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# Extension communication patterns in oyo state agricultural development programme

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# EXTENSION COMMUNICATION PATTERNS IN OYO STATE AGRICULTURAL DEVELOPMENT PROGRAMME



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## DEDICATION

This thesis is dedicated to the LORD Jesus Christ for his mercies, provisions and protection over me and my family, and to my beloved wife, Mrs. Olayemi Olufemi Ogunwale with whom God has made me a blessed family.

ACKNOLWLEDGEMENT

O magnify the LORD with me and let us exalt his name together. I sought the LORD, and he heard me, and delivered me from all my fears. O taste and see that the LORD is good, blessed is the man that trust in him.

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Above all "But to do good and to communicate forget not, for with such sacrifices God is well pleased. (Heb. 13:16).

God be with you all. Amen.

OGUNWALE ABEL BABALOLA

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## ABSTRACT

The Oyo-state Agricultural Development Programme was designed to support increased agricultural production in the state. There were many improved agricultural technologies and farm information available in the programme but the extension communication for dissemination of these improved agricultural technologies between research and extension workers on one hand, and between these agencies and farmers of the programme has not been studied.

The specific objectives of the study were to examine the organizational structure of the programme so as to identify those involved in disseminating farm information and agricultural technologies, to identify the stock of improved agricultural technologies available and to determine channels of communication between the research and extension workers and between these agencies and the farmers. For the respondents, the study was to determine their socio-economic characteristics which have influence on their frequency of contact.

To achieve the stated objectives, data for the study was collected between November 1990 and March, 1991 from the following number and categories of respondents, 9 research workers, 150 village level extension staff and 120

registered farmers of the programme. Two sets of questionnaires were administered to research workers, and a randomly selected samples of extension workers. Interview schedule was used to collect information from randomly selected samples of programme registered farmers. Participant observation was also used as data collection technique. The data collected were analized and subjected to statistical analyses with the use of chi-square, correlation analysis and multiple regression analysis.

The findings showed that Subject Matter Specialists constituted a link between the research workers and the village level extension workers, while the village extension agents were responsible for face-to-face contacts and communication with farmers in the programme. "Personal contacts" "meetings" and "group discussion" were the main channels of communications of agricultural information and technologies. However, the use of mass media such as daily newspapers, magazine, journals, radio and television has not yet been institutionalized as sources of farm information in the programme.

There was a positive and significant correlation between the following characteristics of extension agent,

age, level of educaion attained, Official status, length of service in the programme and years of experience and frequency of contact between research and extension workers, while the age of farmer, level of education of farmer, years of farming experience and knowledge of extension agent's name had significant relationship with the frequency of contact between extension agent and farmers in the programme.

It was recomended that the programme should strengthen the research organs and extension service at farmers' level, and innovative educational techniques should be employed to increase opportunities for communication of farm information. Provision of adequate transport facilities for village level extension agent, and the establishment of more Agro-chemical and farm service centres in the programme area were also recommended.

# CHAPTER ONE

## 1.1 INTRODUCTION

The development, dissemination and utilization of new agricultural technologies take place in three inter-related parts of a system of technology transfer. This means that the process of modernizing agriculture involves three basic, social systems; research, extension and the farmers systems. Each of these is equally important in the process of modernizing agriculture. The members of each system are constantly communicating with other members within and between the systems. The more meaningful the communication within and between the systems, the faster will be the process of modernization of agriculture.

Nigerian agricultural administrators are increasingly concerned that peasant agriculture in the country has developed little over the years and that it is presently incapable of solving the nation's food problems. Although research centres in the country have demonstrated that it is possible to grow high yields by using improved varieties, fertilizers, agro-chemicals, and high plant population but most farmers have been unwilling or unable to adopt the resulting technologies. Factors responsible for yield gaps between the research stations and farmers' fields are

technical, economical and social.

The technical factors include differences in soil quality and management ability as well as conflict of the new practices with other technical elements in the farmers production system. The common economic and social factors include high cost associated with the new inputs, differences in production objectives, lack of complementary resources, inadequate infrastructural and institutional support, taste preferences and conflict with social obligations.

Organisationally, the extension service system serves as a communication link between the research system and the farmers' system. The system receives new knowledge from the research system and after due processing, and modifying if necessary, pass it on to the farmers to make use of the knowledge. Thus, the job of extension personnel in this context is very complex and crucial. But our knowledge of the profile of extension personnel in relation to communication behaviour is quite inadequate.

Agricultural research Institutions and Agricultural Development Programmes (ADPs) now generally agree that technologies intended for small-scale farmers should be identified, designed and evaluated within the context of the farming systems practised by farmers themselves. The value

of farmer participation in such research is also widely recognized, although the degree to which farmers' involvement is encouraged and effectively used varies. The potential benefits of more complete involvement are considerable, but the practical problems are also considerable, demanding imagination and cultural sensitivity.

Furthermore, factors responsible for technological gaps between the research station and farmers do not obtain in every situation, and some are more important than others. The extent to which they limit farmer's adoption of a new technology, will depend much on how effectively the technology is communicated to the farmers. This study will help to improve the understanding of such problems and suggests directions for improved approaches.

The problem related to communication patterns of research workers, extension personnel and farmers can be grouped under three categories:

(i) Individual communication pattern

(ii) Intra-system communication pattern, and

(iii) Inter-systems communication pattern

All these three types of communication patterns are considered, but emphasis is placed on the inter-systems

pattern. At the inter-systems level, communication patterns include communication and contacts between research workers, extension personnel and farmers' systems.

A critical study of extension communication patterns of the research workers, extension personnel and farmers might go a long way in identifying the ways and means for accelerating the flow of information for modernizing agriculture in Nigeria. In the light of this fact, this study is designed to examine the extension communication patterns in Oyo-state Agricultural Development Programme.

## 1.2 Background Situation

Over the years, many researchers have attempted to bring their work objectives and activities more in line with farmers' needs. Their efforts however, have often been uncoordinated, if not contradictory. In Nigeria, attempts to establish dialogue between the partners in agricultural development i.e. researchers, extension personnel and farmers had gained impetus. Researchers wanted to put "improved" technology from research stations to the test in the reality of local environments.

Akinbode (1980) said that "a considerable amount of problem oriented and investigative agricultural activities are going on in the research institutes, universities and

other institutions but there is no proper linkage between these institutions and the farmers. The reported research findings of increased production in almost every aspect of our agriculture bear no relationship to the practices of the farmers.

The research is closely linked with developments aimed at generating involvement and action by farmers. Farmers negotiate with research personnel for the types of production recommendations they want and thus hold the real power to decide which techniques are the most appropriate. The extension system must feed research workers with information about the contraints farmers have experienced in adopting research recommendations, and the research system must have the capacity and readiness to respond with problem-specific recommendations. Research should also seek to obtain direct feedback from the field itself, through field visits undertaken by research scientists, preferably accompanied by extension workers.

Agricultural extension is the framework within which the agricultural information/technology diffusion process takes place to induce increased agricultural productivity. It is not only a facilitating influence in agriculture but also the nerve centre and life wire of agricultural

development of any nation. The transfer of useful ideas at a rapid rate from one person to another is imperative to agricultural development in any country. Agricultural development process requires integrated approach. That is, due consideration should be given to the implication that development programme in one area might have for the others.

It is important to provide essential interface between the farmer and improved agricultural technology. This will encourage the agricultural communities to produce high quality goods and raw materials for the country's agro-allied industry.

## 1.3 Historical Background of Agricultural Developments Projects/Programmes in Nigeria

The Agricultural Development Projects (ADPs) were first identified as viable projects in November, 1972, at a time when only two years after the end of the civil war, Nigeria was facing its first food and fibre shock, the emergence of food production short-falls which started manifesting itself as from 1970.

The Agricultural Development Projects (ADPs) were identified and launched against the background of a Nigeria Agriculture which in the 1950s and 1960s had attained pre-eminent export status through complete reliance on the small

scale farmers. Therefore, the main feature of the ADP is on the small scale farmer as the centre piece of increased food production.

The first generation of ADPs were enclave project covering a limited number of local government areas. Hence, Funtua ADP was established in 1975, Gusau (1975), Gombe, (1975), Ayangba (1978), Lafia (1979), Bida (1980), Ilorin (1980), Oyo-North (1982) and Ekiti Akoko (1982).

The enclave project provided useful lessons in implementing the new concepts of area-based projects to other LocalGovernment Areas within the same state as well as to other states not covered by the ADPs. By the late 1970s, there were demands for the benefits of ADPs to be spread to other Local Government Areas within a state so that all parts of a state could benefit from the ADP systems. This period coinceded with the time when Nigeria Agriculture was obviously suffering from neglect due to the emphasis on commercialization of petroleum and its products. These demands became intensified during the civilian regime when politicians could no longer contain the demand for state-wide ADPs. This led to the next generation of ADPs covering all the Local Government Areas within a state, hence Bauchi (1981), Kano (1981), Sokoto (1982), Kaduna (1984) and Oyo (1989).

The failure of special crop programmes to achieve rural development objectives and unfavourable developments in agricultural sector led to the strategy of integrated approach in the ADPs. The ADP system is based on the premise that a combination of factors comprising the right technology, effective extension service, aceess to physical inputs, adequate market and other infrastructural facilities are essential to get agriculture moving and to improve productivity in order to raise the standard of living of rural dwellers.

One of the important features of ADP is its integrated approach to the supply of inputs and infrastructures. Rural roads, small dams, farm service centres, seed multiplication farms, inputs distribution, extension service e.t.c., were all handled by the ADP management unit demonstrating the vital importance of the linkages and the need for optimal sequencing of agricultural development production activities.

Another important feature of ADP strategy is its reliance on small scale farmer as the centre-piece of an incremental food production. ADP typically constructs and sustains a favourable infrastructural environment which together with an efficient input distribution system provides the driving force that drives the millions of farm

families.

The implementation of the integrated agricultural development projects is primarily a responsibility of the individual states through semi-autonomous management units. However, the Federal Department of Rural Development is vested with the responsibility of coordinating the integrated agricultural development programmes and other pogrammes like Home Economics, which were designed to improve the economic and social well-being of the rural population.

Under the Federal Department of Rural Development is the Agricultural Projects Monitoring, Evaluating and Planning Unit (APMEPU) which was established in 1976 at Kaduna, and the Federal Agricultural Coordinating Unit (FACU) established in mid-1981 in Ibadan. Both Units are supported financially by the World Bank loan under the Agricultural Technical Assistance Project Loan to Nigeria.



## 1.4 Description of the Oyo State Agricultural Development Programme

### (i) Background

The Oyo State Agricultural Development Programme (OYSADEP) took off on 1st April, 1989 in succession to the Oyo-North Agricultural Development Project (ONADEP). Unlike

the Oyo-North Agricultural Development Project whose operations were restricted to Ifedapo, Kajola and Irepo Local Government Areas, the activities of the Oyo-State Agricultural Development Programme cover all the different parts of the state.

The establishment of the Oyo-state Agricultural Development Programme was inspired by the succes of the Oyo-North Agricultural Development Project in a conscious and deliberate effort to address the problems of Nigerian agriculture and rural development in Oyo-state. As the dominant sector of the economy, agriculture holds the key to the successful upliftment of the standard of living of the poor majority. In the long term, agricultural development will serve as the framework on which industrial take-off and technological break-through will be sustained in Nigeria.

In pursuance of this societal goal and aspiration, the Oyo-state Agricultural Development Programme is making new institutional approaches toward the generation and dissemination of agricultural technologies, as well as the efficient training and management of extension personnel required to perpetuate the proper use and maintenance of these technologies.

The Oyo-state Agricultural Development Programme is now part of the Agricultural Research and Development (R&D) system of Nigeria, hitherto comprising faculties of agriculture in general Universities, autonomous commodity - specific agricultural research institutes, World Bank assisted Agricultural Development Projects (ADPs), agricultural ministries and a number of other institutional establishment.

In general terms, the expected incremental benefit of the Oyo-state Agricultural Development Programme is in the area of increasing the agricultural production in the state especially the production of food crops, and raising the living standard of the people in the rural areas. Thus, the programme is concerned with adaptive research and the use of small technology to boost food production, productivity and increase in the income of rural farmers.

The Oyo-North Agricultural Development Project (ONADEP), which was expanded to all parts of the state, and renamed as Oyo-state Agricultural Development Programme, was established in 1982 and became operative at the beginning of 1983 with Headquarters at Saki. The project was designed to cater for an estimated 55,000 farming families in the project area. The main objective of the project was to increase food production and farm incomes through improving

the productivity of the land and labour of the rural farmer in three Local Government Council areas of the state involved in the project namely Ifedapo, Irepo and Kajola. The project covered approximately 12,310 square kilometers (1,231,000 Hectares) which is about 32% of Oyo state, and was implemented over a period of five years. The project was jointly financed by the Federal Government, the Oyo state Government and the World Bank.

Whereas, the Oyo state Agricultural Development Programme covers the whole Local Government Council areas in the state and involves more crops and farming families. The main objectives of the programme are the same as those designed for the enclave project except for the coverage, number and types of crops involved, and the number of farm families to benefit from the objectives. The Oyo-North Agricultural Development Project concentrated efforts on six main arable crops which were maize, cowpea, soybean, rice, cassava and yams, and did not engage in tree crops. However, the activities of the Oyo-state Agricultural Development Programme involve more arable and tree crops than those involved in the encalve project. Also, the extension service unit of the state Ministry of Agriculture and Natural Resources has now been incorporated into the

programme. So the programme is now responsible for extension service in the state. The programme has also been inolved in fishery activities. Very soon, it was gathered, the vertinary and Forestry Units of the state Ministry of Agriculture will also be transfered into the programme. Thus, the programme is broader in scope in terms of coverage, activities and farm families than the Oyo-North Agricultural Development Project.

Also in an attempt to know why the state used the term programme instead of "Project" it was gathered that the World Bank had been assisting in Oyo-state Cocoa Development Unit, which was a state-wide project, and the World Bank did not want to assist in another state-wide agricultural project. So, the state Government decided to transfer part of the responsibilities of Oyo-state Cocoa Development Unit to Oyo-State Agricultural Development Programme so as to secure World Bank assistance in the new state-wide agricultural project. This is because the World Bank did not want to involve in two separate state-wide agricultural projects. Hence, the adoption of the term programme so as to differentiate the new state-wide agricultural venture from the Oyo-North Agricultural Development Project and the former state-wide Cocoa Development Unit in which the World Bank had been involved.

For the successful operation of the programme, the programme had taken over the assets and liabilities of both the Oyo-North Agricultural Development Project (ONADEP) and the Agricultural Inputs and Services Unit (A.I.S.U) whose enabling edicts have been repealed. Thus, the state government has repealed the Edicts establishing ONADEP and A.I.S.U and vested their assets and liabilities in Oyo-state Agricultural Development Programme.

(ii) Objectives and functions of Oyo-State Agricultural Development Programme

Oyo-state Agricultural Development Programme had been designed to support increased agricultural production in the state especially production of food crops, and to raise the living standard of the people in the rural areas. In order to realise these objectives, the programme therefore, performs the following functions;

(i) Provide farm inputs such as seeds, fertilizers, agro-chemicals and other services necessary for effective cultivation of crops, the rearing of livestock and the production of fish;

(ii) Provide and maintain necessary infrastructure such as rural roads, wells, boreholes, dams and irrigation facilities for agricultural

development;

(iii) Facilitates the rapid development of the state's agriculture by dissemination of improved farm practice and management methods to farmers; and

(iv) Maintain a vigorous, effective and result-oriented agricultural extension service.

## 1.5 Management, Administration and Organization of the Oyo-State Agricultural Development Programme.

The government has taken the following steps to facilitate the successful operations of the programme;

(i) The Agricultural Development Programme Executive Committee (ADPEC) had been set up with the ultimate responsibility for broad policy guidelines and adequate funding. Other subsidiary bodies have also been set-up, and

(ii) The Programme Manager, Other Heads of Department and key officers have been appointed while the Agricultural Development Programme Management Unit (ADPMU) had been established and therefore, the World Bank conditionalities for loan disbursement have been satisfied.

While the administrative headquarters for the programme is at Saki, the programme has established its administration

at Zonal levels at Oyo, Ibadan, Ilesa, Tede, Ogbomoso and Osogbo, and at each of the Local government headquarters in order to ensure an effective state-wide coverage. The zonal offices are headed by Zonal Managers.

There are six divisions within the programme, each with Department stated. These are:

DIVISION A: Office of the Chief Executive headed by the Programme Manager. This division is responsible for Federal and State Liaison, Public Relations, Evaluation and Monitoring Personnel, Communication and security.

DIVISION B: Finance headed by the Financial controller. It is responsible for all accountancy activities, wages and salaries and purchasing and supply.

DIVISION C: Technical services (Agriculture) headed by Chief of Technical Services. It is responsible for Research Trials, Extension (Teaching), seed production, Land Use Planning, and Farm Management Advisory Services.

DIVISION D: Engineering services (Infrastructure Development) headed by Chief Developoment Engineer. It is responsible for Mechancial Engineering (Workshop), Water (Hydrology), Roads Building (services and construction) and Transport.

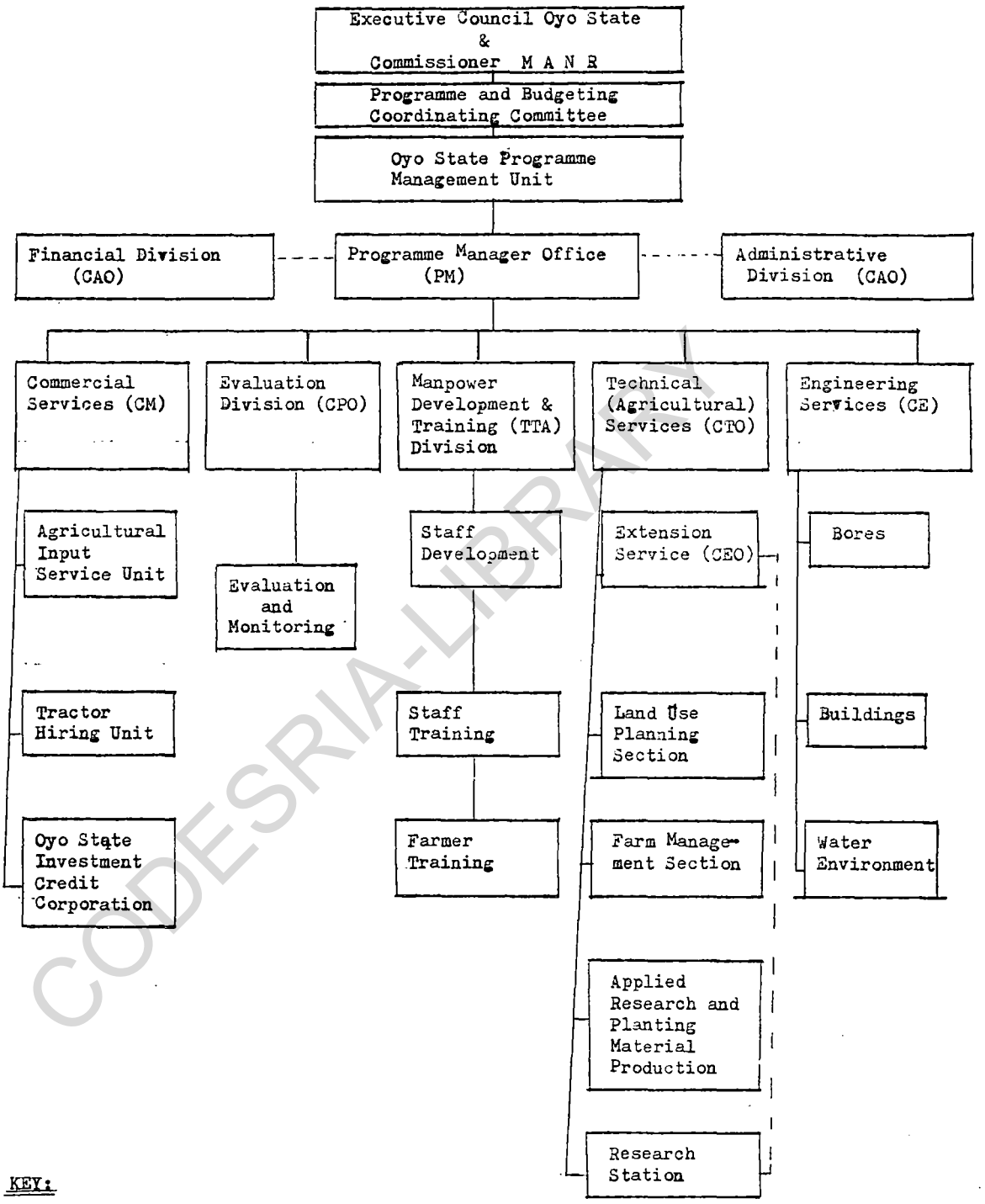
DIVISION E: Commercial services headed by the commercial

manager. It is responsible for Farm Inputs, Cooperative Development, Marketing Credit, Lending, Investment and Mechanical Implement Hiring services.

DIVISION F: Training and Manpower Development headed by Training Manager. It is responsible for both staff Training and Development, Community Teaching and Training in close cooperation with Extension services, Manpower and succession planning, Agricultural Communications.

It is envisaged that giving available resources, the programme should be able to contribute significantly to the transformation of socio-economic well being of the entire people of the state and promote self sufficiency in food production for local consumption, industrial uses and even export.

FIG 1.1 OYO STATE AGRICULTURAL DEVELOPMENT PROGRAMME ORGANIZATIONAL STRUCTURE






KEY:

CAO:- Chief Administrative Officer

CAO:- Chief Accountant

CE:- Chief Engineer

CEO:- Chief Extension Officer

CTO:- Chief Technical Officer

TM:- Training Manager

CM:- Commercial Manager

CPO:- Chief Planning Officer

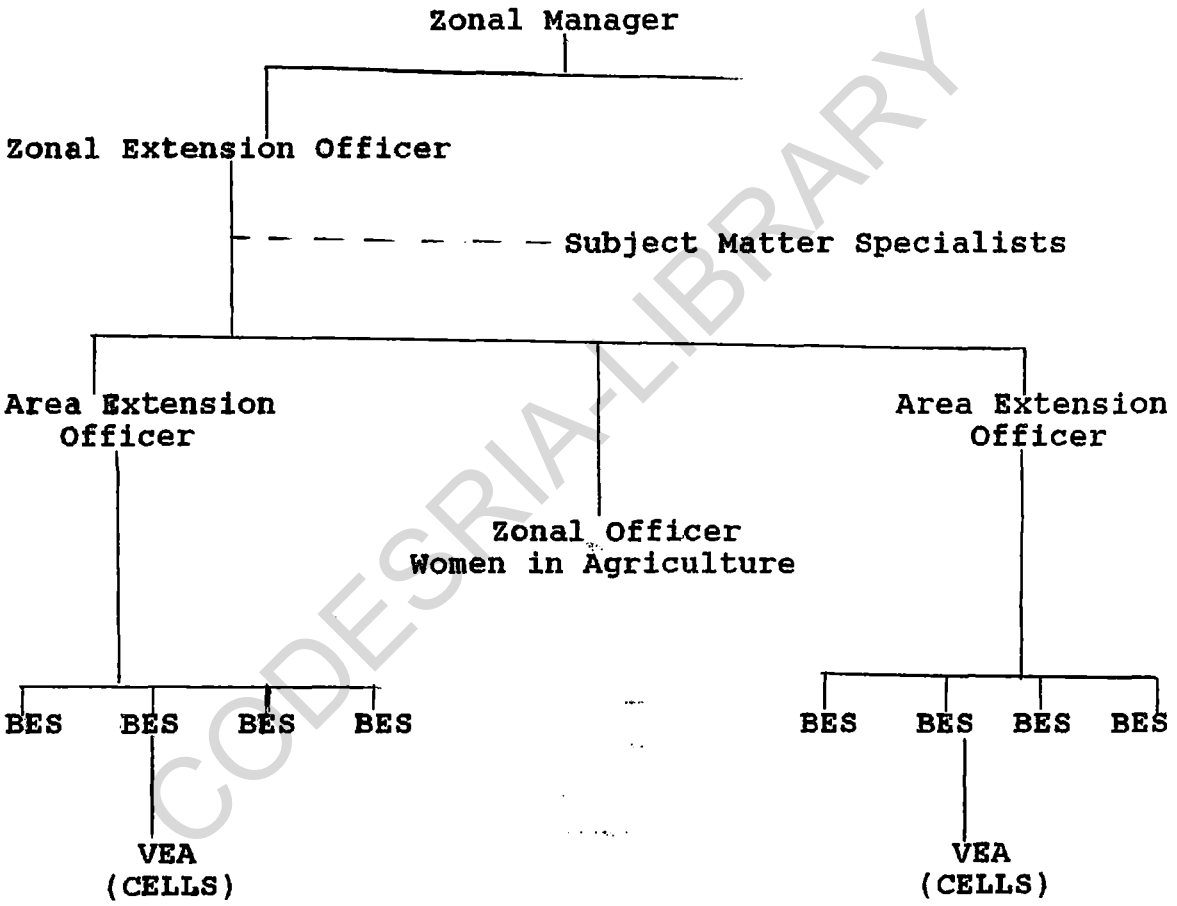
## 1.6 The Extension Service system in the programme

The Extension Department is under the Technical services Division of the programme. The programme extension service was designed to focus attention on small scale farmers, to relieve a series of external constraints that were perceived to be restricting acceptable new technologies. Farm service centres were set up to provide easy and timely access to inputs and also seed farms to multiply planting materials to supply the farmers in the programme. Six (6) zones were created in the programme and one of such zones to be discussed here is Ogbomoso.

