ANALYSIS OF SOME SOCIO-ECONOMIC FACTORS INFLUENCING THE EFFECTIVENESS OF AGRICULTURAL BROADCASTING IN KADUNA STATE

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DECLARATION

I hereby declare that this thesis has been written by me personally and is a record of my own research work. It has not been presented before in any previous application for a higher degree.

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CERTIFICATION

This thesis, entitled "ANALYSIS OF SOME SOCIO-ECONOMIC FACTORS INFLUENCING THE EFFECTIVENESS OF AGRICULTURAL BROADCASTING IN KADUNA STATE" meets the regulation governing the award of the degree of M.Sc. (Agricultural Extension and Rural Sociology) of Ahmadu Bello University and approved for its contribution to knowledge and literary presentation.

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DEDICATION

This work is dedicated to my affectionate mother:

ALHAJJA FADIMATU BABBA

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ABSTRACT

During the 1990's, several social and economic policies were introduced in Nigeria, and they affected the pattern of public and domestic lives of citizens, including peasant farmers. In view of this, an attempt has been made to investigate and generate ample data about some social and economic characteristics, as well as specific and general farmers' attitudes towards agricultural broadcasting; to establish whether or not, there is a relationship between the farmers' characteristics and their level of response (interest) in agricultural broadcasting; and to proffer up-to-date recommendations on policy guidelines, which would enhance the conduct of agricultural broadcasting in Makarfi and Sabon Gari Local Government Areas of Kaduna State. This was instituted by means of an empiritcal research process.

The respondents numbering 100, were randomly drawn from 16 randomly selected rural villages and semi-urban settlements in the two study areas. Data were gathered through primary and secondary sources. Questionnaire administration was used to obtain the primary data while personal observation, media content reviews and library research were relied on as the secondary sources of information.

First, attempt was made to find out the broadcast media channels prevalent in the study areas and the motivating factors of the farmers toward their patronage. Secondly, the social and economic variables: age, sex, home location, farm size, farm income, non-farm income, family

size, formal education, informal education and years of tuning (radio/television) experience were examined. Accordingly, the statistical relationship between the socio-economic variables and effectiveness of the identified broadcast channels, influencing the farmers' perception about three key extension messages, have been established. The Pearson's Correlation Coefficient, and the Chi-Squared Test methods were used in the analyses of the data.

It was found that a great deal of farmers' leisure times were spent while listening to agricultural broadcasting becuase of their desire to learn through the programmes. Also, such factors as farm size, age, formal education, use of local language in programming, clear radio signals and conformity of programmes to existing norms and values contributed positively to the farmers' level of patronage for the agricultural programme.

Consequetly, nine fresh agricultural broadcast policy guidelines (recommendations) were made. Chief among these were increase in the total number of agricultural programmes for radio and television audience; need for involvement of farmers in planning and production of agricultural programmes; and for the restriction of commercialisation to private media only, while public media be better funded to serve as tools for development support communication.

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CHAPTER ONE

1.0 INTRODUCTION

Nowadays, changing tastes and times tend to render most mass media audiences very unstable or difficult to define. If this is true, it would certainly have sharp repercussions on the effective use of mass media in the dissemination of agricultural innovations to farmers.

This is unlike in the pre-SAP days when broadcast and print media audiences were almost sharply identifiable. In the 1970s, newspapers, magazines and television were identified as the most urban media, while radio was of rural dwellers due to obvious reasons (Nwuneli, 1985). Although increased adult literacy had led to a rise in circulation of vernacular newspapers and magazines in rural communities, that did not automatically make newspapers and magazines become rural media like radio. Also, recognition by governments of the value of television led to an increase in the number of rural television viewing centres, but most of these centres could not operate for long due to mis-management and high cost of maintenance. So television still remains predominantly an urban medium.

Since the introduction of SAP in 1986, social and economic status of many individuals and families have undergone transformation. Commodity prices, costs of newspapers, electronics, and food have been rising. Food crops became cash crops overnight thereby turning farming into a lucrative business. Thus, farming activities started booming higher not because farmers have been better informed about farming techniques, but because the need to

feed and fend for families became more challenging than ever before.

Due to these changing tastes and times, an impact study of some socio-economic factors on agricultural broadcasting in Kaduna State was proposed. It was perceived that the study was not only to identify and analyse the social/economic factors that render most media audience unstable, but was also to determine the relationships between the factors and farmers' (audience) level of awareness about agricultural innovations. Also, the study attempted to find out the effects of farm income level on farmers patronage of agricultural broadcasting as well as to compare and contrast the effectiveness of agricultural broadcasting in rural and semi-urban communities, as influenced by the economics and social factors. Finally, the study sought to proffer useful suggestions for effective policy formulation on agricultural broadcasting in Nigeria.

1.1 RESEARCH PROBLEM

Broadcast media messages, like most other media (newspapers, magazines, posters, bill-boards, newsletters and other non-broadcast media like cinema, video e.t.c.), messages have been known to influence the opinions, attitudes and behaviours of audiences. Radio programmes for instance, have been found to be very effective in generating awareness about innovations in rural communities in general (Yazidu, 1973; Moemeka, 1981; Nwuneli, 1985; Dare, 1990 and Ibrahim, 1990). The ability of television

to create awareness and to shape social and political attitudes, has also been established (Aladekomo, 1984; Muhammed, 1991 and Osho, 1992).

Perhaps, what obviously needs to be known is the effect of specific economics and social factors on selected occupational groups' attitudes towards broadcast messages, in this case, peasant farmers of Northern Kaduna State. Preliminary investigations revealed that there was the need for time and location-specific studies on the subject in Nigeria.

Moreover, Orewere (1984) carried out an impact study of agricultural broadcasting in Jos and its environs. He recommended further research that could:

> "Locate the social and cultural units of adoption without which any campaign using the broadcast media to promote agricultural development will yield minimal effects in the rural areas."

Likewise, Nwosu and Megwa (1993), in a critical assessment of the role of communication in agricultural and rural development of Swaziland, have contended that:

> "The major flow in the current approach to development communication in Swaziland (and neighbouring countries) is the over-emphasis on development programmes and the source of development communication rather than on recipients of development information. It is therefore important to recognise and find ways of ensuring recipient participation in planning dissemination and diffusion."

Similar thoughts were expressed by Moemeka (1991) and Oso (1992). So, from the foregoing, it was clear that there was need for further studies on the audience response to agricultural broadcasting and factors influencing the

modes of their responses. For example, the phenomenal increase in prices of food crops within the last ten years, must have created some strange bed-fellows in farmers' attitudes to communication media in general. Therefore, only by research of this nature could verifiable evidences be found. Economic instability also calls for comparative analysis of the impact of agricultural broadcasting in the semi-urban setting and that of rural setting, as influenced by social/economic factors. This is because, semi-urban farmers and rural farmers have slightly different orientations' in terms of choice and use of media as well as competition.

The fact that radio and television broadcasting have been widely recognised as effective means of communicating agricultural information (Schramm, 1964; Voh, 1979; Matanmi, 1987; Akinfeleye, 1990 and Ansah, 1991), calls for thorough investigation of the main factors determining the extent to which they can be most effective or ineffective. It was therefore the problem of this research to yield ample time and location specific data about the social and economic characteristics as well as the specific and general attitude of the farmers towards agricultural broadcasting; to establish whether or not there is a relationship between the farmers' characteristics and their mode of response to agricultural broadcasting in the study area; to proffer up-to-date recommendations on how to enhance the effectiveness of agricultural broadcasting in Kaduna State. Three research questions were therefore

raised: To what extent did farmers in Makarfi and Sabon Gari Local Government Areas tuned to radio and television agricultural programmes? Was there any relationship between socio-economic characteristics of the farmers and their level of patronage to the existing agricultural radio and television signals in the study area? What were the identified solutions (if any) to the current limitations militating against the full success (effectiveness) of agricultural broadcasting in Kaduna State?

1.2 OBJECTIVES OF THE STUDY

The broad objective of this study was to analyse, the relationship between the socio-economic conditions of farmers and effectiveness of agricultural broadcasting.

The specific objectives therefore were to:

(1) identify the various agricultural broadcast media and to determine the most used media by the target farmers.

(2) determine the relationship between some farmers' socio-economic characteristics and effectiveness of agricultural broadcast media in increasing farmers' awareness about modern farm innovations.

(3) proffer policy guidelines that could further enhance the conduct of agricultural broadcasting in the state.

1.3 SIGNIFICANCE OF THE STUDY

Attention to media's role in development of Third World countries began receiving priority attention since early 1960s. Interest about mass media's role in

development has been on the increase world-wide (Ibrahim, 1990).

In view of the pivotal role of the media in development, and the importance attached to their role in public enlightenment, knowledge about individuals' and groups' media habits and how individuals and groups respond to mediated messages and of course, factors determining their mode of response to such messages, are always needed. Also, the demand for a normative time and location-specific investigations on major sociological issues such as those related to agricultural broadcast messages, is always being expressed (Dare, 1990 and Amienyi, 1993). This is mainly to ensure continuous review of priorities and strategies so as to suit different purposes and times. Moreso, the study of this nature in Kaduna State was considered very relevant in the sense that no such work was done in the near past.

Similarly, rise in costs of printing materials led to the increase of cover prices for newspapers and magazines. Political crises have also led to forceful closure of many popular print media. As a result, many Nigerians have tendency to withdraw from relying on print media, to their radio or television sets for all views, entertainment and current affairs (education).

Following the coming into being of Nigerian Broadcasting Commission (NBC) via decree 38 of 1992, the stage for full commercialisation or partial commercialisation and private ownership of broadcast media has been set. Emphasis was now on commercials, e.t.c.

rather than on public service programming.

It has also been realised that the mass media, which are acknowledged vehicles through which proven innovations could be channelled to mass audiences, have enjoyed different levels of patronage from different groups in Nigeria. Therefore, new findings about the determinants of media choice and use is always required in all parts of the country (Amienyi, 1993).

Moreover, this study represented a further step aimed at updating recent findings about effects of agricultural broadcasting. At the same time, it successfully advanced knowledge of the subject and consequently adds to the pool of existing literatures.

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter examines a review of related literature and discusses its implications for the study.

2.1 AGRICULTURAL BROADCASTING IN DEVELOPMENT: THE USE OF RADIO AND TELEVISION.

In what ways do radio and television aid the process of development? The different approaches and their likely results are represented in the following literature review:-

2.1.1 The Concept of Development

The term development has been given different interpretations by different scholars from different backgrounds. Rogers (1969) defined development as a type of social change in which new ideas are introduced into a social system in order to produce higher per capita incomes and level of living through more modern production methods and improved social organisation. However, Boafor (1991) stressed that, "the interpretation of development can be influenced by the paradigm of development used, as well as the development goals being sought." As such, development could centre on economic growth or as a means of social advancement (equity, freedom) or combination of both.

While economists would want to consider the per capita incomes or GDP of nations to determine their level of development, rural sociologists would choose to use some social indicators such as: health and nutrition; education; income and consumption; employment; non-human productive resources; housing utilities and environment; political freedom and justice; public safety and social mobility.

That was why Seers (1972) argued that "there is no development regardless of the state of per capita income of a country unless there is a reduction of poverty, unemployment and inequality."

Undoubtedly, the concept of development witnessed transformation in terms of interpretation, from an economic emphasis in the 1960's and 1970's, towards being more humanitarian in the 1980's and 1990's. True development therefore, is today, a revolutionary parlance that seeks to involve everybody. A synopsis of the term's general usage by modern scholars ties its impact to every sector. Afigbo (1991) identified five ingredients to development which clearly are in conformity with both humanitarian and economic approach, namely; increasing material wealth for the use of individuals and nations; eliminating unemployment; eliminating poverty and want; eliminating inequality; increasing the general availability of labour-saving devices i.e. emphasis on technological growth.

By implication, development in the Third World, will take place only when rural farmers, who are producers of 80 - 95 percent of agricultural commodities, are adequately supported. This is because agriculture is the pre-occupation of most nations and a leading factor for development (Satter, 1983).

2.1.2 **Development Communication as Facilitator of Change**

Concepts like Agricultural Extension Services, Extension Education Services, Adult Education, Farm Settlement, e.t.c., prevalent in the 1940s and 1950s, gave

rise to the concept of Development Support Communication or Development Communication (Journalism). It means the application of the print and electronic media to promote agriculture and social development (Akinfeleye, 1990). But the concept of broadcasting in the service of education and development emerged during the 1966 UNESCO sponsored conference in Bangkok, Thailand, when the subject was first discussed at a higher level. Since then, the major goal of Development Journalism has been three fold: to inform, to interpret and to promote developmental efforts and activities. Therefore, the concept of Development Communication or Journalism is in conformity with one of the oldest theories of communication; the "tool theory" of Tolman (Voigt, 1979). Thus, communication is used as a tool, not as a product, to achieve desired goals. So, for any meaningful development to occur, the mass media should begin to give ample time and space to coverage of development programmes and projects (Akinfeleye, 1990).

4.1.3 **The 4-Way Media Approach to Development**

Golding (1979), reported on the four-way development support journalism practices. That, in practice, mass media practitioners employ four distinct strategies of development support communication. These include stressing the general educative function of news; producing stories which display particular social needs or problems; giving prominence to local self-help projects; and tackling specific problems such as elite corruption.

2.1.4 Communication Technology and Change in Human Society:

The views of Mcluhan reported by Bittner (1980) on this subject is famous. In his views, the communication systems and mass media are the source of many changes in human society (just like for Karl Marx it is economics and for Freud, sexuality). He argues that mass media (electronics) is the cause of the development of man, and with the expansion of man, a different understanding of the world of existence is created. He believes that the appearance of electronic communications in the second half of the 20th century is the period of "visual culture" (Echo of Islam, 1992). Mcluhan also believes that the medium is the message and proliferation of electronic media has made the global village a near reality (Mohammed, 1991).

2.1.5 The Lasswell Formula: A Basic Model of Communication

In the views of Lasswell as reported by McQuil (1981), a convenient way to describe an act of communication is to answer the following questions: "Who says what, in which channel, to whom, with what effect?". The model contributed in clarifying the tendency to exaggerate the effects of mass communication. Earlier models took for granted that a mass communicator has always some intent in influencing the receiver. Although, the model has been criticized for omitting the element of feedback which is so important in evaluating any communicative behaviour or act (McQuil and Windahl, 1981).

