved farming and home economics practices and related subjects
- (b) To help give the necessary dignity to agriculture as an occupation
- (c) To help young people to establish sound farming enterprises
- (d) To help raise the standard of living of rural people
- (e) To provide an opportunity for self-expression
- (f) To help farm boys and girls develop their leadership ability
- (g) To make boys and girls better citizens
- (h) To provide the necessary recreational activities that will make for enjoyable rural living
- (i) To develop agriculture as a means of strengthening national economy

The factors influencing the enrollment in YFC are:

- (1) Interest in communal farming and individual farming
- (2) Parents' attitude toward farming

- (3) Family background
- (4) Availability of Y.F.C. organization information
- (5) Availability of land and money

Factors considered by extension workers in carrying out YFC programs are:

- (1) Needs of members, parents and community
- (2) Practicability of Y.F.C. projects
- (3) Time of the year
- (4) Adaptability of the program to the people
- (5) Funding
- (6) Culture of the people

Problems identified in Y.F.C. organization are:

- (1) Lack of interest in farming by the youth
- (2) Difficulty in getting effective leaders
- (3) Lack of parental interest
- (4) Finance
- (5) Land availability for projects
- (6) Availability of volunteer leaders

Organization of Y.F.C.

Membership is voluntary. It is open to boys and girls between the ages of ten and twenty-five. Members from a club elect their own officers using democratic methods and select their own projects based on their needs, interest and resources. Each club must have at least ten members. A club must have a project and each individual must have one project. A record must be kept for all projects. Each club must

also have two volunteer leaders namely a club organization leader and a project leader. Each club must hold monthly meetings. The club year is completed in December and reorganized in January.

### Projects

There is no limit to the size of the project. Projects carried out include gardening, livestock, crop farming, home economics projects including handicraft and cookery, rural development and good citizenship such as the construction of roads in the rural communities (East Central State Ministry of Agriculture, Y.F.C. Booklet, 1977).

### Livestock Program

This program is still in the early phase of establishment. The livestock program includes projects such as beef production, dairy production, piggery, poultry, livestock research and veterinary services and grazing research and pasture development. The program was allocated a total of ₦344.046 million for the 1975-80 plan period. There are establishments in the areas of cattle ranches, rehabilitation of livestock, provision of marketing and distribution infrastructures, feed and pasture development and the provision of essential services and infrastructure (Third National Development Plan, First Progress Report 1975-1980, Planning Office, Lagos, Nigeria, 1980).

### Beef Production

At the federal level, cattle ranches are established by the Federal Department of Agriculture and assisted by the world bank. The

projects are not yet fully operational. States, federal and private ranches have been identified and development plans have been provided for the ranches under the North-East Livestock Company, Western Livestock Company and the National Livestock Production Company. Trypano-tolerant Ndama cattle have been procured for the private and public ranches from foreign countries.

There are pastures established in different states. Imo and Anambra states in the eastern portion have 16 hectares of pasture at Adada Cattle Ranch, while 6,912 cattle were handled at the Ezilo/Nkalagu Livestock Project. Kano state in the north established an artificial insemination laboratory and sheds for the rehabilitation of pregnant cows and heifers while Bendel state in the midwest developed 600 hectares of pastures at the Oria Ranch which has 400 cattle. In Kwara State the Borgu Cattle Ranch was established and stocked with 150 cattle of the Keteku breed. The Cross River State acquired 240 hectares each at Adadra and Uyat Enyin for livestock breeding (Federal Ministry of Economic Development, 1980).

#### Dairy Production

Dairy projects are new in the nation. The F.A.O. and Federal Government have organized training courses on milking processing. There are a few dairy ranches across the nation. The Freisian, Brown Swiss, Sokoto Gudali and Bunaji breeds are the main types of dairy cows found in the country. Few dairy plants have been installed in the nation for the processing of milk (Federal Ministry of Economic Development, 1980).

### Grazing Reserve and Pasture Development

This project has had some problems in its establishment such as:

- (a) Identification of suitable areas
- (b) Demarcation of suitable areas
- (c) Development of infrastructure - water, pasture, etc.
- (d) Surveying and mapping of demarcated boundaries of suitable areas

There are presently some elementary and intermediate surveying and cartographic draftsmen who are working on the problem of identification, surveying and demarcation of suitable grazing reserves. The Federal Government has assisted some states to obtain some pasture seeds from Australia for multiplication and distribution in 1977.

### Poultry Projects

The nation has Federal and State Poultry Projects which have been established and are being developed. Broilers, eggs and turkeys are produced across the nation, and farmers and citizens are supplied with day-old chicks for rearing and eggs and meat for consumption. The Federal Department of Agriculture and the state have trained poultry experts to work with the local farmers. Some poultry demonstration centers are established and the poultry scheme has been introduced for the improvement of poultry production in the nation (Third National Development Plan, First Progress Report, 1975-1980).

### Piggery Projects

Piggery projects exist in the southern half of the country but are almost nonexistent among the Northerners whose major

religion is Islamism. There are piggeries in Imo, Anambra and Kwara states where farmers are encouraged to embark on pork production (Third National Development Plan, First Progress Report, 1975-80).

### Horticulture Program

The Horticulture Program in Nigeria is designed to encourage and help the peasant farmers in producing plenty of fruits and vegetables. The agricultural extension horticulture workers sell vegetable seeds and help the vegetable garden farmers to obtain seeds from the "Market Gardens" located at various parts of the country. The Extension Division sometimes gives out free seeds and seedlings to encourage the farmers to engage in horticulture. Farmers are encouraged to establish gardens in the urban areas as well as in the rural areas. This program is also planned to encourage low income peasant farmers to reduce their expenditure for food and obtain nutritional meals at the same time.

The horticulture program in Nigeria also promotes the planting of flowers and shrubs for home beautification; however, the peasant farmers are mostly concerned with planting familiar horticulture plants like tomatoes, onions, peppers, spinach, watermelons, carrots and other indigenous vegetables. A total of about 250 hectares of citrus, 60 hectares of pineapples and bananas and 120 hectares of various types of vegetables were established by the State Governments in the first year of the Third Year National Development Plan (1975-80). In addition to these new establishments, about 24,000 fruit and vegetable seedlings were distributed to farmers across the nation (Third National Development Plan, First Progress Report, 1975-80).

## Farm Inputs for the Horticulture Program

In this area, government activities are directed at providing fertilizer, pesticides, improved planting seeds and seedlings, farm machinery and equipment, extension services and some infrastructures.

## Other Integrated Programs

Axinn and Thorat said that the total program included agricultural information programs, supervised agricultural credit programs, plant protection programs, fertilizer promotion programs, soil conservation programs, agricultural economics programs, rural women's programs, and training programs. The authors said, "But, looking at the programs functionally, there seems to have been a continuing growth in the numbers and the kinds of services performed." (Axinn and Thorat, 1972, pp. 162-163).

## Training of Staff

In the field of training the extension workers, the F.D.A. and the M.A.N.R. work hand in hand to achieve the required goal of providing sound and knowledgeable extension workers.

There are many colleges of agriculture in the states some of which are federally owned and others state owned.

A new institute, Agricultural and Rural Management Training Institute (ARMTI) and cooperative training schools were introduced in the late 1970's and in early 1980's for training extension staff. The only type of specialized schools of agriculture are veterinary schools which train junior agricultural workers for veterinary work (Afaamefuna, 1982).

Kidd (1968) conducted a study of a group of 126 technical staff members in Western Nigeria supported by 17 clerical staff. He indicated that about one-quarter of the staff had a high school education. Thirty percent had received formal agricultural training and over half had received some short-term agricultural training. He noted that the training of technical staff for all the ministries of agriculture posts in Nigeria were conducted in special schools run by the Federal and the State Ministries of Agriculture.

Butler (1969) indicated that, of the trainees of the school of agriculture, seventy-six percent had completed their West African school certificate prior to beginning their non-degree agricultural training. Eighty-nine percent of the respondents in his study indicated that they had farm background. Butler said that the most common method of teaching the extension staff in training was by lecture, allowing the trainees time to write every word in their notes. The author also indicated that the trainees memorized the materials taught to them rather than study "why" in the materials presented and do practicals. Thus the author believed that the training was less than adequate as practical preparation for the extension work ahead.

Axinn and Thorat (1972) enumerated the subject matter content of the training programs at the junior intermediate level (Agricultural Assistants) in the schools of agriculture found in Nigeria as follows:

general agriculture, (extension, field demonstration, government procedure, farm center or work station management, agricultural economics, and farm management, office routine, and records); crops, soils, animal husbandry (including elementary physiology, anatomy, nutrition, management breeding and health), surveying and engineering, agricultural science, botany, zoology,

chemistry, and physics. The students successfully completing the program were awarded certificates.

The authors also said,

At the senior intermediate level for (Agricultural Assistant Superintendent or Agricultural Superintendent) a diploma was issued. The subject matter there included horticulture and agronomy, extension, agricultural engineering, farm economics, farm center management sciences (botany, agricultural biology and agricultural chemistry), animal husbandry and poultry, and field experimentation. (Axinn and Thorat, 1972, p. 159)

### Inservice Training

The training of the technical staff for all ministry of agricultural posts in Nigeria was conducted mainly by the schools of agriculture and the universities. However, some staff are sent overseas for inservice training. The F.D.A. and the state ministries organize different types of inservice training programs in the form of meetings, conferences, agricultural shows, demonstrations, workshops, seminars and crash courses in which the agricultural extension agents are invited to participate.

The main aim of the inservice training programs is to give the extension agent the up-to-date knowledge and skills needed to carry out extension work effectively.