Ogbomoso zone consists of five (5) Local Government Areas namely, Ogbomoso, Ogo-Oluwa, Ejigbo, Orire and Surulere. At present, there are fifty-five (55) cells and seven (7) Blocks ably manned by fifty-five village Extension Agents and Seven Block Extension supervisors respectively. Each Extension Agent supposed to reach 800 farmers out of which 80 contact farmers are selected. Other supervisors include the Zonal Extension officer, assisted by five subject matter specialists, One Area Extension officer and one zonal Woman in Agriculture (W.I.A) who coordinates the activities of the women in agriculture in the zone. (Women in Agriculture is a component Unit of the Extension Department). The Extension Department in the zone operates

a single line of command with the Zonal Extension officer (Z.E.O) as the head and the Village Extension Agent as the grassroot link with the farmers.

The organizational structure of Extension service at the zonal level is shown in Fig. 1.2.






NOTE:
BES = Block Extension Supervisor
VEA = Village Extension Agents

## 1.7 Statement of the Problem

There has always been a gap between information generation and its dissemination to the ultimate users. In fact, farmers in most of the developing countries are not able to keep pace with the fast growing farm technology. In Nigeria, too enough technical information have been generated at research institutes and agricultural development programmes but target consumers of the information i.e. the farmers were aware of only a part of this information and have been able to accept and utilize even a small part of the same.

Therefore, communication between the researchers and the extension personnels on the one hand, and between these agencies and the farmers on the other becomes sine-quo non for the two-way flow of farm information from the research station to the farmers through the extension agents. In Nigeria, however, there seems to be a communication gap between the research agency and the Extension Service on the one hand, and between these agencies and the farmers on the other. The problem may be due either to the farmers' relunctance to change their old ways of farming thereby avoiding contacts with the information development and disseminating agents, or in the ineffectiveness of the agents to deliver the "goods" to the farmers.

The effective extension worker must not only have at its command a variety of tools and methods to do his job, but must also know, where to use them, when to use them, and how to use them. The more the variety of channels used in introducing new ideas, the better the chances of their acceptance. If a widespread response is desired, people must be exposed to teaching efforts in different ways. That is to say, repetition but in a variety of ways, is exceedingly important to learning.

There is no doubt that improved technology used in combination with other factors will positively enhance food production. There are however, several reasons why available agricultural technologies are currently not being utilized at a level that shows any appreciable impact on the level of agricultural productivity in Nigeria. Small-scale farmers who constitute the majority of farmers in Oyo state are not resistant to change per se. If they appear unresponsive to agricultural programmes and technologies designed to improve their standard of living, it is because of the social, economic and physical environment in which they operate.

The state Ministry of Agriculture had for a long time provided a link with the local farmers. It was their

exclusive responsibility to organise and execute extension services. However, there has been tremendous changes in the state agricultural policy and extension staff attitudes that it has become quite difficult for the state's extension service to cope with the challenges of transfering agricultural information to farmers effectively. This study will examine the sources of information to farmers, the methods and channels of communications being used by the extension workers in disseminating farm information and technologies to farmers, and the socio-economic factors which have influence on the process of communicating research information to them.

It is acknowledged that agricultural research in Nigeria has not until the advent of the farming system approach been geared to the real problems of the farmers. A lot of research had been undertaken by research institutes in the country in the development of agricultural technologies but the commercialization of such research activities has not been encouraged. Therefore, this study will try to find out the available agricultural technologies in the programme. What are the socio-economic factors influencing the frequency of contacts or communication between extension workers and researchers on one hand, and between extension workers and farmers on the other. What

can be done to make farmers improve their communication and contacts with extension workers.

Thus, the specific aim of this study is to provide answers to the following questions:

1. Who are those involved in disseminating agricultural technologies in the programe?
2. What are the improved agricultural technologies available and how are they being disseminated to programme farmers?
3. What are the sources of information to researchers, extension workers and farmers?
4. What are the channels of communication between the researcher and extension workers, and between the extension workers and the farmers, and
5. What are the socio-economic factors which have influence on the frequency of contact between the researchers and extension workers, and between extension workers and farmers?

Thus, the general problem of this study can therefore, be stated as a study of the extension communication patterns in the Oyo-state Agricultural Development Programme.

## 1.8 The Objectives of the Study

The overriding purpose of the study is to explore the systems of communication of agricultural technologies and farm information between the researchers, extension workers and farmers in the programme. The specific objectives are

(i) To examine the organizational structure so as to identify those involved in disseminating agricultural technologies and farm information.

(ii) To determine the social-economic background of the respondents.

(iii) To identify the stock of improved agricultural t echnologies available in the programme.

(iv) To determine channels of communication between the research workers and extension workers, and between the extension workers and the farmers.

(v) To identify the socio-economic factors which have influence on the frequency of contact between the research workers and extension agents, and between extension agents and farmers.

(vi) To identify the avenues used for getting feedback information in the programme.

## 1.9 The Significance of the Study

As the importance of effective communications in any

organization cannot be over emphasized, this study will be useful, especially to the Extension service, in the choice of communication channels and staff recruitment and replacement. The study would also enable the research and extension agencies determine what adjustments or changes are needed to ensure effective research and extension linkage.

The study will also help in the formulation of strategies for effective feedback mechanisms which will enable the communicator to adjust smoothly to audience. The various personnel involved in the communication process would be able to improve their performance.

Furthermore, the study would contribute to the theoretical knowledge that exists on communications of innovations. Finally, the study will also contribute to information already available in the area of extension communication research.



## 1.10 The formulation of Hypotheses

Communication between research workers and extension workers is often more effective for undistorted farm information flow if a two-way communication system is developed between the two groups. This is also the case between extension workers and farmers. This implies that

people from the two organisations concerned (research-extension, and extension-farmer) should be willing to take the initiative to communicate with one another. Such a situation usually exists where there is mutual confidence and trust between members, and where members see inter-organizational communication as necessary for the execution of their duties.

The following hypotheses were advanced to test the association between personal socio-economic characteristics of respondents and frequency of contacts.

1. There is no significants relationship between the frequency of contacts which a research worker had with extension agents and the following characteristics of research worker (i) age, (ii) level of education attained, (iii) official status, (iv) length of service, and (v) years of experience.
2. There is no significant relationship between the frequency of contacts which a research worker had with extension agent and the following characteristics of extension agent (i) age, (ii) level of education attained, (iii) length of service, (iv) official status, and (v) years of experience.
3. There is no significant relationship between the frequency of contacts which an extension agent had with

the farmer and the following characteristics of extension agent, (i) age, (ii) level of education attained (iii) length of service, (iv) official status, and (v) years of experience.

4. There is no significant relationship between the frequency of contacts which an extension agent had with the farmer and the following characteristics of farmers (i) age, (ii) level of education attained, (iii) years of farming experience (iv) size of farm, and (v) knowledge of agent's name by farmer.

1.11 The Assumptions on which the Study was based

The assumptions on which this study was based were:

(a) that communications exist between research workers and extension workers on one hand, and extension workers and farmers on the other hand, in the programme.

(b) that there was a message from research workers to farmers and production problem from farmers to research workers.

(c) that the research workers and agricultural extension workers in the programme would recognise the importance of communication as a vital tool in the

dissemination of information about new ideas and having recognised such importance would,

(d) honestly participate in the study in order to determine those media and/or channels which are of value in reaching their objectives.

(e) that communication channels exist and they often can be combined to advantage.

(f) that there are certain tasks which one channel can do that others cannot do.

(g) that research workers, extension workers and farmers in the programme vary in their socio-economic characteristic.

(h) that if there is adequate supply of essential inputs, effective communication of relevant messages to farmers in the programme can increase their production, and

(i) that the results obtained by this study in the programme could relatively be true for other Agricultural Development Programmes (ADPs) in the country.

## 1.2 Operationalization of Concepts

### (a) Communication Pattern:

It refers to the communication behaviour of an

individual or a social system that is systematic and exhibit some form of regularity. The systematic communication behaviour of an individual includes input, processing and out-put of farm information related to agricultural technologies.

(b) Information-Input Pattern:

It refers to all the activities performed by an individual for acquisition of scientific and technical information related to agricultural technology. The process of information input of each respondent will be examined by an information input index developed for the purpose.

(c) Information Output Pattern:

It refers to all such activities performed by an individual for dissemination of scientific and technical information related to agricultural technology. The process of information output of each respondent will be examined by an information output index developed for the study.

(d) Information feedback mechanism:

It refers to the process of information which makes the communication's process two-way rather than one-way affair. It comprises of all the avenues through which the extension workers get to know the effect, impact or

consequence of their communication on farmers and also all the avenues through which the research workers get to know the effect of information transfered to farmers either directly or through extension workers, and the avenues through which the extension workers rely back the production recommendation's problems to research workers. This will be examined in the study.

(e) Relationship:

The term "relationship" as it is used in the testing of hypotheses, means that changes in two (or more) variables are associated with each other in the study. A logical relationship exists between variables when it supports further analysis through the use of reason and judgement along with the application of knowledge about the variables and the forces at work.

## 1.13 Justification of the Study

The gradual and increasing awareness of the importance of agriculture in our society today, demands proper management of human, land and material resources. Information becomes necessary and this is essential for effective management in agriculture, thereby creating the need for an effective communication pattern within

institutions, farming population and the public.

Also, agricultural development depends on the dissemination of useful and utilizeable research findings to farmers in a language that can be understood by them. Sustained growth in agriculture can be maintained not only by supplying farmers with an array of technological inputs but also by establishing a close liaison between the research and extension institutions, and the farmers through such media as are found suitable and effective.

Thus, effective introduction of improved farm practices and inputs, is impossible without an effective strategy of approach based on a through knowledge and understanding of farmers' selection of appropriate channels of communication and agricultural extension methods. Hence, the major prupose of this study is to examine the extension communication patterns in Oyo-state Agricultural Development Programme.

# CHAPTER TWO

## 2.1 REVIEW OF LITERATURE

Many studies have been done in many parts of the world on extension communication. Few studies have made brief references to the subject reporting the nature of contact between farmers and extension workers in relation to the adoption of innovations (Williams, 1969). There is still a need, however, to describe and analyse in greater details, the extension communication patterns between researchers and extension workers on one hand, and extension workers and farmers on the other. There is the need to further probe whether there are contacts between the originator of innovations i.e. the researchers and the ultimate users, i.e. the farmers.

In this chapter, review was made of research and extension relationships as they affect communication between the two agencies, and extension workers - farmers relationship in communicating farm information. The concept of extension communication, and problems or factors affecting contacts between extension agents and farmers were also considered. Thus, this chapter summarises the findings which implications are related to this study. A review of

excerpts from various experts in the field of communication was necessary so as to finally define those groups of propositions which would be examined. The review of literature for this study would focus on the following areas:

1. communication in Agricultural Development programmes.
2. sources of information and channels of communication.
3. socio-economic factors that affect communication or contacts, and
4. Feedback mechanism.

### 2.1.1 Communication in Agricultural Development Programmes

It has been stated that communication especially in agricultural development is essential for better understanding of the project objectives, unity among the agencies involved, farmers motivation, co-ordination of the project activities towards a common goal, and increased productivity. For communication to yield the desired results, relevant information is the essential raw material.

Furthermore, it was noted that part of development task consist of determing to what degree communication problems are significant in all aspects of development programmes and

then developing the means of training personnel and building the institutions needed to meet the communication need. It was also recognized that very often communication problems tend to limit the effectiveness of the personnel involved in any development programme. This is a very strong viewpoint that needs adequate attention.

Communication problems tend to limit the effectiveness of extension agents in taking technologies from the researchers to the farmers and in taking farmers' farm problems back to the researchers. This limitation may be caused by stained research-extension workers relationships or by the absence of a suitable link between researcher and extenstion worker or organizational factors. So, there is a need to reduce administrative bottlenecks in an organization that involves both research and extension.

Stensland (1958) emphasised the role of communications in community development. He pointed out that development stops when communications break down. What Stensland was trying to say was that communications generate ideas for verification. For instance, when we consider farm information system which actually involves scientific farm information development, dissemination and integration, one will be further convinced that the three groups - research,

extension, and farmers, involved need continuous flow of information within and between the groups for any development to take place.

### 2.1.2 Sources of information and channels of communication

The extension worker has often been regarded as the link between reseach and the farmers on technology transfer. The village level extension agents have been one of the main sources of agricultural information to the farmers because of their close contact with the farmers. However, they often pass distorted information to the farmers because of the lengthy communication chain often involved in the process.

Kidd (1971) in a study of sources of knowledge of new practices of various schemes found that majority of the farmers reported first hearing about new practices or programmes directly from extension staff. Between one and two fifths reported hearing from friends or other farmers. Mass media sources were reported as sources of knowledge in about 15 percent of the cases studied.

In the study, it can be seen that farmers behaved both as individuals and as members of a village social system in regard to sources of knowledge. The mass media in most cases would link the farmers with the programme at an

impersonal level, and many of them, due to level of education or ignorance, might not follow the announcement, talkless of adopting the innovations. This finding butressed the fact that it is very imperative that extension workers use a combination of two or more extension methods to impart knowledge.

Clark and Akinbode (1968) identified both mass media and interpersonal sources of information as means of communication with the rural populace, particularly the farmers of old Western state of Nigeria. The main sources of information, according to them, include extension agents of the Ministry of Agriculture, newspaper/pamphlet and agricultural bulletin, radio and/or rediffusion, cooperative union, neighbours and friends, buyers and salesmen. They further pointed out that communication media, for example, letters, newspapers, radio/rediffusion, film shows constitute primary methods of learning about social change and new improved schemes.

In the study above, the emphasis was still that combinations of extension methods have to be used for effective communication to take place. People need to see, and preferably be able to participate in any extension programme. The significance of mass media in disseminating

social change was also emphasized. This study further revealed that an adequate learning situation was brought closer to the farmer through the use of many avenues, and offered experiences which stimulate self activities on the part of the low-income farmers.

Evidence regarding the role of television in the individual adoption process is inconclusive. There is some evidence that it can be effectively used in conjuction with group meeting (Lionberger, 1960). Publications were also found to be useful device for supplementing educational television programme. The study demonstrates the manner in which television programming can be used in, and integrated with group discussion.

Furthermore, the study demonstrated the potential effectiveness of television demonstrations as a means of changing overt behaviour in a selected audience and the utility of a supplementary publication. Without any doubt, the potentials of television as an educational media has not been fully realized. It has not yet been institutionalized as a source of farm information as in the case of radio and farm publications. It is also possible that it may not yet have won a reputation as a good place to learn about new ideas in farming.

Ogunwale (1988) worked on the sources of information to

extension workers, and all avenues for teaching-learning situations through which the extension workers acquired necessary skills. He reported that most of the extension workers used Fortnightly Training meeting (FNT). Agricultural extension offices, subject matter specialists (SMSs), result and method demonstrations as sources of information. These are the four most used sources of information by the extension workers.

Furthermore, leaflets and folders, Extension guide and special short training programmes constituted another three sources which are of less importance. Only about 58 per cent of extension workers included in the study reported radio as a source of information. No agents reported the use of magazines and newspapers. This shows that there was no use of such channels as sources of information by the extension workers.

The various sources of information aim at building a professional extension staff that are capable of assisting farmers, teaching and convincing them to adopt recommended production practices. The sources provided for situation where the teacher (i.e. the researcher) and the learners (extension workers) know themselves and do interact.

Researchers are expected to obtain their ideas for

research basically from sources dealing with farmers (extension) and from the farmers themselves, while at the same time using other sources outside to broaden their knowledge. Possible sources of ideas for research include the following; other researchers, immediate colleagues, extension workers, farmers and any other available sources to them. Although research need farmers as an important source of ideas, there is a need to work collaboratively with farmers in obtaining information on researchable farm problems from farmers.

The channels of communication are the avenues, devices or media used to transmit message to/from the audience/receiver/farmers (Adedoyin 1988). Channels/methods can be classified according to the number of people reached into:

1. Individual contact methods .e.g. Home/office/farm visit, telegram, phone call e.t.c.
2. Group contact methods e.g. method and result demonstration, group meeting and discussion, farmers' field day, lecture, symposia, farm tour and agricultural show and exhibition.
3. Mass media methods e.g. Radio, television, Newsletter, Newsbulletin, Banners, Magazine, Newspaper; Village instructional board and leaflets.

The channels can also be classified into forms of message as written, spoken, visual or audio-bisual. Adedoyin (ibid) however, advised that it is important for a source or communicator to select and use the proper channel or combination of channels or methods if effective and successful communication is to be achieved.

The frequency of contacts and the preferences of an information source are a function of the relative advantages the source has over other alternative sources in solving the farmers' problems. The advantage could be either in terms of credibility, availability, usefulness, etc as perceived by the farmers.



### 2.1.3 Socio-economic factors that affect communication or contacts

Adedigba (1984) noted that the downward trend in agricultural productivity in Nigeria can be blamed on many factors. One of such factors is our failure to develop communication practices capable of motivating Nigerians in general and farmers in particular into productive farming. Research findings should be presented to the farmers in a language which they will understand. Farmers should equally be able to share their professional experience through feedback. Agricultural information which encompasses

improved knowledge of agricultural practices should be transfered from those who know to those who need to know in order to adopt such improved practices on their farms.

The inherent question is who should transfer these improved practices or technologies to the farmers who can make use of them to increase food production? The scientists and all other specialists in the field of agriculture may soon be out of business if their findings in the laboratory, green-house and experimental plots are not put to practice by the intended users - the farmers. Their failure may be tied to lack of or improper dissemination of their findings to the practicing farmers. Their failure will be the failure of government policies on agricultural development, and our agricultural productivity will not improve. It is, therefore, pertinent that attention be directed toward effective communication with the farming public if we need to succeed.

A study of the performance of village level extension workers in India revealed that the most effective village level extension workers were in the age group of thirty-one to forty, had graduated from high school, married and had rural background (Rahudkar, 1962). Similarly, Nye's (1952) findings in Missouri revealed that personality

characteristics followed by rural background and training were the most impoprtant factors affecting the county agent's performance.

In the above studies, one can reason that age was not a differentiating characteristics of the more effective and less effective extension agents as the findings were trying to prove out. This is because the credibility of extension agents is a function of their communication skills, knowledge level, attitude and socio-cultural background. The credibility of the agent is affected by his ability to teach the farmers all they need to know about modern techniques discovered by research to improve their traditional methods of production. What they need to know about type of seeds which will give them better yields, which fertilizers to apply, when to apply them, how much to apply and to which crops, and how to market their produce for maximum profits.

Furthermore, to achieve credibility in the sight of farmers, the farmers must be adequately informed about bank credits, tractor hiring service, improved management practices, soil conservation measures, crop protection, irrigation techniques where needed, good animal husbandry and crop storage practices. All these can affect the effectiveness of extension agents in changing farmers rather

than age, marital status, and rural background alone.

Even where the extension agent possesses the necessary credibility, the socio-economic characteristics of his clientele tend to limit his contacts with certain farmers, and often cause the well known differential contact paradigm. Akinbode (1969) revealed a significant correlation between seven contact methods and a number of socio-economic factors which include level of formal education, adult education participation, distance travelled for good and services, net farm income, number of total acres owned, and number of improved acres declared by each farmer.

He however, concluded that since the factors studied did not explain more than two-fifths of the variation in obtaining information from extension agents through any of the media studied, it was imperative to study other characteristics besides those of the farm operators if extension agents are to make effective use of the media under study. In this study an attempt will be made in that direction by studying characteristics of extension agents which may affect their contacts with farmers.

Wilkening (1950) in considering the sources of information for improved farm practices, reported that

farmers of higher socio-economic status tended to use the formally organized sources of information, while those of lower status need sources which were incidental to their every day social contacts. Wilkening, then concluded that the latter group were likely to obtain information from neighbours, relatives, farm-input dealers and other persons with whom they had personal contact. Farmers with higher socio-economic status, on the other hand, were more likely to use extension agencies and farm magazines as sources of farm information.

In the above findings, however, the association between status and information sources could be explained by social and psychological variables related to socio-economic status. For instance, those having higher status may also have the means as well as the desire for contact with the formalised sources of information, whereas those of lower-status may have neither the means nor the desire for such contacts.

Kentact (1965) argues that research and extension staff should work as a team as the endeavours of each staff affect the success or failure of the other. The absence or ineffectiveness of an effective liaison between research and extension can be due to several factors among which is the poor communication existing between research and extension.

On the extension agent-farmer contact several factors have been identified to influence extension agent - farmer contacts among which are the personality and background characteristics of the agents and farmers, and physical and institutional factors (Rahudkar, ibid). Individual or personal factors include age, years of schooling completed, attitude toward self and job, and such selected psychological characteristics as mental flexibility and orientation toward farming as a business.

The socio-economic characteristics of clientele usually tend to limit contact with extension agents. Farmers of high socio-economic status have more contacts with extension agents than those of low socio-economic status. Coleman (1951) found a direct association between education, size of farm, socio-economic status, and the extent of contact with the county agents.



### 2.1.4 Feedback mechanism

Ekere (1984) lamented that it is unfortunate that agricultural related messages do not flow freely in Nigeria. It is almost always taken for granted that messages will eventually reach the farmers. Therefore, if any message flows, it does so in a half hazard manner. A message which

flows in this manner, is not intentionally directed toward a targetted audience which in this case is the farmer. This being the case, no good results in terms of striving to obtain increased agricultural productivity could be expected from the farmers. Then who is to blame? Extension workers or farmers. The point is for effective feedback from the farmers to appropriate authorities (research, extension or the government) those who know should help those who do not know and try to understand their problems.

Agricultural information, like other types of information always seek to influence because of the desire of the source to obtain noticeable results from the farmers. Farmers agree to communicate as long as the information will help them improve their farming operations and increase farm yields. On the other hand, the transmitter or the source of the agriculture related information has the obligation to earn or retain the goodwill of the farmers. Such goodwill is the feelings of warmth, trust and confidence.

Goodwill which is the residual of successful human interaction is attained when farmers feel that their own needs are gratified satisfactorily by their relationships with authorities in government or research establishments. By the establishment of goodwill, farmers will voluntary develop their intent to communicate with the government and

research centres by way of feedback.

This study is not only to identify the stock of agricultural information and technologies available in the programme,,but also to examine the transfer efforts being made and the obstacles toward extension communication. An attempt will be made to study characeristics of research workers, extension agents and farmers which may affect their contact with one another. It is my contention that if messages getting accross to farmers are relevant, suitable to their production systems and affordable by them, then we need not be where we are today in terms of agricultural productivity.

## 2.2 What is Extension?

Extension is an out-of-school system of education. In all aspect of discipline, such as health, education and agriculture, we have extension. Agricultural Extension is informal out-of-school system of education which involves educating farmers on improved agricultural practices and skills (technologies) for better farming, more food and more prosperity for the farmers. This involves going to farmers on their farms to teach them improved agricultural practices and skills (technologies) and influencing them to adopt the

technologies for increased agricultural production of crop/livestock yields and increase in their income. Thus, agricultural extension is a system whereby extension workers continuously interacts with the researchers and the farmers to ensure continuous provision of useful information to both sides.

### 2.2.1 Common forms of Agricultural Extension

Over the past three decades, many different approaches have been used to develop or improve the different national agricultural extension systems. These can be considered in order to understand extension as well as to recognize the advantages and disadvantages of each approach.

The first three models to be examined fall under the category of common forms of agricultural extension systems. The first, a conventional extension system, is an approach that attempts to summarize some of the basic features and problems of agricultural extension organizations in many Third World countries. Most of these systems were established long before there were productive agricultural research systems, therefore, in most cases, these institutions did not have an extension message to transmit.

In addition, these organizations were generally established under the Ministry of Agriculture, therefore, they became increasingly involved in carrying out all types of government activities at the village level.

The World Bank has introduced and substantially supported a new system of agricultural extension to improve existing agricultural extension systems in countries where the agricultural extension organization are very weak and do little or no extension work. This approach is known as the Training and Visit system (T&V system) of agricultural extension and focuses on specific weakness of these national systems.

A third common form of agricultural extension is one organized by an agricultural college or university. The primary example of this aproach is in the United States where agricultural extension was first formally established in 1914. Because extension was organized under higher agricultural educational institutions, it has been easier to preserve the autonomy and educational nature of extension, than in other countries where extension is part of a governmental agency.

From these three general systems, we can examine how extension is handled within commodity-development and production systems, integrated Agricultural Development

Programmes, and under integrated Rural Development Programmes.

The commodity system approach is essentially a continuation of the technology development and transfer system that colonial governments initiated to increase the export of specific commodities, such as rubber, cocoa and groundnuts. Integrated agricultural development programmes were a product of the 1970s and a recognition that all of the institutional components of an agricultural system must be successfully co-ordinated and made available to farmers if agricultural development is to occur.

Integrated rural development programmes trace their roots to the community development efforts, and the Animation rurale approach that was undertaken in a number of franco-phone countries of Africa. As the name implies, these participatory rural development programmes are much broader than agricultural extension, per se. However, the high level of client participation in planning, implementing, and evaluating programmes makes this an important approach to consider when improving agricultural extension systems.

In Nigeria, two main approaches to extension work that could be identified are the (i) the conventional or general extension service approach and (ii) the project approach.

Differences between the two strategies could be found from the organizational structure and functional emphasis. The general extension service approach is the traditional type of extension inherited from the colonial masters. Structurally, it is directly under the Ministry of Agriculture. Its activities are extended all over the country, performing such extension duties as dissemination of improved technology, supply of farm inputs, marketing of produce and regulatory functions.

On the other hand, the project approach is a strategy usually used in the execution of specific elaborate projects. The efforts here are generally limited to a geographically bound area within which the tasks are broadly conceived. These projects are organizational autonomous. Functionally, they render diverse extension services (supply, educational and regulatory) to farmers within the project area. Examples of such projects are Agricultural Development Projects and Programmes in many states of the country. Under these projects, the Extension service is usually divided into two main units, namely:

(i) the extension unit which offers advisory services to project farmers and acts as a liaison between the farmers and the other units, and

(ii) the commercial services section which handles the credit, supply and marketing functions.