2.1.6 The Riley and Riley Model: A Sociological View of Mass Communication

Early communication models easily gave the impression that the communication process takes place in a social vacuum and influence from the environment is not worth bothering about. But in 1959, Riley and Riley, proposed this model which "has surely helped to tie the concept of mass communication to existing sociological theories". The model suggests that mass communication should be seen as a social process among others and that it may influence and be influenced by the society. It focuses on the mediating role of other psychological factors in influencing the impacts that the mass media can produce on individuals and groups (McQuail and Windahl, 1981).

2.1.7 Opinion Leadership and the Two-Step Flow Model

Much of the information disseminated by the mass media, radio, television, newspaper, films, e.t.c., comes to the individual's attention second-hand, from people who relay their interpretation of it. Such people are the opinion leaders who play great roles of extending media messages to the less active media audience members. An understanding of these intricacies led to proposition of Katz and Lazarsfeld's two-step flow model. The model assumes that some media audience are more active than others. The occupants of the more active role (opinion leaders), are characterized by more use of the mass media, and possession of influence over others. The model has more or less succeeded in emphasising that the media have

an input into a very complex web of social relationships and compete with other sources of idea, knowledge and power (Bittner, 1990).

2.1.8 The Diffusion of Innovation Model

There are no concise formulas to express the importance of mass media in convincing audience to acquire certain products or attitudes because each person is unique as is each product and each situation.

Dwelling on an earlier model by Rogers, Bittner (1980) explains: "The process leading up to decision to accept (adopt) has several steps: First, one normally had a need then, one becomes aware of a new answer or solution to the need through say, accidental encounter with it in a magazine, alerting one to its many features. Next, exposure could then be through a television commercial creating interest sufficient to stimulate discussions with fellow peers. These discussions help to evaluate the innovation. Then, one takes the decision to move a step further on a trial basis by attempting to try the innovation. After the trial period, a decision to acquire (adopt) or reject it is taken. Hence, the impact of magazine and television on awareness and interest, respectively, is obvious".

2.1.9 Nature of Mass Media Audience

Research has shown that media audience is heterogeneous (McQuail, 1977). The audience differ in terms of race, sex, age, tribe, faith, e.t.c. But the audience is socially undifferentiated because it lacks a

clear demarcation line among classes, races, sexes or faiths. The audience is usually large and anonymous. In pluralistic societies, mass media audience exercise some freedom of media choice. Since the technology is a one-way flow and there is no direct feedback, audience relation with communicator is impersonal and anonymous. There is constant shift in the composition of mass media audience. It has no single leadership and no feeling of identity *per se*. Local audience could be significantly different from national audience. Going by the stimulus response model, mass media messages can influence audience behaviour in a short period of time.

2.1.10 Nature of Persuasive Communication

Persuasive communication can take the form of advertising, sales, political campaign and newspaper editorial. They all seek to avert or change attitudes. The extent to which an individual's attitude changes by persuasive communication depends on eight factors: Who delivers the message; what the person says; respondents' views about the communicator's knowledge level on the issues involved; the truth; the strength; how attractive the listener finds him or her; how dramatic or humorous is the presentation; and the non-verbal behaviour of the communicator (Wainwright, 1979).

2.1.11 Credible Commitments to Development: Africa Must Implement

Countries of Africa (including Nigeria) must implement, individually and collectively, credible commitments that could speedily see the continent through

sustainable development. A sure way out in the words of Tolba (1993) is, "by the proliferation in Africa of scientific and technological know-how through increased research activity, better development of human capacities and active technical cooperation". Perhaps, McBride *et. al.* (1980) had similar feelings: "Communication (mediated), therefore, had within and among societies, a definite importance for the diffusion of great ideas, for the relationship between the authorities and the majority of inhabitants, as well as for the conservation and stabilization of societies".

2.1.12 Tackling the Hunger Crisis: A Plan of Action

One of the basis of an international plan of action to end hunger in Africa, has been identified as "intensification of awareness campaign". Anikpo (1991) argues that "the awareness of everybody to the real cause of hunger, the need to end it and how to end it, is the beginning of any practical action." He further states that such awareness must not be restricted to classroom lectures and academic conference, but other viable channels like the mass media can be used "to make hungry people realize their own potentialities and to have confidence in their own abilities".

2.1.13 Mass Media's Role in a Developing Country

In any country, developed, developing or underdeveloped, the mass media have distinct and crucial roles to play (Learner, 1964). Jakande (1974) identified 'six crucial roles' the mass media (electronic and print)

can play in a developing country. These are: information role; historian role, educator role; forum role, watchdog role and leadership role. Accordingly, McBride, *et. al.* (1980) wrote: "It is difficult to imagine that all the advances in administration, trade, education, economics and military development could have been made without the dissemination of news".

2.1.14 Mass Media and Agricultural Development: A vital link

According to Benor D. (1984), "Mass Media - newspapers, radio and even television - can reinforce the work of extension by giving publicity about the system and by providing farmers with general technical advice. Relevant, attractively presented material, combined and coordinated with frequent field visits of extension agents, can ensure a quick, broad impact." In a similar vein, Dare (1990) argues that "In any serious effort to improve the conditions of the people, the mass media have a role to play. The mass media can be used to keep people thinking about development, to make them recognize and accept the need for development, to mobilize and make them predisposed toward development. They can serve as a vehicle for non-formal education to impart knowledge and skills. In contrast, Dare further argues that, their role can only be supplementary. He warns that "it must not be assumed that the information, once applied, can lead to increased production regardless of the land size, extension services, markets, credit facility and other basic necessities". Dare's submissions seem to be in agreement with the Riley

and Riley model which points to the mediating role of other psychological factors in influencing the impacts that the media can produce on individuals and groups.

2.1.15 Mass Communication in the Third World: The Dysfunctional Effect

Moemeka, (1982) reported that over the years, structure of mass communication in the third world generally, indicate a dysfunctional impact of the different media (Radio, Television, Newspapers, Magazines) saying that "the media are more often than not, instruments for widening the public knowledge gap rather than for bridging it".

Of course, he admitted that the dysfunctional effect was not the same for all media, the need therefore, for restructuring the media to remove this dysfunction was felt. In particular, Moemeka felt that it could be removed by stressing how the media can narrow the gap between the advantaged and the disadvantaged, and how the audience can control the media through feedback, access and participation. (Moemeka, 1982).

2.1.16 Individual, Group and Mass Contact Channels

Several communication channels are employed in the dissemination of agricultural information. Ajieh (1993) argues that channels should be chosen according to the communication situation. He went on to identify three distinct possibilities, viz:

Individual Contact Channels: Farm and home visits, office calls, telephone calls, correspondence and result demonstration.

Group Contact Channels: Demonstration, general meeting, lectures, group discussion, workshops, field and farm walks, achievement days and excursions.

Mass Contact Channels: Publications' bulletins, circulars, leaflets, exhibits and posters, agricultural shows, cinema vans, radio and television.

Ajieh further stressed that effective communication demands for effective use of these channels. Thus, an extension agent should be aware of all the communication channels and their advantages.

2.1.17 **Most Important Sources of Information to Farmers**

In a survey of Gusau area of Sokoto State, Matanmi (1989), found radio as the most used source of information to farmers (71%), followed by neighbours (68%), then extension workers (60%). In terms of importance, Matanmi found out that majority of farmers in the area considered extension workers as the most important source, followed by radio and then neighbours. The study shows farmers with high level of adult education tended to use extension workers more than those with low level of adult education. Those with high level of living tended to use radio than those with low level of living.

Much earlier, Yazidu (1973), in a study of radio as a means of communicating agricultural information to farmers in Northern Nigeria, found that: more males listen to radio programmes than females in Northern Nigeria; more people listen to farming programmes on radio in the semi-urban areas (59%) than in the rural areas (40%); semi-urban

people believe in radio messages more than rural people (99.6 : 82.1%); radio was the most important source of agricultural information to farmers in both rural and semi-urban areas of northern Nigeria; farm information was the most popular radio programme among all people interviewed; in rural areas, the higher the percentage of literacy, the lower the listenership while in semi-urban areas, the higher the literacy the more the listenership; radio owners listen to radio more often than non-radio owners; 2 - 4 pm and 6 - 8 pm are the most prime periods for listening to farming programmes.

2.1.18 Radio Broadcast Plus Slide Tapes in Mass Campaigns: A Case Point

The use of radio and slide tapes in mass campaign situation can result in massive success stories. One of the most recent Food and Agriculture Organisation (FAO) sponsored campaigns in Sierra Leone is a good example. Coldevin (1991) reports: "following a 'Knowledge, Attitude, Practice' (KAP), information needs and media access surveys, a rural information campaign was built around the urgent priority to increase rice production. Radio broadcasts over a two-month period were supplemented with village-based slide tape presentations. Post-campaign results showed that on average, farmers involved in the exercise had increased their knowledge levels by almost 60% over baseline scores. And those who tuned in regularly to radio broadcasts, displayed virtually twice the information gains when compared with the responses of sporadic listeners. This FAO sponsored campaign in Sierra Leone, as

reported by Coldevin, demonstrates the benefits to be derived from an intensive multi-media catalyst to mobilize a rural population towards increased national food production.

2.1.19 **Broadcasting as Tool for Development**

In Nigeria, and indeed in most African states, broadcasting, that is radio and television services, are used as tools for promoting development, at least in theory. But in practice, entertainment tends to dominate the fare, even though development is always a major objective. Quite often, entertainment formats are used for educational purposes. Both radio and television have been used to support formal and informal education with varying degrees of success.

The use of television is however, limited because its cost has made it virtually an elite and urban medium (Coldevin, 1991). In a related perspective, similar to Dare's views, Ansah (1991) wrote: "despite the great potential of broadcasting to help in the achievement of national integration, it can only play a supportive role. The content of broadcast messages alone cannot bring about national integration. It is essential that appropriate institutions are set up to translate into concrete acts, the messages coming from the media".

2.1.20 **Impact of Broadcasting on Farmers: The Jos Experience**

In a study of Jos and environs, Orewere (1984), found the following facts about agricultural broadcasting: rural farmers are more likely to be aware of new farm information

and adopt new farm practices through inter-personal channels than through impersonal channels of radio and television; agricultural broadcasting is an acceptable channels for new farm information regardless of educational levels; mass media (Radio/Television) serve as farm information sources at awareness stage mainly while inter-personal channels take charge of confirming or rejecting.

2.1.21 **Development News**

Nwuneli (1985), in a survey of development news and radio broadcasting in Nigeria, found that radio stations seem to devote a high percentage of their air time to purely entertainment programmes. This is followed closely by formal educational broadcast programms such as English by radio e.t.c. He found that other information type of programmes are presented in such a way that they appeal only to the educated elite, leaving out the majority of the population who are rural based, and uneducated. Compared to newspapers, television and cinema; it was found that radio was one of the main media that most of the Nigerian population could be reached with any form of information that is of importance and interest to the target audience - both the rich and the poor. The study noted that communication research, especially on programming was still at its infancy in Nigeria and Africa as a whole.

2.1.22 **Effectiveness of Television Programming**

Current approach to, and objectives of television programmes of most stations in Western Nigeria, are too narrow and inadequate to have any meaningful impact. Oso

(1992) argues that "although agricultural television programming in southern Nigeria reflect the dominant development thinking in the country, (that is transfer of technology and production constraints) structural constraints are probably more fundamental to the process of development than information on technology". The farmers, according to him, may not be as ignorant as they are perceived to be. Their problems may stem more from poverty, exploitation and other structural constraints which are usually neglected in television programming. Oso (1992) further argues that to be relevant and effective, television programmes have to incorporate such issues which necessarily calls for broadening of the scope and focus of agricultural programmes on television. On commercialisation, Oso felt that its effect on broadcasting poses greater threat to existence of public service broadcasting. He said while the Stations may be able to make profits as a result of commercialisation, the majority of Nigerians will be poorer for it information wise. This is because time allocation for commercials is given priority attention than agricultural programmes.

2.1.23 **Radio as a Priority Medium**

The use of radio programmes in disseminating proven agricultural technologies will remain a priority for most agricultural extension agencies in Nigeria. Omenesa (1992) points out that despite limitations of radio (its transient nature; its one sense appeal; its one-way flow and its reliance on a powered receiver), the agricultural extension

workers/agencies can always use the radio effectively to reach a large number of people (farmers) very cheaply. Valuable time, energy and resources, can be saved by relying on radio. Spot announcements and discussion programmes can be relied on to inform the farmers and to stimulate their desire to know more about various subject-matters.

According to him, success stories of agricultural radio broadcasting in Northern Nigeria was responsible for sustenance of the programmes for decades, e.g. 'Nome Karkara Magajin Garba', 'Mukoma Gona' and 'Noma Tushen Arziki', all hausa language agricultural programmes on FRCN, Kaduna. Such programmes have supported the various agricultural and rural development programmes of successive regimes in Northern Nigeria. It therefore, calls for more financial support to radio programming in that all good qualitative programmes are a result of sufficient financing.

2.1.24 **Summary of Reviewed Literature**

From the above review of literatures, it is clear that development symbolises all round progress in human society. Agriculture, which is a leading factor for rural Africa's development, must thrive very well at all times and by all means in order to pave way to speedy development.

The mass media play a very important role in development efforts through information, education, persuation and mobilisation of people in development. However, there is need for more ample time, space and

financial support for the media to be effective. Besides financial/logistic support, there must be an effort to locate the psychological factors serving as mediating/complementary roles in ensuring broad impact of mass media generally and broadcast media in particular.

The educational/developmental role of broadcast media (Radio/TV) calls for the setting up of institutions' that can translate their messages into concrete actions. It also calls for sustained research about them, to be followed by concrete actions based on sound policies. Moreover, there is need to broaden the scopes of most agricultural broadcast programmes. This is because, both radio and television agricultural programming have contributed immensely to national development and cohesion, and will continue to do so in future.

2.2 SOCIO-ECONOMIC DIMENSION AND COMMUNICATION CHANNELS

Although both Makarfi and Sabon Gari Local Government Areas were relatively newly created, observingly one could deduce quite a clear social, cultural and economic manifestations of the inhabitants at the time of study. In most cases, these manifestations were alike, but in other cases, they were distinct.