### Graduate Education

The staff of the Agricultural Extension Service are occasionally promoted and sent to do graduate education overseas or in Nigerian universities. Many Agricultural Extension technical staff have been awarded scholarships to attend a university of their choice to obtain

a masters or doctorate degree.

### Qualification of Staff

James M. Kincaid, (1968) carried out a research study on staff qualification and training in the field of agriculture and related subjects at Michigan State University. He indicated that the Permanent Secretary is the head of all the staff of the Ministry of Agriculture and Natural Resources in Nigeria. He is usually a university graduate with at least a bachelor's degree in administration or a related field, and has many years experience in administration.

#### The Chief Agricultural Officer

Kincaid (1968) identified the next person as the Chief Agricultural Officer, designated the (C.A.O.). He is usually a university graduate with at least a bachelor's degree in a field of agriculture, and usually has many years of experience in agricultural extension work and has attended many inservice training activities overseas and at home. He is familiar with all reliable resources for effective extension work. He has a thorough knowledge and background about the philosophies, objectives, policies and organization of the agricultural extension system. He has the capability of evaluating the impact of the extension program and is knowledgeable in the field of adult education and has a good knowledge of human relations.

#### The Principal Agricultural Officer

Oruwari (1982) said that the Principal Agricultural Officer designated the (P.A.O.), is the next officer in rank. He is usually a

university graduate with a bachelor's degree in a field of technical agriculture. The P.A.O. must have gained many years of experience before having been promoted from the rank of an Agricultural Officer to the rank of (P.A.O.) accounted for by a successful term of service. However, in recent times an employee with a doctoral degree in agriculture or a related field may rise to the rank of a (P.A.O.) in a shorter time than one with a bachelor's degree. He must have a knowledge of adult education and a strong philosophy of extension and education.

#### The Senior Agricultural Officer

Oruwari (1982) also said that the Senior Agricultural Officer is usually a university graduate with a bachelor's degree in a field related to agriculture. He is usually promoted from the rank of an agricultural officer, nevertheless, in recent times a university graduate with a doctoral degree in agriculture or a related field could be employed directly in the post of an (S.A.O.). The (S.A.O.) has a good knowledge of human relations and the extension organization. He must also be knowledgeable in all subject matter areas such as: Agriculture and Natural Resources, Young Farmers' Club Organization, rural development and home economics.

#### The Agricultural Officer

Kincaid (1972) said that the Agricultural Officer designated the (A/O) is a new university graduate with a bachelor of science degree in any field of technical agriculture. He has a good knowledge of all subject matter areas as well as a good knowledge of extension work,

staff organization and farm management. The Agricultural Officer could be promoted to the rank of the Chief Agricultural Officer after a long term of successful service, after serving first as Senior Agricultural Officer; second as Principal Agricultural Officer and third as Deputy Chief Agricultural Officer.

#### The Agricultural Superintendent

Kincaid (1972) and Butler (1969) identified the Agricultural Superintendent as the next rank below the Agricultural Officer. He is usually promoted from the rank of Assistant Agricultural Superintendent after many years of successful service and/or a diploma course (training at the School of Agriculture in Nigeria). The staff member usually has five years of high school education plus a two-year diploma course. He could be promoted to the post of Senior Agricultural Superintendent after many years of successful service and the completion of the appropriate inservice training programs. He must have a good knowledge of general agriculture, and a good knowledge of how to organize, implement and supervise agricultural programs. He is trained to be a good public relations officer and teacher of the farmers. The Agricultural Superintendent is the lowest in rank among the senior staff of the Extension Division.

Butler (1969) and Kincaid (1972) said that a lower rank than the Agricultural Superintendent is designated as the (A.A.S.) or the Assistant Agricultural Superintendent. The A.A.S. usually has had five years of successful high school education plus a two-year diploma

course in one of the schools of agriculture or a university. He could be promoted to the rank of Agricultural Superintendent after a long period of successful service and an additional one year diploma course.

#### The Agricultural Assistant

The Agricultural Assistant (A.A.) rank is a junior intermediate staff position. The person usually has had five years of high school education and a one year diploma course at the School of Agriculture.

The Agricultural Assistant has a good knowledge of farm management and public relations. He also has some knowledge in the area of cultural practices and the use of modern equipment and techniques in farming.

#### The Field Overseer and Agricultural Demonstrator

The next staff rank to the A.A. is the field overseer designated (F.O.) or the (A.D.), the Agricultural Demonstrator. These individuals are not required to have completed successfully five years of high school education. They have a little agricultural training at the farm institutes in general extension work, oil palm, cocoa, and rubber planting and processing techniques. The (A.D.) and (F.O.) have a good knowledge of public relations and a little knowledge of all subject matter areas, and programs such as plant science, animal science, Young Farmer Club programs, home economics, community development and agricultural production.

#### The Machine Operator

The next grade of technical staff is the machine operator designated the (M.O.). The individuals usually have no high school

training and no training in any area of the subject matter fields. They attend periodic crash courses on how to operate different machines and how to use agro-chemicals. They have a knowledge of some cultural practices which are pertinent to the use of the machines.

#### The Laborers and Nursery Men

The lowest technical staff rank are the laborers and nursery men. Some laborers did not attend any form of school. As the name implies they do manual work like clearing the bush, carrying out cultural practices on government farms and working in agricultural stores. The individuals have no training while in service. However, they are usually oriented to new agricultural practices at their work station as the needs arise.

#### Communication Process and Teaching Methods Used

"The only way to insure "transfer" (i.e, to insure that training received in one situation will prove helpful in another ) is to increase the similarity or the number of so called identical elements, between the learning situation and the situation in which you want the learning applied"

(Gage and Berliner, 1979).

#### Communication Process

Rogers and Shoemaker (1971) analyzed a study about research on the adoption of new ideas carried out in some societies where the villagers live according to the laws of their customs. They said that social structure always serves to hamper the diffusion of innovations and that local traditions link the beliefs of the villagers even if they are not scientifically proven to be true. They concluded that in

traditional societies, the important factor affecting the adoption of any innovation is its compatibility with the cultural beliefs of the social system.

They also said: "In summary a social system with modern norms is more change oriented, technologically developed, scientific, rational, cosmopolite, and empathic. A traditional system embodies the opposite characteristic." (Rogers and Shoemaker, 1971, p. 33.)

In a report presented by Onukwuba (1981), he said that there are six categories of the adoption diffusion process identified in Nigeria in the innovation diffusion process, namely: innovators, early adopter, early majority, late majority, late adopters or laggards and finally the never adopters. He reported that the first five categories are found in every society but the last category, the never adopters, who constitute two and one-half percent are those people who have no means of livelihood. Never adopters found in Nigeria are groups such as robbers, the disgruntled element, loafers, squatters, and drunkards who also usually cause trouble in the society. They blackmail the agent of change, such as the agricultural extension worker (see Figure 15, Distribution of Farmers of Nigeria Among Six Categories According to Time of Adoption on page 151).

Ogionwo (1978) in his book, "Innovative Behavior and Personal Attitudes," a case study of social change in Nigeria, said that telecommunication facilities (telephone and telegraph networks) are virtually non-existent in rural Nigeria. Existing post offices are usually small and antiquated and take care of about one thousand square miles. He observed that there are no television networks and in most of the rural

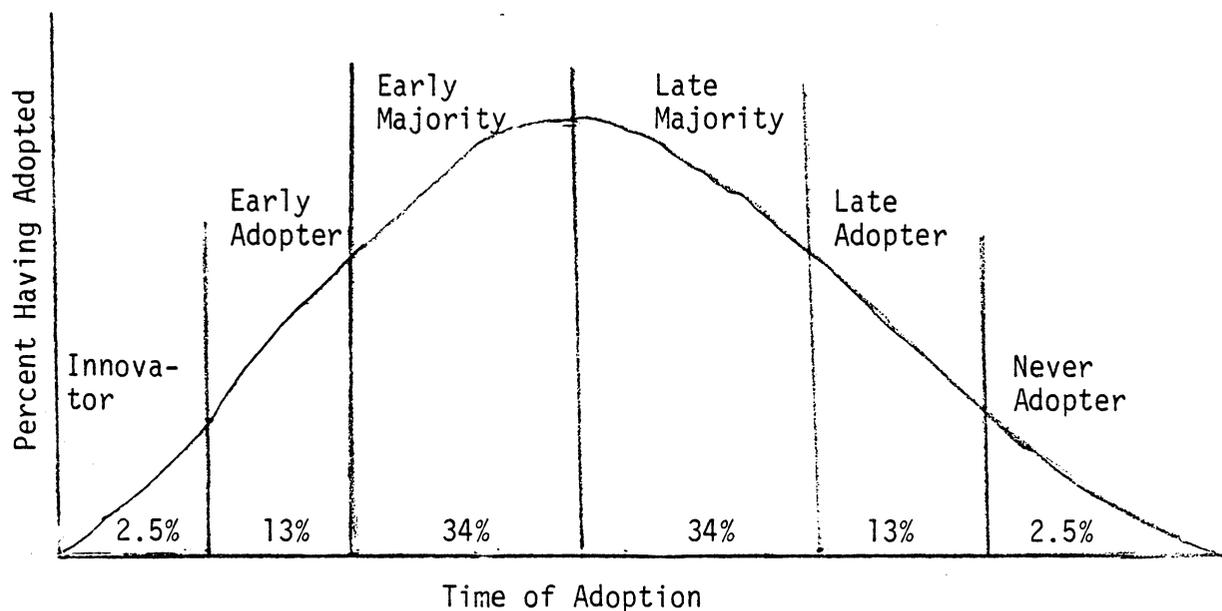


Figure 15. Distribution of farmers of Nigeria among six categories according to time of adoption.

towns and villages daily newspapers are not available. There are no good roads or transportation facilities for adequate communication.