Thus, there are many agricultural extension services in existence all over the World and almost as many organisational structures to go with them. They range from services concerned with the rehabilitation or development of a single cash crop to those offering advice on a wide range of farming activities. Of necessity, the needs of organisations in all these different environments vary enormously and hence the organisations themselves vary.

Above all, three things that are essential to effective extension service are:

(i) close links between extension and reserch. i.e. extension must have access to technologies relevant to farmer's needs.

(ii) continuous training of extension workers. The extension agents in contact with farmers must be fully familiar with farm technologies.

(iii) frequent visits by extension workers to farmers. The extension agents must communicate their messages effectively by frequent person-to-person contact. Other methods of communication such as the use of mass media, group activities, demonstration and field-days may have a part to play.

In order to be effective, extension agents must pay frequent visits to farmers and adequately briefed with appropriate messages. In other words they must be trained and they must visit.

## 2.3 The concept of communication in Extension

Communication has been defined by Hoveland et. al (1950) as the process by which an individual transmits stimuli to modidy the behaviour of others. They identified four elements of communication. These are (i) the communicator who transmits the message, (ii) the stimuli transmitted. (iii) the individual who responds to the communication; and (iv) the responses made by the receiver (feedback).

Perhaps an appropriate definition of communication for extension purpose is that given by Kelsey and Hearne (1964). They defined communication as the process of transfering an idean, skill or aptitutde from one person to another accurately and satisfactorily. They identified six elements which include:

(i) communicator - the one with a message to convey and a purpose to accomplish.

(ii) The objective - a clear cut specific purpose

(iii) The audience - the person or persons to whom the communicator directs his message.

(iv) the message - the substance that the communicator wishes the audience to receive from his efforts.

(v) the channel - the means of transmitting the idea to the audience. In some instances this is best consisdered in terms of the sense receivers, and in other instances as tools such as radio, television, movies, meeting e.t.c. and

(vi) the treatment - the way in which the component parts are put together so that the entire communication effort achieves the desired goals.

Akinbami, (1986) stated that before any communication process can be said to be effective, the following must prevail,

(a) There must be mutual understanding of the message by both the source and the receivers.

(b) There must be feedback, which is a behaviour that shows the understanding or lack of understanding of the message by the receivers

(c) There must be absence of distortion and filtering of the message refered to as "Noise" by communication specialists. Technically speaking, noise is attributed to any variation in the message received that could not

have been predicted at its source. In human terms distortion (noise) can develop from the following conditions:

(i) if the source does not have adequate and clear information

(ii) if the message is not encoded fully, accurately and effectively in transmitable symbols

(iii) if the message is not transmitted fast enough and accurately enough to the desired receivers.

(iv) if the message is not decoded in a pattern that corresponds to the encoding of it.

(v) if the receiver is unable to handle the message as to produce the desired results.

Furthermore, Adelakun (1984) defined communication as sharing of a piece of information or knowledge between two or more individuals. The sender and the receiver have a common experience which lends meaning to the message encoded by the sender, received and decoded by the receiver. In the Oyo-state Agricultural Development Programme set-up, the communication channel with the farmers is through the agricultural extension staff of the programme who are nearer the rural farmers than the researchers.

The success of any training programme has much to do

with the effectiveness of communication between the sender and the receiver. Thus, the following communication characteristics have significant influences on the success of extension activities in agricultural development programmes:

(1) The extent to which its participants carry out with their own hands all of the significant activities about which they are being taught.

(2) The more communication channels in parallel between a communicator (agricultural extension staff) and his audience (farmers) the greater the chance that any particular message sent by the communicator will be received by the audience. Communication channels may be said to be in parallel when several of them link the same sender with the same receiver or the same communicator with the audience.

(3) The more communication channels in series between a communicator (agricultural extension staff) and his audience (farmers) the less the chance that any particular message sent by the communicator will be received by the audience. Communication channels may be said to be in series when a sender utilizes one channel directly while a different channel is utilized by the receiver.

(4) The extent to which it employs the same words those farmers typically use (with similar meanings), in the same types of phrases, with the same sorts of feelings.

(5) The degree to which treatments are constructed with symbols that have the same meanings for both the sender and the receiver.

(6) The fidelity of the channels employed.

(7) The capacity of the channels employed.

(8) The extent to which the receiver (audience) attends to the channels being utilized.

(9) The receiving skill of the receiver (audience) in regard to the particular channel(s) utilized.

(10) The number of other receivers who also constitute the audience for that particular communication.

(11) The amount of time that lapses between origination of the treatment by the communicator and the perception of the treatment by that audience.

(12) The extent to which the audience associates with the channel used.

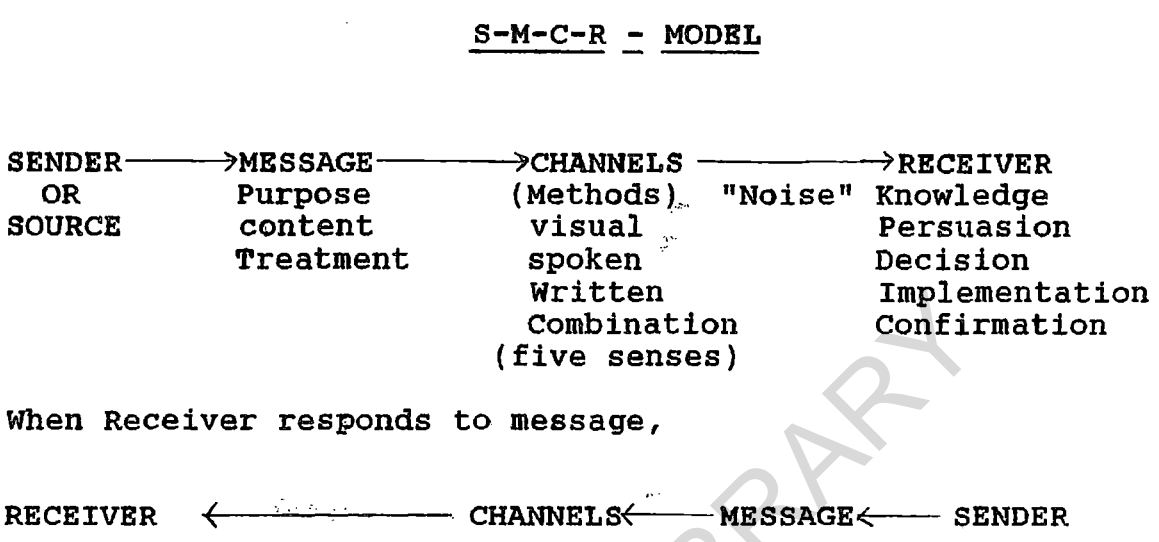
## 2.4 The Theoretical Framework

Communication is a process by which two or more people exchange ideas, facts, feelings or impressions in ways that

each gains a common understanding of the meaning, intent and use of the message. It can also be described as the exchange of knowledge, skills and attitude among persons or among social groupings (Ononiwu, 1988).

Communication scientitists make use of models in an attempt to analyze the process of communication. This is so because models help us identify the components of the communication process and their relationship and interprete these into a meaningful pattern, and provide a frame of reference for scientific inquiry. It is useful to conceptualize communication process in terms of the S-M-C-R-model. The letters, in order, stand for sender or source, message, channel and receiver (Fig. 2.1)

Fig. 2.1: Elements of the Communication Process




This is Feedback, and the S-M-C-R process is reversed.

Source:- Agricultural Extension - A reference Manual by A.H. Maunder, 1973 Rome, Food and Agricultural Organisation

Berlo (1960) in his model based on concept of the major elements in the communication event - source, message, channel and receiver, noted that several things determine how a source will operate in the communication process. These include the source's communication skills, his abilities to think, to write, to draw and to speak. They also include his attitude toward his audience, toward the subject on which he is communicating, toward himself, or

toward any other factors pertinent to the situation. Knowledge of the subject, the audience, the situation and other background factors also influence the way the source operates.

Preparation of a message which can be understood by an audience requires a considerable depth of understanding of the content of the message. Such depth of understanding ideally includes practical experience with the implementation of ideas involved in the message, and also assumes considerable knowledge of how particular message elements fits into the aggregate agricultural production process of the clients.

Channels of communication are the various methods available to any communicator in reaching an audience with a message. Written communication has obvious limitations where the clients are predominantly illiterates but cannot be rejected totally in view of the fact that the printed messages are read to non-literates in areas of low literacy. Direct face-to-face interaction via the spoken word is preferable in that it allows for two-way interactions to be easily and successfully accomplished.

Mass media methods, such as radio and television have come into increasingly wider use to reach audience with the spoken word. Visual means of communication includes slides,

films and television and the many variants of field demonstrations. To be effective, result demonstrations require the use of both visual and spoken communication and can easily benefit from the use of written materials as well. A combination of methods is the ideal.

The receiver is the final point in the communication process. All of the factors that determine how a source will operate apply to the receiver. Communication skills might be taught of as how well a receiver can hear, read or use his other senses. The terms listed below the receiver in Fig. 2.1 are intended to specify the mental and physical responses, evoked by effective communication. They can be considered as stages in the process of adoption of farm practices (Rogers, 1969) which are the preferred outcomes of the communication process.

The bottom portion of Fig. 2.1 illustrates another element of effective communication, the process of information which ideally at least makes the communication process two-way rather than one-way. In the absence of any reactions (feedback), it is virtually impossible to judge the appropriateness of the message contents, or channels selection, for example, in the implementation of an information campaign.

As this section is intended to help the reader to follow the way in which the analysis of data will be organized. The rationals for the construction of both questionaires for researchers and extension workers, and interview schedule for farmers, as well as for the choice of significant variables are outlined.

Owing to the descriptive rather than a cause-effect nature of this study, the analysis will be considered in two part.

(i) the research-extension relationship

(ii) extension agent-farmer relationship

The first restriction will be to leave aside all technical aspects of communication theory, the amount and rate of information transmitted, distortion and noise in the channels, the efficiency of transmission and the problem of translating from scientific terminology to a terminology which the farmer can understand. The analysis will be concerned only with what channels exist, and by whom they are used.

The second restriction will be to leave aside the bulk of personality theory and its techniques of measurement. Obviously, there must be relations between absorbtion of information and intelligence or education level or between the willingness to be exposed to or absorb information and

motivation. This is because it would not have been possible in practice to subject a busy and down-to-earth farmer to intelligence scale and a rigorous interview.

The three systems i.e. Research, Extension and Farmer systems, involved in agricultural technology transfer system will be analysed under the model develop for this study.

Fig 2.2

CONCEPTUAL MODEL OF THE COMMUNICATION PATTERNS OF AGRICULTURAL TECHNOLOGIES DESIGNED FOR THE STUDY.

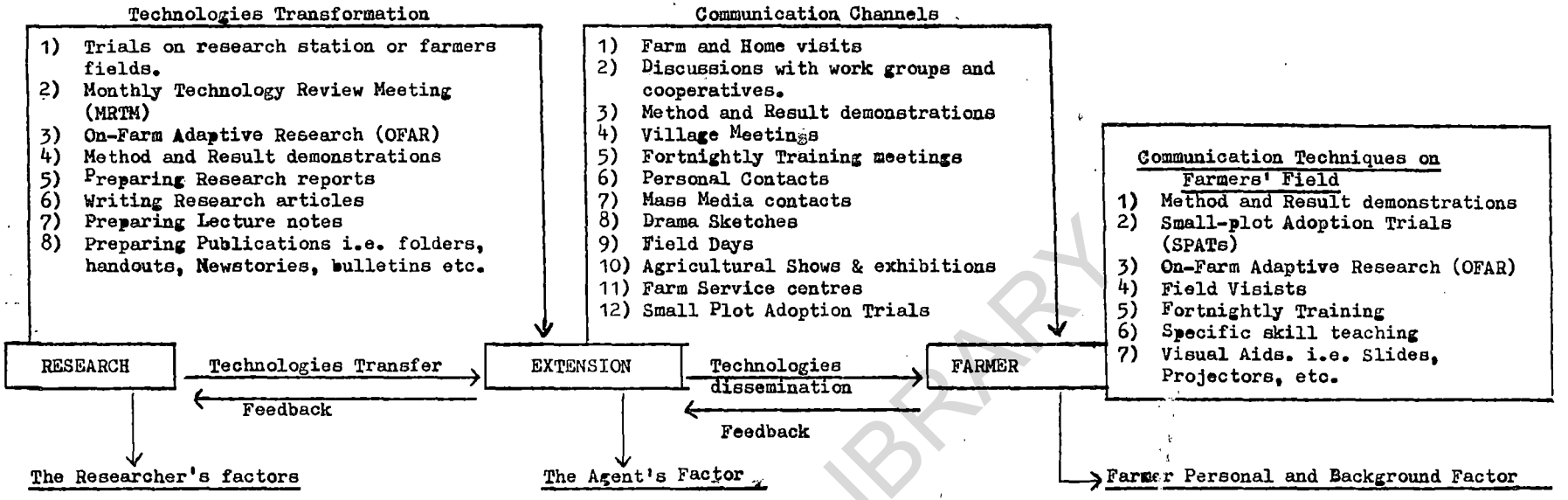



FIG 2.2 SOURCE:- ADOPTED FROM BERLO (1960): The Process of Communication

An Introduction to theory and practice.

The paradigm of the communication patterns of agricultural technologies designed for this study contains three major systems - Research, Extension and Farmer. The research constitutes the development system in which new crop varieties, livestock practices and useful information on improved farm practices are developed. The extension constitutes the disseminating or transfer agency, and the farmers constitute the utilization system (Akinbode, 1983).

In the research system, on ascertaining the usefulness of a technology, the researh workers transform the language of science for easy comprehension of extension personnel and farmers. Trials on farmers' field, Monthly Technology Review Meeting (MTRM), On-farm Adaptive Research (OFAR), preparing research report, writing research articles, preparing lecture notes, folders and handouts and publications such as newstories and newsletters are methods of transformation of technology among the research workers as a whole.

The extension system constitutes a linkage between researchers and farmers. The system is connected with research through the various methods of technology transformation techniques and with farmers through the various channels of communication to make technologies available to farmers. The information sources to farmers

include farm and Home visits, discussions with work group and cooperatives, method and result demonstrations, village meetings, mass media contact, personal contact, drama sketches, fortnightly training meetings, field trips, agricultural shows and exhibitions, and farmers' field days.

The extension agent's background factors which affect the communication pattern comprise of his communication skills and every other pertinent background factors. The profile of extension agent viz- age, level of education attained, working experience and major resposibility also affect the communication pattern.

Uwakah (1983) identified three groups of variables as determinants of success of an extension programme/worker in any social system. These variables are

1. Variables related to change agent
2. Environmental variables, and
3. Variables related to the client system.

Change agent related variable include such factors as

i. Quality of professional training received
ii. Ability to communicate
iii. Attitude to extension work,
iv. Field responsibilities, and
v. Satisfaction with job.

Environmental variables include variables such as

i. organizational content

ii. Administrative content

iii. Programme content

iv. Economic, social and political situation

v. Internal and external relationship between extension service organization and other institutions.

Client system related factors/variables include

i. Psychological factors and

ii. Socio-cultural pattern of behaviour.

Uwakah (ibid) expresses opinion that "of these factors, those relating to the change agent are most crucial in determing the success of extension workers/work.

The agent's perception of the situation also affect his communication behaviour. The social system's norms or innovativeness serve as incentives or restraints of his behaviour. The economic constraints and incentives, and the characteristics of the farming system also affect communication behaviour.

Information sources are important stimuli to the individual in the communication process. The individual becomes aware of the technology mainly by impersonal and cosmopolite sources such as the mass media. Localite and

personal information sources are more important at the evaluation stage.

The farmer is the receiver of main interest in extension communication process of agricultural technologies. All the factors that determine how a source (extension workers) will operate also apply to the receiver. The personal and background factors such as mental ability and conceptual skill, social status, cosmopoliteness, opinion leadership and innovativeness of individual affect the perception of characteristics of the technology. The effect or impact of a message on a farmer can either be adoption or rejection of the idea. As the outcomes of the communication process, a technology may be adopted and may be (i) used continuously or, (ii) rejected at a later date, that is discontinuance. And these are the obvious avenues for feedback to research workers through extension workers.

## 2.5 Dependent and Independent Variables

The dependent variable which is communication as used in this study refers to any overt act resulting in contact (personal or impersonal) with members of the other organization or with farmers for the purpose of providing or seeking information on work related activities.

This variable is operationalized as

(i) sources of information

(ii) Information input pattern

(iii) Information-output pattern

(iv) Information feedback mechanism, and

(v) Types of communication channels or extension methods used. These include:

(i) Farm visits; (ii) Office and Home visits

(iii) group meetings and field days/trips

(iv) Publications among others.

The independent variables include personal and demographic characteristics of the respondents and these are operationalised as

(i) age,

(ii) level of education attained

(iii) years of working experience

(iv) official status

(v) length of service with the programme

(vi) Farm size under cultivation by farmer and

(vii) Knowledge of extension agent's name by farmer.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Area of Study

This study was conducted in the Oyo-state Agricultural Development Programme. The headquarter is located at Saki. For agricultural extension purpose and statewide coverage, the whole programme area has been divided into six zones, namely, Ibadan/Ibarapa, Oyo, Ife/Ijesha, Osogbo, Ogbomoso and Saki. Each zone was divided into areas, and each area was divided into blocks, and each block was subdivided into cells and each cell into farmers' groups. Each cell is assigned a village extension agent (VEA). The number of blocks in each zone depends on the population of the farmers in the zone and the size of the area. Each zone is assigned a zonal manager who supervises all the programme affairs under his jurisdiction. Each block is assigned a Block Extension officer (BEO) and village extension agents visit each group of farmers at scheduled day and time.

## 3.2 Development of Instrument

Two sets of questionnaires and one interview schedule were prepared to collect data from the three sources.

(i) The Questionnaires

One set of questionnaire for the research workers, and another set for the extension workers were prepared for the study. Structured and open-ended questions were included in both sets to collect data mainly on the flow of farm information and agricultural technologies from research workers through extension workers to the farmers and for feedback mechanism. Questions were asked on the kind, and use of communication channels. Emphasis was placed on the personal and background characteristics of the respondents and on the problems encountered in the process of communication.

Thus, the questionnaires were designed to furnish information on

(a) The profile of respondent - viz, age, working experience, education and professional training acquired.
(b) sources of information
(c) Information input pattern
(d) Information putput pattern,
(e) Socio-economic factors which have influence on the frequency of contact.
(f) information feedback mechanism

(g) problems of establishing contact or communication and,

(h) Essential conditions for establishing communication and contact.

(ii) The Interview Schedule

An interview schedule was prepared for the farmers to collect data on the patterns of communication between the farmers and the extension workers on one hand, and any other sources of information on the other. Farmers were also interviewed on factors affecting their contact with the extension workers. The communication channels and extension methods used, and the personal data of the farmers participating in the study were also collected.

3.3 Content Validity Test of the Instrument

To validate the instrument for the study, a group of judges comprising graduate students and lecturers, were selected from the field of agricultural extension and rural sociology to make critical reveiws and judgements of the content validity of the instrument. The comments and suggestions of the judges were utilized in order to make the questionnaires and interview schedule ready for use.

Furthermore, five village extension agents and ten registered programme farmers in Ife area of Ife/Ijesha zone,

were used for the pretest of the instruments. Some questions were restructured in both instruments after the pretest. Thus, the instruments were pretested and revised accordingly before the actual data collection work started.

## 3.4 Data Collection

For the data collection, the zonal research officers and their assistants in each zone were interviewed in their respective zones.

The training centers of the extension workers Fortnightly Training Meetings (FNT) in the six zones i.e. Ibadan, Iwo, Ilesa, Osogbo, Ogbomoso, Oyo and Tede were used for administering questionnaires, which they took home and returned during the following fortnight training meeting. Ife area was exepted in the final data collection exercise as it had been used for pre-testing.

Programme farmers were visited in the chosen cells for interview in the six zones. The interview with farmers was conducted in the local dialect.

In addition, data was collected through some publications about the programme, interviews with Subject Matter Specialists (SMSs), Zonal Extension Officers, Area Extension Officers, and by Direct Observations during fortnightly Training meetings (FNTs) and demonstration

programmes.

## 3.5 Designation of the Sample and Sampling techniques

Data for the study was collected from three main sources, namely

(i) the research workers.

(ii) the field extension workers, and

(iii) the registered programme farmers.

To be eligible for interview, an extension worker must have served the programme at the field level for not less than six months at the time of this study, and must be involved in extension work. The research worker must also have served the programme for at least six months as research worker while farmers were those registered with the programme and actively involved in farming in the programme area.

Random sampling techniques were used to select respondents from both the village extension workers and the programme farmers. This method was suitable because it allows the grouping of the population elements into separate categories based on zone location.

Nine programme research workers were interviewed with the help of questionnaire developed for the study.

List of names of field-level extension workers were

secured with the help of Area Extension officers in the programme. From the total population of the extension workers on the list in each area, at least fourty percent were randomly selected from the lists. The random technique used was to pick every fourth name on the list having taken the first person on the list as the first respondent in each area. All propective respondents that had not spent up to six months in the programme, to the time of study were rejected for data collection in line with the required criteria for eligibility of interview. The number of extension workers interviewed was proportional to their population in each zone. In all a total of 150 extension workers were interviewed.

For the sampling of farmers, lists of cells in each block were secured and all were numbered together from 1, upward for every zone. Then small pieces of papers were cut and a corresponding number of each cell in each zone was written on each paper. Each paper was rolled to form a ball and dropped into a basket. The basket was shaken together throughly after every paper had been dropped in. Thereafter, five paper balls were randomly selected from the basket and the cells with corresponding number on the paper picked-out were chosen for sampling farmers to participate in the study. At the cell-level, lists of farmers in each

cell were secured from extension workers in the cells concerned. The method of sampling used for selecting farmers was systematic sampling. The first respondent was picked at random by the use of random table and every fifth name below and above it were choosen at regular interval from each list. The number of farmers interviewed in each cell was determined largely by the availability of selected farmers for interview. The extension workers were of much help in identification of farmers, and introduction of investigators in the data collection process. A total of 120 farmers constituted the sample size for the study.

Although the nature of this study should give cognizance to the importance of education and socio-economic status of the farmers for the purpose of categorization, they were not used for stratification purpose before samples were drawn, though they were used for analytical purpose.



## 3.6 Analysis of Data

The method of analysis that was adopted in this study was mainly descriptive, owing to the exploratory nature of the study. Thus, descriptive statistics were employed for the analysis. Tables showing the frequency and percentage distributions of various items and use of communication

channels were shown.

However, to test for relationship between contacts and personal and socio-economic characteristics of respondents as postulated in the hypotheses, Chi-square, correlation analysis and multiple regression analysis were used.

The raw data obtained from the questionnaires and interview schedules, were coded and entered on data sheet and computer analysis was carried out.

## 3.7 Methodology for Testing Hypotheses

The dependent variable which is communication is operationalized as (i) sources of information, (ii) information-input pattern, (iii) information-output pattern (iv) information feedback mechanism and (v) types of channels or extension methods used. The communications index for individual is given by frequency or number of contact with other individual through various means or channels of communication.

The independent variables in the study are: (i) age, (ii) level of education attained (ii) years of experience (iv) official status (v) farm size and (vi) knowledge of extension agent's name.

CODING FORMAT FOR VARIABLES

Case for research workers

(i) The age of respondent was recorded according to the number of years given by respondent

(ii) For level of education attained, years of schooling was used. Primary school completed was assigned 6 years, secondary school, 5 years, First degree (B.Sc./B. Agric) - 5 years, Second drgree (M.Sc.) another one year, and Ph.D - 3 years. The number of years was calculated by additon of years right from primary school.

(iii) For official status, there were four recognised official status for research workers in the programme, and each status was assigned 5 points from the lowest status accordingly. Thus, Assistant Zonal Research Officer - 5 points; Zonal Research Officer - 10 points; Deputy Chief Research Officer - 15 points and Chief Technical Service - 20 points.

(iv) The length of servie, and (v) years of experience were recorded according to the numbers of years given by the respondents.

The total maximum score for communication index for research worker was 31.

Case for Extension Worker

(i) The age of respondent was recorded as given by the respondent.

(ii) For the level of education attained, years of schooling was used. For primary school completed, 6 years was assigned, next 3 years for Modern School, or 5 years for Secondary school completed, next 2 years for OND; 3 years for NCE; 4 years for HND and 5 years for B. Agric or B.Sc. The years of schooling were added together in progressive manner, i.e. OND holder spent 13 years, N.C.E. holder spent 14 years, H.N.D holder spent 15 years while B.Sc. or B. Agric holder spent 16 years in school.

(iii) The length of service with the programme was coded as follows:

(i) Less than one year - 1 point

(ii) 1 year - 1½ years - 2 points

(iii) 1½ years - 2 years - 3 points

(iv) 2 years - 2½ years - 4 points

(v) 2½ years - 3 years - 5 points

(vi) 3 years - 3½ years - 6 points

(vii) 3½ years - 4 years - 7 points

(viii) 4 years and above - 8 points

(iv) The official status of Extension staff was coded as follows

(i) Village Extension Agent - 2 points;

(ii) Village Extension Workers - 4 points

(iii) Block Extension Officer - 6 points;

(iv) Block Extension Supervisor - 8 points;

(v) Area Extension Officer - 10 points and

(vi) Zonal Extension officer - 12 points

(v) The years of experience of extension staff was coded as follows:

(i) Less than one year - 2 points

(ii) 1 year - 1½ years - 4 points

(iii) 1½ years - 2 years - 6 points;

(iv) 2 years - 2½ years - 8 points;

(v) 2½ years - 3 years - 10 points;

(vi) 3 years - 3½ years - 12 points

(vii) 3½ years - 4 years - 14 points;

(viii) 4 years - 4½ years - 16 points;

(ix) 4½ years - 5 years - 18 points;

(x) 5 years - 5½ years - 20 points;

(xi) 5½ years - 6 years - 22 points

(xii) 6 years - 6½ years - 24 points

(xiii) 6½ years - 7 years - 26 points

(xiv) 7 years - 7 ½ years - 28 points

The frequency of contact of extension staff was calculated by the total points scored in each of the following scores.