In both local governments, social gatherings revolved around market days, mosque/church services, coronation ceremonies, agricultural shows, Sallah and Christmas celebrations and Marriage/naming ceremonies e.t.c. Musical displays and instruments varied from *Kalangu, Goge, Kuntigi,* to the modern guitar players. Female praise

singers and snake charmers were also in their numbers across the towns and villages of the area.

The people usually undertake annual community services by building rural roads through self-help initiatives. Such efforts normally take place immediately after harvests just before the rains stopped. Hundreds of Youths were seen lined up while digging the road sides in response to musical displays by some invited traditional praise singers. Local Government Chairmen were usually attracted to such events, where they deliver speeches and announce donations to the Communities. The rehabilitated roads provided access to the rural areas for ease of transport and communication.

The agricultural system of the areas was mostly based on traditional implements and practices. However, there existed a high awareness level among all categories of farmers, about chemical fertilizers, pesticides and herbicides, improved seeds and tractor services (Atala, 1984). Regrettably, most of these inputs were generally eigher too expensive or unavailable to the average farmer. In sum, farming activities remained common in both localities and have been taken seriously. The agricultural system in Sabon Gari Area was observedly much more intensive than in Makarfi because many farmers scrambled for limited farming lands among the urban working population of the Area. A greater percentage of farmers in Sabon Gari seemed to be earning from other sources besides farming, which was not the case in Makarfi.

In terms of communication channcels, there existed traditional or non-conventional and modern communication channels. Usually, the village heads and the ward heads engage the services of town criers to announce certain messages. Also, Imams of Mosques are usually contacted by L.G. Chairman and Chiefs to pray for peace and to deliver some messages from Government. In both channels, there was no room for immediate feedback.

Besides, opinion leaders like active radio and television viewers and educated elites provided and maintained opinion leadership, but the electronic media: radio/television, played a significant role in serving as channels of mass communication. There was no evidence of wide circulation of any printed Extension leaflets or vernacular newspapers with any reasonahle agricultural materials. However, independent scientific inquiry into the socio-economic and communication systems of the area was lacking as at the time of study.

For both Local Governments, the ADPs, Health Service Departments, Local Authorities and National Electric Power Authority etc. rely on radio, television and loud-speaker (carrying vans to reach the public with valuable messages). Ocassionally, free cinema shows were held at villages to enlighten the public about some extension messages.

2.3 THEORETICAL FRAMEWORK

From the foregoing, this study could be rightly located within the "Audience and Effects" theory of mass communication and was based on the empirical "Uses and

Gratification Model" of Mass Communication. Whichis one of the audience-centred theories of mass communication. The model teaches that in media campaigns (or programming), audience members usually have identifiable information needs. For this reason, individuals expose themselves to media messages mainly to satisfy or gratify those needs. Thus, the ability of messages to satisfy those needs, determines patterns of exposure as well as how they use or react to programmed messages (McQuil, 1977). Going by this model, if messages are to register well and achieve desired goals, they must be addressed to the needs of the people who are usually active, critical and selective in their media use (Rogers, 1969).

Supporting this model, Bittner (1977), states that "there are no concise formulas to express the importance of mass communication in convincing us to acquire these products..., but some general trends are discernible and can aid in our understanding of this process". As consumers of mass communication, we are constantly exposed to materials that both informs and persuades: information about new discoveries in technology, inventions and other innovative procedures; persuasion to avert or change attitude on the bases of: who delivers the message; what the person says; the truth; the strength; how attractive; how dramatic or humorous; his knowledge level, etc. (Wainwright, 1979).

Windahl (1979), in what appeared like a critique of the model and an attempt to further expatiate it,

successfully propounded the "Uses-and-Effects" model, which proves to be a synthesis of the "uses and gratification" model.

Here, need satisfaction by audience is but one factor leading up to media use. Hence, we are reminded that "audience member and his intra and extra individual characteristics", including needs and interests, will lead to decision by the individual about whether to use or not to use mass media content. Such characteristics may include: access; expectations and perception of media, content attributes and communicator (source) attributes. For Windahl (1979), the mere act of using may be described in terms of: amount of content used; relations to media used and way of using it (primary or secondary).

The relevance of this model to this study lies in the fact that the model dwells so much on use effect of media contents. Use here implies listening to, or viewing radio/television messages of any kind. In a broader sense, use also includes readership of print media contents i.e. newspapers, newsletters, posters, magazines, etc. The model also examines the outcomes (effects) of media use (Figure 1). Three possibilities of outcomes from media content and media use were therefore, identified. As represented in the diagramme below, effect may be influenced by content, by use or by both (Windahl, 1979).

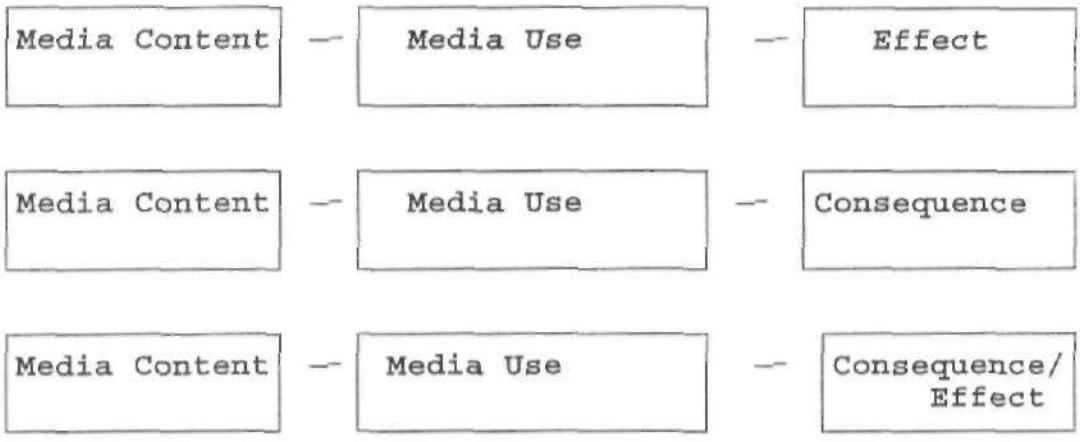


Figure 1: The "Uses-and-Effects" model of audience response to media content (Windahl, 1979).

Windahl's diagramatic sketch could be explained as follows:

1. The characteristics of media content determine most of the outcomes. Media use (exposure) is only an intervening factor. The outcome of such a process is labelled "effect".
2. In many cases, outcomes are more of a result of use (exposure), than of content. This could mainly be due to the fact that media use may exclude, prevent or reduce other activities. It may also have some psychological consequences such as dependence on specific media. When use is the main cause of outcome, such is labelled "consequence".
3. In other cases, outcomes may be partly determined by media content and partly by use itself. There are thus, two processes involved working simultaneously together causing a result called consequence-effect (conseffect).

Clearly, the "Uses-and-Effects" model attempts to provide a clear-cut explanation of mass communication outcomes. That is why this study considers the model to be most relevant, as

reflected in subsequent chapters.

Also within the same framework, Moemeka (1991) outlines the five principles f that underline the system of traditional communication in rural Africa. It is widely held that no communication strategy is likely to succeed in rural Africa (including rural Nigeria) unless it takes into account the five basic principles outlined by Moemeka. These are: (a) supremacy of the community, (b) respect for old age, (c) utility of the individual, (d) sanctity of authority, and (e) religion as a way of life.

Figure 2 presents a conceptual framework of all the *interrelationships among study variables. The framework* consist of three columns. Column one represents all the independent variables: age, sex, family size, farm income level, non-farm income level, farm size, formal educational level, informal educational level and years of access to radio and, or television receiver. These variables were assumed to be capable of influencing changes among the dependent variables.

Column two represents the dependent variables which are choice of broadcast channels (stations/programmes) and frequency of using broadcast channels. The column also includes other likely intervening variables like interpersonal, print media and other non-broadcast media channels. The dependent variables are considered to be responsible for the effects of broadcast messages. It means choice of channels and frequency of using the channels determines the mode of response by listeners (viewers), to the

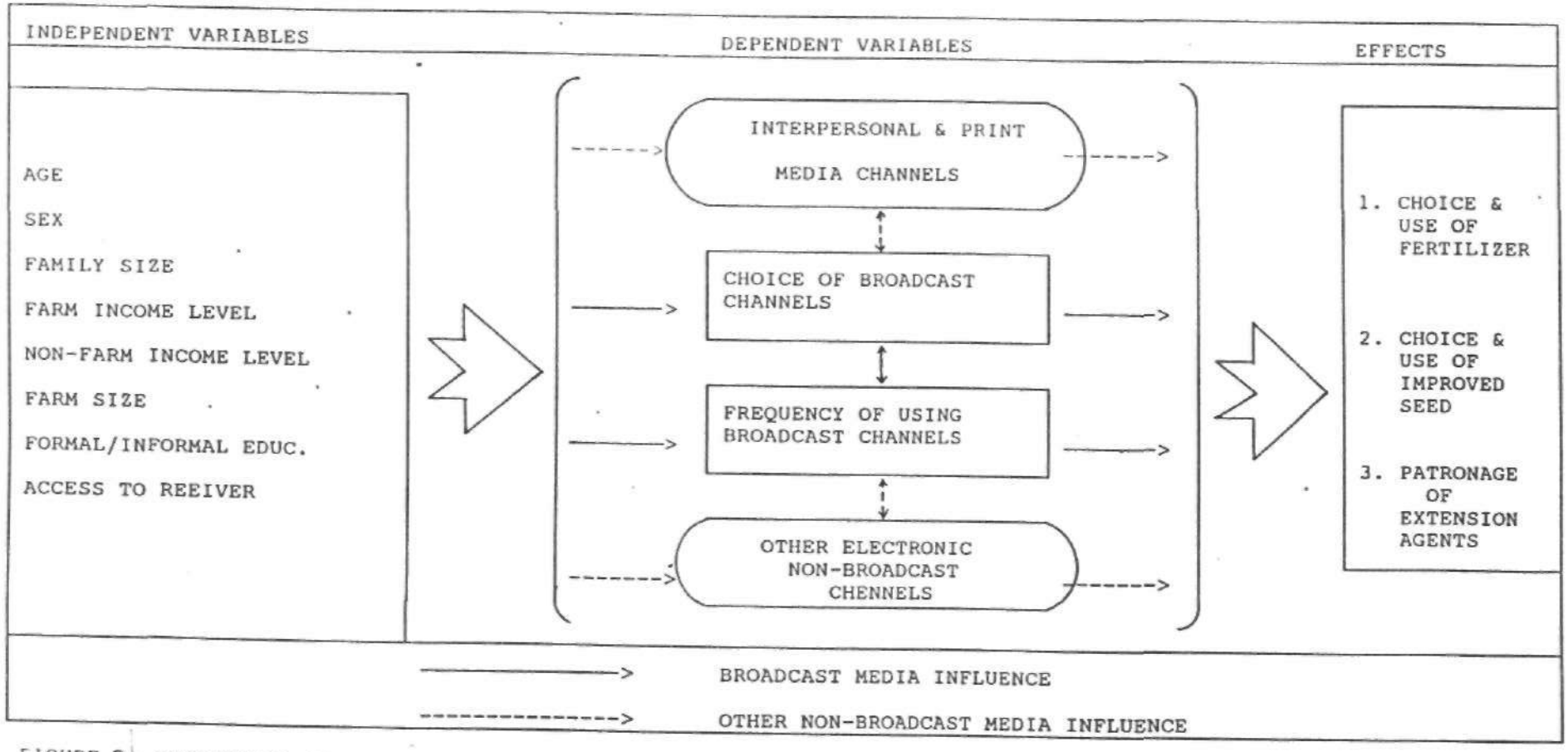


FIGURE 2: CONCEPTUAL FRAMEWORK

agricultural broadcast messages.

Column three consists of choice and use of fertilizers or improved seeds and patronage of extension agents. These are three common goals of broadcast messages which any devoted listener could get attracted to. So, it was conceived that changes in the independent variables could influence changes in the dependent variables and will in turn determine the effects or mode of response to such messages. For instance, farm income level may likely influence the farmers choice and frequency of using radio and television to the extent that it will determine if broadcast messages about fertilizer, seeds and extension services are patronized by the farmers on the bases of their exposure to the radio or television messages about them.

2.4 HYPOTHESES

In conformity with the above theoretical framework, the following empirical propositions were subjected to a test :

1. "A great deal of farmers' times are spent on agricultural broadcasting because of their interest in the programmes".
2. Effectiveness of agricultural broadcasting is related to the specified farmers' socio-economic characteristics (e.g. age, sex, family size, farm income level, non-farm income, farm size, formal/informal education and access to receiver (set).

CHAPTER THREE

3.0 METHODOLOGY

This section presents the methodology comprising the research setting, target population, sampling frame, sample size, methods of data collection, data analysis and presentation.

3.1 The Setting: This study is carried out in Kaduna State for obvious reasons. First, a similar study has not taken place in the State in the recent past. Secondly, the researcher has been in the State for quite some time. His personal observations could be very relevant to the study. Thirdly, the State is blessed with active farming communities of both rural and semi-urban backgrounds. Fourthly, there is sufficient reach of broadcast signals throughout the State and fifthly, nearness of target farmers to Samaru will afford the researcher the opportunity to save costs and time for travelling long distances.

Kaduna State has a land area of about 45,567 square kilometres. It has a population of 3,969,252 (NPC,1992) inhabitants, about half of which are women.

Geographically, the State is located between latitude 9°N and 12°N and longitude 6°E and 9°E (Figure 3 & 4). The climate is tropical continental with annual rainfall of between 100 and 150 centilitres. There are between 4 and 6 dry months in a year. Relative humidity stands at between 20 percent and 40 percent in January, and 80 percent in July. Mean annual temperature varies between 20°C and 27°C. Kaduna State falls within the Guinea savanna agro-ecological zone. The soil is mostly sandy loam in texture.

Inhabitants of the State are predominantly farmers, cattle rearers, traders, or public servants. The main crops grown in the State include sorghum, maize, millet, cotton, rice, sugar cane, ginger, tomatoes, pepper, yams, and vegetables. Livestocks like goats, cattle, sheep, donkeys, and poultry are also reared in the state.