Niehoff and Rogers (1967) in a study of the diffusion of agricultural innovation in Eastern Nigeria tried to determine which communication channels were used by the ministry. They discovered that the mass media channels were relatively unimportant. Only two to eight percent reported using them. The authors noted that interpersonal technical channels, such as direct visits with personnel from the Ministry of Agriculture were most frequently reported. Also, interpersonal contact with neighbors constituted a major source of information for the farmers. They concluded that "the most significant bottleneck to agriculture in eastern Nigeria is the inadequacy of communication channels" (Niehoff and Rogers, 1967, pp. 20-22).

## Methods Used

Kidd (1967) reported that in a study carried out in western Nigeria, face to face interaction is the fundamental method used in extension work. Demonstrations to farmers seemed to constitute the primary activity. He said that extension workers spent forty percent of their time supervising and inspecting each other. About twelve percent of their time was devoted to general extension work through visits with farmers and another twelve percent of their time in meetings and demonstrations with farmers. The extension workers also devoted four percent of their time to the sales and distribution of supplies, and a little time to tours and excursions, about five percent to collecting data and running surveys, and another five percent to office work. The author said: "Thus the major methodology of this extension system, with respect to its education function, seems to consist of personal visits and demonstrations." (Kidd, 1967, p. 51).

George and Nancy Axinn's study indicated that talking with one another was the main kind of communication found among farmers in one rural part of Nigeria and that rural people devoted an extremely low proportion of time to such activities as listening to the radio and reading newspapers or any other kind of materials.

Kincaid (1968) reported that eighty-four percent of the 69 senior staff questioned reported that they spent fifty percent of their working hours on administration and supervision. Fifty-seven percent of the one hundred and eighteen junior staff interviewed were spending fifty percent or more of their time on administrative and supervisory activities. The personnel therefore spent less time communicating with

the farmers through extension teaching methods.

Axinn and Thorat noted that, how to get from one farm or demonstration plot to the next is a problem in extension education in Nigeria. He said that a study on the method of staff communication revealed that in western Nigeria, forty-seven percent of 116 field overseers and agricultural assistants reported traveling by bicycle, thirty-two percent by motorcycle, thirteen percent by walking, four percent by truck or bus and less than two percent by automobile.

In Nigeria, the face to face or individual contact method, the farm and home visits, demonstration method, meetings, lecture meetings, radio and exhibits are the common methods used by extension workers to communicate with the farmers. Office calls, telephone calls, correspondence, use of visual aids, publications and television are not used extensively because most farmers cannot read or write. These methods are also expensive and there are no networks of radio, telephone, and television in the rural areas (see Table III which shows different methods used in extension work and the degree of their use in Nigeria on page 146).

Most of the teaching methods are not commonly used in Nigeria. There exist some domestic, social, economic, educational, religious, and political factors which influence the adoption of agricultural practices through these teaching methods. Methods used are compatible to the common life-style of the people, inexpensive and easy to comprehend.

Table III. Level of Extension Methods Used in Nigeria

Type of Method	Most Common	Used Sparingly	Not Common
1) Individual Contact Method:			
(a) Farm and Home Visit	X		
(b) Office Calls		X	
(c) Telephone Calls			X
(d) Correspondence			X
(e) Result and Method Demonstration	X		
2) Group Methods:			
(a) Method and Result Demonstration	X		
(b) General Meetings		X	
(c) Lecture Meetings	X		
(d) Use of Audio Visual Aids		X	
(e) Group Discussion			X
(f) Program Planning Meetings			X
(g) Field Meetings		X	
(h) Tours		X	
(i) Achievement Days			X
3) Mass Media Method:			
(a) Publications		X	
(b) Radio	X		
(c) Television		X	
(d) Exhibits		X	
4) Indirect Influence Method:			
(a) Neighbors	X		
(b) Local leaders	X		

### Reporting and Program Evaluation

Evaluation is utilized for identifying how well the programs are progressing. It is an important tool because it guides the extension workers in their activities. Evaluation provides the extension agents not only with the results of their efforts expressed in terms of changes in the clientele behavior but also acts as a bench mark by which the progress of the extension work is measured. Many extension personnel avoid evaluation of their work in Nigeria in order not to expose their incompetence and apathy (Williams and Alao, 1972).

Akinbode (1979) noted that the separation of the agricultural extension component from the research component has resulted in a poor linkage system in Nigeria. He also said that although, the research institutes and some higher institutions and universities do agricultural research, there is no proper linkage between the extension workers and the research bodies. The extension workers who work directly with the farmers are incompetent in developing and carrying out an effective evaluation of their program.

Ekpo, (1983) noted that some agricultural extension workers do not have a good record of their work and as such the data are not reliable for effective evaluation. He noted that most agricultural reports show much missing data and are therefore not valid for evaluation of the work.

In the book, Nigerian Agricultural Extension Conference Proceedings (1980), Mr. Bolarin asked a question: How will a new system of combined university and state agricultural extension service be able to solve the problems faced by the present system of agriculture

extension service?

Dr. Onazi answered this question by saying that the extension service needs always to take a look at what it is doing, reappraise what it is doing, and evaluate what it is doing. He believed that a university based agricultural extension system for Nigeria would help to improve and carry out a better program of evaluation, than a separate research and extension system.

Wudiri and Anaso (1980) edited the book Proceedings of the 2nd Agricultural Extension Seminar/Conference in Zaria, Nigeria. They stated that there exists a lack of proper evaluation machinery in the extension service in Nigeria. The editors indicated that the extension staff should carry out not only an evaluation of their work but also of themselves (self evaluation) in order to find out how effective they are in teaching the farmers. They also stated that formal annual evaluations by an outside agency can provide a useful check on the performance of the extension service. They remarked that the Agricultural Extension Service in Nigeria should carry out more Agro-Socio economic surveys.

Davies (1980) noted that there is no specific section within the agricultural extension division to carry out the evaluation of agricultural extension programs in order to assess the success and failures of the system. He remarked that in the 1950's and 60's, agricultural extension and research were under one organization and the research section carried out research and evaluation activities. However at the present, the research division is separated from the extension division. As a result there is some discrimination by the research personnel who

feel that they are more competent than the extension workers in carrying out an evaluation program. The two divisions do not work very closely any more.

The evaluation of extension programs is carried out by the federal personnel on the federal level, by the state personnel on state and local levels and by the local extension personnel at the local level. Each agricultural extension worker incorporates in his monthly report of work an evaluation statement on the programs he or she is carrying out. Each agricultural extension workers keeps a daily record of his work.

The agricultural extension head officers at the federal, state and local levels compile a comprehensive quarterly, biannual and annual evaluation report of all the different programs carried out in their areas. The evaluation reports are used to plan programs for the succeeding year.

The agricultural extension workers report mainly on the following items periodically:

- (1) Work accomplished for the past month(s)/year
  - (a) Number of visits to farmers
  - (b) Number of acres on food crops and permanent crops
  - (c) Oil palm rehabilitation scheme
  - (d) Livestock/livestock farmers
    - (1) Number of pigs, cows, poultry, sheep, goat, etc.
    - (2) Number of livestock farmers
  - (e) Number of livestock deaths
  - (f) Diseases: (1) plants; (2) animals and pests

- (g) Young farmers club
  - (a) Number of old members and leaders
  - (b) Number of new members and leaders
  - (c) Number of old projects and project leaders
  - (d) Number of new projects
- (2) Details of journeys undertaken for the month (local transport and travel report (Lt and t)
- (3) Fertilizer report
- (4) Weekly labor report
- (5) Sales of Agro-Chemicals
- (6) Number of subsidy farmers
- (7) Staff promotion/transfers
  - (a) Number in training
  - (b) Number of transfer
- (8) Staff termination
- (9) Annual confidential report

### Chapter Summary

The Agricultural Extension Service in Nigeria grew out of the need of the British colonialists to supply the British industries with plenty of raw agricultural materials in the 1800's and to improve the peasant farmers in Nigeria. A botanical research station was established in Lagos in 1893. In 1905 the Moore plantation was founded and in 1910 it became the headquarters for the first Ministry of Agriculture in Southern Nigeria. In 1912 Lord Lugard established another headquarters of the Ministry of Agriculture in the northern region of Nigeria. In June 1921, Northern and Southern Nigeria were amalgamated into one central government. Sir O. T. Faulkner was made the first Director of Agriculture in Nigeria. His main objectives were to introduce agricultural education and to train agricultural extension workers. Schools of agriculture were established in 1921, 1927 and 1954 in the West, North and Eastern regions of Nigeria respectively. The Federal Ministry of Agriculture was established in 1964 and in 1968 there emerged state Ministries of Agriculture in Nigeria. The Agricultural Extension Service in Nigeria continues to be in transition. There has been no federal legislation passed to support the Agricultural Extension system. The organization and administration is complex and the financing is not adequate. The extension staff personnel are not well trained and receive mostly theoretical preparation. Each staff member is responsible for many activities and a large number of program areas.

The most frequently used methods of communication with the farmers are through individual contacts and demonstrations. Some group methods are used for good diffusion of new ideas.

Most Agricultural Extension workers, especially the junior staff members, are not well trained to do reporting and evaluation. Neither process evaluation nor program result evaluation is regularly and adequately used in the Agricultural Extension Service of Nigeria.