(i) Process of dissemination of agricultural technologies with maximum total score of 16 points.

(ii) Research and Extension linkages used in the programme by individual with maximum score of 7 points.

(iii) Information-output pattern used with a total score of 9 points.

(iv) Communication channels used with farmers with total maximum score of 11 points,

(v) Points of contact with farmers in the programme with total score of 7 points and

(vi) Avenues used for feedback mechanism with total point score of 7 points.

Therefore the total maximum score points for communication index for extension staff was 57.



Case for Farmers

(i) The age of farmer was recorded in years as given by respondent.

(ii) The level of education of farmers was expressed as

level reached in school and coded as follows:-

(i) Never attended school - 2 points

(ii) Primary (uncompleted) - 4 points

(iii) Primary school (completed) - 6 points

(iv) Secondary Modern School - 8 points

(v) Secondary Grammar School - 10 points

(vi) Teacher Grade II/OND/NCE - 12 points

(iii) The years of experience of the farmer was coded as follows:

(i) Less than 4 years - 5 points;

(ii) 4 - 6 years - 10 points

(iii) 6 - 8 years - 15 points

(iv) 8 - 10 years - 20 points and

(v) 10 years and above - 25 points

(iv) The farmers' farm size was coded as follows:

(i) Less than 1.5 ha. - 2 points

(ii) 1.5 ha - 2.5 ha - 4 points

(iii) 2.5 ha - 3.5 ha - 6 points

(iv) 3.5 ha - 4.5 ha - 8 points

(v) 4.5 ha - 5.5 ha - 10 points

(vi) 5.5 ha and above - 12 points.

(v) The knowledge of agent's name by farmer was coded as follows:

(i) I don't know - 5 points; and

(ii) I know his name - 10 points.

The frequency of contact of farmer was calculated by adding the total points score as follows

(i) participation in programme activities - 10 points

(ii) the sources of communication from nearby village or OYSADEP - 6 points

(iii) Sources of knowledge of agricultural practices - 6 points;

(iv) sources of information to farmers: - 6 points and

(v) channels of communication with extension workers - 10 points.

Thus, the total maximum score points for frequency of contact of farmer was 38 points.

## 3.8 Justification for the use of Statistical Techniques Chi-square, Correlation and Regression analyses

Chi-square distribution was needed to test the significance of the differences that may exist between three or more sample percentages. Chi-square distributions were used in a procedure that involved the comparison of the differences between the sample frequencies of occurrence or percentages that are actually observed and the hypothetical or theoretical population frequencies of occurence or percentages that are expected if the hypotheses were true.

$X^2$-value is given by the following formula:

$$X2 = \Sigma \frac{(fo-fe)^2}{fe}$$

where fo = an observed sample frequency

fe = an expected hypothetical frequency if the Ho is true.

Then the value of X2 computed was compared with a X2 table value (found for the specified level of significance from the appropriate $X^2$ distribution) to determine if the computed $X^2$-value was significantly above zero. The table value was the critical $X^2$-value that separates the area of acceptance from the area of rejection. If the computed $X^2$-value is equal or lesser than the critical value, it will fall into the area of acceptance and Ho will be accepted. But if the computed $X^2$ value is greater than the table value, this will be cause for rejecting the Ho. Therefore, Chi-square distributions were used to determine the significance of the differences that exist between the frequency of contact and each of the independent variables (i.e. age, level of education, official status, length of service, years of experience, size of farm and knowledge of agent's name by farmer) in the study.

Correlation and Regression analyses

Correlation analysis and regression analysis were used to measure and evaluate the relationship between two or more variables in the study. The variable estimated (frequency of contact) was called the dependent variable (Y) and variable that presumably exerts an influence on or explains variations in the dependent variable was termed the independent variable (X).

Correlation analysis describes the relationship between two variables and indicates the closeness of the association or correlation that exists between the variables (Sanders, et al, 1980). Two of these correlation measures used were the Pearson's correlation coefficient (r) and the coefficient of determination ($r^2$). The coefficient of determination ($r^2$) is a measure of the portion of the total variance in the dependent variable that is explained or accounted for by the introduction of the independent variable. It should always, however, be remembered that it is the variation in the dependent variable that is being explained or accounted for but not necessarily caused by the independent variable.

The coefficient of correlation (r) is simply the square root of the coefficient of determination ($r^2$). The

coefficient of correlation, is not as useful as the coefficient of determination, since it is an abstract decimal and is not subject to precise interpretation (Sanders et al, 1980). "r" provides a scale against which the closeness of the relationship between dependent variable and independent variables can be measured. Therefore, the degree of linear relationship between dependent variable (frequency of contact) and each of the independent variables (age, level of education, official status, length of service, years of experience; size of farm and knowledge of agent's name by farmer) was determined by the use of Pearson's product moment correlation coefficient.

Multiple Regression

When there are more than two variables having numerical value and continuous, the magnitude of relationship between the variables and most importantly the degree of change in the dependent variables as explained by each of the independent variables can be determined using multiple Regression Coefficient (Richard, 1988). A positive (or direct) relationship exists between two variables if as independent variable increases, the dependent also increases. On the other hand, it would be quite possible for variables to have a negative (or inverse) relationship,

as the x-value increases, the Y-value decreases. Therefore to know the effect of each factor in the relationship between the frequency of contact and all independent variables in the study, i.e. age, level of education attained, official status, length of service, years of experience, size of farm and knowledge of agent's name by farmer, multiple regression analysis was carried out.

## 3.9 Limitation of the Study

Large sample size was used to provide the necessary and sufficient information so as to get a high level of precision. However, the restrictions to leave all technical aspect of communication theory, the amount and rate of information transmitted, distortion and noise in the channels, the efficiency of transmission, the problem of translating from scientific terminology to a terminology which farmers can understand, and the bulk of personality theory and its techniques of measurement have limited the findings of the study.

Furthermore, the study did not probe the following;

(i) The degree to which an individual occupies the central position in the frequency of communication among the members of an organisation.

(ii) The degree to which an individual communicates farm

information with his peers of the same or different cadres, and

(iii) The degree to which an individual extension worker contacts different types of farmers for communicating farm information.

Also the programme studied has just took off, hence it is still very young to provide adequate findings for the study of this nature. It is however, believed that the generalization of the findings of the study could be made where similar communication patterns exist in other Agricultural Development programmes, or institutions in the country or elsewhere.

# CHAPTER FOUR

## ANALYSIS AND DISCUSSION OF DATA

This chapter deals with the analysis and discussion of data collected and the implications with respect to the extension communication in the programme. The data was analysed and discussed according to the following:

(i) The socio-economic background of the respondents i.e. research workers, extension workers and the programme farmers included in the sampling

(ii) Stock of modern agricultural technologies available in the programme.

(iii) The research workers and extension workers communication pattern.

(iv) The extension workers and farmers communication pattern, and

(v) The testing of the hypotheses.

The total sample size for each set of respondents with respect to zone locations was as follows:

TABLE 1: TOTAL SAMPLE SIZE OF EACH SET OF RESPONDENTS ACCORDING TO ZONE LOCATIONS

| ZONE LOCATIONS | SET OF RESPONDENTS | | |
|---|---|---|---|
| | RESEARCH WORKERS | EXTENSION WORKERS | FARMERS |
| (i) Ibadan/Ibarapa | 2 | 31 | 21 |
| (ii) Oyo | 1 | 27 | 18 |
| (iii) Ife/Ijesa | 1 | 15 | 17 |
| (iv) Osogbo | 1 | 26 | 19 |
| (v) Ogbomoso | 2 | 23 | 20 |
| (vi) Saki | 2 | 28 | 25 |
| TOTAL | 9 | 150 | 120 |

Table 1 reveals that a total number of nine research workers, comprising Zonal Research Officers and Assistant Zonal Research Officers, One hundred and fifty village extension workers and one hundred and twenty farmers constituted the sample sizes for each set of respondents.



## 4.1 The Socio-economic background of the respondents

This study investigates the age, the educational level attained, official status, length of service with the programme, and years of experience of research workers and extension workers in the programme.

On the part of farmers, the age, educational level attained, size of farm, years of experience in farming, types of crops grown; length of participation in the programme and the knowledge of the extension worker's name were probed.

Case for research workers

TABLE 2: FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESEARCH WORKERS BY AGE

| Age of research workers | Frequency | Percent |
|---|---|---|
| (i) 30 - 35 years | 2 | 22.22 |
| (ii) 35 - 40 years | 5 | 55.56 |
| (iii) 40 and above | 2 | 22.22 |
| Total | 9 | 100.00 |

The observation of Table 2 shows that 5 research workers (55.56%) were in the age-group of 35-40 years, another 2 research workers (22.22%) were in the age-group of 40 years and (22.22%) fall within the age-group of 30-35 years. By the nature of research work, which demands matured attitude and sound mind, it can be said that the age of research workers provided the level of maturity that may be required for sound research works. Also, most of them (77.78%) are less than 40 years of age, hence are within

their productive years.

(ii) The Level of Education attained

The highest level of education attained by the research workers was Master degree. All the nine research workers (100.00%) were holders of Master degree in Agriculture. This implies that the programme provides a firm minimum standard for its research staff. This ensures a provision of a core of resources based personnel in the research unit.

(iii) Areas of specialization of research workers

The study shows that 4 research workers (44.44%) were agronomists, another 4 research workers (44.44%) were plant breeders while only one research workers (11.11%) specialized on crop protection. The implication of this finding is that the programme may be laying more emphasis on the crop production technologies than any other area of agriculture.

(iv) The length of service in the programme

The study reveals that 4 research workers (44.44%) had spent less than 2 years in the programme, another 2 research workers (22.22%) had spent less than three years while only 3 research workers (33.33%) had spent more than 3 years in the programme.

(v) The official status

The study reveals that there are 4 zonal research officers (44.44%) and 5 Assistant Zonal Research Officers (55.56%) that participated in the study. The implication of this finding was that there were only two officers for research activities in each zone of the programme. These two officers were responsible for all research activities and coordination of on-station and on-farm research trials in each zone.

(vi) The years of experience

The study shows that only one research worker (11.11%) had less than 3 years of experience, 4 research workers (44.44%) had between 3 and 4 years of experience, 2 research workers (22.22%) had between 4 and 5 years, while the remaining 2 research workers (22.22%) had above 5 years of experience in research work.

The implication of above finding is that the wealth of experience of these research workers would make research more relevant to the needs of local farmers, if their problems are adequately assessed and analized, and make the on-farm adaptive research more oriented towards local conditions in the programme area.

TABLE 3: FREQUENCY AND PERCENTAGE DISTRIBUTION OF EXTENSION WORKERS BY AGE: N = 150

| Age of Extension workers | Frequency | Percent |
|---|---|---|
| (i) 20 - 25 years | 2 | 1.33 |
| (ii) 25 - 30 years | 39 | 26.00 |
| (iii) 30 - 35 years | 29 | 19.33 |
| (ii) 35 - 40 years | 45 | 30.00 |
| (iii) 40 and above | 35 | 23.33 |

Table 3 reveals that a large proportion of extension workers (72.66%) were above thirty years old. About seventy-five percent fall within the age-group of 25 and 40 years. If, age can be assumed to be an index of maturity, then it could be said that a large proportion of the workers are matured enough to be able to carry out satisfactory extension activities, and hence, would be expected to be more effective in carrying out their responsibilities.

Level of Education and Professional training acquired

TABLE 4: FREQUENCY AND PERCENTAGE DISTRIBUTION OF EXTENSION WORKERS BY LEVEL OF EDUCATION AND PROFESSIONAL TRAINING ACQUIRED N = 150

| Level of Education attained | | Frequency | Percent |
|---|---|---|---|
| (i) | Secondary Grammar School/College WAEC/GCE | 121 | 80.67 |
| (ii) | Agricultural Assistant Certificate Course | 23 | 15.33 |
| (iii) | Ordinary National Diploma School of Agricultural (O.N.D.) | 72 | 48.00 |
| (iv) | Agricultural Superintendent Diploma Course (H.N.D.) | 40 | 26.67 |
| (v) | National Certificate of Education in Agriculture (N.C.E) | 22 | 14.67 |
| (vi) | B. Agric./B.Sc. (Agriculture) | 16 | 10.67 |
| (vii) | Others (Certificates of in-service training, short-courses - F.A.C.U, I.I.T.A., ARMTI) | 35 | 23.33 |



Table 4 shows that 23 extension workers (15.33%) had attended Agricultural Assistant Certificate Course; 72 extension workers (48.00%) had Ordinary National Diploma (O.N.D.) Certificates in Agriculture; 40 extension workers (26.67%) had Higher National Diploma (H.N.D) certificates in Agriculture; 22 extension workers (14.67%) had attended Colleges of Education and had received National Certificate of Education in Agriculture; while 16 extension workers

(10.67%) had received Bachelor degrees in Agriculture. Another 35 extension workers (23.33%) had attended in-service training and short courses related to agriculture. The short courses were given by the Federal Agricultural co-ordinating units (F.A.C.U), Ibadan, Agricultural and Rural Management Training Institute (ARMTI) Ilorin, and the International Institute of Tropical Agriculture (I.I.T.A.) Ibadan.

If education can be assumed to be an index of enlightenment, then it could be hypothesized that the extension workers can effectively communicate with local farmers. The training provided serves as a good prospect for professional growth so as to motivate the workers.

In another question raised about schedule time for training of extension workers in the programme, 147 extension workers (98.00%) indicated a Fortnightly Training Meeting (FNT) schedule, while no respondents indicated neither weekly nor monthly training schedule. This implies that there are provisions for having competent and knowledgeable extension staff in the programme, and logically, an adherence to the Training and Visit system of extension in the programme.

Training for extension staff is taken as a very

important area of attention at the programme level. At the fortnightly training meetings, the village extension workers learn and practice the recommended techniques so that they can teach them to farmers accurately and effectively for the next two weeks. Technology Review Meeting was meant for Zonal Extension Officers, Area Extension Officers and programme Subject Matter Specialists with the programme research workers or scientists from Institute of Agricultural Research and Training (I.A.R.&T), Ibadan as trainers. Subject matter specialists carry on the impact points to the fortnightly training meeting of field extension staff. This strengthens the required linkage between extension and research. The exercise is organised monthly, hence it is usually refered to as Monthly Technology Review Meeting (MTRM) in the programme.

(iii) Length of Service in the programme

The study shows that about 83.00% (82.68%) of extension workers had spent more than two years in the programme, and had been actively involved in extension activities at village level. The implications of these findings are that a large proportion of the workers had been well familiar with the programme systems of operations by virtue of their length of service. This would ease the penetration of nooks

and corners of the programme areas for adequate dissemination of farm information and technologies to the farmers in the programme.

(iv) Year of experience

The study reveals that 86.00% of the extension workers had more than two years of job experience, while among the remaining 10.00% had more than one year, while 4.00% of the extension workers had less than one year of job experience. This finding showed that the Extension Department of the programme had some experienced workers.

If experiences are anything to go by, it appears that a large proportion of the workers (86.00%) by virtue of experience would be able to carry out satisfactory extension activities and feel responsible to both research workers and programme farmers. Their observations and opinions would help to improve the quality of the advice given to the farmers and make research more relevant to a variety of local conditions.

(v) The Official Status

The study shows that 130 village extension agents (86.69%) and 20 extension workers (13.33%) constituted the sample size of extension staff. The implications of this findings are that these are the extension cadres responsible

for face-to-face contact and communication with farmers, and for dissemination of farm information and agricultural technologies in the programme.

The field extension staff were asked to mention the major responsibilities given them. The responses were collated and tabulated in Table 5.

TABLE 5: FREQUENCY AND PERCENTAGE DISTRIBUTION OF EXTENSION WORKERS BY MAJOR RESPONSIBILITIES N = 150

| | Major responsibilities | Frequency | Percent |
|---|---|---|---|
| i. | Registration of farmers | 136 | 90.67 |
| ii | Training and teaching farmers new methods | 113 | 75.33 |
| iii | Selection of contact farmers | 83 | 55.33 |
| iv | Farm visitations | 140 | 97.33 |
| v | Establishment of Small Plot Adoption Trials (SPATs) | 127 | 84.67 |
| vi | Dissemination of farm information and production recommendation | 77 | 51.33 |
| vii | Attendance of fortnightly training meetings | 145 | 96.67 |
| viii | Inspection of farms for fertilizer recommendation and approval | 63 | 42.00 |
| ix | Giving advice to farmers | 79 | 52.67 |

Source: Farm Field Work Survey, (1991)

Table 5 clearly reveals that more than 50 percent of village level extension staff mentioned the following as their responsibilities:

(i) Farm visitation (97.33%);

(ii) Attendance of fortnightly training meetings (96.67%);

(iii) Registration of farmers (90.67%);

(iv) Establishment of small plot Adoption Trials (84.67%);

(v) Training and teaching farmers new methods (75.35%)

(vi) Selection of contact farmers (55.33%)

(vii) Giving advice to farmers (52.67%) and

(viii) Dissemination of farm information and production recommendations (51.33%) while 63 extension workers (42.00%) mentioned inspection of farm for fertilizer recommendation and approval for farmers in the programme.

The above findings showed that the extension staff were given responsibilities in which face-to-face interaction and communication occur. Also, they were avenues for more intimate and face-to-face contact between the extension workers and the farmers in the programme. However, no respondents mentioned any responsibility having either direct or indirect link with research in the programme.

## Socio-economic background of farmers

### (i) Age of farmers

TABLE 6: FREQUENCY AND PERCENTAGE DISTRIBUTION OF FARMERS BY AGE: N = 120

| Age of farmers | Frequency | Percent |
|---|---|---|
| (i) 25 - 30 years | 7 | 5.83 |
| (ii) 30 - 35 years | 12 | 10.00 |
| (iii) 35 - 40 years | 17 | 14.17 |
| (iv) 40 and above | 84 | 70.00 |
| Total | 120 | 100.00 |

Table 6 shows clearly that above 84.17 percent of farmers included in the study were above 35 years of age, while the remaining 15.83 percent fall within the age-group of 25 and 35 years of age. This shows that younger farmers are increasingly going out of farming. For instance, only 15.83 percent of the respondents who fell between the ages of 25 and 35 engaged in agriculture.

A survey carried out by the International Labour Organization (ILO) in Nigeria (Carrender, 1966) reported that 79.00% of the young people wanted to work in industry or to get further training in Urban Institutions. The ILO studies further showed that fewer than 5 percent wanted to

be farmers. The reason can easily be attributed to massive rural-urban migration due to the much desired white collar jobs in the cities.

(ii) Level of education attained by farmers

TABLE 7: FREQUENCY AND PERCENTAGE DISTRIBUTION OF FARMERS BY LEVEL OF EDUCATION ATTAINED.

| Level of education attained | | Frequency | Percent |
|---|---|---|---|
| i. | Never attended school | 69 | 57.50 |
| ii. | Primary School uncompleted | 29 | 24.17 |
| iii | Primary School completed | 14 | 11.66 |
| iv | Secondary Modern School | 6 | 5.00 |
| v | Teacher Grade II | 2 | 1.67 |
| | Total | 120 | 100.00 |

Table 7 shows that 57.5 percent of the farmers had never attended any school, 24.17 percent attended primary school but did not complete, while 11.67 percent completed their primary education. Another five percent of farmers attended secondary modern school while only 2 farmers (1.67%) attended Teacher's Grade II College. Thus, a large proportion of the farmers were illiterate.

In the light of the above finding, informal educational programmes are necessary to help farmers in the programme.

(iii) Years of farming experience

The study shows that a large proportion of the farmers in the programme area had long been involved in farming. 88.34 percent of farmers had more than six years of farming experience, while out of the remaining ten percent had between 4 and 6 years, of farming experience while only 2 farmers (1.67%) had less than 4 years of farming experience. Thus, the wealth of farming experience of farmers could be a solid base for on-farm adaptive research if their experiences could be adequately used by both research and extension workers in the programme.

(iv) Size of farm

The study showed that most of the farmers (48.33%) were cultivating between 1.5 ha and 2.5 hectares of land in the programme. 32 farmers (26.66%) were cultivating between 2.5 ha and 3.5 hectares of land while 30 farmers (25.00%) were cultivating above 3.5 ha of land. It is needful to say that respondents were very sceptical to declare the true size of their lands under cultivation.

The lands used for cultivation were put under either permanent or annual crops or both. The study further investigated the types of crops grown by the farmers.

(v) Types of Crops grown

TABLE 8: FREQUENCY AND PERCENTAGE DISTRIBUTION OF FARMERS BY TYPES OF CROPS GROWN: N = 120

| Types of Crops grown | Frequency | Percent |
|---|---|---|
| (a) Annual Crops | | |
| i. Rice and Cowpea | 47 | 39.17 |
| ii Yams and Cocoyams | 87 | 75.50 |
| iii Maize and Cassava | 113 | 74.17 |
| iv Soyabeans and Melon | 68 | 56.67 |
| v Sweat potatoes | 45 | 37.50 |
| (b) Permanent/Cash Crops | | |
| i. Oil Palm | 67 | 55.83 |
| ii Cocoa | 48 | 40.00 |
| iii Kola | 53 | 44.17 |
| iv Citrus | 45 | 37.50 |

Source: Farm Field Work Survey, (1991)

Table 8 shows that farmers planted both annual and permanent crops on their farms. A large proportion of the farmers (74.17%) were producing maize and cassava. Other major annual crops produced include yam and cocoyams; soyabean and melon; rice and cowpea; and sweet potatoes. These were mentioned by 75.17%; 56.67%; 39.17% and 37.50% of farmers respectively. Permanent crops produced included oil

palm; kola; cocoa; and citrus. These were mentioned by 55.83%; 44.17%; 40.00%; and 37.50% of farmers respectively. The annual crops were usually inter-planted with vegetables in the programme.

The implication of these findings are that most of the farmers were practising multiple cropping systems. They engaged in the production of annual crops at subsistence level for home consumption, while their agricultural activities in planting the permanent crops were quite limited. Again, the use of hoes and cutlasses was dorminant in their farming activities.

(vi) Length of Participation in the programme

The study revealed that most of the farmers (65.00%) had been participating in the programme for more than 2 years while 20.83 percent of the farmers claimed that they had spent more than one year. The remaining 14.17 percent said they had spent less than one year with the programme.

The farmers were further asked to mention their reasons for participating in the programme. The study showed that more than fifty percent of the farmers interviewed mentioned the following:

(i) To get fertilizer at cheaper price (89.17%)

(ii) To get farm inputs readily (69.17%);

(iii) To attend fortnightly training (62.5%);

(iv) To have access to farm tractors and implements (55.83%) and

(v) To acquire new crop varieties (52.55%);

as reasons for their participating in the programme. The reasons mentioned by farmers are such that would be of benefit to them in increasing their farm production, farm income and hence, their standard of living.

These findings showed that if the expectations of the farmers were met, there is likelihood that the programme primary objectives which are to increase food production and farm income through improvement of productivity would be achieved within a very short period of time. Other reasons mentioned by farmers were:

(i) To get farm information (49.17%)

(ii) To acquire knowledge of new methods of farming (40.00%);

(iii) To receive advice on farming practices (34.17%) and,

(iv) To get solutions to farm problems (26.67%).



## 4.2 The Modern Agricultural Technologies Available in the programme

The research workers and extension workers were asked to mention the stock of modern agricultural technologies

available in the programme. The responses of each set of respondents were collated and tabulated.

TABLE 9: FREQUENCIES OF MENTION MADE OF STOCK OF MODERN AGRICULTURAL TECHNOLOGIES AVAILABLE IN THE PROGRAMME BY RESEARCH WORKERS. N = 9

| Modern Agricultural Technologies | Frequency | Percent |
|---|---|---|
| i. Improved Varieties of Crops such as Rice, cowpea, maize, cassava and Soyabeans | 6 | 66.67 |
| ii Right dosage of fertilizer application | 8 | 88.89 |
| iii Correct Chemical Spraying techniques of crops | 3 | 33.33 |
| iv Optimum spacing for crops | 7 | 77.78 |
| v New knowledge and skill on crop processing | 3 | 33.33 |
| vi Preservation and storage methods of farm produce | 4 | 44.44 |
| vii Control of Pests and diseases of crops | 6 | 66.67 |
| viii Planting techniques of crops | 5 | 55.56 |



Then the extension workers responses on the stock of modern agricultural technologies available in the programme were also collated and tabulated.

TABLE 10: FREQUENCIES OF MENTION MADE OF STOCK OF MODERN AGRICULTURAL TECHNOLOGIES AVAILABLE IN THE PROGRAMME BY EXTENSION WORKERS. N = 150

| Modern Agricultural Technologies | Frequency | Percent |
|---|---|---|
| i. Improved Varieties of Crops such as Rice, cowpea, maize, cassava and Soyabeans | 127 | 84.67 |
| ii Right dosage of different types of fertilizers | 131 | 87.33 |
| iii Fertilizer application techniques for different crops | 93 | 62.00 |
| iv Correct Chemical Spraying techniques of crops | 35 | 23.33 |
| v Optimum spacing for different crops | 77 | 51.33 |
| vi Soyabean production and utilization | 86 | 57.33 |
| vii Preservation and storage methods of farm produce | 72 | 48.00 |
| viii Control of Pests and diseases of crops | 73 | 48.67 |
| ix Poultry Management Practices | 38 | 25.33 |
| x Livestock Management Practices | 35 | 23.33 |
| xi Fishery Management Practices | 23 | 15.33 |
| xii Planting techniques of crops | 69 | 46.00 |
| xiii Harvesting techniques of crops | 55 | 36.67 |
| xiv Processing of crops residues as animal feeds | 31 | 20.67 |
| xv Soil testings | 14 | 9.27 |

The observations of tables 9 and 10 showed that crop production technologies are more available than animal husbandry technologies in the programme. The right dosage of fertilizers and different application techniques (87.33% and 62.00% respectively) were frequently mentioned by both research workers and extension workers in the programme. Improved crop varieties such as cowpea, rice, maize, soyabeans and cassava and their optimum planting distances were also mentioned by more than fifty percent of both research workers and extension workers. Soyabean production and utilization (57.33%), Control of diseases and pests of crops (48.67%), preservation and storage methods of farm produce (48.00%) and Planting techniques of crops (46.00%) were also rated high by extension workers as being available in the programme.