The main ethnic groups include Hausa, Fulani, Kaje, Gwari, plus several other smaller ethnic groups scattered in the rural areas, as well as settler communities in urban and semi urban areas.

The State capital is Kaduna bounded by Zaria City in the North, Saminaka town in the East, Kafanchan town in the South and Birnin Gwari town in the West. There are a total of 18 Local Government areas in the State of which Makarfi and Sabon Gari are two.

Agricultural problems of the State have been identified by Atala and Tarfa (1991) as: Lack of adequate modern farming implements; lack of adequate credit facilities; lack of cheap labour; poor distribution and high costs of basic inputs; unstable market prices, transportation and storage problems; and incessant pests and disease outbreaks.

3.2 **Target Population**

This study was carried out at Makarfi and Sabon Gari Local Government Areas. Both areas are located in the Northern part of Kaduna State. (Figure 3).

MAKARFI: This is predominantly an agricultural rural area with large concentration of active farmers, whose main mass medium is radio, and to a lesser extent, television.

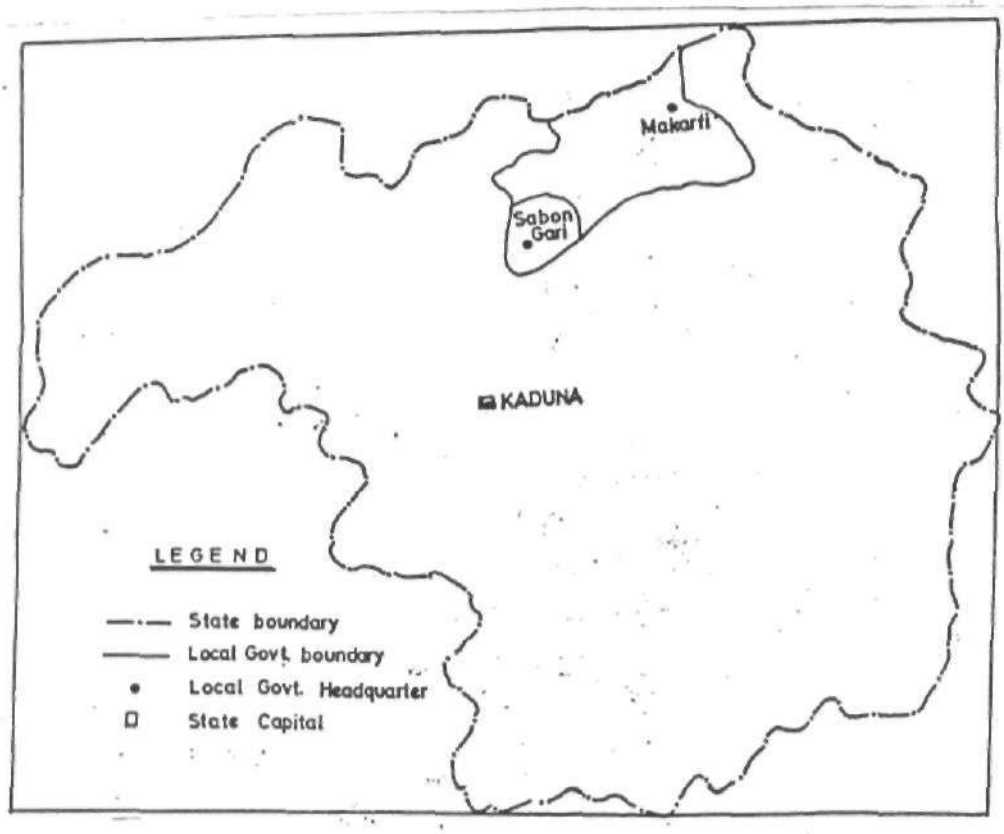


Figure 3 Map of Kaduna State showing the study area

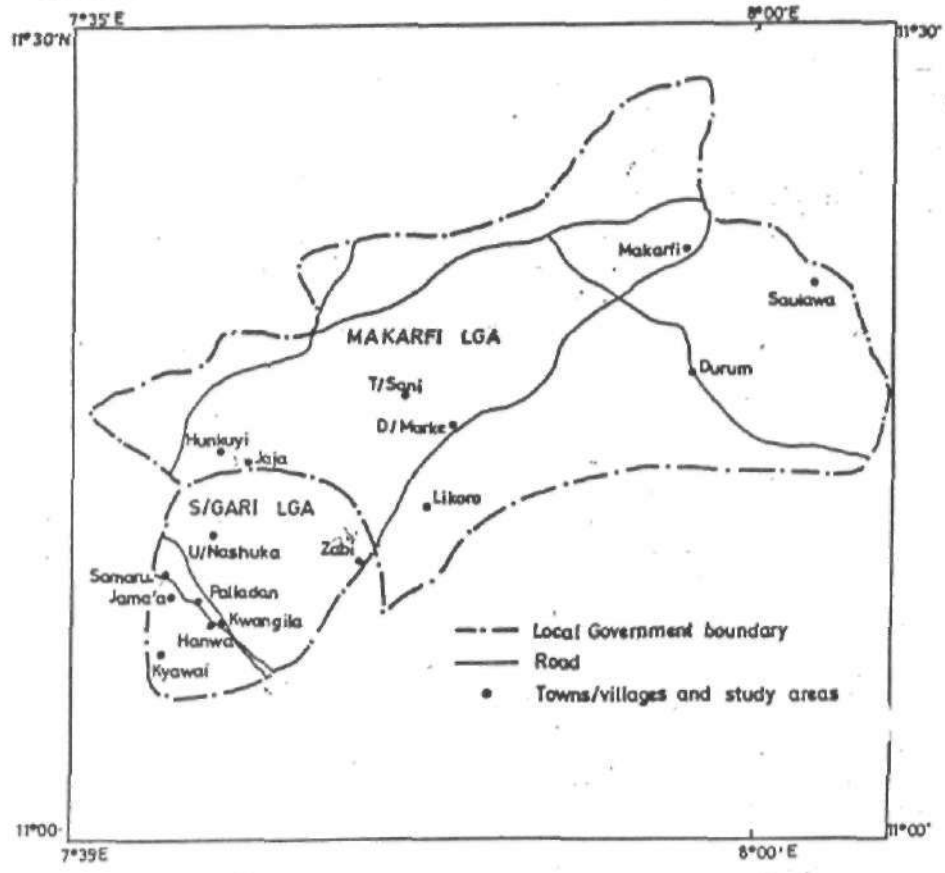


Figure 4 Map of Makarfi and Sabon Gari local governments showing the study sites.

Most of the farmers in the area are full-time farmers. Crops grown include maize, sorghum, millet, coco-yam, cowpea, rice, pepper, onions, tomato, carrots, cabbage, soyabean and sugarcane. Apart from farming, other occupations of the people include: local (brown) sugar processing, black-smithing, cattle grazing, leather works, barbing, praise singing, tailoring, petty trading, butchering, hunting and gathering, radio/watch/motor servicing and precious stones mining e.t.c.

Relatively few women are actively involved in intensive farming. Most women are housewives engaged in housekeeping, hair plaiting, weaving, cooking, petty trading and traditional medicine practices.

Presently, all the towns in the area do not enjoy electricity supply except Makarfi, Kudan and Hunkuyi township which receives power supply from the national grid in 1995/1996. However, despite this limitation, broadcast media messages are received by farmers in the area through transistor radio sets. Television programmes are occasionally watched at the various viewing centres. There are about 25 television viewing centres in the area. The viewing centres were set-up by the local Government with the aim of affording the populace the opportunity to enjoy television programmes. But most of these viewing centres no longer open due to economic and political reasons.

There are several radio Stations with good reception in the Local Government Area. These include: The Federal Radio Corporation of Nigeria (FRCN), Kaduna; Kaduna State Media

Corporation (KSMC), Kaduna; Voice of America (VOA), Washington D.C.; Voice of Nigeria (VON), Lagos; Radio Kano and Katsina State Radio, Radio Plateau, Radio Abuja, Radio Minna and Rima Radio, Sokoto.

Nigerian Television Authority (NTA), Kaduna is the major Television Station being received in the area at the moment. Although, there are reports of occasional reception of NTA Kano's Signals in some village areas. Others include NTA Katsina, NTA Jos and City Television (CTV) Kano.

There are two (2) Districts in Makarfi Local Government Area. These are: Makarfi District with eighteen (18) village areas and Kudan District with fourteen (14) village areas. The approximate land area is about 40 sq. kilometres inhabited by Hausa, Fulani and Maguzawa tribes mainly. The 1991 population of the area comprised of 107,236 males and 104,010 females (Citizen, 1992).

SABON GARI: This is a complex setting equally suitable for this study. The local government is also chosen because of its semi-urban population with high potential of Television and Radio audiences which comprise inhabitants of Sabon-Gari township, Zaria G.R.A., A.B.U., Main Campus and neighbouring villages.

In this Local Government Area, one finds active educated backyard farmers as well as the peasant farmers who are engaged in mixed farming, subsistence farming or commercial farming practices.

The use of mass media is higher here compared to Makarfi. This is due to abundance of electric power and urbanisation.

Nearly every household has radio set, television set or both. So also, newspaper and magazine use is higher due to high concentration of literate audience (Table 4).

Crops grown in the area include maize, sugarcane, sorghum, millet, cowpea, soyabean, groundnuts, sweet potatoes, rice, cotton, vegetables, mango, orange, grapes, tobacco, guava and bananas/plantains, e.t.c. Animals produced in the area include cattle, sheep, goats, poultry production, e.t.c.

In Sabon Gari Local Government Area, manpower could be categorised into three: Peasant and large scale farmers; Business men and Traders; Civil Servants, Employees and Company workers. Other occupations include fisheries, dairies, transporting e.t.c. (S/Gari L.G., 1994).

Sabon Gari area has been traditionally referred to as the centre for Western education in Zazzau Emirate Council. One finds quite an active women's population that is engaged in all sorts of income-generating activities. Notable among these are seasonal maize roasting, poultry management, petty trading, backyard farming, grapevine production, tomatoes/pepper milling and so on.

The major broadcast media used in Makarfi Local Government Area are the same as those of Sabon Gari Area. The difference is only in Television audience where more Television viewers are found than in Makarfi.

The inhabitants of the approximately 600 square kilometres Area, include Hausa, Fulani, Ibo, Yoruba, Bajju, Kataf, Tangale, Birom, Benin and Calabar speaking people. There are two Districts in the Local Gvoernment: Sabon Gari

District, comprising 14 village areas and Bassawa District comprising 6 village areas. In all, there are 113, 415 males and 99,256 females in the Area,(NPC 1992).

3.3 **SAMPLING FRAME**

The objects of sampling in this studyincluded places, people, episodes, broadcast stations and broadcast programmes as described below:

Places: The study was conducted in four Districts within the two Local Government Areas namely, Makarfi, Kudan, Sabon Gari and Bassawa Districts. Respondents were drawn from rural and semi-urban settlements only. Sampled villages for Makarfi were: Makarfi, Saulawa, Tashar Sani, Dan Marke, Durum, Likoro, Jaja and Hankuyi where the Sabon Gari villages were: Hanwa, Zabi, Kwangila, Unguar Nashuka, Palladan, Kyawai, Samaru and Jama'a. (Figure 4).

People: The study mainly focussed on active adult growers of food/cash crops and livestock who are small-or large-scale operators and makers of management decisions about their farming activities.

Episodes: For the purpose of measuring effectiveness of broadcasting, the study was restricted to three farmer-delight episodes namely, use or patronage of extension agents; wise choice of fertilizers for different crops; taking due advantages of improved seeds in terms of desire and motivations.

Broadcast Stations: For convenience sake, the study was based on two radio stations and one television station mainly because of their reception level in the area. The two radio

stations are FRCN, Kaduna and KSMC, Kaduna, while the NTA, Kaduna was the main television station studied. However, less important stations with some reception in the areas were considered for convenience sake. This include Kano radio, Katsina radio and NTA Kano.

Radio and Television Programmes: For this study, focus was made on seven regular programmes that were identified as follows:-

1. "Noma Yanke Talauci" (weekly NAERLS/NTA, Kaduna),
2. "Mukoma Gona" (weekly NAERLS/FRCN, Kaduna),
3. "Nome Karkara Magajin Garba" (weekly NAERLS/FRCN,) Kaduna,
4. "Kartau Sarkin noma" (weekly KTARDA/FRCN Radio),
5. "Jagorar Manoma" (weekly JARDA FRCN Radio),
6. "Noman Zamani (Weekly NAERLS/KSMC Radio) and
7. "Food Basket" (Weekly NTA network)

3.4 SAMPLING AND SAMPLE SIZE

The sampling procedure adopted was that each of the two Local Government Areas (Makarfi and Sabon Gari) was divided into its respective two districts from which the Sample was drawn, and all the sixty four villages in the four districts were allocated numbers from which the Sample of 16 villages were representatively drawn.

As for Sampling the individual households, the purposive sampling method was used. This was done in accordance with miller's (1975) Model. Consequently, 50 respondents were purposively drawn from each of the two Local Government Areas giving a sample size of 100. All questionnaires were filled

and returned, through the help of trained IAR enumerators. The enumerators wrote down the responses to each question on the interview schedule.

3.5 MEASUREMENT OF INDEPENDENT AND DEPENDENT VARIABLES

The dependent and independent variables were measured as follows.

3.5.1 Independent Variables

AGE: Age was measured by the number of years since birth given by the respondent at the time of study.

SEX: This was the sex (male or female) of respondent given by him/her at the time of study.

FAMILY SIZE: This variable was measured by adding the number of wives, children and dependents/relatives actually living with the respondent in his household at the time of investigation. Total number of persons in the household constituted the family size.

FARM INCOME LEVEL: Farm income level was determined by respondent's naming of the crops he grows and the estimated amount of money he usually earns from the sale of each crop.

These amounts were summed up to give respondent's farm income score, as well as his net farm income.

NON-FARM INCOME: This was determined by totalling respondent's other income sources for the year, e.g. salary per annum.

FARM SIZE: Farm size was determined by the number of hectares of land being cultivated by the farmer at the time of investigation.

FORMAL/INFORMAL EDUCATION: The formal educational level

of a respondent meant the number of years he/she spent in primary, secondary and post-secondary school. The informal education level of a respondent, meant the number of years he/she spent in Quranic school, Adult education classes or others (as specified).