## Chapter Four

### A COMPARISON OF THE COOPERATIVE EXTENSION SERVICE OF THE UNITED STATES AND THE AGRICULTURAL EXTENSION SERVICE OF NIGERIA

"If every human group had been left to climb upward by its own unaided efforts, progress would have been so slow that it is doubtful whether any society by now could have advanced beyond the level of the old stone age." (Linton, 1936, p. 324)

#### Chapter Introduction

The objective of this chapter is to compare the United States Cooperative Extension Service and the Nigerian Agricultural Extension Service. A study of the Cooperative Extension Service in the United States and the Agricultural Extension Service in Nigeria was developed extensively in chapters two and three, respectively, based on the following elements:

- (1) The Background and History
- (2) The Organization
- (3) The Administration
- (4) The Responsibilities of Staff
- (5) The Financing
- (6) The Program Areas
- (7) The Training of Staff
- (8) The Communication Process and Methods Used
- (9) Reporting and Evaluation of Programs

The two nations' Agricultural Extension Services are organized for the same purpose. Therefore it is appropriate to develop a comparison between the two based on the previously mentioned elements.

## I. BACKGROUND AND HISTORY

United States

The Cooperative Extension Service in the United States originated in 1914 after the passage of the Morrill Acts (of 1862 and 1890) and the Hatch Act (Experiment Station Act) of 1887. The Cooperative Extension Service was established in order to extend education from the land-grant institutions and experiment stations to the farmers in the communities. The service has expanded since its establishment to include different programs and activities. Much legislation has been passed to provide funds and direction for the development and improvement of the Cooperative Extension Service.

Nigeria

The Agricultural Extension Service in Nigeria originated as a by-product of the British government. Prior to the establishment of the Department of Agriculture in 1910 and 1912 in the Southern and Northern parts, respectively, there was a department of botanical research which was established in 1893 by Sir Claud MacDonald which emphasized the adoption of new varieties of crops by the Nigerian peasant farmers. In 1921, O. T. Faulkner, the first director of agriculture, developed the first policy for reorganization of the Ministry of Agriculture including the establishment of the Agricultural Extension Service. In 1954 a

### United States

Organizations such as the Massachusetts Society and the Pennsylvania Society, promoted agriculture in the 1870's prior to the establishment of the Co-operative Extension Service. Men such as Booker T. Washington and Seaman Knapp carried out farm demonstrations in the late 1800's and early 1900's to teach the people how to improve farm productivity.

### Nigeria

regional ministry of agriculture was formed in each region. In 1968 State Ministries of Agriculture evolved following the creation of states. Each Ministry of Agriculture has the Agricultural Extension Service as a major division. The Nigerian Agricultural Extension Service is still in transition. There was no public society which influenced its establishment and there has been no federal legislation which provided funds for the establishment of the Nigerian Agricultural Extension Service.

## II. ORGANIZATION

In the United States, the Cooperative Extension Service has three primary levels of organization; namely, Federal, State, and Local levels (district and county).

The Nigerian Agricultural Extension Service is organized by the state government at the state and local levels (province, division, and county).

United States

Federal:

On the federal level the Cooperative Extension Service is headed by the Secretary of Agriculture of the USDA. The extension functional unit is under the leadership of an administrator who reports to the Director of Science and Education Administration. The Director of the Extension Division reports to the Director of the Science and Education Administration. The Secretary of Agriculture and his aides organize the Cooperative Extension Service at the federal level.

Geographical Division or Zone :

The Cooperative Extension Service is not organized by zones in the United States.

Nigeria

Federal:

The Agricultural Extension Service is not organized on the federal level in Nigeria.

Geographical Division or Zone :

There are four federal zones for agricultural development. A Principal Agricultural Officer is in charge of each zone. In

United States

State:

On the state level, the extension service is located at the land-grant institutions. The Dean of the College of Agriculture or the designate in the land-grant institutions are the chief organizers of the State Agricultural Extension Service. Under the Dean are the Associate Deans and Assistant Deans who assist the Dean to organize the Cooperative Extension work. The specialists are also located at the state universities to

Nigeria

each zone the Agricultural Extension Service is organized by the P.A.O., with the assistance of the Senior Agricultural Officers and Agricultural Superintendents who are placed in charge of federal projects in the provinces and divisions, respectively.

State:

The Agricultural Extension work on the state level is organized by the states' Ministries of Agriculture and National Resources in Nigeria. The Commissioner for Agriculture is placed at the head of the organization; however, the Permanent Secretary and the Chief Agricultural Officers are the chief organizers of extension work. Under these persons are the Principal Agricultural Officers, Senior Agricultural Officers,

United States

assist in the Cooperative Extension Service organization. At the state level there are also secretarial staff who provide support services.

## Local:

In the United States on the local level Cooperative Extension Services are carried out by the districts and counties.

## District:

The district Extension Service is organized by the District Chairman. He/she is assisted by supervisors, program leaders and extension agents. In each district office are also secretarial staff who provide support services.

Nigeria

Agricultural Officers, Senior Agricultural Superintendents and Agricultural Superintendents who assist in organizing the extension work. There are different levels of Executive Officers (EO's), clerks and typists who provide support services.

## Local:

In Nigeria on the local level the Agricultural Extension Service is organized in the provinces, divisions and counties.

## District:

There is no organization of extension work at the district level in Nigeria.

United States

## Province :

The Cooperative Extension Service is not organized on the provincial level in the United States.

## Division :

The Cooperative Extension Service is not organized on the divisional level in the United States.

Nigeria

## Province :

The Senior Agricultural Officer is the organizer of the agriculture extension work at the province level. He has Agricultural Officers, Agricultural Superintendents, Assistant Superintendents and Agricultural Assistants who help him to organize the Cooperative Extension work. Each province is made up of divisions.

## Division :

The Agricultural Officer is the chief organizer of the Agricultural Extension Service at the divisional level. Under the (AO's) are Agricultural Superintendents, Assistant Superintendents, Agricultural Assistants and Field Overseers and Machine Operators, who assist to organize

United States

## County:

The County Chairman organizes the Cooperative Extension work at the county level. Under the county chairman are extension agents and paraprofessionals who assist to organize the Cooperative Extension work within the counties.

Nigeria

extension work in the division. Every division is made up of several counties.

## County:

There are county agricultural officers; however, the county extension work is organized at the divisional agricultural office. The Agricultural Officer is the head organizer for the county agricultural extension work. The Agricultural Assistants, Field Demonstrators and Overseers work in the towns and villages in the counties.

## III. ADMINISTRATION

In the United States, the administration of the Cooperative Extension Service is carried out on the federal, state and local level (districts and counties).

The Nigerian Agricultural Extension Service is administered on the state and local level (zones, provinces, divisions and counties).

United States

## Federal :

The United States Department of Agriculture administers the Cooperative Extension Service on the federal level. It administers the Smith-Lever Act and other laws and regulations involving the Cooperative Extension work. The Secretary of Agriculture is the chief administrator of the Cooperative Extension Service with the assistance of his aides at the federal level.

## Geographical Division or Zone :

There is no Cooperative Extension Service administered on geographic divisional or zone level in the United States.

Nigeria

## Federal :

Agricultural Extension work is not administered on the federal level in Nigeria.

## Geographical Division or Zone :

The Agricultural Extension Service is administered by the (C.A.O.) Chief Agricultural Officer with the assistance of the Principal Agricultural Officers as field administrators in the geographic divisions or zones of the federal Ministry of Agriculture.

United StatesState:

The Dean of the College of Agriculture at the Land-Grant University or his designate, Associate Deans and Assistant Deans administer the extension work on the state level. They are supported by a team of specialists and secretarial staff.

District:

The district extension work is administered by the District Chairman, Program Leaders, Supervisors and Extension Agents. The secretarial staff provides support to the administration of the

NigeriaState:

The Commissioner of Agriculture, the Permanent Secretary, the Chief Agricultural Officer, the Principal Agricultural Officers, the Agricultural Officers, the Senior Agricultural Superintendents and the Assistant Superintendents administer the Agricultural Extension Service on the state level. The Permanent Secretary and the Chief Agricultural Officer are the chief administrative and technical officers.

District:

The Agricultural Extension Service is not administered on the district level in Nigeria.

United States

Cooperative Extension Service  
on the district level.

## Province :

The Cooperative Extension Service is not administered on the provincial level in the United States.

## Division :

There is no administration of the Cooperative Extension Service on the divisional level in the United States.

Nigeria

## Province :

The Senior Agricultural Officer is the chief administrator on the provincial level. He is assisted by the Agricultural Officers, Senior Agricultural Superintendents, Agricultural Superintendents, Assistant Superintendents, Agricultural Assistants, Field Overseers. The secretarial or clerical staff provide support in administering the Extension Service.

## Division :

The A.O. administers the Agricultural Extension Service in the division with the aid of the Agricultural Superintendents, Assistant Agricultural Superintendents, Agricultural Assistants, Field Overseers, Machine Operators and clerical officers.

United States

County:

At the county level the Cooperative Extension Service is administered by the unit chairman, the extension agent, the program leaders, the technicians and secretarial staff. The unit chairman is the chief administrator at the county level.

Nigeria

County:

There is no specific administrative organization of the Agricultural Extension Service on the county level. The administrators on the divisional level administer extension work in the counties and villages. The divisional Agricultural Officer is the chief administrator of Agricultural Extension Service in the county.

## IV. RESPONSIBILITIES OF PERSONNEL

In the Cooperative Extension Service, there are federal, state and local personnel whose duties are related and interdependent on one another.

There are only state and local agricultural extension personnel in the Nigerian system of the Agricultural Extension Service. There are two categories of personnel; namely, the administrative and technical personnel. Their responsibilities are related but not dependent on one another.

United States

## Federal:

The responsibility of the Secretary of Agriculture is to interpret and prepare the resources of the USDA for use by the state extension service and to appoint state directors.