However, poultry management practices, livestock management practices and fishery management practices were not mentioned by research workers and also rated low by 25.33 percent, 23.33 percent, and 15.33 percent respectively of extension workers as being available in the programme. Thus, it can be said that the programme lay more emphasis on crop production than any of poultry, livestock and fishery management practices.

Also above forty percent of extension workers mentioned

preservation and storage methods of farm produce (48.00) and planting techniques of crops (46.00%) as available modern technologies in the programme. Harvesting techniques of crops (36.67%) and correct chemical spraying techniques of crops (23.33%) were also mentioned by few extension workers as being available. Also, thirty-one extension workers (20.67%) mentioned processing of crop residues as animal feeds, while only fourteen extension workers (9.33%) mentioned soil testings as modern agricultural technology available in the programme.

The programme farmers were also asked to indicate their knowledge of modern agricultural technologies available and introduced to them in the programme. Their responses were collated and tabulated.

TABLE 11: FREQUENCIES OF MENTION MADE OF MODERN AGRICULTURAL TECHNOLOGIES AVAILABLE AND INTRODUCED TO FARMERS IN THE PROGRAMME AS INDICATED BY FARMERS

N = 120

| | Modern Agricultural Technologies | Frequency | Percent |
|---|---|---|---|
| i. | Hybrid or improved crop varieties of maize, cowpea, cassava, rice and soyabean | 89 | 74.17 |
| ii | Preservation and storage methods of farm produce | 69 | 57.50 |
| iii | Soyabean production and utilizations | 61 | 50.58 |
| iv | Use of chemicals for crop protection | 43 | 35.83 |
| v | Rearing of day old chicks to layer | 31 | 25.83 |
| vi | Soil improvement techniques | 22 | 18.33 |
| vii | Use of farm residue for livestock feeding | 29 | 24.17 |
| viii | The use of fertilizers and fertilizer application techniques | 98 | 81.69 |
| ix | Diseases and Pest control measures of livestocks such as dipping and deworming | 17 | 14.17 |
| x | Optimum plant spacing for crops | 83 | 69.17 |
| xi | Planting techniques for arable crops | 71 | 59.17 |
| xii | Spraying techniques for use of herbicides, pesticides and weedicides | 42 | 35.00 |
| xiii | Processing methods such as farmentation of cocoa; maize and cowpea shelling | 45 | 37.50 |
| xiv | Tomatoes staking techniques | 47 | 39.17 |

Table 11 shows that above fifty percent of farmers mentioned, the use of fertilizers and fertilizer application techniques (81.67%), Optimum plant spacing for crops (69.17%); planting techniques for arable crops (59.17%); Hybrid or improved crop varieties of crops, such as rice, maize, cowpea, cassava and soyabeans (74.17%); preservation and storage methods of farm produce (57.5%) and soyabean production and utilization (50.83%) as modern agricultural technologies available and introduced to them in the programme.

Also, tomatoes staking techniques (39.17%); processing methods (37.5%); use of chemicals for crop protection (35.83%) and spraying techniques for use of herbicides, pesticides and weedicides (35.00%) were mentioned as available modern agricultural technologies by above 30.00% of the farmers interviewed, while less than thirty percent of the farmers mentioned, rearing of day old chicks to layers (25.83%); use of farm residues for livestocks feeding (24.17%) and diseases and pest control measures such as dipping and deworming of livestock (14.17%) as available modern agricultural technologies introduced to them in the programme.

It should be noted that crop production technologies were much available and introduced to programme farmers than

animal husbandy technologies. Poultry and livestock management practices were not frequently mentioned by programme farmers, while suprisingly, no farmers indicated availability of fishery production technologies in the programme. This might have been so because of the special requisite of fish production. These findings showed that the programme placed much emphasis on crop production than either poultry, livestock or fishery production in the programme, even though the programme has few subject matter specialists (SMSs) that are specialists in these various discipline.

## 4.3 The Research Workers and Extension Workers Communication Patterns.

This was discussed under information-input pattern; information-output pattern; and information feedback mechanism. Then problems encountered in communications, and suggestions for improvement were also mentioned.

Sources of Ideas for research

TABLE 12: FREQUENCY AND PERCENTAGE DISTRIBUTION OF DIFFERENT SOURCES OF INFORMATION FOR RESEARCH USED BY RESEARCH WORKERS. N = 9

| | Sources of Information | Frequency | Percent |
|---|---|---|---|
| i | Researchers/Scientists outside the programme | 6 | 66.67 |
| ii | Discussions with immediate colleagues | 4 | 44.44 |
| iii | Programme research stations | 3 | 33.33 |
| iv | Village Extension workers | 2 | 22.22 |
| v | Area Extension officers | 5 | 55.56 |
| vi | Programme farmers | 2 | 22.22 |
| vii | Farmers' field and farm plots | 3 | 33.33 |
| viii | Monthly Technology Review Meeting | 8 | 88.89 |
| ix | Research Institutes | 7 | 77.78 |
| x | On-farm Adaptive research sites | 5 | 55.56 |
| xi | Field-trips/Visits | 5 | 55.56 |



The observation of Table 12 showed that most of the research workers used Monthly Technology Review Meetings (88.89%); Research Institutes (77.78%); Researchers/Scientists outside the programme (66.67%);Area Extension officers (55.56%); On-farm adaptive research sites (55.56%) and Field trips/Visits (55.56%) as sources of

information for research in the programme. These are the most six used sources of information for research.

Others sources included discussions with the immediate colleagues (44.44%), and farmers' fields and farm plots (33.33%), while village extension workers (22.22%) and programme farmers (22.22%) were the least used sources of research information in the programme.

A question was asked to know the recognised research and extension linkages in the programme. The responses of research workers showed that Monthly Technology Review Meetings (100.00%); On-farm Adaptive Research sites (77.78%) and Farmers' field days/Field trips (55.56%) constituted the most three recognised research-extension linkages in the programme. However, Fortnightly Training Meeting (22.22%) was not recognised as important linkage with extension workers while no respondents mentioned Training Workshops and seminars; and implementation meetings as research and extension linkages in the programme.

The extension workers were also asked to indicate the recognised research and extension linkages in the programme. Their responses showed that Monthly Technology Review Meeting (94.00%); On-farm Adaptive Research sites (64.67%) and field days/trips (52/67%) were the three most recognised

research and extension linkages in the programme. The small Plot Adoption Trials (42.00%) were also recognised by few extension workers as a linkage system. However, Fortnightly Training Meeting (11.33%) and Training Workshops and seminars (10.00%) were less recognised, while no respondents indicated implementation meetings as a linkage system.

The research workers were asked to mention the categories of extension staff they dealth with in the programme. Their responses showed that the research workers usually communicate and maintain contact with Zonal Extension officers (88.89%); subject Matter specialists (88.89%) and Area Extension Officer (66.67%), while communications and contacts with Block Extension Supervisors (44.44%) and Village Extension Agents (22.22%) were usually limited.

In another question raised to know the channels of communication with extension staff, the responses of research workers were collated and tabulated.

TABLE 13: FREQUENCY AND PERCENTAGE DISTRIBUTION OF DIFFERENT CHANNELS OF COMMUNICATION WITH EXTENSION STAFF USED BY RESEARCH WORKERS N = 9

| Channels of communication | | Frequency | Percent |
|---|---|---|---|
| i. | Face-to-face personal contact | 6 | 66.67 |
| ii | Group contact meeting | 6 | 66.67 |
| iii | Monthly Technology Review Meeting | 9 | 100.00 |
| iv | On-farm Adaptive Research Sites | 7 | 77.78 |
| v | Farmers field days | 5 | 55.56 |
| vi | Field trips/Visits | 6 | 66.67 |

Source: Farm Field Work Survey (1991).

Table 13 shows that Montly Technology Review Meetings (100.00%); On-farm Adaptive Research Sites (77.78%); face-to-face personal contact (66.67%); Group contact meeting (66.67%), field trips (66.67%) and farmers' field days (55.56%) constituted the most used channels of communication between research workers and extension workers in the programme. No research workers reported the use of correspondence, publications such as Technical reports and Bulletins; Journal articles, research reports and visual aids such as over-head projector slides and film-shows. Thus, mass media channels of communication were not much in use in the programme.

## Difficulties in Establishing Communication and Contacts Between Research Workers and Extension Workers

The research workers were asked to mention specific problems encountered in establishing communication and contact with extension staff. The responses of research workers revealed that lack of visual aids and teaching materials (66.67%); inadequate transport facilities (55.56%) and lack of frequent exchange of ideas and information (55.56%) were the most serious problems mentioned by research workers.

The extension workers were also asked to mention specific difficulties encountered in establishing communication and contacts with research workers in the programme. It was revealed that inadequate number of research officers in the programme (58.00%) and lack of information as regard the different locations of the research workers (55.33%) were the two main problems mentioned. Limited contacts of research workers with specific member of extension staff and the lack of adequate modern communication facilities were also mentioned by 46.00 percent and 40.67 percent of extension workers respectively. Lack of direct contacts of research workers with village-level extension workers was mentioned by 38.00 percent of the respondents.

It was obvious from the observations of the investigator that inadequate number of research workers can be explained by the fact that there were only two research officers in each zone of the programme. These two officers, considering the staff-strength of extension workers in each zone, could not have been able to establish and maintain adequate contacts and effective communication with extension workers.

Essential Conditions for establishing Contact and Communication between research workers and extension workers

The research workers were asked to mention essential conditions for establishing contact and good working relation with extension staff in the programme. Their responses showed that provisions of visual aids and modern communication facilities; teaching materials and training facilities were the three most essential conditions mentioned by 66.67%; 55.56% and 55.56% of research workers respectively. Frequent exchange of ideas and information and improvement of the programme training methodology were also mentioned by 44.44% and 33.33% of research workers respectively.

The extension workers mentioned improvement in service condition and job satisfaction (58.00%) and provision of adequate transport facilities (54.00%) as essential

conditions for establishing and maintaining contacts and closer working relation with research worker. Regular meetings and discussions (47.33%) and improved communication system with research officers (42.00%) were also mentioned. Involvement of extension workers in research process (39.33%) and frequent joints field visits (28/67%) were mentioned by few workers.

Sources of Information to Extension workers

The extension workers were asked to indicate the different sources of information received from research workers in the programme. The responses were collated and tabulated.

TABLE 14: FREQUENCY AND PERCENTAGE DISTRIBUTION OF DIFFERENT SOURCES OF INFORMATION FROM RESEARCH WORKERS USED BY THE EXTENSION WORKERS IN THE PROGRAMME N = 150

| | Sources of Information | Frequency | Percent |
|---|---|---|---|
| i | Fortnightly Training Meeting (FNT) | 141 | 94.00 |
| ii | Subject Matter Specialists (SMSs) | 143 | 95.33 |
| iii | On-farm Adaptive Research Sites | 97 | 64.67 |
| iv | Field days/trips | 79 | 52.67 |
| v | Zonal Extension officers | 105 | 70.00 |
| vi | Training Workshops and Seminars | 12 | 8.00 |
| vii | Area Extension officers | 135 | 90.00 |
| viii | Area offices | 51 | 34.00 |

Table 14 shows that subject matter specialists (95.33%); Fortnightly Training Meetings (94.00%); Area Extension officers (90.00%); Zonal Extension officers (70.00%); On-farm adaptive research sites (64.67%) and field days/trips (52.67%) constituted the most used sources of information from research workers to extension workers. While Area offices (34.00%) and Training Workshop and Seminars (8.00%) were indicated by few extension workers as sources of information to them in the programme.

Process of dissemination of agricultural technologies and production recommendations

The research workers were asked to indicate all the various avenues through which they give out farm information, production recommendations and modern agricultural technologies in the programme. Their responses were collated and tabulated.

TABLE 15: FREQUENCY AND PERCENTAGE DISTRIBUTION OF AVENUES FOR DISSEMINATION OF FARM TECHNOLOGIES USED BY RESEARCH WORKERS. N = 9

| | Avenuea for dissemination | Frequency | Percent |
|---|---|---|---|
| i | Direct contact wth subject matter specialists (SMSs) | 7 | 77.78 |
| ii | Monthly Technology Review Meeting | 9 | 100.00 |
| iii | On-farm Adaptive Research (OFR) sites | 6 | 66.67 |
| iv | Direct contact with zonal Extension officers/Area Extension officers | 7 | 77.78 |
| v | Farmers' field days/trips | 5 | 55.56 |

Table 15 showed that Monthly Technology Review Meeting (100.00%); Direct contact with Subject Matter Specialists (77.78%) and Direct contact with Zonal Extension officer/Area Extension Officer were mostly used as avenues for dissemination of farm information and agricultural technologies. While On-farm Adaptive Research sites (66.67%) and Farmers' field days (55.56%) constituted other avenues beings used in the programme. These findings showed that the extension staff were involved in all the avenues used by research workers.

The extension workers were also asked to indicate all the avenues they used for disseminating farm information and

technologies to farmers in the programme. Their responses were collected and tabulated in Table 16.

TAB;E 16: FREQUENCY AND PERCENTAGE DISTRIBUTION OF AVENUES USED FOR DISSEMINATION OF AGRICULTURAL TECHNOLOGIES BY EXTENSION WORKERS IN THE PROGRAMME N = 150

| | Avenues for dissemination | Frequency | Percent |
|---|---|---|---|
| i | Radio and Television | 0 | 0.00 |
| ii | Research officers | 7 | 4.67 |
| iii | Programme contact farmers | 131 | 87.33 |
| iv | Leaflets and folders | 28 | 18.67 |
| v | Magazine and Newspaper | 0 | 0.00 |
| vi | Special short training programmes | 11 | 7.00 |
| vii | Farmers' fortnightly Training meetings | 143 | 95.33 |
| viii | Blackboard News | 37 | 24.67 |
| ix | Farmers field days/field trips | 79 | 52.67 |
| x | Small plot Adoption Trials | 145 | 96.67 |
| xi | Extension drama/playlet | 42 | 28.00 |
| xii | On-farm Adaptive research sites | 49 | 32.67 |

Source: Farm field Work Survey (1991).

Table 16 reveals that small plot Adoption Trials (96.67%); Farmers fortnightly training meetings (95.33%) and Programme contact farmers (87.33%) constituted the most

three used avenues for disseminating farm information and technologies to farmers by extension workers. Farmers field days) field trips (52.67%) and on-farm Adaptive Research sites (32.67%) were also mentioned.

Other avenues mentioned include: Extension drama/Playlet (28.00%) Blackboard news (24.67%) and leaflets and folders (18.67%). However, no respondent indicated the use of the following media, radio, television, magazine and Newspapers in the programme.

A question was asked to know the types of contacts the research workers usually have with the programme farmers. It was revealed that there was limited direct contact between research workers and farmers in the programme. Most of the research workers (77.78%) carried out on-farm adaptive research with farmers, 3 research workers (33.33%) participated in demonstration programmes with farmers in attendance; another 3 research workers (33.33%) indicated visiting farmers in their farms to discuss farm matters, while only two research workers (22.22%) reported that farmers visited their offices on farm related matters. This finding implies that there was no use of printed media from research workers to farmers.

Problems limiting-the dissemination of production recommendation and modern agricultural technologies to farmers

The research workers were asked to mention problems limiting the dissemination of production recommendations and agricultural technologies to farmers.

Many research workers (66.67%) perceived lack of modern communication facilities to be a problem. Also, five research workers (55.56%) mentioned lack of adequate teaching facilities as a problem while only three research workers (33.33%) saw transportation problems to rural areas and inability to contact farmers directly as limiting problems in the programme.

Information feedback mechanisms between research workers and extension workers in the programme.

The research workers were asked to mention various avenues they used to receive feedback information on farm production recommendations and agricultural technologies in the programme. Their responses were collated and tabulated.

TABLE 17: FREQUENCY AND PERCENTAGE DISTRIBUTION OF AVENUES USED TO RECEIVE FEEDBACK ON FARM INFORMATION IN THE PROGRAMME BY RESEARCH WORKERS N = 9

| Avenues | | Frequency | Percent |
|---|---|---|---|
| i | Field trips to farmers' fields | 4 | 44.44 |
| ii | Monthly Technology Review Meetings | 8 | 88.88 |
| iii | On-farm Adaptive Research sites | 6 | 66.67 |
| iv | Discussions with subject matter specialists | 7 | 77.78 |
| v | Discussions with colleagues and extension staff | 5 | 55.56 |

Table 17 revealed that most of the research workers used Monthly Technology Review Meeting (88.88%); direct discussions with subject matter specialists (77.78%) and on-farm adaptive research sites (66.67%) as avenues for getting feedback information. Discussions with colleagues and extension staff (55.56%) and field trips to farmers' field (44.44%) were other avenues being used by research workers in the programme.

It was obvious from all the avenues mentioned that extension workers were not left out and they were much relied upon for feedback information. This invariably provided the research workers better insight to farmers' problems for adequate solutions.

## 4.4 The extension workers and farmers communication patterns in the programme.

The extension workers were asked to indicate various communication channels they used to contact farmers in the programme. Their responses were collated and tabulated.

TABLE 18 FREQUENCY AND PERCENTAGE DISTRIBUTION OF DIFFERENT COMMUNICATION CHANNELS WITH FARMERS USED BY EXTENTION WORKERS. N = 150

| | Communication channels | frequency | Percent |
|---|---|---|---|
| i | Visit to farms and Homes | 146 | 97.33 |
| ii | Face to face personal contact | 123 | 82.00 |
| iii | Group meetings of farmers | 129 | 86.00 |
| iv | Small Plot Adoption Trials | 147 | 98.00 |
| v | Farmers Training Meetings | 136 | 90.67 |
| vi | Extension drama/playlet | 27 | 18.00 |
| vii | Farmers field days and Exhibition | 39 | 26.00 |
| viii | Field trips and field visits | 78 | 52.00 |
| ix | Publications e.g. Posters, Bulletin and pamphlets | 29 | 19.33 |
| x | Radio Broadcast | 18 | 12.00 |
| xi | Television Broadcast | 13 | 8.67 |
| xii | Blackboard News | 36 | 24.00 |

Table 18 showed that small Plot Adoption Trials (98.00%); Visit to farms and Homes (97.33%); Farmers

Training Meetings (90.67%); Group Meetings of farmers (86.00%) and face-to-face personal contact (82.00%) were the most frequently used channels of communication with farmers in the programme. Field trips and field Visits (52.00%) came next followed by farmers' field days and exhibition (26.00%); Blackboard News (24.00%); Publications such as posters, Bulletins and pamphlets (19.33%); Extension drama and playlet (18.00%); Radio Broadcast (12.00%) and Television Broadcast (8.67%) came last in descending order of use. These findings were in accordance with the findings of Kidd (ibid) and Williams and Williams (1972).

The findings also revealed that there was little use of the following media Blackboard News, Publications, extension drama and playlet, radio and television, while there was no use of agricultural film show and mobile open broadcast in the programme. The use of extension drama playlet and blackboard news was observed to have been frequently employed by the extension workers who were in the zones included in the former enclaved project.

The investigator, withnessed a farmers' field day at Ilesha, in Ife/Ijesa zone. The village extension agents invited their contact farmers, rural women in agriculture, and other registered farmers in the programme for the day.

The programme research workers, scientists from other agricultural institutions, Area Extension officers, Zonal Extension officer, subject matter specialists and village level extension workers were present. The officials of the state Ministry of Agriculture and Natural Resources were also in attendance.

Agricultural products such as improved cowpea, varieties, improved rice varieties, cassava varieties, maize varieties and agro-chemicals were displayed. Modern farm implements and equipments were also displayed by the programme and other private firms.

The research workers and scientists discussed many issues that affect agriculture in the area such as effects and control of diseases, and storage of farm produce. Women in Agriculture staff displayed processed food mostly from Soyabean and plantain. The farmers asked questions freely and answers were adequately provided.



Points of contact with programme farmers

The extension workers were asked to mention their points of contact with farmers. The findings showed that the village extension workers had established contacts with farmers at village-level. Fortnightly schedule meetings, Demonstration sites; on-farm shed and farm sites; and

contact farmers' farms were mentioned by 98.00%; 87.33%; 76.67% and 71.33% of village extension agents respectively. Few extension workers (11.33%) mentioned meeting of co-op organisations as their points of contact with farmers.

The Channels of communication with extension workers used by the programme farmers.

The farmers were asked to indicate various channels of communication through which they contact extension workers. Their responses were collated and tabulated.

TABLE 19 FREQUENCY AND PERCENTAGE DISTRIBUTION OF CHANNELS OF COMMUNICATION CHANNELS WITH EXTENTION WORKERS USED BY PROGRAMME FARMERS N = 120

| Communication channels | | frequency | Percent |
|---|---|---|---|
| i | Visit of extension workers to farms and Homes | 93 | 77.50 |
| ii | Face to face personal contact | 71 | 59.17 |
| iii | Group meetings of farmers | 95 | 79.17 |
| iv | Small Plot Adoption Trials sites | 105 | 87.50 |
| v | Farmers Training Meetings | 97 | 80.83 |
| vi | Extension drama/playlet | 21 | 17.50 |
| vii | Farmers field days and Exhibition | 63 | 52.50 |
| viii | Publications e.g. Posters, Bulletin and pamphlets | 15 | 12.50 |
| ix | Blackboard Information | 19 | 15.83 |

Table 19 shows that many farmers recognised the following, Small Plot Adoption Trial sites (87.50%); Farmers training meetings (80.83%); Group meeting of farmers (79.17%); Visits of extension workers to farms and Homes (77.50%); and face-to-face personal contact (59.17%) as the channels through which they had contacts and communication with extension workers in the programme.

Furthermore, extension drama and playlets (7.50%), blackboard information (15.83%), Publications notably posters and pamphlets (12.50%) were not of much use as channel of communication with extension workers. No farmer indicated any of the following media, agricultural film shows, mobile open broadcast and television broadcast as channels used to communicate with extension workers in the programme. They were all included in the interview schedule but no respondent indicated their use.



Sources of farm information to farmers in the programme

The extension workers were specifically asked to mention various sources of farm information and agricultural technologies available to programme farmers. It was reported that the most four available sources of information and agricultural technologies are farms and Homes visitation, Programme contact farmers; small plot Adoption

Trials and farmers training meetings. Other sources indicated by extension workers were farmers' field days and field trips, Agro-chemical and farm input centres; Blackboard information and radio broadcast in decreasing order as mentioned by extension workers. No extension workers indicated mobile open broadcast and television broadcast as available sources of information to farmers in the programme.

In a similar question asked the farmers to indicate all available sources of farm practices and technologies they had acquired in the programme. The responses were collated and tabulated.

TABLE 20: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SOURCES OF ACQUIRED FARM PRACTICES AND TECHNOLOGIES USED BY PROGRAMME FARMERS

N = 120

| | Sources of Information on Improved farm practices | Frequency | Percent |
|---|---|---|---|
| i | Village extension workers | 95 | 79.17 |
| ii | Leaders of Co-operative societies | 33 | 27.50 |
| iii | Contact farmers | 68 | 56.67 |
| iv | Produce buyers/Farm input dealers | 17 | 14.17 |
| v | Demonstration sites | 71 | 59.17 |
| vi | Radio agricultural programmes | 73 | 60.83 |
| vii | Television programme | 3 | 2.50 |
| viii | Agro-chemical and farm input centres | 53 | 44.17 |
| ix | Fortnightly training meeting | 93 | 77.52 |
| x | Friends and neighbours | 73 | 60.83 |
| xi | Sons and Relatives | 47 | 39.17 |
| xii | Blackboard information | 17 | 14.17 |
| xiii | Extension drama and playlets | 15 | 12.50 |
| xiv | Publication - posters, pamphlets | 5 | 4.17 |



Table 20 revealed that the village extension workers (79.17%) constituted the most used sources of farm practices and technologies in the programme. This was followed by Fortnightly Training Meetings (17.50%); radio agricultural

programmes (60.83%) Friends and neighbours (60.83%); Demonstration sites (59.17%) and programme contact farmers (56.67%). Then, agro-chemicals and farm centres (44.17%); Sons and Relatives (39.17%) and the leaders of co-operative societies (27.5%) also constituted sources of acquired farm practices and technologies used by programme farmers.

Other sources of improved farm practices and technologies mentioned by farmers included produce buyers/farm input dealers (14.17%); Blackboard information (14.17%); Extension drama and playlet (12.5%); Publication such as poster and pamphlets (4.17%) and Television programmes (2.5%), even though they were not mentioned as important sources of farm practices and technologies by the generality of farmers.



Activities in which farmers had participated in the programme

A question was asked to know the various activities in which farmers had participated in the last three months to the time of the study. The responses of farmers were collated and tabulated.