ACCESS TO RECEIVER: Access to receiver was measured by the respondent's indication of whether he/she uses a radio set, television set or both. The receiver could be his own, his neighbour's own or hired from someone else.

3.5.2 DEPENDENT VARIABLES

CHOICE OF MEDIUM: Choice of medium was measured by finding out the most favourite channel of each respondent as reported by the respondent.

USE OF MEDIUM: Use of medium was determined by respondent's indication of number of minutes/hours spent by him/her while listening to radio or watching television programmes on agriculture daily, weekly, monthly quarterly or yearly.

EFFECTIVENESS OF USE: For this aspect, effectiveness refers to level of influence which use of radio/television agricultural programmes had on respondent. The following three farmer-delight episodes, which are common subjects for most agricultural broadcast were considered as instruments:-

1. patronage of extension agents
2. wise choice (as per recommendation) of fertilizers per crop.
3. taking advantages of (eagerness for) improved seeds.

These were measured by considering the reported

knowledge contributions of broadcasting on a specified basis as indicated by respondents at the time of study.

3.5.3 INTERVENING VARIABLES:

Variables that presumably, could likely influence the dependent variables just like the independent variables were identified for convenience sake. Care was taken to isolate all intervening variables in the course of data gathering and analysis. Indentified most likely intervening variables in this study were:

Interpersonal channels (extension agents, neighbours and friends)

Ugboajah (1979), recommends that the media can be more effective when combined with inter-personal channels or with traditional media. Also, Atala (1984) reported that interpersonal channels play a significant role in the adoption of modern agricultural innovations by farmers in Maigana and Gimba areas of Kaduna State.

Print Media (Use):

Salau (1992) reports that print media of newspapers and magazines have little impact on rural farmers due to poor coverage of agricultural matters by the print media at that time. However, posters, hand bills, leaflets and guides, usually distributed to farmers by ADPs, could be effective, or complementary. However, distribution of hand bills, etc. by ADPs to farmers had been de-emphasized due to poor funding.

Other Electronic Non-broadcast Media:

Electronic non-broadcast media channels like video, cinema, audio, tapes, etc. can be effective means of acquiring agricultural innovations. However, few farmers are accessible

to them nowadays, due to current high cost of electronics and poor extension services by government agencies. It is generally assumed that respondents shall always distinguish information obtained from Radio and TV, as against those from other sources.

3.6 DATA ANALYSIS

For this study, the major statistical tools have been: Correlation analysis: for objectives 1, 2 and 3, an attempt was made to establish the existance of relationship between the socio-economic variables and effectiveness of agricultural broadcasting channels. The pearson's Correlation Coefficient Model was used as instructed by Miller (1975). And for objectives 1, 2 and 3, attempts were made to compare and contrast the different variables of study using simple summary statistical tools i.e. percentages, mean, standard deviation, etc. This was done in accordance to Spiegel (1972).

Furthermore, for objectives 2 and 3, the Chi-squared test method was used in order to adequately test the existence or non-existence of relationship among dichotomous variables such as age, income, years of farming experience etc. in line with Miller (1975).

CHAPTER FOUR

4.0 FINDINGS AND DISCUSSIONS

This chapter contains the presentation and discussion of the research findings,based on the specified study objectives.

4.1 Socio-Economic Characteristics of the Respondents

Table 1 presents a summary of salient socio-economic attributes of the target farmers in the study area.

Table 1: Distribution of the farmers according to selected demographic characteristics.

VARIABLES	MEAN	MIN	MAX	SE	CV
AGE	40	24	72	9	.2
FAMILY SIZE	8	1	35	11	1.4
FARM SIZE (HA)	4.5	1	15	7	1.6
AMOUNT INVESTED (N)	20,000	600	109,000	47,000	2.4
AMOUNT EARNED (N)	41,000	2,500	248,300	46,000	1.1
NON-FARM INCOME (N)	18,000	100	180,000	26,000	1.4
FARMING EXPERIENCE (YRS)	21	1	70	12	.6
FORMAL EDUCATION (YRS)	6	0	20	7	1.2
INFORMAL EDUCATION (YRS)	19	0	70	14	.7
USE OF RADIO (RS)	5	1	10	9	.2
USE OF TV (YRS)	2	1	10	2	1

Source: Field Survey n = 100

From the sample of 100 farmers drawn among 16 randomly selected villages, in the four districts of study, it was found that the average age of all the farmers was 40 years. Their average farm sizes were 4.5 hectares. The average years of formal education was 19, which meant more farmers were educated informally than formally. This was so because there has been a general negative attitude to western education among rural communities in the northern part of the country.

In terms of number of years of tuning to agricultural broadcast programmes, the farmers on the average, had about 5 years tuning to agricultural radio programmes regularly as against the average of 2 years of tuning to television for agricultural programmes. This meant that use of the radio channel for agricultural programming was more pronounced among the farmers, in terms of average years of tuning, than use of the television channel for the same purpose.

As for the amount of money invested in farming and amount earned, the average amount invested (N20,000) was significantly lower than the average amount earned (N41,000), which clearly indicates that most of the respondents enjoyed the doubling level of profit on investment in farming. In other words, there was a relatively good returns margin for an average farmer.

4.2 Agricultural Broadcast Stations and Frequency of Use by Farmers

Several agricultural broadcast media were identified in the study area. The air timing and scheduling of agricultural broadcasts differ from one station to another. The frequency or degree of use also varied from one farmer to another and from one locality to another. The findings of the study on agricultural broadcast station and use are presented in tables 2 to 5.

Table 2: Percentage distribution of the farmers according to use of agricultural broadcast stations.

STATION	USING	
	NO.	%
RADIO		
FRCN Kaduna	98	24
KSMC RADIO	79	19
KANO RADIO	74	18
KATSINA RADIO	25	6
OTHERS	64	16
TELEVISION		
NTA KADUNA	52	13
NTA KANO	5	1
OTHERS	12	3
TOTAL	409	100

Source: Field Survey n = 100

A total of 8 radio Stations and 5 television stations with agricultural broadcast schedules were found accessible to the respondents. These radio stations, arranged in descending order of importance by relative frequency (%), in terms of patronage level include; Federal Radio Corporation of Nigeria (FRCN) Kaduna (24%), Kaduna State Media Corporation (KSMC) Radio Kaduna/Zaria (19%), Kano State Radio (18%), Katsina State Radio (6%), Plateau State Radio, Niger State Radio, Abuja radio and Rima Radio of Sokoto State (16%).

The five television Stations, also arranged in order of their patronage importance, were: Nigerian Television Authority (NTA) Kaduna (13%), NTA Kano (1%), City Television (CTV) Kano and NTA Jos (3%).

FRCN Kaduna, the station with a multiplicity of

agricultural programmes, was the most popular (24%) agricultural broadcast radio station. Its popularity is reportedly a result of the fact that it has been one of the most powerful local radio stations in west Africa and the station pioneered the airing of agricultural radio programmes in Hausa language. KSMC radio was the second most popular agricultural radio station. A relative frequency (percentage) distribution showed that Nineteen percent (19%) of respondents said they tune KSMC agricultural programmes regularly. Most of those who do not listen to the Stations' programmes maintained that the programmes have been very unstable, either they were frequently replaced or relocated to other times on quarterly basis without proper notice. However, regular listeners confirmed that the agricultural programmes were interesting and quite educative.

Kano Radio enjoys a wide patronage (18%) among the target farmers. Most respondents believed that agricultural programmes of Kano State Radio have been quite educative, but poor reception has remained a problem. Perhaps, the poor reception could be due to the small capacity of the Station's transmitters, compared to that of FRCN Kaduna or KSMC radio. Proximity of the Station from its Kaduna State audience (over 200km) was also an important factor for poor reception.

Katsina radio was observed to be scantily (6%) patronized. This was due to poor reception mainly, and the relative newness of the sation. A great majority (94%) of the respondents said they never tuned to the Katsina radio for any form of agricultural knowledge.

Interestingly, 16% of the farmers said they enjoyed several other agricultural radio programmes from other Radio Stations outside Kaduna State. These stations were identified as Radio Plateau, Radio Minna, Radio Abuja and Rima Radio. Collectively, these stations reached 16% of the farmers with ample agricultural information, considered to be quite significant in promoting their awareness level.

In terms of agricultural television signals, 13% of the respondents tuned to NTA Kaduna's agricultural programmes regularly. They believed that the NTA Kaduna's agricultural broadcasts were quite educative and useful. Many (87%) indicated that they never had any form of agricultural knowledge from the Station.

A very negligable portion (1%) of the respondents reported ever tuning to NTA Kano's agricultural programmes regularly. Even these few said the reception had been poor. About 3% of them however, reported having enjoyed some agricultural television programmes from other Stations like NTA Katsina, NTA Jos, and City Television (CTV) Kano. There was general complaint of poor reception from the three stations. It was also found that even the most used television channel (NTA Kaduna), its regular agricultural programmes, "Noma Yanke Talauci" and "Food Basket", were never repeated within the week. So, most of the farmers only tuned to them when they were available at the regular periods of airing, otherwise the opportunity of repeat broadcast was not there.

This could be translated to mean that the agricultural radio broadcast media are more popular in terms of air timing

scheduling and use, than the agricultural television broadcast media within the target areas. This finding conforms to the earlier findings made by Yazidu (1973) Matanmi (1989) and Ansah (1991), in which they found the radio to be the most accessible electronic mass medium for the peasant farmers.

A Pearson's correlation coefficient test of socio-economic variables of the farmers, as they relate to the use of four regular farm broadcast programmes was conducted (Table 3). The four programmes were "Nome Karkara Magajin Garba", (Once and a repeat broadcast per week on FRCN, Kaduna), "Kartau Sarkin Noma" (Once and a repeat broadcast per week on FRCN Kaduna), "Noma Yanke Talauci (Once and for all per week, on NTA Kaduna) "Food Basket" (Once and for all per week, on NTA Network).

It was found that there was a negative but significant correlation between years of formal education and tuning to agricultural television, (-.40 for B and -.42 for D) at 0.01 level of significance. In this case, farmers with more years of formal education, tended to be least attracted to agricultural television programmes, suggesting that agricultural television messages have little or no effect on the more formally educated. A possible reason being the relative few number of actual regular television viewers among the respondents. On the other hand, farmers with informal education significantly, positively correlate with tuning to agricultural television programmes (.34 for B and .35 for D).

Table 3: Pearson's correlation coefficient of selected variables and broadcast programmes

VARIABLE	A	B	C	D
AGE	.28**	.06	.29**	.08
FAMILY SIZE	-.07	-.00	.07	.01
FORMAL EDUCATION (YRS)	.00	-.40**	.04	-.42**
INFORMAL EDUCATION (YRS)	.07	.34**	-.18	.35**
FARM SIZE (Ha)	.19*	-.07	.30**	-.07
NET FARM INCOME(N)	-.05	-.03	.01	-.03
NON-FARM INCOME (N)	-.07	-.16	.002	-.20

A = NOMA KARKARA (RADIO) n = 100
B = NOMA YANKE TALAUCI (TV)
C = KARTAU SARKIN NOMA (RADIO)
D = FOOD BASKET (TV)
* = Significant at 0.05 level
** = Significant at 0.01 level
(N) = Naira

The relationship was significant at the 0.01 level. Thus, informally educated farmers seemed to be more exposed to agricultural television messages than the formally educated farmers. It could therefore, be rightly said that the informally educated farmers are more likely to be influenced by agricultural television programmes than the formally educated ones among them. This does not necessarily mean formally educated ones do not tune to television with the aim of increasing their agricultural knowledge and skills compared to the informally educated farmers. Note that there are more informally educated ones than the formally educated, and agricultural television broadcasts lack merit in the study area, because of its once-and-for-all programming pattern.

There was however, statistically insignificant correlation, at 0.05 and 0.01 levels, between family size, net

farm income and all the radio and television programmes. In this case, there is no basis to suggest that use of broadcast message has any direct bearing with either the family size of a farmer nor his net-farm income. This was a direct indication of the fact that those with small or large families share equal experiences in terms of exposure to broadcast messages about farming. Also, there are other more important determining factors of net-farm incomes than broadcast messages, ie., inputs, land, labour, capital, e.t.c.

There was a significantly negative correlation (-.20) between non-farm income and tuning to the regular English Language Network programme, food basket. Since majority of the resondents were informally educated (table 1), very few could be attracted to an English Language programme. This explains the negative correlation here. The programme (Food Basket) had reportedly been a major relief to non-hausa speaking farmers as nearly, all other radio and television agricultural broadcasts were in hausa language. Food Basket was introduced by NTA as a documentary film on the profile of Nigeria's agricultural technology development. It was usually aired on Fridays, at the time of study.

Table 4 presents a chi-squared test of significance between frequency of tuning to all the regular agricultural programmes and home location of the respondents. In this study, each respondent is either rural-based (Makarfi) or sub-urban based (Sabon Gari).

Table 4: Chi-Squared test of significance between frequency of tuning to agricultural broadcasting and home location

TUNING FREQUENCY	RADIO		TV	
	MAKARFI	S/GARI	MAKARFI	S/GARI
NEVER	1.0	1.0	25.0	18.0
SEASONALLY	2.0	2.0	33.0	12.0
MONTHLY	2.0	1.0*	4.0	4.0
WEEKLY	26.0*	19.0*	4.0	22.0*
TWICE WEEKLY	20.0*	21.0	6.0	24.0*
DAILY	6.0	3.0	3.0	8.0

X^2 = 6.42 DF = 4 X^2 = 19.27,
* Significant at 0.01 level.

The findings showed that the radio medium is more frequently tuned to, in Makarfi area than the television medium. Obviously, reasons being absence of electricity power supply in Makarfi township and environs at the time of study.