The administrator of the USDA administers and supervises the federal extension work and programs.

## Zone:

There are no zonal agricultural extension personnel in the United States.

## State:

The Dean of the Cooperative Extension Service is responsible for administering the agricultural

Nigeria

## Federal:

There are no federal agricultural extension personnel; however, the Director of the Federal Ministry of Agriculture is responsible for conducting the federal programs administered in the states by the Agricultural Extension Service. His main responsibility is to appoint the Chief Agricultural Officer to take charge of the geographical divisional agricultural extension work sponsored by the Federal Ministry of Agriculture.

## Zone:

The Principal Agricultural Officers are responsible for zone agricultural extension work in Nigeria.

## State:

The Chief Agricultural Officer is responsible for conducting the technical agricultural

United States

extension work (both technical and administrative responsibilities). He is assisted by the Associate Deans, Assistant Deans and Program Specialists in carrying out the agricultural extension work at the state level.

## Local:

There are district and county or unit chairpersons who are responsible for administering extension work at the local level. They direct and supervise the Program Leaders, Extension Agents, paraprofessionals, support staff and clerical workers in carrying out their responsibilities.

Nigeria

extension work in the geographical divisions of Nigeria and in the states. The Permanent Secretary is in charge of the administrative responsibilities. The two chief officers have many other officers lower in rank who assist in carrying out the responsibilities for administering the Agriculture Extension Service.

## Local:

The Senior Agricultural Officer and the Agricultural Officers are responsible for administering agricultural extension work in the provinces, divisions and counties. They direct and supervise the Agricultural Officers, Senior Agricultural Superintendents, Agricultural Superintendents, Agricultural Assistants, Field Overseers, Agricultural Demonstrators and the clerical staff who carry out

United StatesNigeria

the agricultural extension work.

## V. FINANCING

The financing of the Cooperative Extension Service is carried out by the three levels of government, the federal, state and local.

The financing of the Agricultural Extension Service is carried out mainly by the federal and state governments. In addition, the local governments occasionally contributes land or money and individuals or groups may provide additional support for the operation of the Agricultural Extension work.

## Federal:

There is federal legislation such as the Morrill Acts of 1862 and 1890 and the Smith-Lever Act of 1914 which provided funds for the Cooperative Extension Service. The Smith-Lever Act under Public Law 733, Title II, Sec. 203(n), 360, 1955 was amended to provide more funds for the Cooperative Extension

## Federal:

The federal government makes available some funds to the state governments for financing agricultural programs. There is no legislation which supports the financing of the Agricultural Extension Service. Special funds are allocated by the federal government only in cases of emergency for the financing of

United States

Service. The federal government also provides special funds for special needs programs.

## State:

The Smith-Lever Act of 1914 required that the states provide a certain amount of money to match the federal allocation. The expenditures of the federal funds are audited to ensure that the monies have been expended by the states in accordance with the federal regulations.

## Local:

The local government is authorized to appropriate out of the county funds money for the support of the Cooperative Extension Service. The state land-grant institution supplements the funds appropriated by the counties. In some states,

Nigeria

the Agricultural Extension Service (especially for the payment of salaries and subsidies).

## State:

The state government makes money available to the Extension Division through the state's treasury for financing agricultural extension work. Funds are also raised through marketing of agricultural produce and materials by the Agricultural Extension Division to help in financing agricultural extension work in the state.

## Local:

The local government contributes whatever amount it can raise from taxes. It also donates land temporarily to the Agricultural Extension Division for carrying out demonstration work and producing agricultural produce for sale.

United States

the county money is given to the land-grant institution to help finance cooperative extension work. In others, the county funds are administered by the county government.

## Private Funds:

The funds raised through contributions by organizations, groups and individuals are usually used by the local government body to accomplish work for which no public money has been allocated.

Nigeria

## Donors:

Voluntary persons and organizations like the Food and Agricultural Organization of the United Nations, YWCA, banks, etc. help finance Agricultural Extension Service by making donations in cash and/or kind (specialists, materials, etc.). There is not much individual money given to support the Agricultural Extension Service in Nigeria.

## VI. PROGRAM AREAS

The United States Cooperative Extension Service has four program areas; namely, Agriculture and Natural Resources, 4-H,

The Nigerian Agricultural Extension Service has ten or more program areas; namely, Tree Crops Program, Food Crop Program, Home

United States

Family Resources (Home Economics) and Community Resource Development. Each program area is made up of subprograms and projects. The programs are focused towards increasing the educational status of the clientele, increasing income, increasing the social status and improvement in productivity. The program development process is from "bottom to top" (from the local people to the administrators).

Nigeria

Economics Program, Young Farmers Club Program, Livestock Program, Horticulture Program, Supervised-Agricultural Credit Program, Fertilizer Promotion Program, Plant Protection Program and other integrated programs such as the Training Program, etc. There are no subprograms, although each program has many projects. The programs are geared towards increasing the productivity, income, the social status and knowledge of modern farming methods. The program development process is from "top to bottom" (from the administrators to the local people).

## VII. TRAINING OF STAFF

The staff of the Cooperative Extension Service are trained through preservice and inservice training programs.

The Nigerian Agricultural Extension staff are trained through preservice and inservice training programs.

United States

## Preservice Training:

The Cooperative Extension workers are trained in an agricultural college or in the university in the areas of agriculture or related fields.

The personnel include mostly workers who hold a doctoral degree, a M.S. degree or a B.S. degree in agriculture or a related field like adult education, etc.

The technicians and the secretaries may hold a high school diploma or an Associate degree.

## Inservice Training:

The inservice training program includes:

- (a) Orientation programs
- (b) On the job training

Nigeria

## Preservice Training:

The Agricultural Extension workers are trained at the School of Agriculture in the areas of practical agriculture, agricultural sciences and office routine. Only the rank of the Agricultural Officer and above are trained at a university in agriculture.

The personnel includes mostly workers who hold a B.S. degree or a high school Certificate with one or two years of training at the School of Agriculture or four years of high school education with 3 months training in an agricultural institute.

## Inservice Training:

The inservice training program includes:

- (a) On the job training
- (b) Inservice training

United States

- (c) Inservice training
- (d) Workshops
- (e) Professional meetings
- (f) Seminars
- (g) Conferences
- (h) Graduate Education Programs
- (i) Others

There is consistency in the use of the above methods. The training periods are usually adequate and include theoretical and practical training. The training programs in the United States include a variety of learning areas such as philosophy, objectives, methods, the sciences, etc., for all the ranks of the agricultural extension personnel.

Nigeria

- (c) Workshops
- (d) Professional meetings
- (e) Seminars
- (f) Conferences
- (g) Graduate education

Orientation programs are not used adequately because of the shortage of staff and funds. The new staff usually receive orientation and on-the-job training at the same time. All the methods mentioned are not used consistently due to a lack of funds. The training period is often very short and mostly theoretical. The training programs for the junior and intermediate staff include a variety of learning areas and are usually conducted in universities and other higher institutions. There is not much in the way of graduate education programs.

United StatesNigeria

## VIII. COMMUNICATION PROCESSES AND METHODS USED

The United States Cooperative Extension Service uses the diffusion process for communicating ideas to its clientele.

The methods used for reaching the clientele are the following:

<u>Method</u>	<u>Extent Used</u>
(1) Individual contact	Not used often except on request
(2) Farm and home visit	Used often
(3) Office calls	Used often
(4) Telephone calls	Used often
(5) Correspondence	Used often
(6) Group method	Used most often
(7) Mass media	Used most often
(8) Indirect influence	Used often
(9) Use of local leaders	Used most often

In Nigeria the process used for communicating ideas to the clientele is the diffusion process.

The methods used for reaching the clientele are the following:

<u>Method</u>	<u>Extent Used</u>
(1) Individual contact	Used most often
(2) Farm/home visit	Used most often
(3) Office calls	Not used often
(4) Telephone calls	Not used
(5) Correspondence	Not used often
(6) Group method	Used often/used most often
(7) Mass media	Used often
(8) Indirect influence	Used often
(9) Use of local leaders	Used often

United States

The clientele are reached mostly on a group basis. The individual contact method is usually used only on request from the people.

Nigeria

Home visits and individual contacts are the most often used methods; however, the group method is the second-most used in communicating with the farmers.

## IX. REPORTING AND PROGRAM EVALUATION

A specialist heads the evaluation unit. Financial support and emphasis is given to accountability and evaluation.

The federal, state and local staff are involved in reporting and evaluation. The public is informed about the accomplishments regularly through the use of a variety of media.

Evaluation is carried out through the following devices:

- (1) Value scales
- (2) Opinion polls
- (3) Comprehensive tests
- (4) Interest checks
- (5) Attitude checks

There is no special evaluation section and there is a lack of money and emphasis on evaluation and reporting. Each Agricultural Extension worker reports on the activities carried out periodically (monthly, quarterly, half annually and annually) to his superior, usually the Agricultural Staff in charge of the state, the zone, the division or the county. The public is not regularly and adequately informed of the accomplishments.

The Agricultural Extension workers do not use the computer to store data and information.

United States

- (6) Performance ratings
- (7) Case histories
- (8) Adoption of practice checks

The accountability and evaluation system has national councils and committees. The system has a variety of reports to be submitted periodically, ranging from a daily report (daily log of activities) to an annual narrative report. Data and other information are stored in the computer. Reporting and evaluation are very closely related to the program plan of work. Every extension staff member shares in the reporting and evaluation responsibilities. Extension workers are trained to report and evaluate effectively. Process evaluation is used regularly and adequately as is product evaluation.

Nigeria

Benchmark forms are used to store the information from the farmers.