TABLE 21: FREQUENCY AND PERCENTAGE DISTRIBUTION OF ACTIVITIES IN WHICH FARMERS HAD PARTICIPATED IN THE PROGRAMME:

n = 120

| Activities | | Frequency | Percent |
|---|---|---|---|
| i | Attending agricultural meetings | 105 | 87.50 |
| ii | Participating in agricultural demonstration programmes | 69 | 57.50 |
| iii | Going with extension workers to demonstration farms | 57 | 47.50 |
| iv | Going to Agro-chemical and farm input centres for supplies (e.g. seeds, fertilizer and chemicals) | 98 | 81.67 |
| v | Going to extension workers for advice | 73 | 60.83 |
| vi | Seeing or reading agricultural posters, pamphlets etc. | 25 | 20.83 |
| vii | Listening to radio agricultural programmes | 91 | 75.83 |
| viii | Seeing agricultural Cinema Van | 7 | 5.83 |
| ix | Going to meetings every fortnight | 97 | 80.83 |
| x | Watching drama presentation on farm practices | 21 | 17.51 |



Table 21 shows that most of the farmers had participated in activities in which face-to-face personal contact and communication with field level extension workers had occured. Most of the farmers had attended agricultural

meetings (87.50%); purchased farm inputs in the programme (81.67%); sought advice from extension workers (60.83%) and participated in demonstration programmes (57.50%). Also, many of the farmers (75.83%) used to listen to radio agricultural programmes.

Radio programmes of interest to farmers

The farmers were asked to mention various special radio programmes of interest to them. Their responses werecollated and tabulated.

TABLE 22: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SPECIAL RADIO PROGRAMME OF INTEREST INDICATED BY PROGRAMME FARMERS

N = 120

| | Special radio programme of Interest | Frequency | Percent |
|---|---|---|---|
| i | "Agbeloba"/"E ku ise loko" | 51 | 42.50 |
| ii | "E jeka roko"/"E pe Agbe" | 43 | 35.83 |
| iii | "Oko lere Agbe"/Agbelere | 47 | 39.17 |
| iv | "Ladokun Feeds programme | 38 | 31.67 |
| v | "Agborodun"/"E yi aro" | 59 | 49.17 |
| vi | "E da soro yi" | 41 | 34.17 |

The observation of Table 22 shows that the farmers used to listen to various special radio programmes of interest. However, it must be said that the programme being studied was not sponsoring any of these programmes of interest mentioned by the farmers. The only radio programme being sponsored by the programme was "Advertisement programme" to create awareness about the programme extension and farm input services.

Farmers were also asked to say if they had ever watched film show or television on farm practices. 89 farmers (74.17%) said "No" while 31 farmers (25.83%) said "Yes". Those who said yes, were further asked to mention the number of times they had watched such programme. 9 farmers (7.50%) said "once or twice"; 5 farmers (4.17%) said "Quite often"; while 17 farmers (14.17%) said "only when travel out of village.

In another attempt to know, if the farmers had ever watched drama or playlet in the programme. 69 farmers (57.50%) said "No", while 51 farmers (42.50%) said "Yes", they had watched drama or playlet in the programme. Then a question was asked to know who actually performed the drama or playlet.

The responses of the farmers were as follows; 19 farmers (15.83%) said they had watched drama performed by "OYSADEP Staff". 37 farmers (30.83%) said they had watched drama performed by "theatre group"; while 21 farmers (17.50%) said they had watched drama centred on farm practices when asked to say the nature of the drama.

Information Feedback Mechanism of Extension Workers

The extension workers were asked to mention all the avenues they used to receive feedback for their farm information and production recommendations to farmers. The responses of extension workers showed that most of the extension workers (70.00%) considered interviewing or questioning farmers about farm practices; 93 extension workers (62.00%) considered rate of adoption of new practices; while 87 extension workers (58.00%) mentioned visiting the farms to discuss with farmers as means of getting feedback information. 79 extension workers (52.67%) used direct observation of attitude and response of farmers as means of getting the impact of their messages on farmers.

When the opinions of the extension workers were sought on how they used farmers' response, they reported the following. It indicates the suitability of production recommendation (58.00%); It shows the extent of farmers' understanding of the technology and instructions (39.33%);

It indicates the problem areas (35.33%); It indicates the effectiveness of communication (32.00%); and lastly, it indicates the area of interests and desires of farmers (31.33%).

Problems involved in establishing communication or contact between extension workers and farmers

The extension workers and the programme farmers were asked a question to know their problems in establishing communication or contacts with one another. The responses of both set of respondents were collated and tabulated.

TABLE 23: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SPECIFIC PROBLEMS INVOLVED IN ESTABLISHING COMMUNICATIONS OF CONTACTS WITH FARMERS BY EXTENSION WORKERS

N = 150

| | Problems | Frequency | Percent |
|---|---|---|---|
| i. | Non-availability of teaching materials and visual aids | 79 | 52.67 |
| ii | Large number of farmers to cover | 57 | 38.00 |
| iii | Failure to meet up farmers' demand | 37 | 24.67 |
| iv | Level of farmers' educational background | 87 | 58.00 |
| v | Settlement pattern of the farming populace | 35 | 23.33 |
| vi | Late arrival of farm inputs | 73 | 48.67 |
| vii | Farmers are difficult to convince | 49 | 32.67 |
| viii | Unwillingness of farmers to accept and adopt new technologies | 76 | 50.67 |
| ix | Poor rural road and inadequate transport facilities | 103 | 68.67 |
| x | Lack of finance for farmers | 115 | 76.67 |
| xi | Lack of extension facilities such as rain coat and rain boot | 65 | 43.33 |
| xii | Old age of farmers | 41 | 27.33 |



The same question was put to farmers to know their problems in establishing communications or contacts with extension workers, their responses were collated and tabulated.

TABLE 24: FREQUENCY AND PERCENTAGE DISTRIBUTION OF PROBLEMS OF ESTABLISHING COMMUNICATIONS AND CONTACTS WITH EXTENSION WORKERS BY FARMERS. N = 120

| | Problems | Frequency | Percent |
|---|---|---|---|
| i. | Transportation problems | 53 | 44.17 |
| ii | Agents living outside the community | 61 | 50.83 |
| iii | Lack of finance to buy farm inputs | 73 | 60.83 |
| iv | Infrequent visits of extension workers | 68 | 55.67 |
| v | Inability to write or read instructions | 73 | 60.83 |
| vi | Late arrival and distribution of farm inputs | 49 | 40.83 |
| vii | Extension workers' short time of visitation | 63 | 52.50 |
| viii | Promises are not usually fulfilled by extension workers | 29 | 24.17 |
| ix | Farm inputs were not sold within accessible area | 42 | 35.00 |
| x | Extension workers' were not always available | 45 | 37.50 |



The observations of Table 23 and Table 24, showed that lack of finance to buy farm inputs by farmers was the most limiting problem. This was expressed by 76.67% extension workers and 60.85% farmers. This was followed by poor rural road and inadequate transport facilities, expressed by

68.67% extension workers and 44.17% farmers. This might have responsible for infrequent visits of extension agents as expressed by 55.67 percent farmers. Then, level of farmers' educational background expressed by 58.00% extension workers and inability to write or read instructions expressed by 60.83% farmers were the next problems. Non-availability of teaching materials and visual aids; and unwillingness of farmers to accept and adopt new technologies were another two important problems mentioned by 52.67% and 50.67% extension workers respectively.

Other problems mentioned by extension workers were late arrival of farm inputs (48.67%); lack of extension facilities such as rain boot and rain coat (43.33%); large number of farmers to cover (38.00%); farmers are difficult to convince (32.67%), old age of farmers (27.33%) and settlement pattern of the farming populace (23.33%).

The farmers also mentioned the following: extension workers' short time of visitation (52.50%); Extension agents living outside the community (50.83%); late arrival and distribution of farm inputs (40.83%); extension workers are not always available (37.50%); farm inputs were not sold within accessible areas (35.00%) and lastly, promises were not usually fulfilled by extension workers (24.17%) as communication problems in the programme.

These findings showed that there were some problems which affect both the extension workers and the farmers in the programme. Such problems include transportation problems and inadequate transport facilities, late arrival and distribution of farm inputs.

Essential conditions that will improve communication and contacts between extension workers and farmers

The opinions of both the extension workers and the programme farmers were sought on essential conditions that will improve communications and contacts between them. The responses of each set of respondents were collated and tabulated.

TABLE 25: FREQUENCY AND PERCENTAGE DISTRIBUTION OF ESSENTIAL CONDITIONS THAT WILL IMPROVE COMMUNICATIONS AND CONTACTS BETWEEN EXTENSION WORKERS AND FARMERS AS MENTIONED BY EXTENSION WORKERS N = 150

| | Essential Conditions | Frequency | Percent |
|---|---|---|---|
| i. | Use of visual aids and teaching facilities | 67 | 44.67 |
| ii | Establishment ofAgro-service and farm input centres at farmers' locality | 87 | 58.00 |
| iii | Adequate mobility for extension workers | 113 | 75.33 |
| iv | Provisions of rural infrastructures and good road networks | 65 | 43.44 |
| v | Maintaining regular schedule visits to farmers | 76 | 50.67 |
| vi | Increase staff strength and allowances | 85 | 56.67 |
| vii | Use of leaflet, posters, information sheet and other publications | 83 | 55.33 |
| viii | Better loan scheme and credit facilities for farmers | 91 | 60.67 |
| ix | Provision of extension facilities for workers | 58 | 38.67 |
| x | Breaking cells into convenient farmers groups and reducing the number of farmers per agent | 76 | 50.67 |
| xi | Prompt solutions to farmers' problems | 35 | 23.33 |
| xii | Use of radio, television and other mass media | 49 | 32.67 |
| xiii | Frequent and adequate supply of farm inputs | 55 | 36.67 |

Observation of Table 25 shows that above 5ØO percent of extension workers mentioned the following: adequate mobility for extension workers (75.33%); better loan scheme and credit facilities for farmers (6O.67%); establishment of Agro-service and farm input center at farmers' locality (58.OO%); Increase staff strength and allowance (56.67%); Use of leaflet, posters, information sheet and other publications (55.33%); maintaining regular schedule visits to farmers (5O.67%) and breaking of cells into convenient farmers' groups and reducing the number of farmers' per extension agent (5O.67%); as essential conditions to establish and maintain communication and contacts, with farmers in the programme.

Other essential conditions mentioned were the use of visual aids and teaching facilities (44.67%); provisions of rural infrastructures and good road network (43.33%); provision of extension facilities for workers (38.67%); frequent and adequate supply of farm inputs (36.67%); use of radio, television and other mass media in the programme (32.67%) and prompt solutions to farmers; problems (23.33%).

The opinions of farmers on essential conditions to improve communication and contacts between them and extension workers were also collated and tabulated.

TABLE 26: FREQUENCY AND PERCENTAGE DISTRIBUTION OF ESSENTIAL CONDITIONS THAT WILL IMPROVE COMMUNICATIONS AND CONTACTS BETWEEN EXTENSION WORKERS AND FARMERS AS MENTIONED BY FARMERS

N = 120

| Essential Conditions | | Frequency | Percent |
|---|---|---|---|
| i | Adequate and timely supply of farm inputs. | 53 | 44.17 |
| ii | Residence of extension workers within farmers' area | 65 | 54.17 |
| iii | Use of pamphlets and posters | 47 | 35.17 |
| iv | Provision of access farm roads | 39 | 32.50 |
| v | Frequent meeting and visits to farms | 61 | 50.83 |
| vi | Regular visits and advice to farmers | 63 | 52.50 |
| vii | Use of sound address systems in meetings | 25 | 20.83 |
| viii | Timely provision of useful farm information and service | 45 | 37.50 |
| ix | Provision of credit facilities and financial assistance | 68 | 55.57 |
| x | Location of farm service centres within farmers' areas | 73 | 60.83 |

Table 26 reveals that the most mentioned five essential conditions for improving communication and contacts with extension workers by farmers were location of farm service centres within farmers' areas (60.83%); provision of credit facilities and financial assistance (55.67%); residence of extension workers within farmers' areas (54.17%), regular visits and advice to farmers' (52.50%); and frequent meeting and visits to farms (50.83%).

Other essential conditions mentioned included adequate and timely supply of farm inputs (44.17%); Use of pamphlets and posters (39.17%); timely provision of useful farm information and service (37.50%); provision of access farm roads (32.50%), and lastly, use of sound address systems in meetings (20.83%).



Extension service system in the programme

An examination of the communication patterns in the programme revealed that the programme adopted the Training and Visit (T and V) system of extension. Systematic training and systematic visit are the two basic concepts embodied in the T and V extension system.

The main idea behind the systematic training is to develop adequate professional knowledge and skill in the extension workers about the specific farm recommendation to

be taught during the forthcoming fortnight to farmers. Systematic visits to the farmers fields and making interpersonal contacts with the farmers follow the training. Schedules of visits are closely supervised at all levels of the extension system. The number of farm families per village extension agent is set at a manageable level and specific schedule of visits is rigidly followed. The span of control was such that close supervision was convenient at all levels.

The overall objective envisaged in the T and V extension system is to attain an ideal communication situation in which the gap between the scientific information transmitted and the amount of such information received at the receivers' level is almost non-existent. The purpose is to attain optimal communication efficiency where the information gap is the least.

The extension workers were asked to mention the general problems affecting extension activities in the programme. Their responses were collated and tabulated in Table 27.

TABLE 27: FREQUENCY AND PERCENTAGE DISTRIBUTION OF PROBLEMS AFFECTING EXTENSION ACTIVITIES IN THE PROGRAMME AS MENTIONED BY EXTENSION WORKERS N = 150

| | Problems | Frequency | Percent |
|---|---|---|---|
| i. | Lack of adequate transport facilities for extension staff | 95 | 63.33 |
| ii | Lack of suitable market and favourable prices for farm produce | 35 | 23.33 |
| iii | Lack of incentive for extension staff | 107 | 71.33 |
| iv | Lack of co-operation of local people | 13 | 8.67 |
| v | Inadequate number of extension agents | 69 | 46.00 |
| vi | Lack of credit facilities for farmers | 115 | 76.67 |
| vii | Lack of necessary farm inputs | 65 | 43.33 |
| viii | High cost of farm inputs | 73 | 48.67 |
| ix | Relunctance of farmers to accept new practices and agricultural technologies | 58 | 38.67 |

Table 27 reveals that lack of credit facilities for farmers (76.67%); lack of incentive for extension staff (71.33%); and lack of adequate transport facilities for extension staff (63.33%) are the three most important problems affecting extension activities in the programme. Other problems mentioned include high cost of farm inputs (48.67%); inadequate number of extension agents (46.00%); lack of necessary farm inputs (43.33%); lack of suitable

market and favourable prices for farm produce (23.33%) and lastly, lack of cooperation of local people (8.67%).

The observations of the problems mentioned by extension workers showed that most of the problems were external constraints to rural farming enterprises. In other words, they were more embedded in the extension system rather than in the farmers' system. This is further buttressed by the fact that lack of cooperation of local people was rated as the least problem in the programme.

## 4.5 Testing the Hypotheses

The hypotheses on socio-economic factors which have influence on the frequency of contact were tested and the findings have been summarised below:

TABLE 28: SUMMARY OF THE CHI-SQUARE ANALYSES OF RESULTS DETERMINING THE SIGNIFICANCE OF THE RELATIONSHIP BETWEEN FREQUENCY OF CONTACT AND SOCIO-ECONOMIC CHARACTERISTICS OF RESEARCH WORKERS, EXTENSION WORKERS AND FARMERS IN THE PROGRAMME.

| | Characteristics | degree of freedom | $X^2$ | $X^2$ | Remark at 0.05 level of significance |
|---|---|---|---|---|---|
| i | Age of research worker | 15 | 9.48 | 25.00 | Not significanct |
| ii | Level of education of research worker | 5 | 2.11 | 11.07 | Not significant |
| iii | Official status of research worker | 5 | 1.25 | 11.07 | Not significant |
| iv | Length of service of research worker | 5 | 1.81 | 11.07 | Not significant |
| v | Years of experience of research worker | 5 | 2.51 | 11.07 | Not significant |
| vi | Age of extension worker | 20 | 14.12 | 31.41 | Not significant |
| vii | Level of education of extension worker | 20 | 24.58 | 31.41 | Not significant |
| viii | Length of service of extension worker | 15 | 24.72 | 25.00 | Not significant |
| ix | Official status of extension worker | 5 | 16.11 | 11.07 | Significant |
| x | Years of experience of extension worker | 30 | 31.72 | 43.77 | Not significant |
| xi | Age of farmer | 15 | 11.49 | 25.00 | Not significant |
| xii | Level of education of farmer | 20 | 15.55 | 31.41 | Not significant |
| xiii | Years of farming experience | 20 | 23.97 | 31.41 | Not significant |
| xiv | Size of farms owned | 15 | 10.46 | 25.00 | Not significant |
| xv | Knowledge of extension worker's name | 5 | 10.24 | 11.07 | Not significant |

In cases where $X^2$ (calculated value) were lesser than $X^2$ (tabulated value) we concluded that the relationships were not significant. In such cases we failed to reject the null hypotheses and therefore, the hypotheses hold. So, there were other factors t hat affect frequency of contacts between research workers and extension workers not only their age, level of education, length of service and years of experience.

Also, there were no significant relationship between frequency of contact between extension workers and farmers and the age, level of education, length of service and years of experience of extension workers. Furthermore, the analyses showed that there were other factors that affect the frequency of contacts between extension workers and farmers not only the age of farmers, level of education of farmers, years of farming experience, size of farms owned and knowledge of extension worker's name by farmer.

However, there was a significant relationship between the frequency of contact between reasearch and extension workers and, [illegible] official status of extension workers. The official status of extension worker also had significant relationship with the frequency of contact with farmers in the programme.

Shete (1978) in his study of characteristics of extension personnel concluded that there were a number of factors which influence the communication effectiveness of a village level worker. He reported the need to know what kind of people are attracted to extension work. Where do they come from? What kind of special training do they have? How satisfied are they with their job as extension workers? What are their job preferences? Furthermore, how are these personal characteristics related to their communication behaviour particularly to information input and output patterns.

TABLE 29: CORRELATION ANALYSIS SHOWING LINEAR RELATIONSHIP BETWEEN SOCIO-ECONOMIC CHARACTERISTICS OF RESEARCH WORKERS, EXTENSION WORKERS AND THEIR FREQUENCY OF CONTACT

| Characteristics | | Correlation co-efficient (r) | co-efficient of determination ($r^2$) |
|---|---|---|---|
| i | Age of research worker | 0.049 | 0.003 |
| ii | Level of education of research worker | -0.234* | 0.055 |
| iii | The length of service of research worker | -0.238* | 0.055 |
| iv | The official status of research worker | -0.292* | 0.085 |
| v | Years of experience of research worker | -0.0625 | 0.004 |
| vi | Age of extension worker | 0.263* | 0.069 |
| vii | Level of education of extension worker | 0.286* | 0.082 |
| viii | Length of service of extension worker | 0.205* | 0.042 |
| ix | Official status of extension worker | 0.209* | 0.044 |
| x | Years of experience of extension worker | 0.233* | 0.049 |

The degree of freedom .d.f = r-k-1 where

r = number of respondents = 159, k = constant = 1

Therefore, d.f. = 159 - 2 = 157.

r = correlation coefficient; $r^2$ = Co-efficient of determination which implies total change as contributed by each variable.

On the statistical table used, the highest sample size was 102 with d.f. = 100. This gives the critical value of r = 0.195 at 0.05 level of significance.

* The value of "r" were significant at 0.05 level of significance

Data in table 29 showed a positive and significant correlation between frequency of contact between research and extension workers and the age of extension workers (0.263), the level of education of extension worker (0.285), the length of service of extension worker (0.205), the official status of extension worker (0.209) and the years of experience of extension workers (0.223). The data also showed a positive but non-significant correlation between frequency of contact and the age of research worker (0.049).

However, the data further showed a negative and significant correlation between frequency of contact between research and extension workers and level of education of research workers (-0.234), the length of service of research worker (-0.238), and the official status of research worker (-0.292), while there was negative but non-significant correlation between frequency of contact and the years of experience of research worker (-0.062).

$r^2$ (coefficient of determination) in table 29 shows the

percentage variation in Y-variable (frequency of contact) as explained by each of the x-variables in the study. 6.9%; 8.2%; 4.2%; 4.4% and 5.0% variation in frequency of contact between research and extension workers were attributed to the age of extension workers, level of education of extension workers, length of service of extension worker; official status of extension worker and years of experience of extension worker respectively. While 5.4% and 5.7% variation in frequency of contact were attributed to level of education and length of service of research worker, whereas, the percentage contributions of official status and years of experience of research workers to frequency of contact were 8.5% and 0.38% respectively.

It could be observed that the percentage contributions to variation in Y-variable (frequency of contact) of all the characteristics of extension workers were low. This was an indication why there were no significant relationships between frequency of contact and these variables as showed by the Chi-square results (Table 28).

TABLE 30: MULTIPLE REGRESSION ANALYSIS SHOWING THE CAUSAL LINEAR RELATIONSHIP BETWEEN RESEARCH AND EXTENSION WORKERS' FREQUENCY OF CONTACT AND THEIR SOCIO-ECONOMIC CHARACTERISTICS

| Characteristics | | co-efficient (b) | Ho |
|---|---|---|---|
| i | Age of research worker | -0.004 | -0.746 |
| ii | Level of education of research worker | -0.029 | -0.919 |
| iii | The length of service of research worker | -0.021 | 0.797 |
| iv | The official status of research worker | -0.015 | -0.494 |
| v | Years of experience of research worker | -0.001 | 0.103 |
| vi | Age of extension worker | -0.274 | -6.695* |
| vii | Level of education of extension worker | 0.286* | 21.009* |
| viii | Length of service of extension worker | -3.424 | -10.659* |
| ix | Official status of extension worker | 1.091 | 7.408* |
| x | Years of experience of extension worker | -0.215 | -0.912 |

R - Square = 0.9902; Adjusted r-square = 0.9894. The degree of freedom d.f. = n-1 where n=sample size = 159;

d.f. = 159-1 = 158.

Assuming a 95 percent confidence level for an interval estimate, then 0.05 level of significance was used.

Since d.f. = 158 could not be found on the statistical table, d.f. = ∞ at 0.05 level of significance was used. Hence, t-value of 1.96 was found at the intersection of the ∞ d.f row and the 0.025 column.

* The values were significant at 0.05 level of significance.

Intercept (a) of the regressionline = 41.321. R-square gave the total percentage variations (99.00%) in the Y-variable (frequency of contact) as could be attributed to the x-variables that showed significant correlation with frequency of contact. That is age of extension workers (T = -6.695); level of education of extension worker (T = 21.009) length of service of extension worker (T = -10.659) and official status of extension worker (T = 7.408) had significant relationship with frequency of contact between research and extension workers.

Data in Table 30 showed that regression co-efficient for length of service of research worker (b = 0.021); years of experienceof research worker (b = 0.001) level of education of extension worker (b = 1.671) and official status of extension worker (b = 1.091) were positive. These results showed that

1. the longer the number of years a research worker works in the programme, the more frequent the contact with extension worker. This result may be true if the

length of service of research workers has made them to be well known by extension workers, and also if this gives the extension workers opportunities to know them and their locations in the programme.

2. The more the years of experience of research workers the more their contacts with extension workers. This result may be true only if the research workers have learnt through experience the need to work collaborately with the extension workers and also to conduct on-farm adaptive research with them. Also, field trips and visits which are indispensable aspect of an experienced research worker responsibility make them available to extension workers. Kentact (ibid) argues that research and extension staff should work as a team, as the endeavours of each staff affect the success or failure of the other. Thus, an experienced research worker would always see extension workers as indispensable in his job.

3. The higher the level of education of extension worker the more the contact he has with research workers. This result may be true if one considers the cadre of extension workers the research workers usually maintain contact with in the programme. The research workers

reported that they usually maintain contact with Zonal Extension officer (ZEO) and Area Extension officer (AEO). The implicationof this result is that if level of education of extension worker could be assumed as only the criteria for the official status in the programme, then it can be said that the higher the level of education of extension worker, the more contact that he is likely to have with research workers in the programme.

4. The higher the official status of extension worker the more contacts he has with research workers. This result may be true in the light of the cadre of extension staff that usually maintain contacts with research workers in the programme. Thus it can be concluded that the higher the level of education and official status of extension workers the more their contacts with research workers in the programme.

TABLE 31: CORRELATION ANALYSIS SHOWING LINEAR RELATIONSHIP BETWEEN SOCIO-ECONOMIC CHARACTERISTICS OF EXTENSION WORKERS AND FARMERS AND THEIR FREQUENCY OF CONTACT.

| | Characteristics | Correlation co-efficient (b) | Co-efficient Ho |
|---|---|---|---|
| i | Age of extension worker | 0.049 | 0.003 |
| ii | Level of education of extension worker | -0.023* | 0.055 |
| iii | The length of service of extension worker | -0.210* | 0.047 |
| iv | The official status of extension worker | -0.281* | 0.079 |
| v | Years of experience of extension worker | -0.062 | 0.004 |
| vi | Age of farmers | -0.025 | 0.001 |
| vii | Level of education of farmers | 0.114 | 0.013 |
| viii | Years of farming experience of farmer | -0.061 | 0.004 |
| ix | Size of farms owned | -0.020 | 0.000 |
| x | Knowledge of extension agent's name by farmer | -0.007 | 0.000 |

The degree of freedom d.f. = r-k-1.

Where r = number of respondents = 270; k = constant = 1.

Therefore, d.f. = 270 - 2 = 268.

$r$ = correlation coefficient; $r^2$ = co-efficient of determination which implies total change as contributed by

each variable.

On the statistical table used, the highest sample size was 102 with d.f. = 100. This gives the critical value of r = 0.195 at 0.05 level of significance.

*The values of "r" were significant at 0.05 level of significance.

Data in Table 31 showed a negative and significant correlation between frequency of contact between extension workers and farmers and level of education of extension workers (-0.234); length of service of extension worker (-0.218) and the official status of extension worker (-0.281). However, the data did not show any variable that is positive and significantly correlated with frequency of contact between extension workers and farmers.