On the other hand both radio and television media appeared to be quite popular in Sabon Gari areas (Table 4). The findings further showed that Makarfi farmers were more frequent on agricultural television programmes (33.0) during some periods of the year than other periods. This suggests that Makarfi farmers are attracted to agricultural television programmes mainly during lesser farming season, when they are less busy and could afford to occasionally travel to Zaria where they could watch such programmes more often. Consequently, the effect of television on awareness could be very minimal as opposed to that of radio. This finding agreed with the findings made earlier by Aladekomo (1984) and

Table 5: Chi-squared test of significance between frequency of tuning to agricultural broadcasting and farm size

TUNING FREQUENCY	FARM SIZE(ha) Small	Medium	Large
NONE	00	00	00
SEASONALLY	2.86	1.43	1.43
MONTHLY	0.00	0.00	1.43
WEEKLY	8.57	24.29*	7.14
TWICE WEEKLY	7.14	24.29*	4.29
DAILY	1.43	5.71	1.43

X^2 = 17.495 DF = 16

* = Significant at 0.05 level.

and Oso (1992), both of which held that rural dwellers in Nigeria were scantily reached by valuable television messages. A chi-squared test of significance between farmer's frequency of tuning to four regular agricultural broadcast media (programmes) and their farm sizes is presented in table 5.

All the respondents were classified into three: small-scale (4 ha or less), medium-scale (5-14ha) and large-scale (15 or more ha) farmers. The results showed that medium scale farmers were significantly attracted to the programmes on a weekly (24.29) and twice weekly (24.29) basis, at 0.05 level. This translates that medium scale farmers are the most accessible receivers of agricultural broadcast messages, within the two Local Government Areas of study. The statistical relationship between tuning to agricultural programmes and medium-scale farmers may be explained in terms of a great majority of the farmers felled within this category. Moreover, knowledge gained by this active group of farmers could be easily disseminated to the other farmers by means of face-to-face interaction in accordance with the two-step model of mass communication, which proposes that the

best media message consumers are always the opinion leaders (Bittner, 1980).

4.3 Relationship Between Socio-economic Characteristics of Farmers and Effectiveness of Agricultural Broadcast Media

This study found significant relationship between the socio-economic characteristics of farmers and the effectiveness of agricultural broadcast media in the target area of study, at 0.05 and 0.01 levels of significance. For our purpose, effectiveness was represented by possible indications of the full or partial achievements of agricultural broadcast objectives. Thus, the effectiveness of the broadcast media was assessed by the farmers report of broadcast media influence on their perception on the patronage of extension agents, wise choice of chemical fertilizers per crop and knowledge of improved seed technology. The study also sought to establish if their perceptions, as influenced by the media, led to the use of knowledge gained from agricultural broadcast media.

4.3.1: Broadcast media use and socio-economic characteristic

There was a positively significant correlation (.25) between age of respondents and their farm sizes at the 0.01 level of significance (Table 6). It means younger farmers tended to have fewer hectarage of farm sizes than older farmers and vice versa. This was very true as elders in hausaland had been known to enjoy a monopoly of kinship land rights (gandu), since all land rights were customarily shared to the youths by their fathers as they grow. This was supported by the earlier findings of Opio-Odougo (1983).

In this study, there was a significantly positive correlation (.14) between years of tuning to agricultural radio programmes and farm size at 0.01 level. This means that farmers more agricultural investments tended to have longer years of interest (patronage) in agricultural radio broadcast messages than those with lesser investments. Accordingly, Bogunjoko (1983) found that there was statistically significant correlation between farmers' socio-economic characteristics such as age, number of years of farming, net annual farm income and the use of radio as a source of information.

However, there was no significant correlation between years of tuning to agricultural television programmes and farm size. This could be due to the low level of agricultural television reception by therespondents as shown in tables 1 and 3. But there was a significantly negative correlation (-.27) between years of informal education and years of tuning to agricultural television programmes, at 0.01 level. It meant farmers with fewer years of informal education tended to be least attracted to agricultural television broadcast messages than otherwise. This was true in the sense that the television is most suitable for the literate (English) by its emphasis on English programmes and dual sensory appeal. Hence, there was statistically significant positive correlation (.44) between years of formal education and years of tuning to agricultural television broadcast channels.

4.3.2: Age of respondents and impact of agricultural broadcasting

A significance test of the derived benefits of

agricultural broadcasting and age of respondents is summarised and presented in table 7. Both radio and television audience were classified into 3 according to the age bracket of each; Youth (25 or less), Meddle aged (26-55) and Elderly (56 and above). This was in accordance with the age dependency ratio of FAO (1992). It was found that there was a general insignificant but positive relationship between age and derived benefits of agricultural broadcast messages. There was however, a significant positive score (22.45) for farmers who found radio to be often beneficial among the middle aged respondents. Generally, for both radio and television programmes, the youth and middle aged farmers tended to be insignificantly, but positively more convinced about the derived benefits of the programmes, than the elderly ones. Perhaps, this has to do with the usual slow response of the older aged farmers. It may also be unconnected to the high cost of inputs factor, in which most subsistence farmers lost interest in media recommended packages because of high cost of recommended inputs such as herbicides, pesticides e.t.c.

4.3.3: Net farm income and impact of agricultural broadcasting

A test of significance between the derived benefits of agricultural broadcasting and net farm incomes of respondents is presented in Table 8. Both radio and television audience were categorized in terms of their net farm earnings: low earners (₦11,000 or less), medium earners (₦12,000 - 50,000) and high earners (₦51,000 and above).

Table 6: Correlation matrix of the nature and degree of relationship between farmers' socio- economic characteristics and agricultural broadcast media

VARIANCE	1	2	3	4	5	6	7	8	9	10
1. SEX	1									
2. AGE	-.33	1								
3. FAMILY SIZE	.10	.17	1							
4. FARM SIZE (HA)	-.01	.25**	.02	1						
5. NET FARM INCOME (N)	-.09	.28**	.02	.63**	1					
6. NON FARM INCOME (N)	.00	.13	.03	.19*	.20*	1				
7. FORMAL EDUCATION (YRS)	.29**	-.34**	-.20*	-.06	-.16	-.06	1			
8. INFORMAL EDUCATION (YRS)	-.28*	.22*	.21*	.06*	-.05	-.06	-.42**	1		
9. USE OF RADIO (YRS)	.03	-.12	.03	.14**	.03	.14	.08	.06	1	
10.USE OF TV (YRS)	.07	-.04	-.11	.06	-.08	.06	.44*	.27**	12	1

* Significant at 0.05 level

n = 100

** Significant at 0.01 level.

In all, results showed that there was no significant relationship between net farm income and derived benefits of any agricultural broadcast programmes. It was noted however that all the three categories of farmers scored highly towards the "often beneficial" probe during the interview.

Table 7: Chi-squared test of significance between derived benefits of agricultural broadcasting and age of respondents

PERCEIVED BENEFIT	RADIO			TV		
	Y	M	E	Y	M	E
NEVER	.00	2.04	1.02	12.24	8.16	2.04
RARELY	1.02	2.04	1.02	.00	1.02	2.04
OCCASIONALLY	4.08	6.12	2.04	2.04	3.06	.00
OFTEN	12.24	22.45*	.00	7.14	3.06	1.02
VERY OFTEN	8.16	2.04	1.02	4.08	2.04	.00
	X^2 = 22.95		DF = 16,		X^2 = 16.693,	

Y = **YOUTH** (25 or less)
M = **MIDDLE AGED** (26-55)
E = **ELDERLY** (56 and above)

* = Significant at 0.05% level.

Observedly too, no farmer among the low earners and higher earners said he never benefitted from the radio programmes, but quite a substantial number (Table 8) positively reported they never benefitted from agricultural television programmes. This cuts across all the three categories. This was a further indication of the predominance of the impact of agricultural radio programming over that of television programming, specific to the target farmers of this study.

Although there was no any significant relation between net farm income and perceived benefit of agricultural broadcasting, it was clear from the findings that the low

earners often benefited from agricultural radio programmes than the medium and high earners categories (15.31). This finding agrees with the findings of Williams and Williams (1971).

Table 8: Chi-Squared test of significance between perceived benefit of agric. broadcasting and net farm income of respondents

PERCEIVED BENEFIT	NET FARM INCOME					
	RADIO			TV		
	L	M	H	L	M	H
NEVER	0.00	3.06	0.00	15.31	16.33	11.22
RARELY	2.04	3.06	0.00	1.02	2.04	3.06
OCCASIONALLY	13.27	3.06	5.10	9.18	1.02	2.04
OFTEN	15.31	13.27	8.16	11.22	4.08	4.08
VERY OFTEN	11.22	2.04	10.20	5.10	3.06	3.01
	X^2 = 28.59		DF = 12,		X^2 = 17.298,	

L = LOW EARNERS (₦11,000.00 OR LESS)
M = MEDIUM EARNERS (₦12,000.00-N50,000.00)
H = HIGHER EARNERS (₦51,000.00 AND ABOVE)

4.3.4: Sex and impact of agricultural broadcasting

Most (96%) of the respondents were males while only a few (4%) were females. Figures obtained (Table 9) showed a very high proportion of male television audience (44.00) said they never benefitted from any agricultural television programmes, but there was a significant correlation between males who 'occasionally' (15.00) and 'often' (19.00) benefitted from the television programmes. In terms of radio audience, there was a significant relationship between male listeners who said they occasionally (25.00), often (37.00) and very often

(24.00) derived some benefits from the programmes, at 0.05 level of significance. One could therefore, reliably state that a significant positive association exist between sex and benefits of agricultural broadcasting in favour of male farmers. However, there was a very few number of female respondents involved, mainly due to the fact that most married women in the study area do not farm at all. This therefore, calls for a more thorough investigation of the sex variable, as it relates to perceived benefits of agricultural broadcasting, in areas where female farmers are in abundance.

Table 9: Chi-Squared test of significance between perceived benefits of agricultural broadcasting and sex.

PERCEIVED BENEFIT	RADIO		TV	
	MALE	FEMALE	MALE	FEMALE
NEVER	3.0	.00	44.00*	.00
RARELY	6.0	.00	8.00	.00
OCCASIONALLY	25.00*	1.00	15.00*	1.00
OFTEN	37.00*	2.00	19.00*	1.00
VERY OFTEN	24.00*	1.00	8.00	2.00
	X^2 = 3.24	DF = 8	X^2 =	9.39,

* = Significant at 0.05% level

4.3.5: Years of Tuning and Impact of Agricultural Broadcasting

Eight socio-economic variables were correlated to number of years of tuning to radio and television agricultural broadcasting and the derived knowledge of new innovations namely; fertilizer techniques and improved seed technology. The Pearson's correlation coefficient formula was used. Both

0.05 and 0.01 significance levels were considered.

It was found that there was no significant relationship between age, family size, net farm income and non-farm income on one hand, and the four variables: years of tuning radio (A), years of tuning television (B), knowledge of fertilizer (C), and knowledge of improved seed (D) (table 10), on the other. It meant that age, family size, net farm income and non-farm income variables cannot be used as basis for comparing the relationship between years of tuning to agricultural broadcasting and knowledge gained, by means of agricultural broadcasting.

There was a significant positive correlation between farm size and broadcast media induced knowledge of improved seed (.27), at 0.01 level, just as there was a positive and significant correlation at 0.01 level, of farm size and years of tuning to agricultural radio broadcasting (.37).

This means that the number of hectares owned by a farmer would determine the extent of his interest in improved seed technology, as propagated by the various radio programmes over the years. If this was so, then it is in order to state that people with large farm holdings were most likely to maintain long years of interest in agricultural radio programmes largely for their desire to acquire knowledge of improved seed technology.

While there was significant negative correlation (-.27) of formal education and years of tuning to agricultural radio programmes, at 0.01 level, there was very significant and positive correlation (.44) of informal education (years) and

years of tuning to agricultural radio programmes, at 0.01 level.

Table 10: Pearson's correlation coefficient test of selected variables (N = 100)

	YEARS OF TUNING		DERIVED KNOWLEDGE	
VARIABLE	A	B	C	D
AGE	-.12	-.04	.17	.00
FAMILY SIZE	.03	-.11	.14	-.06
FORMAL EDUCATION (YRS)	-.27**	.06	.16	.28**
INFORMAL EDUCATION (YRS)	.44**	.08	-.22*	-.27**
FARM SIZE (HA)	.37**	-.17	.02	.27**
NET FARM INCOME (N)	.03	-.08	-.05	-.06
NON FARM INCOME (N)	.14	.06	.08	.03

n = 100

A = YEARS OF TUNING AGRICULTURAL RADIO BROADCAST
B = YEARS OF TUNING AGRICULTURAL TV BROADCAST
C = KNOWLEDGE OF FERTILIZER INNOVATIONS
D = KNOWLEDGE OF IMPROVED SEEDS TECHNOLOGY
* = Significance at 0.05 level
** = Significance at 0.01 level

On the other hand, while there was significant positive correlation (.28) of years of formal education and knowledge of improved seeds at 0.01 level, there was significant negative correlation (-.22, -.27) of informal educational level (years) and knowledge gained of fertilizers and improved seeds, at 0.05 level of significance.

The significant negative correlation of years of formal education and years of tuning, may be attributed to the low level of formal education among the farmers. The significant positive correlation of informal education and years of tuning may be due to the high level of informal education among the

farmers. The significant positive correlation of years of formal education and improved seeds knowledge translates that those with formal education may be more interested in or exposed to improved seeds programmes than the informally educated ones. The significant negative correlation of informal education and knowledge gained of fertilizers and improved seeds, suggest that those with fewer years of informal education gained more knowledge of fertilizers and improved seeds than those with more years of informal education.

Note that farmers with more years of formal education tended to have fewer years of informal education than those with low formal education.

4.3.6: Knowledge of improved seed and impact of agricultural broadcasting

It was found that there was a sharp contrast between agricultural radio broadcast contribution to farmers' knowledge of improved seeds and contribution of agricultural television broadcasting. Table 11 presents a summary of relative frequency (percentage) distribution of the farmers according to perceived knowledge gained from agricultural broadcasting about improved seeds.

While 21% of respondents said they had gained from agricultural radio programmes on improved sorghum seeds technology, only 9% said they gained from similar television programmes. Reasons for this being the radio medium has more frequent and larger number of programmes than the television medium.

Table 11: Percentage distribution of farmers according to knowledge gained from agricultural broadcasting about improved seeds

CROP	RADIO		TV	
	NO	%	NO	%
SORGHUM	66	21	10	9
MAIZE	86	27	16	15
COWPEA	60	19	12	11
GROUNDNUT	61	20	22	20
MILLET	30	10	1	1
NONE	10	3	48	44
TOTAL	313	100	109	100

Source: Field Survey n = 100

Also, a large number of the population have no access to television programmes due to lack of rural electrification. This is why only 3% of respondents said they never benefitted from any radio programme on improved sorghum, maize, cowpea, groundnut and millet seed programmes, compared with 44% of the respondents who said they never benefitted from similar programmes on television (table 11).