Most Agricultural Extension workers, especially the junior officers, are not well trained to do reporting and evaluation.

Only a few techniques are used (due to the lack of funds) for evaluation such as:

- (1) Value scales
- (2) Performance ratings
- (3) Adoption of practice checks
- (4) Case histories

There is no national council or committee for the reporting and evaluation unit. Reporting and evaluation are closely related to the program. Neither means evaluation nor end evaluation is regularly and adequately used.

### Chapter Summary

In Chapter 4, a comparison of the Cooperative Extension Service of the United States and the Agricultural Extension Service of Nigeria was made. It was based on the background and history, the organization, the administration, the personnel responsibilities, the financing, the program areas, the training of staff, the communication process and reporting and evaluation of programs. There were some similarities but many differences in all the elements compared. There is greater similarity in their operations and less in the organizational and administrative structure. There are differences in the methods used to carry out the extension programs, program coverage, procedure of program planning, and reporting and evaluation of the programs. Analysis of differences suggested possible weaknesses in the Nigerian Agricultural Extension Service.

## Chapter Five

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

"Agriculture is a fundamental factor in economic growth...one of our priority national problems...and so deserves continuing priority for public support through education and research."

(Nigeria Farm Labour Report, 1974)

#### Summary

Agriculture plays an important role in the economic development of the United States and Nigeria. It is the largest employer in the United States and in Nigeria. The farmers' efficiency can be improved through the services of the Agricultural Extension Service in both the United States and Nigeria. The Agricultural Extension Service in the United States and in Nigeria is organized to help the farmers solve their home, farm and community problems. The United States has a well-developed agricultural extension education system and it has been used as a model for reorganization, review and development of the extension services in other countries. The Nigerian Agricultural Extension Service is in the process of reconstruction and development in order to be more effective in working with the peasant farmers and thereby improve the agricultural sector.

There are three objectives of the study as follows:

1. To investigate the following of the Cooperative Extension Service in the United States (Virginia) and Nigeria (Anambra).
  - A. Background and history
  - B. Organization

- C. Administration
  - C. Responsibilities of personnel
  - E. Financing
  - F. Program areas
  - G. Training of staff
  - H. Communication processes and methods used
  - I. Reporting and evaluation of programs
2. To write a descriptive comparison of the two extension systems.
  3. To make recommendations for the improvement of the Nigerian Agricultural Extension Service based on the findings.

This was a descriptive research study based on personal interviews and a literature review.

The investigation shows that there were similarities and differences in the organizational structure and operation of the two extension systems.

### Background and History

The United States Cooperative Extension Service originated with the passage of the Smith-Lever Act in 1914. It was established to carry information and knowledge from the land-grant institutions and experiment stations to the people. Prior to the establishment of the land-grant institutions and experiment stations, farmers had the need and desire to learn the new methods of farming and homemaking. Because of this need there were many public societies which promoted agriculture in the 1700's. The Smith-Lever Act of 1914 and its amendment acts have provided funds, legal basis and direction for the development of the Cooperative Extension Service in the United States.

The Nigerian Agricultural Extension Service originated after 1921 (Faulkner's Policy) as a by-product of the British government. It is a division of the State Ministry of Agriculture and Natural Resources in Nigeria. There has been no federal legislation or society which influenced the establishment of the Agricultural Extension Service; however, the Richard's Constitution of 1954 established the regional Ministry of Agriculture. Prior to its establishment there was a Department of Botanical Research established in 1893. It emphasized the adoption of new crops and practices in farming. The Agricultural Extension Service in Nigeria was started to teach the peasant farmers the ways of fitting the major export crops in their farming system. The persons who influenced the establishment of the Agricultural Extension Service were Sir R. B. Moore, Lord Lugard and the (British) High Commissioner for Agriculture Sir O. T. Faulkner. The improvement of the Agricultural Extension Service of Nigeria has been neglected since the early 1970's due to the advent of petroleum oil as the major source of the nation's revenue.

#### Organization

In the United States, the Cooperative Extension Service is organized with the support of the federal, state, and local governments. It is linked with the land-grant institutions and universities. The Cooperative Extension Service is organized at the federal level, state, district and county levels. On the federal level the administrator of the extension functional unit is the chief organizer. On the state level the Dean of the School of Agriculture or his designate in the

1890 institutions are the chief organizers of the Cooperative Extension Service. On the district and county levels the district chairman and county chairman are the chief organizers. There are extension agents and paraprofessionals who organize the cooperative extension work in the towns and cities.

In Nigeria the Agricultural Extension Service is organized by the state government and is not linked with the universities and institutions. The Agricultural Extension Service is organized on the state, zonal, provincial, divisional and county levels.

On the state level the Permanent Secretary and the Chief Agricultural Officer are the chief organizers and on the zonal level the Principal Agricultural Officer is the chief organizer. On the provincial and divisional levels the Senior Agricultural Officer and the Agricultural Officer are at the top of the organization. The Agricultural Assistant, Field Overseers, Agricultural Demonstrators and Machine Operators organize agricultural extension work at the villages, towns and cities.

#### Administration

The Cooperative Extension Service is administered by the federal, state and local governments. The Secretary of Agriculture, Dean of the College of Agriculture or his designate, the district and county chairmen are the chief administrators of Cooperative Extension work on these levels, respectively. Each level administrator has personnel who help to administer the Cooperative Extension Service.

In Nigeria there are more levels of the chief administrators who administer the Agricultural Extension Service than in the United States. The Agricultural Extension Service is administered on the state, geographical division or zone, provincial, divisional and county levels. The Permanent Secretary and the Chief Agricultural Officer are the chief administrators on the state level. The Principal Agricultural Officer and the Senior Agricultural Officer are the chief administrators at the geographic divisional and provincial levels, respectively. The Agricultural Officer is the chief administrator for the divisional and the county levels. The Agricultural Superintendent, Assistant Superintendent, Agricultural Assistants, Field Overseers and Agricultural Demonstrators help to organize the Agricultural Extension work in the villages, towns and cities.

#### Responsibilities of the Personnel

In the United States there are federal, state and local personnel of the Cooperative Extension Service. The administrator of the USDA with the assistance of the Secretary of Agriculture administers, supervises the federal extension service and carries out other appropriate responsibilities at the federal level.

The Dean of the Cooperative Extension Service is responsible for the service on the state level. He supervises and delegates some of his responsibilities to the Associate Dean and Assistant Dean of Cooperative Extension Service.

On the district level the District Chairman is responsible for the conduct of the Cooperative Extension Service. He supervises and delegates some of his duties to the program leaders, supervisors, extension agents and paraprofessionals.

On the county level the Unit Chairman is responsible for carrying out the duties and he/she is assisted by the extension agent and the paraprofessionals. The main responsibility of the Cooperative Extension Service personnel is education. Each chief administrator is responsible for the delegated responsibilities. There are technical and administrative responsibilities involved in the Cooperative Extension work, such as preparing reports, planning of programs, holding of meetings, and demonstration of farming techniques.

In Nigeria there are only state and local agricultural extension personnel with two categories of staff; namely, the administrative and technical personnel. The Agricultural Extension personnel's responsibilities range from educational, marketing, and supply to governance duties.

Agricultural Extension Service is not administered on the federal level in Nigeria. The Director of the Federal Ministry of Agriculture is responsible for appointing the Chief Agricultural Officers to take charge of the geographical divisions or zones on extension work and to provide and account for funds for the operation. The Principal Agricultural Officer is responsible for organizing and administering extension work in the zones.

On the state level the Chief Agricultural Officer is responsible for the technical matters while the Permanent Secretary is responsible

for the administrative matters.

On the provincial level the Senior Agricultural Officer is responsible for the conduct and supervision of extension. He is accountable for the delegated duties.

On the divisional level the Agricultural Officer is responsible for organizing and administering the Agricultural Extension work. His main responsibilities include procurement of funds, supervising and writing of reports.

The Agricultural Assistants, Field Overseers, Agricultural Demonstrators and Machine Operators are responsible for working directly with the farmers. Their main responsibilities include writing of reports and the selection of subsidy farmers and contact farmers. The overall responsibilities of all the personnel are many and complicated.

### Financing

Financing of the Cooperative Extension Service in the United States is carried out by the federal, state and local governments. The federal government administers the Smith-Lever Act of 1914 and its amendment acts. The state and local governments appropriate monies for the operation of the Cooperative Extension Service from the Morrill Act and county funds, respectively. Funds are also raised through contributions by private individuals and groups for the operation of the Cooperative Extension Service.

The Nigerian Agricultural Extension Service is financed mainly by the federal and state governments. The local government contributes whatever funds and materials they can. Donors such as The Food and

Agriculture Organization, banks, and other groups donate money for the operation of the Agricultural Extension Service.

### Program Areas

In the United States the Cooperative Extension Service has four program areas; namely, the 4-H, Family Resource, Agriculture and Natural Resources, and Community Resource Development. The program is involved with satisfying the educational needs of its clientele. Each program is developed and implemented at the county level. The program development process is from "bottom to top" (from the local people to the administrator).

The Agricultural Extension Service in Nigeria has ten or more program areas; namely, the Tree Crops Program, Food Crops Program, Home Economics Program, Young Farmers Club Program, Livestock Program, Horticulture Program, Supervised Agricultural Credit Program, Fertilizer Promotion Program, Plant Program and other integrated programs such as the training program. The programs are mainly involved with increasing productivity, fitting high yielding materials into the peasant system and increasing farmers' level of agricultural education. Each program is developed and implemented at each state level. The program development process is from "top to bottom" (from the administrators to the local people).