$r^2$ (coefficient of determination) in Table 31 showed the percentage variation in Y-variable (frequency of contact) as explained by each of the x-variables in the study. 5.5%; 4.7% and 7.9% variation in frequency of contact were attributed to level of education of extension worker; length of service of extension worker and official status of extension worker respectively.

It could be observed that level of education, length of service and official status of extension worker were negatively correlated with their frequency of contacts with

farmers. This is because the higher the level of education, or the longer the length of service which might have resulted to many promotions to higher official status, and the higher the official status, of extension workers, the lesser their contacts with farmers in the programme. This might have resulted from the fact that they may be further removed from the village level extension service in the programme thus, the gap between them and farmers may be widened.

TABLE 32: MULTIPLE REGRESSION ANALYSIS SHOWING CAUSAL LINEAR RELATIONSHIP BETWEEN EXTENSION WORKERS AND FARMERS' FREQUENCY OF CONTACT AND THEIR SOCIO-ECONOMIC CHARACTERISTICS

| Characteristics (X-variables) | | Regression co-efficient (b) | T-value for Ho |
|---|---|---|---|
| i | Age of extension worker | 0.033 | 0.472 |
| ii | Level of education of extension worker | -0.039 | -0.161 |
| iii | The length of service of extension worker | 0.115 | 0.989 |
| iv | The official status of extension worker | -0.115 | -0.515 |
| v | Years of experience of extension worker | -0.029 | -0.555 |
| vi | Age of farmers | -0.12 | 3.132* |
| vii | Level of education of farmers | 0.639 | 4.736* |
| viii | Years of farming experience of farmer | -0.186 | 2.266* |
| ix | Size of farms owned | 0.124 | 0.939 |
| x | Knowledge of extension agent's name by farmer | 0.654 | 6.683* |

R-square = 0.8768; Adjusted R-square = 0.8670. The degree of freedom d.f. = n-1 where n = sample size = 270; d.f. = 270-1 = 269. Since d.f. = 269 could not be found, on the table, d.f. = ∞ at 0.05 level of significance was used. Hence t-value of 1.96 was found at the intersection of the ∞

and the 0.025 column.

* The values were significant at 0.05 level of significance.

Intercept (a) of the regression line = 19.036. R-square gave the total percentage variations (87.68%) in the Y-variable (frequency of contact) as could be attributed to the X-variables that showed significant correlation with frequency of contact. That is age of farmer (T = 3.132) level of education of farmer (T = 4.736); years of farming experience of farmers (T = 2.266) and knowledge of extension agent's name by farmer (T = 6.683) had significant relationship with the frequency of contact between extension workers and farmers in the programme.

Data in Table 32 showed that regression coefficient for age of extension worker (b = 0.033); length of service of extension worker (b = 0.115); age of farmer (b = 0.124); level of education of farmer (b = 0.639); years of farming experience of farmers (b = 0.186); size of farm owned by farmer (b = 0.124) and knowledge of extension agent's name by farmer (b = 0.654) were positive. These results showed that

1. The higher the age of extension worker the more the frequency of contact with farmers. This result may be true in the sense that above 84.17 percent of farmers

included in the study were above 35 years of age, while the remaining 15.33 percent fall within the age-group of 25 and 35 years of age. So, for psychological reason, one may expect that the closer the age of an extension worker with that of farmer, the more likely his or her contact with his or her farmers. Rahudkar (ibid) had identified age among other several factors to influence extension agent-farmer contact. Also, Berlo, (ibid) concluded that age, working experience, education and major responsibility affect the communication pattern of extension agent.

2. The longer the length of service of extension workers the more their contacts with farmers. This result may be true if the length of service were counted as the years of working experience in a particular area. Moreover, the length of service in the programme might have created familiarity with farmers in their various locations within the programme. Once, the familiarity is established upon mutual trust and confidence, then it is logical to have more contacts with one another in communicating farm information in the programme.

3. The higher the age of farmer the more the frequency of contact with extension workers. This result may be

true if the extension workers have established good rapport with farmers in the programme. As the help and assistance needed b y farmers usually increase with their ages, then they will be more prone to seeking assistance and help if extension workers had established credibility in the sights of farmers. If farmers are very sure that extension workers would provide solutions to their problems, then they would have more contacts with them. Rahudkar (ibid) found age of farmers among other personality and background characteistics, to influence agent-farmer contacts.

4. The higher the level of education of farmer the more the frequency of contact with extension workers. This result may be true in the sense that farmers of high socio-economic status usually have more contact with extension agents than those of low socio-economic status. Akinbode (ibid) revealed a significant correlation between seven contact methods and a number of socio-economic factors which include level of formal education, aldult education participation, distance travelled for good and services, net farm income, number of total acres owned, and number of improved acres declared by each farmer. Coleman (ibid) found a direct association between level of education of farmer

and the extent of contact with the county agents.

5. The more the years of farming experience of farmers the more their contact with extension workers. This result may be true if extension workers have established credibility in the sights of farmers, Over a number of years in their farming enterprise. The credibility of extension workers which is a function of their communication skills, knowledge level, attitude and socio-cultural background, has also been reported to affect the effectiveness of extension agents in changing farmers.

6. The more the size of farm owned by farmers the more their contacts with extension worker. This result may be true if the increase in size of farm owned by farmer was accompanied by increase in socio-economic status and adoption of improved farm practices and technologies. As farm hectrages increase in size, the status of farmers concerned equally increases in the society; thereby affording them many opportunities to contact extension workers through various media. Wikening (ibid) confirmed that farmers with higher socio-economic status were more likely to use extension agencies and farm magazines as sources of farm

information. Akinbode (ibid) and Coleman (ibid) also found a significant correlation between the extent of contact with extension worker and number of total acres owned, and number of improved acres declared by farmer.

7. The more the knowledge of farmer about extension worker the more the frequency of contact with him. This result may be true in the sense that the knowledge of extension agent's name by farmer was an indication of frequent interaction between them, thereby providing more chances for contacts and communications. Ogunwale (ibid) reporting on the frequency of extension methods reported that face-to-face contact was the most frequently used method. Also, Williams and Williams (ibid) in a study on extension agents in Western Nigeria, reported that agents placed much emphasis on "visits to farms" and "addressing farmers" (82 and 73 percent respectively), and found them effective. The two methods emphasised provided face-to-face interaction in which farmers' problems can be solved in situ thereby providing avenues to establish more intimate relationship so as to have the knowledge of extension agent's name.

# CHAPTER FIVE

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Farming in Nigeria is still at the peasantry level in spite of government efforts in the past. Despite this there has been a very wide gap between the Research Institutes and these peasant farmers who make up the large chunk of the farming industry. There is evidence to show that a lot of findings exist in both the National and International Institutions engaged in agricultural research in the country. Farmers can benefit tremendously from these research results if they are appropriately passed on to them. To do this however, requires very verile extension services around the country. It is noteworthy that the Agricultural Development Programmes (ADPs) have been the right step in the right diretion.

Agricultural development depends on the dissemination of useful and utilizable research findings to farmers in a language that can be understood by them. Research scientists know how to design and develop crop varieties for the efficient transformation of energy and nutrients required by man. But they lack one important element and that is how to disseminate these vital pieces of information

to the farmers in a language that can be easily understood by them.

Of late considerable attention is being paid to the issue of integrating communication support into our extension programmes. While the effort has made some meaningful progress in some Agricultural Development Programmes (ADPs), it is yet at the primordial stage in some. It is necessary to quicken the pace of installation of this component to facilitate the administration and supervision of extension service, and hence, the adoption diffusion proces. But this should take place only when careful planning has been put in place. This will no doubt be an assets in enabling us respond quikcly to the demands of the ever-changing extension communication patterns and rural information environment.

The major purpose of this study, in its broad perspective, was to make an analytic study of the extension communication patterns of farm information and technologies in Oyo State Agricultural Development Programme. In discussing this subject, the following objectives were considered:

i. the organizational structure of the programme

ii the socio-economic background of the respondents

iii the stock of modern agricultural technologies available

programme area. The instruments were pretested and modified before the actual data collection was carried out. The data were collected by participant-observation, review of secondary literature on the programme, interviews with subject matter specialists, Zonal Extension Officers, Area Extension officers and through the use of questionnaires for research workers and extension workers and personal interview with the help of a structured schedule by farm field work survey method from farmers.

The instruments used for each set of respondents were

and how they are being disseminated to farmers.

iv the sources of information to research workers, extension workers and programme farmers.

v the channels of communication between the researchers and extension workers; and between the extension workers and the farmers.

vi the problems encountered in the process of communicating farm information and technologies.

vii the avenues being used for getting feedback information in the programme; and

viii the recommendations for improvement based on the findings of the study.

With the aim and objectives of the study, some literature review on extension communication research were done. The relevant parts to the situation of programme area were selected and developed into two sets of questionnaires used for research workers and extension workers, and interview schedule used to collect the data needed from programme farmers. The instruments used were structured and arranged in such a way as to provide needed information for the study.

The programme area constituted the study-location and the programme research workers, extension workers and

into data processing sheets. A computer was used for sorting the analysis. Both discriptive and inferential statistics were used for the analysis. The statistical tests used were largely frequency and percentage distribution, Chi-square, product-moment correlation, and multiple regression analysis.

## 5.1 The socio-economic background of the respondents. Case for research workers

Two research workers (22.22%) fell within age-group of 30-35 years, another 55.56% were within the age-group of 35-40 years while the remaining 22.22% were in the age group of 40 years and above (Table 2).

The highest level of education attained by the research workers in the programme was Master degree. All the nine research workers were holders of Master degree in the field of agriculture. By the virtue of specialization, the study shows that 4 research workers (44.44%) were agronomists, another 44.44% percent were plant breeders while only one research worker (11.11%) specialized in crop protection.

The study further shows that 4 research workers (44.44%) had spent less than 2 years with the programme, another 22.22 percent had spent less than three years, while

only 3 research workers (33.33%) had spent more than 3 years in the programme. It was also revealed that 4 zonal Research Officers (44.44%) and 5 Assistant Zonal Research officers (55.56%) participated in the study.

Case for Extension Workers

The study shows that a large proportion of extension workers (72.00%) were above thirty years of age. Above seventy-five percent of extension workers fell within the age-group of 25 years and 40 years of age. (Table 3)

Twenty-three extension workers (15.33%) had attended Agricultural Assistant Certificate Course; 72 extension workers (48.00%) had Ordinary National Diploma (O.N.D) Certificate in Agriculture; 40 extension workers (26.67%) had Higher National Diploma (H.N.D) Certificates in Agriculture; 22 extension workers (14.67%) had attended colleges of education and had received National Certificate of Education in Agriculture; while 16 extension workers (10.67%) had received Bachelor degrees in Agriculture (Table 4). 35 extension workers (23.33%) had also attended in-service training and short courses related to Agriculture.

The study revealed further that above 82.68% of extension workers had spent more than two years in the programme and had been actually involved in extension

activities at village level. Also, 86.00% of the extension workers had more than two years of job experience, while among the remaining, 10.00% had more than one year of job experience. By virtue of official status, the findings revealed that 130 extension agents (86.67%) and 20 extension workers (13.33%) participated in the study.

The major responsibilities of extension workers in the programme include

(i) Farm visitation (97.33%);

(ii) attendance of fortnightly training meetings (96.67%)

(iii) registration of farmers (90.67%);

(iv) establishment of small plot adoption trials (84.67%);

(v) training and teaching farmers new methods (75.33%);

(vi) selection of contact farmers (55.33%)

(vii) giving advice to farmers (52.67%)

(viii) dissemination of farm information and production recommendation (51.33%), while 63 extension workers (42.00%) mentioned inspection of farms for fertilizer approval for farmers in the programme (Table 5).



Case for Programme farmers

Above 84.17 percent of farmers included in the study were above 35 years of age, while the remaining 15.83 percent fell within the age-group of 25 and 35 years of age (Table 6). It was revealed that 57.5 percent of the farmers never attended any school; 24.17 percent attended primary school but did not complete it; while 11.67 percent completed their primary education. Also, 5.00 percent attended secondary Modern school, while only two farmers (1.67%) attended Teachers' Grade II College (Table 7).

A large proportion of the farmers in the programme area had long been involved in farming. 88.34 percent of farmers had more than six years of farming experience, while out of the remaining, 10.00 percent had between 4 and 6 years of farming experience. Only two farmers (1.67%) had less than 4 years of farming experience.

The study showed that most of the farmers (48.33%) were cultivating between 1.5 and 2.5 hectares of land in the programme. It was further revealed that 32 farmers (26.66%) were cultivating between 2.5 and 3.5% hectares of land, while 30 farmers (25.00%) were cultivating above 3.5% hectares of land.

The lands used for cultivation were put under either permanent or annual crops or both. A large proportion of the farmers (94.17%) were producing maize and cassava (Table

8). The study also showed that most of the farmers (65.00%) had been participating in the programme for more than 2 years. While 20.83 percent of the farmers claimed that they had spent more than one year, the remaining 14.17 percent said they had spent less than a year with the programme.

## 5.2 The organizational structure of the programme and those involved in disseminating agricultural technologies

The Technical Services Division is responsible for "Appropriate Technology" with adequate packages of recommendations which are easily adaptable to local conditions. At the programme level, the Extension system being used is referred to as Training and Visit Extension system, which incorporates Demonstrations with emphasis on small plot Adoption Trials (SPATs). The Extension Department is responsible for the technology transfer of improved management practices and agricultural technologies in the programme.

The village extension agents are responsible for visiting and training farming families in the programme. They established small plot Adoption Trials for disseminating farm practices such as planting distance of crop varieties, fertilizer application techniques and so on,

as demonstration plots at farm level. The research workers also, established adaptive research trials usually referred to as on-farm Research (OFR) for improved crop varieties to test their adaptability to local conditions at farm levels. This in most cases, involved the presence of both extension workers and the farmers in the area.

Thus, the Extension Department is primarily involved in disseminating agricultural technologies, with the village extension agents in direct contacts with the farmers, in the programme.



5.3 The stock of modern agricultural technologies available in the programme and how they were being disseminated.

The stock of modern agricultural technologies available in the programme can be divided into the following categories. These are

(i) Annual crops and permanent crops production technologies

(ii) Livestock, poultry and fishery production and management technologies

(iii) Soil improvement technologies, and

(iv) Agro-chemicals technologies.

However, livestock, poultry and fishery production and management practices as well as the soil improvement

technologies are yet to be emphasised as crops production technologies in the programme.

Among the crops production technologies available in the programme were the following:

(i) improved varieties of crops such as cowpea, maize, cassava, and soyabeans.

(ii) Optimum spacing for crops such as cowpea, maize and cassava;

(iii) planting techniques and appropriate spacing for tree crops such as cocoa, kola and citrus,

(iv) cowpea diseases and pests control

(v) control of deseases and pests of citrus and cocoa

(vi) prenursery, nursery and orchard planting of citrus fruits and oil palm;

(vii) tomatoes staking techniques,

(viii) preservation and storage methods of farm produce and

(ix) soyabean processing methods.

The livestock, poultry and fishery production and management technologies available include

(i) Control of diseases and pests in poultry, ruminants, rabbits and pigs;

(ii) vaccination of animals against Bacteria and Virus;

(iii) Recommended method of dipping animals against

ectoparasites;

(iv) use of farm residue for livestock feeding

(v) poultry vaccination and medication

(vi) brooding management practices in poultry;

(vii) pond management techniques;

(viii) feeding of frys and fingerlings and

(ix) stocking, feeding and pest control in fish pond.

The soil improvement technologies available include mulching, weed and erosion control methods and soil testing to determine land capability, suitability and types and precise amount of fertilizers needed. While, the agro-chemical technnologies available include,

(i) different types of fertilizers, and fertilizer application techniques,

(ii) agro-chemicals and chemical spraying techniques.

The research workers used Monthly Technology Review Meetings (100.00%); Direct contact with subject matter specialists and Zonal Extension officers (77.78%), and on-farm Adaptive Research Trials (66.67%) as avenues for dissemination of modern agricultural technologies to extension staff in the programme.

The Extension Department is responsible for the dissemination of these modern agricultural technologies to

the programme farmers. The village extension agents visit and train farmers in all nooks and corners of the programme. Also, they established small Plot Adoption Trials within farmers' field. The extension workers usually made use of contact farmers (85.33%) for effective coomunication and dissemination of modern technologies in farming. Also, farmers training meetings (65.33%) and farmers' field days/field trips were also being used for disseminating these technologies in the programme.

However, the following media, radio, television, magazine and Newspapers were not being used for the dissemination of modern technologies in the programme.

## 5.4 The sources of information for research workers, extension workers and farmers in the programme.

The most used six sources of information for research workers in the programme are Monthly Technology Review Meeting (88.89%), Research Institutes (77.78%); Researchers/Scientists outside the programme (66.67%); Area Extension Officers (55.56%); On-farm adaptive research sites (55.56%) and field-trips/visits (55.56%). Discussions with immediate colleagues (44.44%) and farmers' fields and farm plots (33.33%) constituted another sources while the village extension workers (32.22%) and programme farmers (22.22%) were of less used sources for research ideas in the

programme.

Moreover, Monthly Technology Review Meetings (100.00%); On-farm adaptive research sites (77.78%) and field days/trips (55.56%) were the three most recognised research-extension linkage systems in the programme.

For the village extension workers, subject matters specialists (95.33%); fortnightly training meetings (94.00%); Area Extension officer (90.00%); Zonal Extension officers (70.00%) and field days/trips (52.67%) constituted the most important sources of information from research workers to them in the programme.

The most important sources of farm practices and technologies already acquired by farmers in the programme were village extension workers (79.17%); farmers fortnightly training meetings (77.50%); friends and neighbours (60.83%); Demonstration sites (59.17%) and programme contact farmers (56.67%). Then, agro-chemicals and farm-input centres (44.17%); sons and relatives (39.17%) and the leaders of co-operative societies (27.50%) also constituted sources of farm practices and technologies already acquired by the programme farmers.

5.5(i) Channels of communications between the research workers and extension workers in the programme.

In the study, Monthly Technology Review Meetings (100%); On-farm adaptive research sites (77.78%); face-to-face personal contact (66.67%); Group contact meeting (66.67%); field trips (66.67%) and farmers' field days (55.56%) constituted the most used channels of communication between research and extension workers in the programme (Table 13). However, correspondence, publications such as Technical reports, and Bulletins, Journal articles, research reports and visual aids such as over-head projectors, slides and films were not used as channels of communications in the programme. This by implication means that mass media channels of communication were not emphasised as channels of communication between the research and extension workers in the programme.

5.5(ii) Channels of communications between the extension workers and farmers in the programme

The most frequently used channels of communications with farmers by extension workers in the programme were small Plot Adoption Trials (98.00%); Visits to farms and homes (97.33%); farmers training meetings (90.67%); Group meetings of farmers (86.60%) and face-to-face personal contact by extension workers (82.00%). Other channels used

include field trips and visits (52.00%) followed by farmers' field days and exhibition (26.00%).

Also there was little use of the following media; blackboard news (24.00%); publications such as postals and pamphlets (19.33%); Extension drama and playlets (18.00%); Radio broadcast (12.00%) and television broadcast (8.67%) came last in descending order of use. The findings also revealed that there was no use of agricultural film show and mobile open broadcast as channels of communications with farmers in the programme.

5.6 The socio-economic factors which have influence on the frequency of contact.

1. The age of extensionworker (r = 0.263), the level of education of extension worker (r = 0.286), the length of service of extension worker (r = 0.205), the official status of extension worker (r = 0.209) and the years of experience of extension worker (r = 0.223) had a positive and significant correlation with frequency of contact between research and extension workers.
2. Level of education of research worker (r = -0.234), the length of service of research worker (r = -0.238) and the official status of research worker (r = -0.292) had a negative and significant correlation between

frequency of contact between research and extension workers.

3. The age of research worker ( r = 0.049) had a positive but non-significant correlation with frequency of contact while the years of experience of research worker (r = -0.062) had a negative but non-significant correlation with frequency of contact between research and extension workers.

4. Level of education of extension worker (r = -0.234), length of service of extension worker (r = -0.218) and the official status of extension worker (r = -0.281) had a negative and sigfnificant correlation with frequency of contact between extension worker and farmers.

5. The age of farmer (T = 3.132); level of education of farmer (T = 4.736); years of farming experience of farmer (T = 2.266) and knowledge of extension agent's name by farmer (T = 6.683) had significant relationship with the frequency of contact between extension worker and farmer in the programme.

## 5.7 The problems encountered in the process of communication of agricultural technologies in the programme

The study showed that lack of visual aids and teaching materials (66.67%); inadequate transport facilities (55.56%) and lack of frequent exchange of ideas and information (55.56%) are the most serious problems encountered by research workers in establishing communications and contacts with extension staff.

The findings also revealed that two main problems being encountered by research workers in communicating farm information and teachnologies were lack of adequate modern communication facilities (66.67%) and lack of adequate teaching facilities (55.56%) in the programme. Other problems mentioned include rural transportation problems (33.33%) and inability to contact farmers directly (33.33%) while distortion of information on production recommendation (22.22%) was not a problem per se in the programme.

The problems being encountered in the process of communicating agricultural technologies to farmers at farm-level include; lack of finance to buy farm-inputs by farmers which was expressed by both extension workers (76.67%) and the farmers (60.83%). This was followed by poor rural road and inadequate transport facilities, expressed by 68.67 percent extension workers and 44.17 percent farmers. This

might had been responsible for infrequent visits of extension agents as expressed by 55.67 percent farmers.

Also level of farmers' educational background as expressed by 58 percent extension workers and inability to write or read instructions as expressed by 60.83 percent farmers are the next problems. Non-availability of teaching materials and visual aids mentioned by 52.6 percent extension workers and unwillingness of farmers to accept and adopt new technologies as expressed by 50.67 percent extension workers were another two important problems.

Other problems mentioned by extension workers were late arrival of farm inputs (48.67%); lack of extension facilities such as rain boats and rain coats (43.33%); large number of farmers to cover (38.00%); farmers being difficult to convince (32.67%); old age of farmers (27.33%) and settlement pattern of the farming populace (23.33%).

The farmers also mentioned the following: extension agents' short time of visitation (52.5%); extension agents living outside the area (50.83%); late arrival and distribution of farm inputs (40.83%); extension worker usually busy with other farmers (37.5%); farm inputs were not being sold within accessible areas of farmers (35.00%); promises were not usually fulfilled by extension workers

(24.17%) and lastly, lack of sound address systems during meetings (19.17%), as communication problems in the programme.

## 5.8 The Essential conditions that will improve communication and contact between extension workers and farmers in the programme.

The essential conditions for establishing and maintaining communication and contact with farmers by extension workers in the programme include, the provision of adequate mobility for extension workers (75.33%); better loan scheme and credit facilities for farmers (60.67%); establishment of Agro-Service and farm inputs centres at farmers' locality (58.00%), increased staff strength and allowances (56.67%); use of leaflet, poster, information sheet and other publications (55.33%); maintaining regular schedule visits to farmers (50.67%); and breaking cells into convenient farmers' groups and reducing the number of farmers per extension agent (50.67%).

Other essential conditions mentioned by extension workers include the use of visual aids and teaching facilities (44.67%); provision of rural infrastructure and good road networks (43.33%); provision of extension facilities for workers (38.67%); frequent and adequate supply of farm inputs (36.67%); use of radio, television and

other mass media (32.67%) and prompt solutions to farmers' problem (23.33%).

The most five essential conditions mentioned by farmers for improving communication and contacts with extension workers were location of farm service centres within farmers' areas (60.83%); provision of credit facilities and financial assistance (55.67%); residence of extension workers within farmers' areas (54.17%); regular visits and advice to farmers (52.50%); and frequent meeting and visits to farms (50.83%).

Other essential conditions mentioned include adequate and timely supply of farm inputs (44.17%); use of pamphlets and posters (39.17%); timely provision of useful farm information and service (37.50%); provision of access farm roads (32.50%) and lastly, use of sound address systems (20.83%).

5.9 The avenues used for getting feedback information in the programme

The research workers use Monthly Technology Review Meetings (88.89%); direct interaction and discussions with subject matter specialists (77.78%) and on-farm adaptive research sites (66.67%) as avenues for getting feedback information. Discussions with colleagues and extension

staff (55.56%) and trips to farmers' fields (44.44%) were other avenues being used by research workers in the programme. The field trips or visits exercise provided on-the-spot assessment of farmers' problems at the farm-level by research workers, subject matter specialists and extension personnel.

The extension workers considered intervieweing or questioning farmers about farm practices and technologies (70.00%); rate of adoption of the new farm practice (62.00%); visiting the farms to discuss with farmers (58.00%) and direct observations of attitude and response of farmers (52.67%) as means of getting the impact of their messages on farmers.

## 5.10 CONCLUSIONS

This study was of the nature of both a descriptive and a statistical research. Its findings were based exclusively on the responses made to the questionnaires and interview schedule administered to research workers, a randomly selected samples of extension workers and the farmers with whom they worked in their respective cells in the programme.

While great caution must be exercised in generalising the claims and the findings of this study, the investigator

was satisfied, however, in presenting on the basis of evidence reported in the major finding, the following conclusions.

1. The division of the programme area into zones, areas, blocks, cells and farmers' groups provided an idea communication situation. Thus, there was almost a perfect and free flow of information between the programme and farmers. This permitted the extension workers to effectively communicate skills and knowledge of modern agricultural technologies to farmers. However, based on the findings of this study, there is a need to break the cells into convenient farmers' groups and reduce the number of farmers to be reached per extension agent so as to improve the extension communication at village level. This may necessitate the need to increase the extension staff strength in the programme.