4.3.7: Farmers' sources of new innovations about chemical fertilizer use

Table 12 contains a summary by relative frequency (percentage) of farmers' various sources of new knowledge about fertilizer technology. Six primary sources of information were presented to the respondents and they were requested to indicate the most important sources. None indicated that the newspapers had contributed to their knowledge about fertilizers technology. This conforms to the

findings of Salau (1992) in which print media contribution to agricultural information was reportedly very negligible. Eight percent of the farmers said 'yes' to television. Thirty three percent said 'yes' to radio. Both friends/neighbours (28%) and Extension agents (30%) contributed highly, more than television (8%). This was supported by the findings of Matanmi (1987) where farmers of Gusau area in Sokoto State, reported radio as the most used source of information.

4.3.8: Farmers' perception of three common extension messages and impact of agricultural broadcasting

Influence of agricultural broadcasting on farmers' perception about the value of extension workers, wise choice of fertilizers and advantages of improved seeds were examined. Most (90%) respondents disagreed with the statement : "Radio/television messages teach that there is no need to contact extension agents frequently". While 96% agreed with the statement: "Radio/television messages teach that wise choice of chemical fertilizers per crop is necessary".

Table 12: Farmers' various sources of knowledge about fertilizer innovations

SOURCE	NO	%
RADIO	82	33
EXTENSION AGENTS	76	30
NEIGHBOURS/FRIENDS	71	28
TELEVISION	21	8
OTHERS	1	1
NEWSPAPER	0	0
TOTAL	251	100

Source: Field Survey n = 100

Similarly, 95% of the respondents disagreed with the statement: "Radio/television agricultural broadcast messages teach that, there is little or no advantage in improved seeds".

Clearly, above figures show that broadcast media have properly provided a useful knowledge about three key extension messages to the farmers. Therefore, broadcast programming in agriculture would to a great deal go a long way in influencing farmers perception about many new innovations.

4.3.9: Farmers' views and enhancement of agricultural broadcasting effectiveness

A frequency distribution (percentage) of the farmers' responses to an open-ended question: "Suggest ways of improving the agricultural (Radio/television) programmes", revealed that 48% of the respondents said they wanted more air-time duration to the agricultural radio programmes, and 27% asked for more air-time duration for agricultural

Table 13: Influence of Agricultural broadcasting on farmers' Perception about three common extension messages

	MESSAGE	AGREED		DISAGREED	
		NO.	%	NO	%
1.	There is no need to contact extension agents frequently	10	10	90	90
2.	Wise choice of chemical fertilizers per crops is necessary	96	96	4	4
3.	There is little or no advantage in improved seeds	5	5	95	95
TOTAL		111	100	189	100

Source: Field survey n = 100

television programmes. This was an indication of their interest in the programmes. Table 14 contains a percentage distribution of the findings.

Seventeen percent of the farmers said they required more frequent agricultural programming on radio than what obtained at the time of study. The same number (17%) asked for a change of programmes scheduling, to a more suitable time for radio audience. However, only 11% of the respondents asked for more frequent programmes (i.e. additional air-time) to agricultural television programming. This was surprising as the two most popular agricultural television programmes at the time were aired once and for all per week. It shows that more farmers were not so familiar about the regular agricultural television programmes and the programmes' shortcomings, as they did to radio.

Table 14: Percentage distribution of farmers' views on how to improve the agricultural radio and television programmes' effectiveness

VIEW POINT	RADIO		TELEVISION	
	No	%	No	%
MORE TIME	50	48	22	27
MORE FREQUENCY	18	17	9	11
CHANGE OF TIME	18	17	3	4
SATISFIED	7	7	2	2
NEPA POWER	0	0	28	34
FOCUS ON LATEST TECHNOLOGIES	4	4	3	4
BOOSTING RECEPTION	0	0	4	5
OTHERS	7	7	11	13
TOTAL	104	100	82	100

Source: Field survey n = 100

A few farmers, (7%) requested for other things such as change of minister for agriculture, introduction of literacy/religious programmes along with the agricultural

programmes and provision of inputs etc. On the whole, there was no any clear evidence to suggest that the farmers were against the agricultural broadcasts because of non-conformity with traditional values such as respect for old age, supremacy of the community, religion as a way of life e.t.c. as outlined by Moemeka (1991). Otherwise, respondents would have included them in the list of things they needed done to improve the programmes.

The findings as relates to objective three, which proffers some useful policy guidelines on future actions about agricultural broadcasting is contained in the recommendations of this study.

CHAPTER FIVE

5.0: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This section contains the summary, conclusions and recommendations of the study, based on the findings in the preceeding Chapters.

5.1: SUMMARY

A complete analysis of all the findings relative to objective one of the study confirms that the first hypothesis was correct and has therefore, been proofed. Thus, a great deal of farmers' leisure times were spent while listening to agricultural broadcasting because of their desire to gain from the programmes. For instance, in table 4, figures showed that a high proportion of the farmers spent much time listening to or watching agricultural programmes on a weekly and or, twice weekly basis.

The average age of the farmers was 40 years. At 40, each farmer was considered independent and a decision maker himself. So, any decision to pay attention to or avoid any source of information would be based on personal interest mainly (Table 1). Besides, three factors have been found to be quite contributory to the farmers reliance on the agricultural broadcasting channels. These were:

(i) Language of communication: mostly hausa;

(ii) Clearity of signals: Reception of FRCN, KSMC and NTA Kaduna;

iii) Conformity with the norms and values of the farmers: Principles of traditional communication in Africa, as outlined by Moemeka (1991).

In this study, each farmer was either a subsistent

farmer, commercial farmer or both. And it was found that farming was a profitable venture. Therefore, there was every reason for them to spend a great deal of their times receiving broadcast media messages, considered to be worthwhile (Table 2). This is because, logically, any source of knowledge that could aid the sustainability or increase in the gains of their trade, would be welcome.

The findings also showed that there was a relationship between years of tuning to agricultural radio programmes and farm size. It meant those with highest interest in agricultural broadcasting tended to have largest hectarage or farm investment, by virtue of the influence of radio message on their attitude to farming and farming skills. This was a further confirmation of the first hypothesis. However, the same was not true of agricultural television broadcasting. The popularity of television (NTA Kaduna) is mainly due to its relative clear sounds and vision as well as its introduction of an alternative English language programme, (Food Basket) for the minority interest, as far as the farming populace was concerned.

Recent experiences have shown that newspapers and magazines were seldom relied on for any reasonable agricultural information. And in this study, no farmer said 'Yes' to newspapers' contribution to his/her agricultural knowledge compared to 33% (Radio) and 8% (television). It showed that broadcast messages were taken more seriously than the print media messages (Table 12). McLuhan's prediction of an electronic age (Bittner, 1980) was therefore here.

Another important proof of the first hypothesis, as revealed by the findings was the perceived influence of agricultural broadcast messages on the farmers' level of awareness about some key extension messages, (Table 13) which goes to confirm its worthiness as provider of correct and sound orientation to life in farming.

Further more, the results relative to objectives one and two of the study, confirmed that the second hypothesis could be accepted. For instance, the patronage of television medium by farmers, has been found to be influenced by location. Urban/semi-urban based farmers tended to use the television medium more than their rural counterparts, an indication that home location (background) could determine the extent to which some broadcast messages were received, (Table 4). It has also been established (table 5) that there was a degree of association between medium scale farmers and long years of tuning to agricultural broadcast signals.

In terms of age, it was found that middle-aged and younger-aged farmers derived more benefits (knowledge wise) from agricultural broadcasting, than the older aged. This could be attributed to the slow adoption characteristics of the older aged and the high cost of recommended inputs factor. (Table 6). Similarly, a significant positive association exist between sex and derived benefits of agricultural broadcasting: Males tended to derive benefits (knowledge wise) proportionately, more than females.

In this study (Table 9), farm size and broadcast media inspired knowledge of improved seeds were related. So,

farmers with large farm holdings were most likely to go for agricultural broadcast messages because of their need for information about improved seeds technology (Table 10). Also, those with fewer years of informal education tended to gain more broadcast induced awareness level, than those with more years of informal education (Table 10).

5.2 CONCLUSIONS

In Makarfi and Sabon-Gari Local Government Areas of Kaduna State, a high proportion of farmers spent their leisure times while listening to, or watching agricultural programmes. They considered the programmes as relevant and useful to their farming occupation.

Similarly, use of local language in programming, clear radio signals and conformity of programmes to existing norms and values contributed positively to the farmers' level of patronage for agricultural programmes; just like such socio-economic factors as farm size, age, informal education e.t.c. were found to be related to the farmers' extent of listening to agricultural broadcast messages, which in turn determined the effectiveness of such programmes conveying the messages.

5.3 RECOMMENDATIONS

This study, like any other one of its kinds, was expected to profer some valuable policy guidelines that could further enhance the conduct of agricultural broadcasting in the study area. Based on the study objectives and above findings, the following recommendations have emerged:

1. The total number of existing agricultural programmes on radio and television (mostly) need to be increased. So

also, there is need to reconsider the frequency of airing the programmes, with possibilities of repeat broadcasts within specified weeks. This would facilitate better comprehension of programmes messages. Governments and independent organisations should therefore work towards introducing additional programmes or stations with grater focus on agriculture and rural development.

2. The attitude of rescheduling/ cancelling some regular programmes without proper notice must be discouraged by all stations. If a regular programme were to discontinue for any reason, the programme manager most endeavour to inform the audience in advance and to provide alternatives as well.
3. Print media managers need to appreciate the importance of reporting agriculture more intensively than what obtains at present. This is to meaningfully complement knowledge gained from agricultural broadcasting becouse the printed word can be refered to always.
4. All programmes for farmers need to involve the farmers in planning and production of such programmes.This is because participation enhances patronage and general feeling of identity. It appears, only a few privileged farmers, usually large scale farmers, get involved in programmes production. Therefore, selection of farmers for participation must cut across all categories, small, medium and large scale farmers.
5. The level of formal educational attainment among farmers was relatively quite low. So, majority of the farmers

have to rely on vernacular (hausa) to comprhend any broadcast messages directed at them. So, for any agricultural broadcast messages to have the desired impact, the messages must be aired using local languages rather than English. Therefore, the emphasis on vernacular must be maintained.

6. Lack of equitable electricity power supply was found to be responsible for poor reception of television signals. There is therefore, the need for rapid rural electrification, if the goals of agricultural television broadcasting is to be fully realised, in the study areas.
7. Emphasis on commercials does not allow room for adequate time and attention on agricultural broadcasting to be intensified, even at the most popular stations such as FRCN. It is therefore, recommended that commercialisation be restricted to private owned media only. This could be possible only if governments could adequately finance public owned media purely as tools for development support communication.
8. There is the need to find a lasting solution to the scarcity and high cost of basic inputs, such as fertilizers, pesticides, herbicides tractors, soft loans, e.t.c. this is because nearly all crop-based agricultural innovations are dependent on these inputs in one way or the other. Thus, without the provision of the inputs recommended practices by broadcast channels could not be put to full use by the farmers.
9. There is the need for further studies to be made in the

areas of broadcast programming, gender and commercialisation as relates to agricultural broadcasting in general.

5.4 LIMITATIONS OF THE STUDY

Financial and logistic constraints could not allow for content analysis of all the agricultural programmes from the three stations of study. So doing could have reassured the investigator more about the farmers views' on them.

Unfortunately, for the investigator, timing of the study had to unavoidably take place at peak farming period. This meant easy access to all farmers was a little more difficult.

Most of the target farmers had no any written records of their experiences about the subject. There was therefore, the need for caution because of the tendency for errors in trying to recall past experiences about the subject.

Finally, in a study of this nature one would have loved to cover a wider audience, but for the obvious limitations stated earlier .

BIBLIOGRAPHY

Afigbo, A.E. (1991). 'Women as a Factor in Development', M.O.Ijrere, Women in Nigerian Economy, ACENA, Enugu, pp.42 - 45.

Ajakaiye, M.B. (1993). 'The Role of the Agricultural and Cooperative Bank (NACB) Limited in Financing Women's Agricultural Venture'. Paper presented at the Regional workshop on Role of Women in Agriculture, IAR/ABU, Zaria. pp.8.

Akinfeleye, R.A. (1990). 'Development Journalism: Facilitator of Change'. Paper presented at the Second National Workshop on the New National Information Order, Abeokuta. 'The Democrat', 13th December, 1990, Kaduna.

Aladekomo, B. (1984). 'Television News in Nigeria'. Television Journal No. 6, Lagos, pp. 4 - 6.

Al-Bashir, A. (1994). 'Agric. Economy', 'The Democrat', Monday, October 3, 1994, page 7.

Ansah, P. (1991). 'Broadcasting and National Development', S.K.T. Boafor (Ed.) Module on Development Communication 2, ACCE, Nairobi, pp. 33 - 44.

Atala, T.K. and Tarfa, S.B. (1991). A Survey of Women groups in Kaduna State. IAR/ABU, Zaria, pp. 1 - 10.

Atala, T.K. (1984). 'The Relationship of Socio-Economic Factors in Agricultural innovation and utilization of information sources in two Nigerian villages'. Nigerian Journal of Agricultural Extension. Vol. 2, Nos. 1 & 2, Zaria, pp. 1 - 10.

Amienyi, O.P. (1993). 'Adult Attitudes Towards Mass Media in Nigeria'. African Media Review, ACCE, Nairobi, Vol. 7(1) pp. 19 - 32.

Anikpo, M.O.C. (1986). Foundations of Social Science Research: A Methodological Guide to Students, ABIC, Enugu, pp. 62 - 64.

Anikpo, M. (1991). Understanding the Hunger Crises in Africa, ABIC, Enugu, pp. 1 - 39.

Benor, D., (1984). Agricultural Extension: The Training and Visit System. The World Bank. New York, p. 49.

Bittner, J.R. (1980). Mass Communication: An Introduction. Prentice Hall, New York, Pp. 391 - 392.

Boafor, S.K.T. (1991). Module on Development Communication 2 ACCE, Nairobi, pp. 72 - 74.