### Training

In the United States there is no nationwide training center for training the personnel of the Cooperative Extension Service. There are several ways through which staff receive training, such as the

college or university training, orientation program, on-the-job training, inservice training, workshops, professional meetings, seminars, conferences, graduate education, etc. There is an opportunity for graduate education for all extension agents after four years of field experience. Universities conduct most of the training. The training periods are adequate and include many areas such as sociology, education, agricultural sciences, weather, marketing and government. There is a high degree of consistency in the duration and the methods used for training the staff and graduate education programs are available to all who desire them.

In Nigeria there are many nationwide training schools for the agricultural extension workers, such as the Federal School of Agriculture. Most states have one training school. The junior and intermediate staff members are trained at the School of Agriculture whereas the senior staff members are trained in the universities and colleges. The Nigerian Agricultural Extension workers receive their training through several other ways, such as on-the-job training, inservice training, workshops, professional meetings, seminars, conferences, graduate education, etc. The training includes many areas such as the agricultural sciences, weather, marketing, methods of farming, and extension organization. The training periods and quality are not adequate and not many staff members receive graduate education.

#### Communication Processes and Methods Used

The Cooperative Extension Service of the United States and the Agricultural Extension Service of Nigeria both use the diffusion

process for communicating with the clientele. They also use the same methods for teaching the people; however, the degree of useage varies. In the United States group methods, mass media and the use of local leaders are used most to teach the farmers. In Nigeria, individual contact and farm/home visit methods are most often used.

### Reporting and Program Evaluation

The reporting and evaluation unit in the United States is headed by an evaluation specialist. All the staff of the Cooperative Extension Service in the United States are involved in reporting and evaluating the program. A variety of devices are used to carry out the evaluation and the public is adequately informed about the accomplishments regularly through the evaluation newsletter, other Extension Service publications, and the local press.

In Nigeria there is no special evaluation unit. Each Agricultural Extension person carries out the evaluation of his project and renders a report to his immediate superior. The public is not readily and adequately informed about the accomplishments of the Cooperative Extension Service due to the lack of funds. The staff are not well trained in the areas of reporting and evaluation and few techniques are used to measure the accomplishments in the Agricultural Extension work. Means evaluation is not adequately used although some end or result evaluation is used.

### Conclusions

In a recent article, John Mellor said:

"Thus, the closing of the twentieth century will see a period of great pressure for developing countries to increase food production so as to minimize their need for imports of food...." (Mellor, 1982, p. 309)

As a result of this study, the writer concludes that:

1. The United States has a well developed Cooperative Extension Service which is effective for educating its clientele.
2. The Nigerian government has an Agricultural Extension system which has not been successful in educating the clientele.
3. The United States government believes in the value of the Cooperative Extension Service and has supported it through federal legislation.
4. The Nigerian government has expressed support of the Agricultural Extension Service but has not provided financial aid through the passage of any federal legislation.
5. The United States Cooperative Extension Service is linked to the land-grant universities and institutions and as such has made use of the personnel and resources of those institutions.
6. The Nigerian Agricultural Extension Service is not linked to the universities or institutions of higher education and as such has failed to make use of the resources and personnel of those institutions.
7. The United States Cooperative Extension Service carries out educational functions exclusively.

8. The Nigerian Agricultural Extension Service carries out many functions in addition to education, such as marketing, supply, regulatory and production. Thus the staff does not carry out the educational function as adequately as it should.
9. The United States Cooperative Extension Service is organized by the federal, state and local governments and as such has every level of government actively involved.
10. The Nigerian Agricultural Extension Service is organized mainly by the state government and does not have the active participation of the federal and local governments in its organization.
11. The United States Cooperative Extension Service has personnel from the three levels of government who jointly administer the Cooperative Extension Service.
12. The Nigerian Agricultural Extension Service is administered by one level of the Nigerian government (the state government).
13. The United States Cooperative Extension Service has adequate and well-qualified personnel.
14. The Nigerian Agricultural Extension Service does not have adequate and well-qualified personnel. (The extension staff/farmer ratio is 1:4000+.)
15. The United States Cooperative Extension Service personnel have clearly written job descriptions of their responsibilities.
16. The Nigerian Agricultural Extension personnel do not have a clear description of their responsibilities and workers usually duplicate their duties.

17. In the United States all ranks of technical personnel, regardless of the rank, work directly with the farmers.
18. The Nigerian senior ranking Agricultural Extension personnel do not adequately work directly with the farmers in Nigeria.
19. The United States Cooperative Extension Service is financed by the federal, state and local governments which insures stronger financial support.
20. The Nigerian Agricultural Extension Service is not adequately financed by the sponsors.
21. In the United States several laws or regulations provide funds for the operation of the Cooperative Extension Service.
22. There is no legislation which provides funds for the Nigerian Cooperative Extension Service.
23. In the United States the extension programs are developed and implemented at the local level (from "bottom to top") with the help of the local extension agent.
24. In Nigeria the extension programs are developed and implemented at the state level (from "top to bottom") without the help of the junior and intermediate extension workers.
25. Among the Agricultural Extension programs in Nigeria, home economics has the least impact and emphasis among the local people.
26. The Cooperative Extension Service personnel in the United States are well trained and regularly attend inservice programs at the state land-grant institutions.
27. The staff of the Nigerian Agricultural Extension Service are usually inadequately trained and little attention is given to

subsequent training while in service.

28. The United States Cooperative Extension Service uses a variety of teaching methods to educate the farmers and as such has reached almost every farmer.
29. The Nigerian Agricultural Extension Service uses mostly the individual contact method and farm/home visit method for educating the farmers which has resulted in the neglect of many farmers.
30. In the United States the Cooperative Extension Service has an evaluation unit which takes care of the appraisal of programs and the Cooperative Extension personnel are deeply committed to and involved in the evaluation of the programs.
31. The Nigerian Agricultural Extension Service does not have an evaluation unit in its organizational structure and not all its personnel are deeply committed to and involved in the evaluation of programs due to lack of funds. Many of the staff do not want to reveal their incompetences and ineffectiveness.

### Recommendations

"Nigeria is at crossroad, its agriculture will keep declining or improving depending on how well the Agricultural Extension Service problems have been solved. Unless measures are taken to reverse the situation, the country may face a serious food shortage which would cripple its development after the oil wells must have dried up." (Wudurri, B. B., and Anaso, A., 1980)

A comparative analysis of the Cooperative Extension Service of the United States and the Agricultural Extension Service of Nigeria revealed much useful information which should enable the author and the Nigerian policy makers to develop and improve the Nigerian Agricultural Extension Service.

Based on the conclusions of this study, the following recommendations are made for the improvement of the Agricultural Extension Service in Nigeria; however they may be applicable to other nations of the world.

1. That the federal government enact legislation (laws) which will provide adequate financial support, recognition and direction for the operation of the Agricultural Extension Service.
2. That the Agricultural Extension Service be linked organizationally to the universities and other institutions of higher education in Nigeria.
3. That the technical personnel of the Agricultural Extension Service carry out educational functions exclusively.
4. That the Agricultural Extension Service be organized and administered by the federal, state and local governments and the divisional agricultural organization and administration be separated from that of the county.

5. That additional extension personnel be employed so that there is an adequate number of well-trained people to do the work.
6. That all new university graduates joining the service be given a period of orientation and internship program activities prior to being posted to their stations of work.
7. That the junior and intermediate staff members be trained more adequately in practical agriculture and sociology and continuous inservice training programs be given to all staff members.
8. That the curriculum of the existing schools of agriculture be expanded and developed to reflect all the problems of the Agricultural Extension Service.
9. That the responsibilities of the various levels of the Agricultural Extension staff be well defined to avoid the duplication of duties and waste of time.
10. That all the ranks of the Agricultural Extension Service personnel be involved in the field more than in the office.
11. That the federal, state and local governments jointly provide adequate financial support.
12. That the agricultural extension programs be developed and implemented at the local levels with the use of advisory committees.
13. That the junior and intermediate staff members participate in the planning of programs at all levels.
14. That more workers in the home economics program area be employed and trained.
15. That the extension workers use more group methods of teaching in order to reach more people (clientele).

16. That the individual contact method be used on the request of the farmers or by appointment by the extension worker.
17. That the extension worker make more use of the training and visit system (T and V) in working with farmers.
18. That the extension service provide an adequate number of demonstration units throughout the country.
19. That cine vans (demonstration units) equipped with microphones and cinema equipment tour all the villages to enlighten the farmers.
20. That a separate Evaluation Section be included in all Agricultural Extension Divisions in the nation.
21. That the personnel of the Agricultural Extension Service be given adequate training in the area of reporting and evaluation.
22. That adequate funds be provided for the reporting and evaluation section so that the workers and the public will know the amount and quality of progress being made.

### Chapter Summary

In Chapter 5 a summary, conclusions and recommendations are made on selected elements of the Cooperative Extension Service of the United States and the Agricultural Extension Service of Nigeria.

The most striking missing elements of the Nigerian Agricultural Extension system when compared to the United States Cooperative Extension Service appear to be (1) a close tie to an educational research base such as the land-grant universities with related research demonstration and experiment stations, and (2) a close tie to a local government. The presence of these elements in the United States Cooperative Extension Service system and their absence in the Nigerian system appear to enhance the former and inhibit the latter in carrying out an effective Agricultural Extension program.

### Discussion

It is unfortunate that the contribution of agriculture in Nigeria has been on the decline since the late 1960's due partly to the oil boom and ineffective Agricultural Extension Service. Agriculture should be the main source of support for the economy. Increased agricultural output will contribute to overall economic development but it has not been the top priority among the government policies. Industrialization should not take place before agricultural development in Nigeria. Oil revenue should not take the place as the principal earner of Nigerian revenue rather than agriculture.