2. The village extension agents manned the cells in the programme. Each extension agent is supposed to reach 800 farmers out of which 80 contact farmers are selected. Thus, the ratio of extension agent to farmer in the programme is 1:800. Whereas, the World Bank extension agent-farmer recommended standard ratio is

1:250 to 300. Thus, there is much disparity between World Bank extension agent-farmer standard ratio and the current ratio in the programme.

3. Crop production technologies were much available and introduced to programme farmers than animal husbandry technologies. Poultry, livestock and fisherymanagement practices were not mentioned by research workers and also rated low by 25.33 percent, 23.33 percent and 15.33 percent respectively by extension workers as being available in the programme. Based on the findings, livestock, poultry and fishery production and management practices as well as the soil improvement technologies were yet to be emphasised as crops production technologies in the programme.

4. The use of combinations of two or more communications channels by the research workers to reach extension staff, and by the extension workers to reach the farmers ensured quick and efficient communication in the programme. This also helped to enhance the efforts to prove the efficacy of modern agricultural technologies.

5. "Personal Contacts" "meetings" and "group discussions" were the main avenues for disseminating agricultural technologies in the programme.

6. A large proportion of extension workers reported fortnightly training schedule as the main source of information to them in the programme. They also rigidly maintained the fortnightly schedule training and visits to farmers. Hence, it can be logically concluded that "Training and Visit system of Extension" was being practised in the programme.

7. The subject matter specialists consituted the link between the research workers and the village level extension workers in the programme; while the village extension agents primarily responsible for face-to-face interaction and communication with farmers at the field-level in the programme.

8. There was little use of the following media: publications, radio and television, while there was no use of agricultural film show and mobile open broadcast in the programme. Thus, the use of mass media such as daily newspapers, radio and television has not yet been institutionalized as sources of farm information in the programme.

9. Although most of the farmers used to listen to various special and agricultural programmes on radio, however, the programme had not in any time employed the use of

radio service specifically for its extension activities so as to reach the farmers.

10. Although the fortnightly schedule visits by extension agents were well maintained in the programme, the extension agents need to pay extral visits to farmers in view of the complaints of infrequent visits of extension agents made by 55.67 percent of farmers. This is because farmers may find it difficult to accept a recommended practice or modern technology at a fortnightly schedule meeting, but with constant visits of extension agents, they may be persuaded to try out the recommended practice. Also, farmers may be dissatisfied with extension agents if they do not see enough of them, as indicated by farmers' complaints of extension workers' short time of visitation.

11. The problems encountered in communicating agricultural technologies in the programme include, inadequate transport facilities, lack of visual aids and teaching materials, lack of frequent exchange of ideas and information between research and extension workers and lack of adequate direct contacts of research workers with village-level extension workers in the programme.

12. Improving the service conditions, job satisfaction and transport facilities for extension workers were of much

importance in efforts to establish and maintain contacts and communication between research and extension workers in the programme. Also, provisions of visual aids, modern communication facilities, teaching materials and aids, research materials and training facilities were perceived by research workers as essential in establishing communication with extension workers in the programme.

13. The positive and significant correlation between the level of education of extension worker, the length of service of extension worker, the official status of extension worker, and the years of experience of extension worker and frequency of contact between research and extension workers, is a reflection of the direction and degree of relationship of these variables to frequency of contact. Out of the variables investigated in the study, frequency of contact was significantly influenced in a positive direction by these four variables. However, level of education of research workers, the length of service of research worker and the official status of research worker showed a negative and significant relationship with frequency of contact. That is, these three variables

influenced frequency of contact significantly but in a negative direction.

14. The age of farmer, level of education of farmer, years of farming experience of farmer and knowledge of extension agent's name by farmer had significant relationship with the frequency of contact between extension worker and farmer in the programme. While level of education of extension worker, length of service of extension worker, and the official status of extension worker had a negative and significant correlation with frequency of contact between extension worker and farmers. The negative influency of contact may not be true except, if the communication patterns in the programmes allow the extension workers with these characteristics to be far away from rural populace.

15. The essential conditions for establishing and maintaining communication and contact between extension workers and farmers in the programme include maintaining regular schedule visits to farmers, mobility of extension workers, provision of credit facilities and financial assistance to farmers, establishment of agro-service centres at farmers' locality, adequately and timely supply of farm inputs,

improvements in transport facilities and rural road network.

## 5.11 RECOMMENDATIONS

Based on the findings and conclusions of this study, the following recommendations are made:

1. There is a need to strengthen the research organs and extension service at farmers' level in the programme. Also, the involvement of the farmers and their local groups in the dissemination of agricultural technologies and collation of feedback information has become imperative in the programme.
2. The research workers and village extension agents on one hand, and the extension agents and farmers on the other, should maintain regular contact to enhance communication and dissemination of farm information and improved agricultural technologies, and at the same time encourages feedback from farmers to extension agents and ultimately to research workers in the programme.
3. The programme should develop more relevant approaches regarding the role of training in the dissemination of production recommendations and agricultural

technologies in the programme. Innovative educational techniques should be employed to increase opportunities for communication of information. Training aids such as films, cassettes, video, tape recording and so on are also becoming a necessity in the programme.

4. The potential of mass media as effective instruments for communication which can be of great assistance in the carrying out of agricultural development plan must be adequately used. There is a need to employ both the prints and electronics media to communicate farm information both to extension workers and programme farmers in simple language. Radio programmes on farming practices should be sponsored and released by the programme weekly. This may take the form of in-house recording of extension activities so as to save the cost.

5. There is a need for the programme to begin a publication of a journal which should reflect latest farm information, latest experiences and ideas on farming systems, and techniques as well as practices within and outside the programme. This journal may be called "OYSADEP News". Through this journal, the programme can carry out enlightenement programmes, disseminate farm information available in the programme

and publish from time to time articles to inform and educate the farmers in particular and the entire people in general on the activities of the programme.

6. The programme should establish a Mobile Training Unit (MTU) under Extension Department. The Unit should be provided with electric generator, television sets, Video sets and specially recorded cassettes on specific production recommendations. The purpose of the video set is to provide filler agricultural and related programmes that will be relevant to the rural audience. This unit should have points of contact with farmers in all blocks of the programme.

7. Farmers in the programme should improve on their production arrangements through the acquisition of proven agricultural technologies available in the programme. This is because, based on the findings, the extension workers mentioned many improved agricultural technologies more than those mentioned by the farmers. This might have resulted from the lack of adequate information in the programme.

8. The programme should provide adequate transport facilities for village level extension workers so as to ease the problem of rural transportation for effective

penetration of the nook and corner of the programme area.

9. In order to facilitate the acquisition of improved agricultural technologies by the farmers, the programme should establish more Agro-chemical and farm service centers in every block in the programme.

10. Continuing training for practising extension workers is necessary if they would achieve the needed competence and proficiency. A good extension worker with a basic training in extension service could achieve the required competence on the job with periodic refresher courses that would keep him abrest of developments in the profession rather than rigid adherance to fortnightly training meetings which usually focused on specific production recommendations.

## 5.12 FUTURE RESEARCH PROBLEMS

The objective of extension communication is to provide firm knowledge on which action can be based, to persuade the farmer to make a decision to try new technologies and to provide the information necessary for actual implementation.

The research workers, extension personnel and farmers are each, in turn, senders and receivers of messages in extension communication. So, the knowledge transfer process

should be viewed from a broader perspective in future research. A strategy for an extension communication should be worked out with respect to such questions as; who should be approached first? What type of system may require longer term efforts? or which channels of communication should be most useful and at what stage?

Furthermore, the following areas should be looked into:

(i) What is the degree to which the members of extension system communicate with members of research system for acquiring information or delivering farmers' problems about some technologies.

(ii) What is the degree to which an extension personnel communicate farm information to the members of client system by use of various communication channels.

(iii) What is the degree to which an individual extension personnel contacts different types of farmers for communicating farm information and

(iv) What is the degree to which an individual communicates technical and professional information with his peers of the same or different cadres?

The socio-economic factors related to frequency of contact between extension workers and farmers, and hence to adoption of new technologies include both the personal

characteristics of extension workers and farmers mentioned in the study, and the characteristics of the context in which they operate. Efforts to explain frequency of contact and hence, adoption behaviour should be intensified. The social economic conditions of farmers may not permit him or her to make certain decisions, hence the need to consider appropriateness of information about improved technology before dissemination. The immediate effort is to indicate a basis for differentiating among audience members and planning an information programme to serve the various segments of that audience.

Then, the assessment of what the systems have learnt is an indispensable task. How much of farmers' production problems has research system learnt, to derive a solid base for adaptive research? How much has extension system received from research to deliver to client's system? or how much has client received from extension system or other sources to improve their production system?

The assessment may be in the form of written or oral examination after the completion of a course of studies or training programmes. Such assessment studies may determine the following:

(i) The effectiveness of extension communication methods in delivering or disseminating agricultural

information or

(ii) Effects of extension training programmes on extension workers and/or farmers in the programme.

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APPENDIX 1

RESEARCHERS' QUESTIONNAIRE

Please give the Information asked for. Socio-background of Respondents

1. Station/Zone ----------
2. Age of respondent ----------
3. Present official status ----------
4. Area of specialisation ----------
5. Length of service with the programme ----------
6. Years of experience in research work ----------
7. Level of Educational attainment ----------

STOCK OF MODERN AGRICULTURAL TECHNOLOGIES IN THE PROGRAMMES

8. What are the stock of agricultural technologies available in the programme.

   i ---------- (iv) ----------

   ii ---------- (v) ----------

   iii ----------

PROCESS OF DISSEMINATION OF TECHNOLOGIES

9. How do you usually disseminate the agricultural technologies to programme farmers?

   (i) ---------- (iv) ----------

   (ii) ---------- (v) ----------

   (iii) ----------

FEEDBACK MECHANISM

10. How do you get extension workers' or farmers' response or reactions to your production recommendation packages or introduced agricultural technologies?

(i) ----------

(ii) ----------

(iii) ----------

SOURCES OF INFORMATION FOR RESEARCH

11. Please indicate by a check (X) your sources of ideas for research.

(i) Researchers outside the programme ----------

(ii) Immediate Colleagues ----------

(iii) Programme Research station ----------

(iv) Village Extension Workers ----------

(v) Programme farmers ----------

(vi) Farmers' field and farm plots ----------

(vii) Training session ----------

(viii) Research Institutes ----------

(ix) Others (specify) (i) ----------

(ii) ----------

COMMUNICATION PATTERNS WITH THE EXTENSION STAFF

12. Please indicate the categories of officers in the Extension service you generally communicate with categories:

(i) ---------- (iii) ----------

(ii) ---------- (iv) ----------

13. What channels of communication do you use with members of the extension service?

Channels of Communication

(i) Face-to-face contact ----------

(ii) Correspondence ----------

(iii) Publications e.g. Bulletins & Pamphlets -----

(iv) Group Contact meeting ----------

(v) Forthnightly Training meeting (FNT)

(vi) Monthly Technology Review Meeting (MTRM)-----

(vii) On-Farm adaptive Research (OFAR) ----------

(viii) Journal articles ----------

(ix) Research reports ----------

(x) Others (specify) (i) ----------

(ii) _____

RESEARCH AND EXTENSION LINKAGE IN THE PROGRAMME

14. Which of the following constitute recognised research-extension linkage in the programme?

(i) Forthnightly Training Meeting (FNT)----------

(ii) Monthly Technology Review Meeting (MTRM) ----------

(iii) On-farm Adaptive Research (OFAR) which is a farmer-oriented, problem-solving approach to research. ----------

(iv) Workshop and seminars. ----------

(v) Implementation meetings ----------

(vi) Diagnostic surveys ----------

(vii) Others (specify) (i) ----------

(ii) ----------

PROBLEMS IN ESTABLISHING CONTACTS WITH EXTENSION STAFF

15. What would you say are the specific difficulties involved in establishing communication/contacts and working relationships with members of the Extension service?

(i) ----------

(ii) ----------

(iii) ----------

(iv) ----------

16. What do you consider the most essential conditions that will make you (researcher) and members of the Extension Service work more closely together than you now do?

(i) ----------

(ii) ----------

(iii) ----------

(iv) ----------

(v) ----------

CONTACT WITH FARMERS

17. Please indicate the type of contacts you made with farmers during the past three months.

Types of Contacts

(i) Farmer visit your office on farm related matters ----------

(ii) You visit farmers in their farms or homes to discuss farm matters ----------

(iii) You address farmers' general meetings --------

(iv) You organize or attend field shows with farmers ----------

(v) You issue pamphlets or bulletins for farmers

(vi) You give an open broadcast on farming -------

(vii) Will you please mention any other ways of contact not mentioned. ----------

18. Please comment on the statement that research workers in the programme should do some extension works; i.e. contact farmers directly so as to get acquinted with farmers' problems.

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19. What are some of the problems you think are limiting the dissemination of the research finding from research direct to the farmers?

(i) ----------

(ii) ----------

(iii) ----------

APPENDIX II

EXTENSION WORKERS QUESTIONNAIRE.

PLEASE GIVE THE INFORMATION ASKED FOR AND INDICATE BY CHECKING (X) WHERE APPLICABLE.

SOCIO-BACKGROUND OF THE RESPONDENTS

1. Area of locality ----------
2. Age of respondent ----------
3. Present official status (Position) ----------
4. Length of service with the programme ----------
5. Number of years of working experience ----------

Level of Formal Education attained

6. What level did you reach in school?
   - (i) Primary (completed) ----------
   - (ii) Secondary Grammar School/College (WASC/GCE)_ _
   - (iii) Ordinary National Diploma School of Agric._ _
   - (iv) HIgher National Diploma School of Agric. _ _
   - (v) National Certificate of Education (N.C.E.) --
   - (vi) B. Agric or B.Sc. ----------
   - (vii) Others (Specify) ----------

Level of Professional training acquired

7. What kind of Agricultural Training have you had?
   - (i) No Professional training acquired ---------
   - (ii) Short course ----------

(iii) In-service training ----------

(iv) Agricultural Assistant Certificate Course O.N.D.

(v) Agricultural Superintendent Diploma (Course H.N.D.----------

(vi) Others (specify) ----------

8. What are your major responsibilities?

(i) ----------

(ii) ----------

(iii) ----------

(iv) ----------

(v) ----------

9. When do you normally go for training?

(i) No schedule time for training ----------

(ii) Weekly ----------

(iii) Fortnightly ----------

(iv) Monthly ----------

(v) Annually ----------

(vi) Others (specify) ----------



STOCK OF MODERN AGRICULTURAL TECHNOLOGIES AVAILABLE IN THE PROGRAMME

(i) ---------- (vi) ----------

(ii) ---------- (vii) ----------

(iii) ---------- (viii) ----------

(iv) ---------- (ix) ----------

(v) ---------- (x) ----------

PROCESS OF DISSEMINATION OF TECHNOLOGIES

10 How do you usually disseminate the agricultural technologies to programme farmers ?

(i) Radio broadcast ----------

(ii) Agricultural extension officer -------

(iii) The Programme Researcher ----------

(iv) Leaflets and folders put out by OYSADEP ----

(v) Magazines and Newspapers ----------

(vi) Subject Matters Specialist from OYSADEP

(vii) Special Short training programmes -------

(viii) Fortnightly Training meetings ----------

(ix) Monthly Technology Review Meetings --------

(x) Monthly staff Meeting (technical) at block Office ----------

(xi) Extension guide of the OYSADEP ----------

(xii) Fellow village level workers ----------

(xiii) Contact farmers in the programme --------

(xiv) Result and method Demonstration sites -----

(xv) Others (specify)

RESEARCH AND EXTENSION LINKAGES IN THE PROGRAMME

11. Which of the following constitute recognised research-extension linkages in the programme.

(i) Fortnightly Training Meeting (FNT) ---------

(ii) Monthly Technology Review Meeting (MTRM)

(iii) On-Farm Adaptive Research (OFAR) which is a farmer-oriented problem solving approach to research.

(iv) Workshops and seminars ---------

(v) Diagnostic surveys ----------

(vi) Implementation meetings --------

(vii) Others (Specify) ----------

12. In general what would you say are the specific difficulties involved in establishing communication/contacts and working relations with researchers?

_____

_____

_____

13 What do you consider the most essential conditions that will make the Extension personnel and Researchers work more closely together than they now do?

_____

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PATTERNS AND PROCEDURES OF COMMUNICATION WITH FARMERS

(i) Sources of Information to farmers

14. What are the available sources of programme information to the farmers?

(i) The village Extension officers/workers ------

(ii) The leaders of farmers cooperative -------

(iii) A selected contact farmer ----------

(iv) Radio and Television ----------

(v) Mobile open radio broadcast ----------

(vi) Agro-chemical and inputs-dealers -------

(vii) Others (specify) (i) ----------

(ii) ----------

Use of Communication Channels with farmers

15 Which of the following channels of communication do you use with farmers in the programme?

(i) Visits to farms and Homes ----------

(ii) Face-to-face personal contact ---------

(iii) Group Meetings of farmers ----------

(iv) Ermers training meeting ----------

(v) Extension drama & Playlets ----------

(vi) Farmers field days and Exhibition --------

(vii) Tours campaigns and field visits --------

(viii) Agricultural film shows and mass media -----

(ix) Publications e.g. Bulletins and pamphlets ----

(x) Mobile open radio broadcast ----------

Point of Contact with farmers

16. Where is your usual points of contact with farmers?

(i) Farmers farm site ----------

(ii) At demonstration plot ---------

(iii) Fortnightly schedule meeting ---------

(iv) Farmers' village ----------

(v) On-farm shed ----------

(vi) Meetings of co-operative organisations -------

(vii) Others (specify) ----------

17 How often do you see your farmers?

(i) Everyday ---------

(ii) Weekly -------

(iii) Fortnightly --------

(iv) Monthly --------

(v) As required ----------

(vi) Others (specify) ----------

FEEDBACK MECHANISM

18 Are there avenues through which you can find out the impact of your communication with farmers?

(i) Yes ---------- (ii) No ----------

If Yes, what are the avenues.

(i) ---------- (iv) ----------

(ii) ---------- (v) ----------

(iii) ----------

19 Of what importance is the farmers' response to your communication?

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PROBLEMS IN ESTABLISHING COMMUNICATION/CONTACTS WITH FARMERS

20. In general, what would you say are the specific problems involved in establishing communication/ contacts with farmers?

(i) ---------- (iv) ----------

(ii) ---------- (v) ----------

(iii) ----------

21 What do you consider the most essential conditions that will make the Extension service and farmers work more closely together especially on how farm information and technologies could reach the farmers faster and more frequently?

(i) ---------- (iv) ----------

(ii) ---------- (v) ----------

(iii) ----------

22. Which of the following problems affect extension activities in your area?

(i) Lack of transport facilities for extension staff

(ii) Lack of suitable markets and favourable prices for farm produce. ----------

(iii) Lack of cooperation of local people in programme implementation or demonstration ----------

(iv) Lack of incentives for staff ----------

(v) Inadequate technical knowledge in agriculture

(vi) Inadequate number of extension staff --------

(vii) Lack of credit facilities for farmers -------

(viii) Reluctance of farmers to accept new practices or agricultural innovations ---------

(ix) Others (specify) (i) ----------

(ii) ----------

## APPENDIX III

## FARMERS' INTERVIEW SCHEDULE

PLEASE GIVE THE INFORMATION ASKED FOR, AND INDICATE BY CHECKING (X) WHERE NECESSARY.

Socio-background of the Respondent

1. Division/Area of the farmer ----------

2. Sex of farmer ----------

3. Age: How old are you?

   (i) under 20 years

   (ii) 20-30 years ---------

   (iii) 30-40 years --------

   (iv) 40 - 50 years -------

   (v) 50 years and above -------

Level of Education attained

4. Did you ever attend classes in school?

   Yes--------- or No ----------

   If yes, for how long did you go to school?

   (i) Never attended school -------

   (ii) Primary (uncompleted) --------

   (iii) Primary (completed) ----------

   (iv) Secondary Modern School ---------

   (v) Secondary Grammar School --------

   (vi) Other formal education (specify) -------

5. Which Certificate did you receive?

(i) No certificate ----------

(ii) School leaving Certificate ---------

(iii) Modern School Certificate ----------

(iv) Teachers Grade II Certificate ------

(v) WASC/GCE --------

(vi) Others (specify) ----------

FARMING EXPERIENCE

6. For how many years have you been farming?

(i) Less than 4 years ----------

(ii) 4 - 6 years ----------

(iii) 6 - 8 years ----------

(iv) 8 years and above ----------

FARM SIZE

7. Will you please tell me ab out your farm land?

(a) How many farm including bush follow do you control?

(b) How big is that farm?

(c) What crops do you grow on that farm?

For each farm plot

| Plot | Size | Crops grown |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

PROGRAMME PARTICIPATION INDEX

8. For how long have you been participating in OYSADEP programmes?----------

9. What are your reasons for joining the programme?

(i) ----------

(ii) ----------

(iii) ----------

(iv) ----------

10. During the last three months did you participate in the following activities.

| | YES | NO |
|---|---|---|
| (i) Attend an agric/farmers meetings | ------ | ------ |
| (ii) See an agric demonstration e.g. Fertilizer of spraying method | _____ | _____ |
| (iii) Go with the agric man to OYSADEP demonstration farm/agric show | _____ | ____ |
| (iv) Go to the agric man for supplies e.g. seed, fertilizer, Chemical | _____ | _____ |
| (v) Go to the agric man for advice | _____ | _____ |
| (vi) See or read an agric. pamphlet, bulletin, poster or Newsboard in the programme. | ------ | ------- |
| (vii) Hear of agricultural radio programme | _____ | _____ |
| (viii) See the agric. cinema van | ----- | ------- |
| (ix) Watch Drama presentation on farm practices | ---- | ------ |
| (x) Go to meeting every fortnightly | ---- | ------ |

COMMUNICATION INDEX

Basis for calculating the level of communication from nearby village or OYSADEP.

11. How do you get information from nearby village or other programme area?

(i) No News ---------

(ii) Words of mouth from friends/Neighbours -------

(iii) Visiting the place --------

(iv) Extension Workers Visits here -------

(v) Letters/pamphlets ---------

(vi) Radio and Television broadcast -----

(vii) Blackboard News -------

(viii) Others (specify) -------

12. Did you receive any mails, bulletin or pamphlets from OYSADEP?

(i) No ------ or (ii) Yes -------

If yes, how often ----------

13. Did you listen to radio during the past month?

(i) No------ (ii) Yes -------

If yes, how many times---------

(iii) Once or twice per week .....

(iv) Once or twice per month ---------

(v) Regularly/daily ----------

(vi) Only when visiting or travel out of village ---

(vii) Just occassionally -------

14. Have you ever seen film show or watch television as regard farm practices and techniques?

(i) Never---------- (ii) Yes ----------

If yes, how often

(iii) Once or twice ----------

(iv) Quite often ----------

(v) Only when travel out of village -----

15. On radio, are there any special programmes that interest you?

(i) No ------- (ii) Yes --------

If yes, what are they? --------

(i) ----------(iv) ----------

(ii) ---------- (v) ----------

(iii) ----------

16. Did you ever watch any drama playlet?

No---------- (ii) Yes --------

If yes, which type?

(iii) Drama performed by OYSADEP group -----

(iv) Drama performed by theatre group -----

(v) Drama centered on farm practices ------

KNOWLEDGE OF AGRICULTURAL TECHNOLOGIES AND PRACTICES

17. What are the agricultural technologies introduced to you by OYSADEP agric man?

(i) ---------- (vi) ----------

(ii) ---------- (vii) ----------

(iii) ---------- (viii) ----------

(iv) ---------- - (ix) ----------

(v) ---------- (x) ----------

18 Do you know anything about these new practices?

| | Yes | No |
|---|---|---|
| (i) Maize or cowpea farm practice | --- | --- |
| (ii) Fertilizer application | ---- | --- |
| (iii) Spraying techniques | --- | --- |
| (iv) Storage and processing method | --- | --- |

(v) Other (specify) (i) ----------

(ii) ----------

19 Through who did you know about the practices?

(i) I don't know ----------

(ii) OYSADEP extension officers/workers ---------

(iii) Friend and Neighbour --------

(iv) Radio/Television --------

(v) Pamphlet/Newspapers/Blackboard News ------

(vi) Buyer/seller/input dealers --------

(vii) Sons and Relatives ----------

(viii) Others (specify) ----------

20 Do you know of OYSADEP and its Extension service?

(i) No ------- (ii) Yes --------

21 Do you know of any agric. extension worker who comes to this area?

(i) I don't know any ----------

(ii) Yes ----------

If yes, do you know his/her name? ---------

(iv) Yes---- (v) No ---- (vi) If yes, what is the name ----------

22 Have you met Mr. (named) the agric extension man personally?

(i) No ---- (ii) Yes ------

If yes, when did you last meet him?

(iii) Over a year ago ----------

(iv) Within last month ------

(v) Within two weeks ago -----

(vi) Within last week.

SOURCES OF INFORMATION TO FARMER

23 What are the available sources of programme information to you?

(i) The village extension officer/workers -----

(ii) The leaders of farmers' cooperative ----

(iii) A selected contact farmer ---------

(iv) Radio and Television broadcast ------

(v) Mobile open radio broadcast --------

(vi) Agro-Chemicals and input dealers ------

CHANNELS OF COMMUNICATION WITH EXTENSION WORKERS

24 Through which of the following channels do you make contact or communicate with extension workers

(i) Visit to your farms and homes ------

(ii) Face-to-face personal contact ------

(iii) Group meetings of farmers ----------

(iv) Method and Result demonstrations -------

(v) Farmers training meeting ----------

(vi) Extension drama and playlet -------

(vii) Farmers field days and Exhibition ----

(viii) Tour campaigns and field visits ------

(ix) Agricultural film shows and mass media ----

(x) Publications e.g. Bulletins and pamphlets ---

(xi) Mobile open radio broadcast -----