Bogunjoko, I.O. (1983), 'Sources of information on improved farm practices: A study of farmers in Giwa District of

Kaduna State'. The Nigerian Journal of Agricultural Extension, Vol. 1, Number 2, Zaria Pages 64 - 71.

Bonepath, E. (1982). Women Power and Policy (Ed.) PerGamon, New York, pp. 264 - 265.

Bukh, J. (1979). The Village Woman in Ghana. CDR, Copenhagen, pp. 92 - 93.

Carnegie, D. (1976). How to Win Friends and Influence People. CEDER Books, Chicago, pp. 253 - 254.

Coldevin, G. (1991). 'Perspectives on Communication for Rural Development'. Boafor, S.K.T. Module on Development Communication 1. ACCE, Nairobi, pp. 37 - 38.

Dare, O. (1990). 'Mass Communication and Food Production.' Lawani, S.M. Communication for Sustainable Agriculture. IITA, Ibadan, pp. 22 - 28

Echo of Islam, (August, 1992) No. 98, pages 35-36.

FAO (1992) Population education and nutrition: Version for Africa, Food Policy and Nutrition Division, FOA, Rome. Page 45.

Golding, P. (1974). 'Media Role in National Development: Critique of Theoretical Orthodoxy'. Journal of Communication, Summer, pp. 39 - 42.

Hafkin, N.J. (1976). 'Women in Africa: Studies in Social and Economic Change, S.U.P., Standford, P. 15.

Ibrahim, M. (1990). 'The Radio as a Campaign Instrument', Eleventh UNIMAID Convocation Lecture, UNIMAID Press, Maiduguri, pp. 20 - 21.

Ijere, M.O. (1990). Women in Nigerian Economy (Ed.) ACENA, Enugu, pp. 216 - 217.

Jakande, L.K. (1975). 'The Role of the Mass Media in a Developing Country'. UNIIFE's, Faculty of Arts Lecture Series 4, UNIIFE pp. 1 - 10.

Kaul, R.N. (1994). 'An Overview of Agricultural Mechanization in the Context of Women Participation' Role of Women in Agriculture with Focus on Farm Tools and related Technologies, IAR/ABU, Zaria, pp. 10 - 20.

Lerner, D. (1964). The Passing of Traditional Society. The Free Press: London, pp. 1 - 90.

MacBride, S. (1980). Many Voices One World UNESCO, Paris pp. 10 - 45.

Matanmi, B.M. (1987). Relationship Between Farmers

Socio-Economics Characteristics and Sources of Farm Information in Gusau Local Government Area of Sokoto State. M.Sc. Thesis. IAR/ABU, pp. 89 - 95.

McQuil, D. (1977). 'The Influence and Effects of the Mass Media'. Mass Communication and Society. The Open University, London, p. 87.

Miller, S. (1975). Experimental Design and Statistics. R. Clay, Suffolk, p. 27.

Moemeka, A.A. (1981). Local Radio: Community education for Development, A.B.U. Press.

Moemeka, A.A. (1991). 'Perspectives on Development Communication' Boafor, S.T.K. Module on Development Communication I. ACCE, Nairobi, pp. 15 - 30.

Muhammed, M. (1991). New Communication Technologies and Society. Nationhouse Press L.T.D., Kaduna, Pp. 1 - 155.

NPC (1992) 'A Review of figures' Citizen magazine, Moonday, March 30, 1992. pp.41-46.

Nwaosu, P.O. and Megwa, E. (1993). 'Communication and Rural Development in Swaziland'. African Media Review 1. ACCE, Nairobi. pp. 1 - 16.

Nwuneli, O.E. (1985). Mass Communication in Nigeria: A book of Reading EDP, Enugu, p. 161.

Omenesa, Z. (1992). ' The Effect of Radio on Agricultural Development in Northern Nigeria', Lawani, S.M. et. al. Recent Development in Cereals Production in Nigeria, IITA, Ibadan, pp. 63 - 68.

Opio-Odongo, J.M.A. (1983), 'The Inertia of Rural Development in Hausaland: An Explication of a Structural Incongruence Hypothesis', in The Nigerian Journal of Agricultural Extension Zaria, Vol. 1, No. 2. P. 9.

Orewere, B.A. (1984). Impact of Agricultural Broadcasting on Farmers in Jos and its environs. Dept. of Sociology A.B.U., Zaria, M.Sc. Thesis, pp. 87 - 88.

Oso, L. (1992). 'Television Programmes on Agriculture in Southern Nigeria', Lawani, S.M. Recent Developments in Cereals production in Nigeria, IITA, Ibadan, pp. 79 - 90.

Rogers, E.M. (1969). Modernization Among Peasants: The Impact of Communication, Holt Inc., New York, pp. 128 - 129.

Rostow, W.W. (1960). The Stages of Economic Growth: A Non-Communist Manifesto, Cambridge University Press,

Cambridge, pp. 3 - 100.

Sabon Gari Local Government (1994). 'Local Government Directory', Zaria. pp. 1 - 6 (unpublished).

Salau, S. (1992). 'Print Media Coverage of Agriculture in Nigeria', Lawani, S.M. Recent Developments in Cereals Production in Nigeria, IITA, Ibadan, pp. 95 - 100.

Satter, M.A. (1983). 'Technology, Agriculture and Development'. UNIMAID Inaugural Lecture Series 18. UNIMAID Press, Maiduguri, pp. 1 - 30.

Seers, D. (1972). 'What are we trying to Measure?' Journal of Development Studies (8), pp. 21 - 36.

Schramm, W. (1964). Mass Media and National Development. Standford University Press, Stanford, pp. 18 - 20.

Spiegel, M.R. (1972). Theory and Problems of Statistics, McGrow-Hill, New York, pp. 141 - 145.

Tehranian, M. (1979). Development Theory and Communication Theories: The Changing Paradigm ABLEX, New York, pp. 120 - 158.

Tolba, M.K. (1993). 'The Earth Summit and Africa's Development'. 4th IITA Distinguished African Scientists Lecture Series. IITA, Ibadan, pp. 1 - 14.

Ugboajah, F.O. (1979). 'Developing Indigenous Communication Systems in Nigeria'. Journal of Communication, Vol. 29, pp. 40 - 42.

Voh, J.P. (1979). 'An Exploratory study of Factors Associated with Adoption of Recommended Farm Practices Among Giwa Farmers'. Samaru Miscellaneous Paper 73, IAR/ABU, Zaria, pp. 1 - 16.

Voigt, M.J. (1979). 'Television viewer behaviour'. McGrow Hill, New York, pp. 1 - 35.

Wainwright, G.R. (1979). People and Communication. Macdonald and Evans. Playmoth. pp. 198 - 199.

Williams, S.K.T. and Williams, C.E. (1971). "The Relationship of Farmers Characteristics to the Source of Information on Improved Farm practices in Western State of Nigeria. Bulletin of Rural Economics and Sociology, Vol. 6.

Windahl, S. (1979). 'A uses and effects model: Some suggestions'. Media Panel Report No. 76, University of Lund Press, Lund, pp. 1 - 26.

Yazidu, I. (1973). 'The Study of Radio as a Means of

Communicating Agricultural Information to farmers in Northern States of Nigeria'. M.Sc. Thesis, IAR/ABU, Zaria, pp. 1 - 146.

APPENDIX I

FARMER'S QUESTIONNAIRE ON SOCIO-ECONOMIC FACTORS INFLUENCING THE EFFECTIVENESS OF AGRICULTURAL BROADCASTING IN KADUNA STATE

INTERVIEWER'S NAME ..... DATE .....

A. **PERSONAL INFORMATION /BACKGROUND**

1. Farmer's Name .....
2. Village/Town .....
3. Local Government .....
4. Sex (Tick): Male ( ) Female ( )
5. Age this year .....
6. Marital Status (Tick): Married ( ) Single ( )
7. Tribe: .....
8. a. Religious Persuasion: .....
   b. For how long have you been into it? .....

B. **FAMILY SIZE**

9. Total number of Children: .....
10. Number of Children staying with you at present:
    Males ..... Females .....
11. Number of wives at present .....
12. Number of relatives under your care at present
    .....

C. INCOME LEVEL

13. Give an estimate of amount of money you earned from the sale of each crop in the last Growing season.

CROP	FARM SIZE (Ha)	AMOUNT INVESTED (₦)	AMOUNT EARNED (₦)
TOTAL			

14. Give an estimate of amount of money you earned from each non-farm activities last year (Jan-Dec'1994)

NON FARM ACTIVITIES	INCOME (₦)
TOTAL	

15. Which of these Properties do you own? (Tick as appropriate)

Zinc roof house (s) .... ( ) Sewing Machine .... ( )

Bicycle (s) .... ( ) Motor cycle .... ( )

Work Bulls ( ) Tractor ... ( )

Others (specify) .....

16. For how many years have you been farming? .....

17. What is the total size of your farm plots? .....

D. **FORMAL/INFORMAL EDUCATION**

18. How many years of formal education have you?

Primary .... years, Secondary ..... years

Post Secondary ..... years.

19. How many years of informal education have you?

Quranic School ..... years, Adult Education .... years,

Others (specify) .....years.

E. **ACCESS TO RECEIVER**

20. Do you own a functional Radio Set? Yes ( ) No ( )

21. If no, are you accessible to one which is functional?

Yes ( ) No ( ).

For how long have you used the radio set?

Over 10 years ... ( ), Five years ... ( ),

One year ( )

Six Months ... ( ), One Month ... ( ),

Never .... ( )

23. How often do you use the set? Monthly ... ( )

Weekly ... ( ), Twice weekly ... ( )

Occasionally/Rarely ..... ( ), Never ... ( )

24. Do you own a functional Television set? Yes ( ) No ( ).

25. If no, are you accessible to one which is functional?

Yes ( ) No ( ).

26. For how long have you used the TV set?

Over 10 years ..... ( ), Five years ... ( )

One year ... ( ), Six Months ... ( ),

One Month ...( ) Never ... ( ).

27. How often do you use the T.V. set? Monthly ... ( ),

Weekly ... ( ), Twice weekly ... ( ), Never ... ( ).

F. **CHOICE OF MEDIUM**

28. Indicate three of your most favourite Local radio stations:

1. ..... 2. ..... 3. .....

29. Indicate two other less favourite local radio stations.

1. ..... 2. .....

30. Indicate three of your most favourite Local Television Stations. 1. ..... 2. ..... 3. .....

31. Indicate two other less favourite local radio stations.

1. ..... 2. .....

32. (a) Are you aware of other radio or Television stations which you do not patronize? Yes ( ) No ( )

(b) What are your reasons for not patronising the

Station(s)?.....

G. **USE OF MEDIUM**

33. Indicate three of your most favourite Agric. radio Programmes 1. ..... 2. .....

34. In two of your less favourite local Agric. radio programmes. 1.....2.....

35. Indicate three of your most favourite local agricultural television programmes. 1. ..... 2. .....

36. Indicate two of your less favourite local agricultural television programmes 1..... 2.....

37. a. Are you aware of any radio or Television programmes which you do not patronize? Yes, ( ) No, ( ).

b. What are your reasons for not patronizing such programmes?.....

38. What is the usual time for Daily use of Radio? Early Morning _____ ( ), Mid-day _____ ( ), Afternoon _____ ( ), Evening _____ ( ), Nights _____ ( ), Late nights _____ ( ).

39. How often do you listen to the Agric. Programmes on radio? Daily _____ ( ), Twice weekly _____( ), Weekly ___ ( ), Monthly _____ ( ), Quarterly ____ ( ), Seasonally _____ ( ), Yearly____ ( ).

40. What is the usual time for your daily use of Television? Week-ends ( ), Evenings ( ), Sun-set ( ), Late-nights ( ).

41. How often do you watch the agric. programmes on Television? Daily ( ), Twice Weekly ( ), Weekly ( ), Monthly ( ), Quarterly ( ), Seasonally ( ), Yearly ( ), Occasionally/Rarely ( ).

H. **EFFECTIVENESS OF USE**

42. How often have you benefitted from listening to agric. programmes on radio? Very often ... ( ) Often... ( ) Occasionally ... ( ) Rarely ... ( ) Never ... ( )

43. Have you tried any of the innovation's you heared from the radio on your farm? Yes ( ), No ( ).

If yes why?

for higher yield ( ), for more Income ( )for trying new techniques ( ), convinced of what has been said ( ), Other reasons (specify) .....

If no, why?

Not interested ( ), Lack of time ( ), Financial constraints ( ), Not aware ( ), Others specify) .....

44. How often have you benefitted from watching agricultural programmes on T.V.? Very often ( ), Often ( ), Occasionally ( ), Rarely ( ), Never ( ).

45. a. Have you tried any of the innovations you heared from the television on your farm? Yes ( ) No ( ).

b. If yes, why? For higher yield ... ( ), For more income ... ( ), For trial sake .... ( ), Based on conviction ... ( ), Other reasons (specify)

c. If no, why? Not interested ( ), Lack of time ( ) Can not afford ( ), Not aware ( ), Others (specify)

46. Which of the following recommendations do you subscribe?

a. Contacting Extension Agents frequently ( ), Self reliance ( ), Trial and error ( ), None of the Above ( ).

47. Your knowledge of inorganic fertilizers has been largely enhanced through which medium (how?)

Radio ( ), Television ( ), Newspaper ( ), Extension Agents ( ), Neighbours/friends ( ), Others (specify)

.....

48. Which of these Modern farm practices have you heard of

in Radio and Television programmes?

Improved Sorghum Seed ( ), Improved Maize Seed ( ).

Improved Cowpea Seed ( ), Improved Millet Seed ( ),

Improved groundnut Seed ( ) Non of the above ( ).

49. Based on your understanding of the Programme topics you heard on Agric. Radio/T.V. programmes, are the following statements true or fales?

a. Radio/television messages teach that there is no use contacting extension agents frequently T ( ) F ( )

b. Radio/Television messages teach that wise choice of fertilizers per crop is necessary

T ( ) F ( ).

c. Radio/Television messages teach that there is little or no advantage in improved seeds.

T ( ) F ( ).

50. Suggest ways of improving the agricultural Radio programmes you know ....

... .

51. Suggest ways of improving the Agricultural T.V. programmes you know..... ....

.....