The problems of the Agricultural Extension Service in Nigeria are many. Many farmers lack the equipment or know-how to farm efficiently. This is partly due to an ineffective Agricultural Extension system and inadequate support from the government. The training of farmers will do more for peacekeeping, freedom from hunger and diseases than the drilling of soldiers.

Periodic restructuring of the system is necessary for the proposed development and improvement to take place. Much has been said in this study about the ways and means of improving the Agricultural Extension Service in Nigeria. Unless these problems are adequately confronted, the extension service will continue to fail. Someone, somewhere must start doing something immediately with the recommendations in order to bring new changes.

Chiefs, elders, policy makers, and other leaders must bear in mind that nutrition, health, poverty and education are not separate

issues but interrelated. The improvement in one affects the other. Therefore agricultural education is needed for the farmers of Nigeria. The agricultural problems need urgent solutions so as to avoid the disasters ahead (malnutrition, diseases, poverty, illiteracy, etc.).

"If we are thinking days ahead we should reorganize the Agricultural Extension Service and teach the farmers more effectively.

If we are thinking weeks ahead we should till the soil now.

If we are thinking months ahead we should sow seeds immediately.

If we are thinking a year ahead we should educate all the people." (Francis Odili Walson, 1983)

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APPENDIX A

IMPORTS OF TRACTORS AND OTHER AGRICULTURAL MACHINERY

Year	Tractors (tracked or half tracked)		Tractors (wheeled less than 40 H-P)		Tractors (wheeled over 40 H-P)		Other Machinery	Total Value
	No.	(value million)	No.	(value million)	No.	(value million)	(value million)	(million)
1973	202	3.0	397	1.3	468	1.4	0.4	6.1
1974	241	2.7	319	1.5	319	0.9	1.7	10.8
1975	1209	26.3	2576	13.8	1196	5.1	1.5	46.7
*1976	1922	29.3	1894	7.7	270	2.7	3.2	46.9

\*1976 was for January to November only.

(Appendix A, Contd.)

## FERTILIZER IMPORTS 1981-85

Year	Import	Average C+F Cost (N/tonne)	Average Port Handling Out Transport Cost (N/tonne)	Total Cost (N 1000)
1981	524	210	60	141,480
1982	676	231	60	196,716
1983	854	254	60	268,156
1984	1,053	279	60	356,967
1985	1,271	306	60	<u>465,186</u>
Total				1,428,505

Source: Unpublished files, Federal Ministry of Agriculture, Lagos.

## APPENDIX B

NIGERIA: PLANNED CAPITAL INVESTMENT IN AGRICULTURE AND  
NATURAL RESOURCES 1981-85 MILLION NIARA

Item	Amount Allocated	Percentage Share/Total*
Crops (Total)	5620.223	62
Food Crops:		
(a) Federal	154.608	
(b) States	152.481	
	307.095	3.4
Tree Crops	5313.128	58.8
Irrigation and Water Resources Development	2266.331	25.0
Livestock	674.724	7.5
Fishery	171.029	2.0
Forestry	<u>299.571</u>	3.3
TOTAL	9031.878	

Source: Computed from: Fourth National Development Plan, Vol. 1,  
Federal Ministry of National Planning, Lagos.

Notes: \*Figures may not add up to 100 due to rounding off.

The grand total for Fourth National Development Plan period is ₦29,497. Ministry of Agriculture and Natural Resources has \$9031.878 million.

$$\% = \frac{9031.878}{29,497} \times \frac{100}{1} = 30\%$$

## APPENDIX C

NIGERIA: VALUE OF FOOD IMPORTS AND SHARE IN TOTAL IMPORTS,  
1965-1980 (N MILLION)

Year	Food Imports (Fm)	Total Imports (M)	$\frac{\text{Food Imports}}{\text{Total Imports}} \% = \frac{\text{Fm}}{\text{M}} \%$
1965	46.1	550.3	8.4
1966	51.6	512.7	10.1
1967	42.6	445.6	9.6
1968	28.4	388.9	7.3
1969	41.7	496.8	8.4
1970	57.7	524.7	11.0
1971	87.9	1068.9	8.2
1972	95.1	991.4	9.6
1973	126.3	1224.8	10.3
1974	154.8	1737.3	8.9
1975	298.8	3721.5	8.0
1976	440.9	5148.5	8.6
1977	736.4	7093.7	10.4
1978	1020.7	8211.5	12.4
1979	1105.9	7472.5	14.8
1980	1091.0	9658.1	11.3

Sources: Files, unpublished, of:

- (1) Federal Office of Statistics, Lagos;
- (2) Central Bank of Nigeria, Lagos;
- (3) Federal Government Press, Economic and Statistical Review 1978, Lagos, 1979.

## APPENDIX D. PERSONNEL RANKS

Administrative Division

Chief Executive Officer, grade level 13y  
Assistant Chief Executive Officer, grade level 12y  
Principal Executive Officer, grade level 10  
Senior Executive Officer, grade level 09  
Higher Executive Officer, grade level 08  
Executive Officer, grade level 07  
Assistant Executive Officer, grade level 06  
Chief Typist, grade level 08y  
Senior typist, grade level 07y  
Typist, grade I, grade level 06y  
Typist, grade II, grade level 05y  
Typist, grade III, grade level 03  
Chief Clerical Officer, grade level 07y  
Assistant Chief Clerical Officer, grade level 06  
Senior Clerical Officer, grade level 05  
Clerical Officer, grade level 04  
Clerical Assistants, grade level 03

Source: Estimates of Anambra State of Nigeria Expenditure, Head  
2341-Ministry of Agriculture, Enugu, Anambra, Nigeria, 1982.

## APPENDIX E. PERSONNEL RANKS

Agricultural Extension Service (Technical Staff)

Chief Agricultural Officer, grade level 15  
 Deputy Chief Agricultural Officer, grade level 14  
 Assistant Chief Agricultural Officer, grade level 13  
 Principal Agricultural Officer, grade level 12  
 Senior Agricultural Officer, grade level 10  
 Agricultural Officer, grade I, grade level 09  
 Agricultural Officer, grade II, grade level 08  
 Chief Agricultural Superintendent, grade level 14  
 Assistant Chief Agricultural Superintendent, grade level 13  
 Senior Agricultural Superintendent, grade level 09  
 Agricultural Superintendent, grade level 07  
 Assistant Agricultural Superintendent, grade level 06  
 Agricultural Assistant, grade I, grade level 07  
 Agricultural Assistant, grade II, grade level 06  
 Agricultural Assistant, grade III, grade level 06  
 Agricultural Assistant in-training, grade level 04

Source: Estimates of Anambra State of Nigeria Expenditure, Head  
 2341-Ministry of Agriculture, Enugu, Anambra, Nigeria, 1982.

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A COMPARATIVE ANALYSIS OF THE COOPERATIVE EXTENSION SERVICE  
OF THE UNITED STATES (VIRGINIA) AND THE  
AGRICULTURAL EXTENSION SERVICE OF NIGERIA (ANAMBRA)

by

Francis O. Walson

(ABSTRACT)

The objectives of the study were as follows:

1. To investigate the following of the Cooperative Extension in the United States (Virginia) and Nigeria (Anambra):
  - A. Background and history
  - B. Organization
  - C. Administration
  - D. Responsibilities of personnel
  - E. Financing
  - F. Program areas
  - G. Training of staff
  - H. Communication processes and methods used
  - I. Reporting and evaluation of programs
2. To write a descriptive comparison of the two extension systems.
3. To make recommendations for the improvement of the Nigerian Agricultural Extension Service based on the findings.

Nigeria has an Agricultural Extension Service which has not been successful in changing the life of the peasant farmers and needs to be improved if agriculture is to be successful in Nigeria.

Nigeria's economy has gone down within the last year due to the

reduced price of oil on which the nation has built its wealth since the mid-1960's.

It is now believed by the Nigerian policymakers that agriculture is a more stable and everlasting base for the economy and again needs to be the primary source of income in Nigeria.

The methods used in this study were as follows:

- A. Literature review. A literature review was made on the elements selected for study.
- B. Sources of information. Additional information was obtained from other sources such as the Cooperative Extension Service in the United States and Nigeria, personal interviews, world bank offices in the United States.
- C. A descriptive comparison was made on all of the elements studied and conclusions were drawn. Recommendations for the improvement of the Nigerian Agricultural Extension Service were made.

The comparison between the Cooperative Extension Service in the United States and the Nigerian Agricultural Extension Service shows similarities and differences. There is greater similarity in their operations than in the organizational and administrative structure. There are also differences in the methods used to carry out the extension programs, variety of programs, procedures used in program planning and reporting and evaluation of programs.

Ten important recommendations resulting from this study are:

That the Federal government enact legislation (laws and regulations) which will provide adequate financial support, recognition

and direction for the operation of the Agricultural Extension Service.

That the technical personnel of the Agricultural Extension Service carry out educational functions exclusively.

That additional technical extension personnel be employed so that there is an adequate number to do the work and that they be well-trained.

That more workers in the Home Economics programs be employed and trained.

That the extension workers use the training and visit system (T and V) to train the farmers.

That the extension service provide an adequate number of demonstration units.

That cine vans (demonstration units) equipped with microphones and cinema equipment tour all the villages more frequently to enlighten the farmers.

That a separate Evaluation Section be included in all Agricultural Extension Divisions in the nation.

That the personnel of the Agricultural Extension Service be given adequate training in the area of reporting and evaluation.

That adequate funds be provided for the reporting and evaluation section so that the workers and the public will know how much progress is being made.